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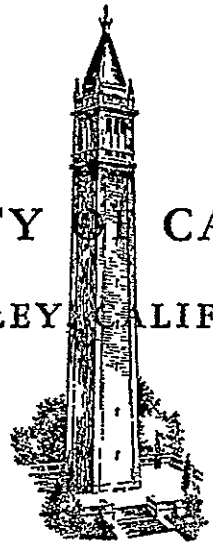

ECISION MAKING AND RESOURCE ALLOCATION

IN A PUBLIC HEALTH AGENCY

by

David Hudson Stimson

Internal Working Paper No. 18

December, 1964

This research was supported in part by the National Aeronautics and Space Administration under General Grant #NSG-243-62 under the University of California.

Space Science Laboratory
Social Sciences Project
University of California
Berkeley

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David Hudson Stimson

California University
Berkeley, California

December 1964

ACKNOWLEDGEMENT

I wish to express my appreciation to the members of my dissertation committee, Professors C. West Churchman and C. B. McGuire of the Graduate School of Business Administration and Robert Dyar, M.D., of the School of Public Health, for the assistance they gave me. Professor Churchman served as chairman of the committee. I am also deeply indebted to the Director and other members of the California State Department of Public Health for the opportunity to conduct a study in their organization. Their active participation in all phases of the study contributed greatly to the dissertation.

This study was supported in part by a fellowship granted from the Ford Foundation, by the National Aeronautics and Space Administration under General Grant #NSG-243-62 under the University of California, and by a Community Health Services Project Grant from the Public Health Service. However, the conclusions, opinions, and other statements in this publication are those of the author and are not necessarily those of the California State Department of Public Health or the supporting agencies.

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Chapter 1. INTRODUCTION

Health as an Area for Research

Good health has become accepted in recent years as a basic human right. In the United States today there is increasing emphasis on making available to every citizen the means of achieving good health.[1] Strong testimony to this growing concern is evidenced by the amount of money spent on all phases of health. In the fiscal year 1962-63 total expenditures for health purposes in the United States were $33.8 billion. Public expenditures for health purposes amounted to approximately 25 per cent of this total.[2] Federal appropriations for the Public Health Service have risen from a postwar low of $104 million in 1946-47 to $1,582 million in 1962-63.[3] In California the budget for the State Department of Public Health has risen in this same period from $8.2 million to $60 million.[4] It should be noted that in California other departments of the State government have responsibilities in the health field. It is estimated that the State of California in the field of medical care alone spent approximately $300 million in 1962 to support twenty programs in ten agencies.[5] In addition, local health departments in California used $34.6 million of local funds in 1962-63 to support their health programs.[6]

What assurance is there that these large sums of public money are being spent in an efficient and effective manner? Is there any way in which the allocation of public funds for health can be studied to determine better ways to allocate these resources?

Although much has been written on "medical economics"[7] there has been little work done on the evaluation of the return from the vast investment both public and private in the health industry. Even less attention has been paid to the allocation of resources in the public health field and the relationships between the different levels of government in administering these resources. Because of the complexity of the health industry it would be difficult to analyze the entire range of public spending for health. Although the research in this paper will of necessity focus on the allocation of funds of a particular program in the public health field, it is hoped that results obtained can be generalized and will be of use in other programs.

The study is an attempt to analyze through the method of operations research the decision making process of the California State Department of Public Health in its administration and allocation of a federal grant-in-aid to the State for improving the outside-the-hospital services for chronically ill and aged persons. The scope of the study is discussed in another section of this chapter.

In the profit making organizations with which the author has had experience, problems were discussed in terms of a single objective such as maximizing profits or minimizing costs. Other values were not explicitly taken into account in solving problems. C. West Churchman and others have argued that psychological and societal values should be introduced into the solution of organizational problems.[8] In the public sector of the economy there is no market for the "product" comparable to the markets that exist for goods manufactured in the

private sector where there is a price mechanism to guide investments. Thus it seemed to the author that in the public sector there would be more explicit concern with multiple objectives and more discussion of reasons for spending public funds to pursue various goals, and that, therefore, an analysis of a public agency would provide rich material for a study of values in decision making.

The Operations Research Approach

The approach to this study of the Department is that of operations research. Operations research has been defined as the application of scientific methods, techniques, and tools to problems involving the operations of systems so as to provide those in control of the operations with optimum solutions to their problems.[9] Some persons in industry and elsewhere have wondered what is new about operations research, implying that they have been doing it for years. What is new is the approach of looking at the whole system first before selecting some part for study, the building of a model, the desire to find an optimal rather than a feasible solution, and the systematic analysis of management problems (those that cut across departmental lines) by an interdisciplinary staff group.[10] The operations researcher analyzes the situation and tries to abstract the essence of the problem. Then, he looks to see if it is analogous to a similarly structured problem in a different context. If he finds one, he may adapt the method of solution to his problem. If he does not, he may have to synthesize a new approach using parts of other methods.

To illustrate the operations research approach, a researcher would say that he is going to try to solve an organizational problem in which resource allocation plays an important part, rather than to say that he is going to solve a resource allocation problem. Analysis within this organizational context is helpful in many ways. It aids in determining those problems which are important from the viewpoint of the organization as a whole. Because operations research has not yet advanced to the point where a complex organization can be optimized all at once, a researcher divides the organization's activities into relatively independent parts. If the researcher is successful, the solution to a problem in one part of the organization helps achieve the overall goals of the organization.[11]

Operations research is an approach to the solution of problems involving organizational operations. An operations research study is not like many of the research studies listed in An Inventory of Social and Economic Research in Health.[12] In these studies a dependent variable like heart disease is related to independent variables like age, race, sex, and occupation, or the various scaling techniques of psychology and sociology are used. Sample survey techniques are often used to collect information about a particular population. An operations research study, in contrast, is a method of problem solving which may use any of these as well as other techniques.

Selection of the Problem

The California State Department of Public Health fulfilled the author's requirements for a public agency in which to make his study. The Department is large enough to offer a variety of interesting problems but not so large as to be impossible for one person to study within a reasonable period of time. The Department was interested in the proposed study and agreed to make all records, files, and personnel available. Official approval for the study was granted by the Department on May 20, 1963. Events occurring after June 1, 1964, are not included in the study.

The first step in identifying a significant research problem in the State Department of Public Health was to think of the Department as a black box with inputs of State and federal money and outputs of money and services.[13] Such a black box is given in Exhibit J which shows the flow of State and federal funds into the Department and the division of these funds into money retained at the State level to support operations and services of the Department and money allocated to local health departments for use at the local level. This classification of funds facilitated further analysis of the inputs and outputs to select some part of the Department for detailed study. The part selected deals with the administration of a particular grant of federal funds. The decision to study this part of the Department's activities was based on several criteria:

1. The part studied would have to represent a significant problem of interest both to the Department and to the author.
2. The problem would have to be of a size that could be handled within a reasonable period of time.
3. The problem could be separated from the other activities of the Department in such a manner that the solution of the problem would be consistent with the overall goals of the organization, i.e., there would be no substantial suboptimization problem.

The problem of the allocation and administration of the "Chronically Ill and Aged Services" (CI&A) federal formula grant meets all of these criteria. Although this grant is not as large as the established Maternal and Child Health (MCH) grant from the Children's Bureau, it ranks second in size among the eight Public Health Service formula grants received by California. Because the CI&A grant is new -- it started in late 1961 -- and large, attention is focused on it. Because of its newness, the individuals who made the initial decisions about the program in 1961 are available for interviews. In addition, although the CI&A grant is a categorical grant, "chronically ill and aged" is a sufficiently broad category to place a heavy responsibility on the Department to decide how the funds should be used.[14]

Problems connected with State funds were ruled out because of the intricacies of budgetary procedures. In addition to the complexities within the Department in arriving at the annual budget request, there are two organizations outside the health field that pass upon the budget request. First the Department of Finance, representing the Governor,

goes over the proposed budgets from all departments to arrive at the budget which the Governor submits to the State Legislature. Then the Legislature analyzes the Governor's budget, makes deletions and additions, and finally approves the revised budget. If one person were to undertake a study involving these two organizations besides the Department of Public Health itself, the difficulties would be overwhelming. Also, as shown in Exhibit J, State funds are divided into categories. Within most of the categories the allocation of State funds to local health departments is governed by the California Health and Safety Code. For a given budget the Department has little discretion in how the State funds are allocated.

The federal formula grants present a more feasible area for study because the Department has much discretion in the use of formula grant funds and because a formula grant can be thought of as an exogenous variable in the system encompassing the Department's administration of the grant. The effect of the actions of a single state on the amount of money appropriated for public health purposes by the United States Congress and on the amount of money the state will receive from the Public Health Service in federal formula grants is slight. It is true that state and local government personnel inform Senators and Congressmen in Washington of their views on public health legislation and that all states acting in concert may be able to affect the total public health appropriation. However, for an individual state it is reasonable to consider the allocation of federal formula grants as outside the control of that particular state. In the various public health formula grant

(grant-in-aid) programs the states have the freedom to decide how to use the grants provided that they confine the use of these funds to the category of activity specified in the formula grant, that they make available the required matching funds, and that they fulfill the reporting and accounting requirements of the federal agency which administers the formula grant.[15]

Method of Collecting and Handling Data

The information needed to make this study was obtained from interviews with members of the Department; by attendance at meetings and discussions which provided opportunities for direct observation of the decision making process; through analysis of letters, memoranda, documents, and other material in various Departmental files; and by discussions with persons outside the Department who had knowledge of its operations.

Of course, in order to collect "the facts" about the Department and the CI&A program presented in the next three chapters some hypotheses were needed. Briefly, these hypotheses were that resource allocation by a public agency could be studied profitably by decision theory, that the goals of those members of the Department who influenced the CI&A program could be identified, that concepts from organization theory could illuminate organizational behavior in the Department in general and the decision process of the CI&A program in particular. The following statement shows the relationship between a hypothesis and the facts.

> In actual scientific work these four stages [of scientific inquiry -- observation, hypothesis, prediction and verification --] are so intertwined that it would be hard to fit the history of any particular scientific investigation into such a rigid scheme. Sometimes the different stages are merged or blurred, and frequently they do not occur in the sequence listed. To know what facts to collect, one must already have some hypothesis about what facts are relevant to the problem, but such a hypothesis in turn presupposes some factual knowledge; and so forth . . . . Not everything can be observed; it is necessary to be selective.[16]

Needless to say, the number of facts that could be assembled about the Department in the post-World War II period is incredibly large.

As a means of collecting needed information, a communications flow chart of the operation of the CI&A program was made. The formal and informal organization of the Department, depicted in the flow chart in Exhibit L, provides an extremely large number of channels and they are all open and used. Although useful in understanding organizational behavior, the flow chart did not seem to be the analytical tool needed for this study.[17] A chronology of the events of the CI&A program within the Department appeared to be a better way to proceed. Copies were made of several hundred pieces of pertinent material found in the files. These pieces when put in chronological order formed the basic file on the CI&A program. The chronology focuses upon key decisions, the discussions preceding the decisions, and the results of the decisions as shown by the actual allocations of the CI&A funds. The continuing interplay between the preparation of the chronology and interviews with members of the Department led to a better understanding of the organization and of the decision making process in the CI&A program.

Formal interviews were held with approximately fifty people in the Department as well as with local health officers and members of the

Public Health Service. In addition, there were many informal contacts with members of the Department which were as productive as the formal interviews. By being furnished a desk within the Department and doing his work there, the author was able to get a better feel of the organization than if he had been only visiting the Department for interviews. His close association with the Department lasted a little over one year. After a time he became part of the environment which hopefully makes the "observer effect" small.

Because the Department is a public agency, minutes are taken of all regular meetings. Hence employees are used to having someone in the room taking notes during their deliberations which means that the author's note-taking wasn't a new experience for them. Also comparisons of the author's notes with the official minutes of meetings were made. Because of the accuracy and comprehensiveness of the minutes more confidence could be placed in the use of minutes of past meetings as one source of information.

The author attended at least one of each of the following meetings to learn more about the communication and decision making processes within the Department.

Division Chiefs' meeting. The eight division chiefs meet with members of the Director's Office twice monthly.[18]

Administrative Staff meeting. The Director, the division chiefs, the bureau chiefs, and other key personnel meet once a month.

Division of Research staff meeting. These are weekly meetings.

Division of Preventive Medical Services staff meeting. These are monthly meetings.

Bureau of Chronic Diseases staff meeting. These are quarterly meetings.

Meeting to discuss and make recommendations for funding or not funding applications for CI&A Contracts. These meetings are held when several applications are ready for final processing and are attended by members of the Bureau of Chronic Diseases and the Division of Community Health Services.

Staff meeting of a regional medical coordinator, Division of Community Health Services, with his regional consulting team. These meetings are held by each regional medical coordinator ten times a year.

Meeting of the ad hoc committee on ground rules for the MCH and CI&A programs. A series of such meetings occurred in the fall of 1963.

Meeting between members of the Department and the San Francisco Regional Office of the Public Health Service on a Community Health Services project grant application. These meetings are not held on a regular basis. When there is a specific grant application requiring special attention, a meeting is called.

Meeting of the Consultants on the Hospital Service Index. The Index is one of the current research activities of the Medical Care Studies Unit. Meetings are held from time to time to review and comment on drafts of the Index.

Meeting of the California Conference of Local Health Officers (CCLHO). These meetings are held twice a year.

Meeting of the Committee on Administrative Practices, a committee of the CCLHO. These meetings are held twice a year.

Meeting of the Committee on Communicable Disease and Laboratories, a committee of the CCLHO. These meetings are held twice a year.

Dinner meeting of the Committee Chairmen of the CCLHO. These meetings are held twice a year.

Meeting of the California State Board of Public Health. The Board holds eight public meetings each year.

The files that were read included those in the Director's Office; the Divisions of Preventive Medical Services, Community Health Services, Research, and Administration; the Bureau of Chronic Diseases; and the CI&A Unit.

Preliminary drafts of the sections of this dissertation were circulated among selected Departmental personnel for comments. Based on the comments received, additional interviews were held and file material reviewed. The revised sections were distributed for further comment. The study was also discussed with persons outside the Department who had knowledge of its operations. The three principal groups of such persons were Public Health Service personnel, local health officers, and University of California School of Public Health faculty members.

Scope of the Study

Several things are attempted in this study of decision making and resource allocation in a public agency. First a case study of the decision making process used by the Department in allocating the CI&A federal formula grant is given. Then a model of the Department's allocation of the CI&A grant is presented. Here there was a desire to see if the allocation problem of a public agency could be formulated in decision theoretic terms and a model yielding a normative solution derived. In using decision theory most of the researcher's time is spent in getting the objectives, alternatives, and other parts needed to state the problem in such a manner that decision theory can be applied. To get a systematic way to identify these parts and to understand organizational behavior, organization theory was used. Here the purpose was to see if organization theory would yield the insights needed to explain the behavior of members of the Department and to identify the elements of the allocation problem: the decision maker, the environment, the alternatives, and the

objectives. Finally, there was an interest in comparing the normative solution of the model with the solution already decided upon by the Department.

As the investigation proceeded it became apparent that the research would demonstrate the feasibility of studying decision making in a public agency in the systematic way described in this chapter. Although the studies required to help fill out the matrix of the allocation model in Chapter 8 will be specified, no attempt will be made to do these studies. The research is limited to a study of the allocation of the CI&A grant by the Department into three major categories: services, demonstrations, and administrative overhead. Systematic processing of values makes possible the ranking of objectives and the determination of the efficiency of the alternatives in achieving these objectives. The model in Chapter 8 gives an overall framework for the allocation decision, makes it possible to delineate the further studies that should be made, and picks out the "best" alternative for allocating the CI&A grant among the three major categories just mentioned.

The next step beyond the model and the solution to the resource allocation problem presented in Chapter 8 would require a number of detailed evaluations of the various CI&A programs carried on in 38 local health departments and in other public and non-profit organizations which have received CI&A money from the Department. These studies would include benefit-cost analyses of such programs as glaucoma screening, diabetes screening, home care nursing, and rehabilitation. The results of these studies would enable the Department to make better estimates of the numbers

that go in the matrix of the allocation model. The reasons why persons in public health have not made these studies, some of the difficulties involved in making them, and suggestions regarding how these studies might be made are given in Chapters 6, 7 and 8.

Outline of The Study

The chronology in Chapters 2, 3, and 4 focuses upon the Department and its handling of the CI&A program. Chapter 2 presents background material about the operations of the Department. It concentrates on changes in the Department's organizational structure and environment in the post-World War II period. A detailed view of how the Department's CI&A program began and how it has developed since 1961 is given in chronological fashion in Chapter 3. The annual budgets and other financial details of the three fiscal years in which the CI&A program has operated comprise Chapter 4. The analysis of the Department and the CI&A program in Chapters 5 and 6 shows how organization theory helps in understanding organizational behavior and in identifying the elements needed to formulate a decision model -- the decision maker, the objectives, the alternatives, and the environment. Chapter 7 contains a brief discussion of alternative methods of measuring utility. Chapter 8 specifies the model for the allocation of the 1964-65 CI&A formula grant and gives the results obtained from its use. The conclusions of this study are stated along with suggestions for further research.

Summary of Findings and Conclusions

The findings of this operations research study of decision making and resource allocation at the California State Department of Public Health are consistent with the hypotheses previously stated. Resource allocation by a public agency was studied profitably through the use of decision theory; the goals of those members of the Department who influenced the CI&A program were identified; and concepts from organization theory did illuminate organizational behavior in the Department in general and the decision process of the CI&A program in particular.

By drawing on organization theory the author was able to identify the elements of the allocation problem: the objectives, the alternatives, the decision maker, and the environment. A model for the allocation of the 1964-65 CI&A formula grant was derived which used these elements. Systematic questioning of the Director of the Department yielded the probabilities and utilities required by the model. The alternative for the allocation of the 1964-65 CI&A formula grant chosen by the Director was the same as the alternative ranked by the model as the most effective alternative for achieving the Director's goals. This agreement supports the hypothesis that the Director chose among alternatives as if he were maximizing expected utility. The same questions were asked of other key members of the Department who were involved in the conception and administration of the CI&A

formula grant program in California. Overall, the results support the hypothesis that the members chose alternatives as if they were maximizing expected utility.

The main benefit to the Department from the study of the CI&A program was the demonstration that some of the Department's problems could be analyzed in a systematic way through the use of operations research and organization theory. In addition, the study revealed some gaps in the Department's CI&A program. At present the Department lacks the information to judge whether more effective use could be made of the CI&A formula grant by changes in its allocation. Studies concerning the administration and evaluation of the two most popular CI&A programs, home care nursing and disease detection, are now under way. The results of these studies will give the Department a better knowledge of the results of allocating CI&A funds to these programs.

There are several limitations in this study. For one thing, lack of information precluded an all-inclusive analysis of the allocation of the CI&A formula grant. The alternative allocations considered in the model had to be limited to allocations among the three major categories, namely, services, demonstrations, and administrative overhead, because information was not available on the consequences of the allocation of CI&A funds to local health departments, voluntary agencies, hospitals, and medical schools. Other limitations of the study center on the decision theory type model of the Department's allocation of the CI&A grant. These limitations include the confusion caused by the complexity of the experiment, the reluctance of subjects to try to use quantitative methods in solving management

problems, and the difficulties involved in putting decision theory into effect in an organization whose members are not familiar with the concepts of quantitative methods in management.

This study attempted to bridge the gap between the abstract models of rational decision making and the decision making behavior of managers in the California State Department of Public Health. Some limitations of the study stem from its admittedly exploratory nature. Other limitations are problems of implementation and are no different from the experiences of other researchers who have had difficulty in getting managers to implement their findings. The study does demonstrate the need for more field research on the relationship of scientists and managers and on ways to bridge the gap between them.

Chapter 2. HISTORICAL BACKGROUND AND ORGANIZATIONAL STRUCTURE OF THE CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH

Introduction

The State Department of Public Health is one of the four departments that comprise the Health and Welfare Agency. The others are the Departments of Mental Hygiene, Social Welfare, and Rehabilitation. The Health and Welfare Agency was created in 1961 as part of a reorganization of the executive branch effected by the Governor of California. The organization of the State government before the grouping of departments into agencies is shown in Exhibit H while the current organization (November, 1963) is shown in Exhibit I.

The California State Department of Public Health has a history dating back to 1870. However, until a major reorganization was effected in 1943, its organizational structure and decision making process differed greatly from that of today.[1] Further modifications were made as a result of studies in 1948 and 1958. Most of the changes in the Department's organization described in this chapter resulted from adoption of recommendations in four studies of the Department in the post-World War II period. However, other changes in the organizational structure have come about through direct action by the State Legislature. For example, the Legislature required that programs in dental health and alcoholic rehabilitation be administered by separate divisions. Still other changes have grown out of the Department's response to requests from the Legislature for special studies. The Medical Care Studies Unit and the Prevention of Blindness Unit fall into this catetory. It is true that the Department originally brought the need for medical

care and blindness prevention programs to the attention of the Legislature. However, the requests by the Legislature for studies in these two areas came about only after investigation by Legislative committees of the desirability of such programs and the subsequent passage of resolutions by the Legislature.

To understand current problems and methods of operation it is important (1) to outline briefly the background of the Department, (2) to examine the changes which took place as a result of the two 1943 studies, the 1948 study, and the 1958 study, (3) to set forth pertinent legal restrictions and requirements that affect public health operations and determine the way in which State funds are allocated to local health departments, (4) to take cognizance of the California Conference of Local Health Officers (CCLHO) and its affect on the approach to public health problems in California, (5) to explain the federal grant-in-aid program, and (6) to examine the relative size of public health programs at various levels of government. Excerpts from the four studies mentioned in (2) highlight the relationship of the State Department to local health departments and the way in which the Department's organizational structure has evolved during the post-World War II period.

The selections from the Department's history contained in this chapter emphasize organizational aspects that have relevance for current Departmental operations. Points covered here reappear in the analysis of the Department and its CI&A program in Chapters 5 and 6.

Early History of the Department

"The California State Department of Public Health is the second oldest in the country, having been established on April 15, 1870, only twenty years after the establishment of its State government."[2] It

was in 1870 that a bill was drafted "providing for the organization of the California State Board of Health. The measure gave the Board little power and there were no additional health laws that provided for any activities related to enforcement."[3]

> The first formal organizational pattern of the State Department of Public Health, as far as we can determine, was established in 1932 and, pursuant to law, Governor James Rolph approved the organization on October 25, 1932. This was during the period when the State Board of Public Health was an executive and administrative board. In 1943 the Legislature amended certain sections of the Health and Safety Code, converting the Board of Public Health to an advisory Board and vesting in the Director of Public Health the full authority for the operation of the Department. In this same year, 1943, the Department of Finance[4] and the American Public Health Association[5] co-operatively made a study of the administrative organization and program of the Department and issued separate reports, the two reports being in harmony. Following the issuance of these two reports, Governor Earl Warren on November 20, 1944, approved the reorganization of the Department in line with the recommendations made. The 21 recommendations made in the Department of Finance report and the 27 recommendations in the American Public Health Association report have been essentially adopted and in operation for many years.[6]

The Two 1943 Reports

The two 1943 reports led to a major reorganization of the Department which gave it the basic structure it now has. The general findings of the reports are described in the following quotation:

> There are three factors which have contributed to a major functional weakness of the Department -- the poorly constructed organizational set-up, failure to define clearly bureau responsibilities and relationships, and discontinuity of leadership. The combined effect of these factors has resulted in the development of several autonomous bureaus, operating almost as if they were independent departments, instead of a single well-coordinated state health

> department functioning smoothly and effectively for the establishment and betterment of local health services to meet local needs. . . . With each bureau striving independently to influence local health departments to emphasize the activity in which the bureau is interested, it is natural that local health departments have had little respect for, or confidence in, the State Department of Public Health.[7]

A later report stated that "in 1943, in spite of some well developed and properly functioning activities, the Department of Public Health could not be considered a good state department of health."[8]

Prior to the publication of the two 1943 reports, the California Legislature early in 1943 passed a bill which changed the status of the Board of Health from an administrative to an advisory-judiciary body, authorized the Director, with the approval of the Governor, to abolish or establish bureaus and divisions of the Department, and set the term of appointment of the Director at four years.[9] The last change was to provide continuity of leadership as there had been five Directors of Public Health in the ten years preceding 1943.

The major structural change recommended in the 1943 American Public Health Association report was the grouping of the bureaus into four divisions.[10] The proposed organization chart is given in Exhibit A.[11] As is noted below, the Department of Finance recommended grouping the bureaus into five divisions.[12] Both reports used the span of control argument to justify grouping bureaus into divisions.[13] Virtually all of the recommendations contained in these two reports were put into effect by the Department.

Some of the twenty-seven recommendations in the 1943 American Public Health Association's report that are of interest for this study are:

> (8) That, as a vitally important part of the plan of reorganization, the Bureau of Local Health Service (recommended to be the Division of Local Health Service) be furnished with a strong consultation-advisory staff.
> (9) That the present plan of employing public health personnel with State or Federal funds and then assigning them to local health departments be abolished, and
> (10) That wherever the State Department of Public Health is subsidizing local health departments the subsidy be provided through a contract between the State Department of Public Health and the local appropriating body.[14]

Recommendations nine and ten refer to the practice of the State furnishing personnel rather than money (State subvention subsidy) to local health departments.

Some of the twenty-one recommendations of the 1943 Department of Finance report that are of interest for this study are:[15]

> (7) That there be created a new position of chief of each of the five functional divisions;
> (8) That the approximately 150 positions used by local health departments be abolished and a contractual subsidy procedure be instituted;
> (20-a) That the Department be centralized by the establishment and choice of a single location for the headquarters of all divisions.[16]

The Department of Finance report also recommended the creation of a Division of Local Health Service:

> This division is in lieu of having a section in each bureau having to do with local unit contacts. . . . Individual contacts by each bureau with local units of government lead to overlapping activities, confusion in advice, excessive expense and ultimately becomes a serious deterent [sic] to the most successful intergovernmental relationships.[17]

The Division of Local Health Service was seen as the means of carrying the programs of the Department to the local health units. The importance of this transmission function is seen by quoting the 1943 American Public Health Association report on the primary functions of a state health department. They are:

> (1) To develop broad public health plans and policies for the State as a whole avoiding such detail as would tend to make it difficult to take into consideration local interests, needs and potentialities in their local application;
> (2) To translate these state-wide broad plans and policies into effective local action wherever possible through full-time local health departments reserving for direct service only those highly professional or technical services which are unfeasible or uneconomical of local procurement.[18]

A report prepared for the Commonwealth Fund strongly influenced the 1943 American Public Health Association report, especially with regard to the recommendation about full-time local health departments.[19]

The allocation problem that this dissertation deals with was recognized as a problem in the 1943 reports. The American Public Health Association report recommended:

> . . . that the State Department of Public Health endeavor to develop a sound plan of allocating state or federal funds to local health jurisdictions. [This allocation] should be based on the ability of the local area to meet its governmental needs and upon the likelihood of the area making effective use of the funds so granted. Among the criteria which should probably be considered in developing some formula for the allocation of funds are population, area, assessed valuation or spendable income and importance of local health problems.[20]

The Department of Finance report advised the Director:

> . . . to make a study of the possibility of installing some scientific method of subsidizing local governments. . . . It has been noted that there is no scientific basis which considers ability to pay by local government, the amount of money available, the amount of local population, etc.[21]

The report suggested that such things as local assessed valuation, present population, and present health services furnished by city and county be studied to arrive at a method.

The 1948 Report

The overall effect on the Department by the legislative action of 1943 and the implementation of the recommendations contained in the two 1943 reports can be seen in this quotation from a study made in 1948.

> In 1943 the California State Department of Public Health began a new era. At that time a new and exceptionally capable Director of Public Health was appointed, the State Board of Health was reorganized, more effective qualifications for professional personnel were established and thought was being given to the necessity of providing more adequate salaries for well-trained people. . . . Today the California State Department of Public Health will rank with the best in the nation. (This is not solely the opinion of your surveyors but is strongly substantiated by the opinions of the Regional Medical Directors of the U. S. Public Health Service, the U. S. Children's Bureau, and the directors of several of the more important state voluntary health agencies.)[22]

The 1948 American Public Health Association study of the Department requested by the Director listed ten major unmet needs. "By far the greatest single need" was the "further development of the Division of Local Health Service through the establishment of a strong consultation-advisory field staff or staffs without regional offices."[23] A primary function of this division is:

> . . . to render such consultation-advisory field service as will assist local health departments in translating the broad plans and policies of the State Department of Public Health into effective local action, taking into full consideration local interests, needs and potentialities. In short, this is a service designed to bring about local health programs balanced to meet local problems and needs.[24]

The progress report of Dr. Haven Emerson that had been mentioned in the Association's 1943 study was referred to again.[25] The strong commitment to this plan is expressed in the following quotation. "The

eventual evaluation of a State Department of Public Health depends upon its success in establishing full-time local health departments maintaining continually progressive programs geared to meet local needs."[26] Because of the prominent role given to local health departments the emphasis on the Division of Local Health Service is understandable.

No change in the basic divisional structure of the Department was proposed as a result of the 1948 study. However, some changes within the five divisions were recommended.[27] The organization chart proposed by this study is given in Exhibit C. As can be seen by comparing this 1948 chart with the earlier ones, a unit devoted to chronic disease, the Chronic Disease Service in the Division of Preventive Medical Services, is mentioned for the first time. As this Service, now the Bureau of Chronic Diseases, plays an important part in the CI&A program, some of its early history contained in the 1948 report is given here:

> The Chronic Disease Service was organized as a departmental unit in August of 1946. . . . All the Service's 1947-48 budget of approximately $124,000 is derived from Federal sources by a grant from the U.S. Public Health Service for cancer control. Starting primarily as a cancer control program, the Service was requested by the 1947 State Legislature to investigate the problems involved in the reduction of deaths and disability from cancer and other chronic disease and . . . report to the 1949 General Session of the Legislature the results . . . and make recommendations as to a program for the reduction of such deaths and disability and the costs thereof. As a result of this resolution of the Legislature, the Service has greatly expanded its thinking, planning and studies to include chronic diseases other than cancer. With the scope of the Service thus broadened, much of the work is still concerned with the organization, planning, and study of the problem.[28]

The 1958 Report

In 1958 the Department of Finance made another survey of the Department of Public Health.[29] In requesting the Department of Finance to make this survey the Director wrote in part as follows:

> Since 1948 the Department of Finance has studied many units of the Department and has made recommendations thereupon, all of which have been helpful, and for the most part, the recommendations made have been adopted. The public health field is rapidly changing and there are different emphases in the programs now as compared with previous years. The Legislature has from time to time added new activities and responsibilities to the department. Methods and procedures have advanced and there are new concepts of administrative organization.[30]

Although the report submitted by the Department of Finance as a result of the study states that "a basically new framework is proposed for the Department, rather than simply clarifying and strengthening existing structure,"[31] it doesn't seem that the recommendations really add up to this. The recommendations of this report can be characterized as being more significant than those of the 1948 study but far short of the changes that were recommended in the two 1943 reports.

One major recommendation in the 1958 report was the establishment of a Division of Research, which was accomplished in 1959. This recommendation was recognition of the important role of research in the Department.

> It is evident that research has again developed, over the past 10 years, into an important departmental function. Several factors suggest that the trend will be in the direction of more and larger projects and investigative studies, particularly in the area of chronic disease.[32]

It was brought out that the research objectives of the Department were not clearly stated and that present practice in the Department involved centralization of many research projects in the Bureau of Chronic Diseases. However, the report did not recommend that all research be done within the proposed Division of Research. Instead, the report stated that the Departmental research policy should incorporate standards for determining whether projects should be administered by the new Division of Research or by other program units of the Department.[33] As it has worked out the Division of Research does little actual research but instead provides administration for some research projects and furnishes expert consultation upon request in such areas as statistics and epidemiology. This Division does have other functions such as providing training in epidemiology and collecting data of a general nature on the state of health in California.

Another major recommendation of the 1958 report was to replace the Division of Local Health Service by the Division of Community Health Services. The change of names indicates that the new Division was to have somewhat broader functions and scope than the present Division of Local Health Service. The Bureaus of Nursing, Medical Social Services (now called Public Health Social Work), and Health Education were put into the new Division. It was recommended that the general consultation be carried out under the direction of a medical administrator. Some regionalization of the Department's consulting activities to local health departments was recommended. For these field activities of the Department, California was to be divided

into three regions each with its own headquarters. The decentralization implicit in this "area administration plan" wasn't carried out fully.[34] There are three medical administrators (called regional medical coordinators), one for each of the three regions. Two of them are headquartered in Berkeley and one in Los Angeles. And as the current name implies they are coordinators and not administrators of regional offices.

The Division of Community Health Services provides consultation to local health departments in organizational matters and in areas of public health activity such as nursing, health education, social work, and sanitation. The Division of Preventive Medical Services provides specialized consultation to local health departments on specific programs such as the CI&A program.

The 1958 report criticized the Department for failing to carry out the intent of the 1943 study.[35]

> Contrary to the intent of the 1943 plan, program units direct their own personnel and program in the field. . . . The bureau is the fundamental organizational component. . . . The integrated division concept, as proposed in the 1943 reorganization plan has never been fully realized in practice. . . . The bureau level continues to be recognized as the fundamental organization unit and there is a high degree of delegation to it. . . . The division offices in the major program divisions are not a directing force. The divisional office has been described as an expediter, a channel, and a facilitator.[36]

One of the more interesting aspects of the report is the frequent mention of the changing nature of public health and the difficulties this caused the investigators.

> The foremost problem in conducting the management survey has been the difficulty, on the part of the survey staff, in developing an understanding of the purposes and functions of certain units of the department.

> The normal expectation that fact-finding activity focused on review of laws, regulations, current operating practices, and working relationships will produce a basic knowledge of a function, and why it is performed, did not prevail. In a number of instances the nature of the health problem is currently changing, and neither the staff work in evaluation of present practice, nor a departmental decision to effect change, has been made yet. The changing character of health, i.e., of the patterns of sickness and death, make it impossible to do a clear-cut, finished job of organizational analysis. . . . The need for the department to make serious adjustments in programs, services and staffing, in the next 5 to 10 years, was regarded as a high-ranking need, which any new system of departmental organization should facilitate.
>
> Organizational review . . . was made considerably more difficult . . . by the general recognition that a number of serious new or emerging health problems are not yet expressly authorized, staffed, or being acted upon. . . . It is recommended that the Department of Public Health initiate intensive review of health program needs with regard to both the current sickness and death causes in California and to professional thinking about "the direction public health should take in the immediate future."[37]

From the author's readings in the public health literature and discussion with people working in this field, the changing nature of public health is still a basic problem.[38] Briefly stated, the traditional problems of public health -- sanitation and control of communicable disease -- have been fairly well solved in the United States. However, the fall in the death rate from communicable diseases has been accompanied by an increase in the death rate from chronic diseases. Also, the increasing length of human life has focused attention on the health problems of the aged. In addition to these two areas, urbanization, increasing population, uncontrolled use of pesticides, and nuclear weapons have brought with them environmental health problems such as air pollution and water pollution. Public health, having achieved its early goals, is now faced with changing its goals and defining its role in these new problem areas.

The organization chart of the Department as of October, 1958, is given in Exhibit D. The organization chart showing the proposed changes recommended in the 1958 study is given in Exhibit E. As can be seen by comparing Exhibit E with the current (May, 1964) organization chart given in Exhibit F there is great similarity. The major change is that the Division of Preventive Medical Services gave up the Bureaus of Nursing and Public Health Social Work to the Division of Community Health Services.

Statuatory Requirements and Restrictions

The State agency with primary responsibility for public health is the State Department of Public Health. Direct public health services are usually provided by local health departments.

> In California direct public health services are available principally through city and county health departments. A principal function of the State Department of Public Health is to assist local health departments in meeting the public health needs of the areas they serve. The Department provides consultation services to local departments and administers the [State] Public Health Assistance Act, which provides state funds for establishing and strengthening local health services. The Department performs some direct public health services when these services cannot be provided locally.[39]

To understand the operations of the Department it is necessary to consider the legal requirements[40] governing State financial support of local health departments and the role of the Department in the allocation of State funds. A recommendation made in 1943 for the State to subsidize local health departments by furnishing funds rather than personnel was carried out.

> In 1947 the Legislature of the State of California enacted a measure . . . [which] . . . committed the State Government to a program of grants-in-aid for local health departments and provided for an initial appropriation of $3,000,000. . . . [This act provided] for the first direct program calling for direct subsidies to the public health agencies of subordinate levels of government by the State.[41]

The allocation of these State subvention funds for local health departments is made in two parts as set forth by law.

> 1141. . . . Allocation shall be made to the administrative bodies of qualifying local health departments in the following manner:
> (a) A basic allotment as follows:
> To the administrative bodies of local health departments serving the territory in one or more counties a basic allotment of sixteen thousand dollars ($16,000), per county or sixty cents ($0.60) per capita per county, whichever is the lesser; provided, however, that if a county is divided into two or more local health department jurisdictions the basic allotment shall be divided between the departments in proportion to the population served by each department, except that no funds shall be available to any city of less than 50,000 population for the maintenance of an independent health department.
> (b) A per capita allotment, determined as follows:
> After deducting the amounts allowed for the basic allotment as provided in this section, the balance of the appropriation shall be allotted on a per capita basis to the administrative body of each local health department in the proportion that the population of that local health department jurisdiction bears to the population served by all qualified local health departments of the State.
>
> 1153. After determining the total amounts available to each area, the State Department of Public Health shall notify the governing body of each local health department of such amount and of the conditions governing its availibility.[42]

There is a matching requirement for the local jurisdiction.

> 1154. No funds appropriated for the purposes of this article shall be allocated to any local health department unless the governing body of such local health department has appropriated for the same period from local funds for the support of such local health department an amount equal to at least twice the per capita allotment provided in Section 1141 (b) of this chapter, such local funds to be wholly exclusive of any state or

> federal funds received or receivable. Actual expenditures of local funds, exclusive of state or federal funds received, shall be not less than this proportion of the total expenditures.[43]

The local health department must also meet certain minimum requirements to obtain the State subvention funds.

> 1155. No funds appropriated for the purpose of this article shall be allocated to any local health department whose professional and technical personnel and whose organization and program do not meet the minimum standards established by the State Department of Public Health.[44]

However, the Department must obtain the concurrence of the California Conference of Local Health Officers in establishing these standards.

> 1130. The State Department of Public Health, after consultation with and approval by the Conference of Local Health Officers, shall by board regulations establish standards of education and experience for professional and technical personnel employed in local health departments and for the organization and operation of the local health departments. Such standards may include the maintenance of records of services, finances, and expenditures, which shall be reported to the State Department of Public Health in a manner and at such times as it may specify.[45] (Italics mine.)

This constraint on the Department extends to all rules and regulations pertaining to State aid for local health departments.

> 1111. The State Department of Public Health shall administer this chapter and the State Board of Public Health shall adopt rules and regulations necessary thereto; provided, however, that such rules and regulations shall be adopted only after consultation with and approval by the California Conference of Local Health Officers. Approval of such rules and regulations shall be by majority vote of those present at an official session.[46] (Italics mine.)

The California Conference of Local Health Officers

The California Conference of Local Health Officers is a legally established body by virtue of Section 1110 of the California Health

and Safety Code and consists of all legally appointed local health officers in California.[47] While it might appear that the Conference operates only to veto recommendations of the Department, the Conference in fact is an important instrument for dissemination of information among local health departments and between these local departments and the State Department as well as for the resolution of conflict between local and State levels. The Conference is also a forum where local health officers can initiate studies of health problems and propose changes or additions to the California Health and Safety Code. In addition, the semiannual meetings of the Conference permit thorough discussion of items of mutual interest to the local health departments and the State Department. A member of the Department explained one function of the Conference to the author as follows: "The Director uses the Conference to iron out difficulties before the Department goes to the State Legislature with any suggestions."

Any local health officer can propose items for discussion by the Conference. Any bureau or division in the Department can propose items for discussion subject to approval by the Director. The items are assigned to the proper committee[48] of the Conference and appear on the agenda for discussion. The committee can either put the item on the agenda of the next meeting of the Conference with the committee's recommendation for approval or disapproval or, if necessary, hold an item over until the next meeting in order to get additional information that discussion has shown is needed. To give a better understanding of the kinds of items handled the agenda of the October, 1963, meeting of the Conference is given in Exhibit G.

The Conference with its committees allows for discussion of any matter before final action is taken. Since the Department initiates many of the items that appear on the agenda, the local health officers have a chance to question members of the Department about items they are proposing.[49] One of the more outspoken local health officers who often challenges Departmental proposals told the author that he "tries to make the State people think."

As mentioned previously a local health department must meet certain standards in order to receive State subvention funds. First there are some basic services the local health department must offer.[50] Briefly, the eight basic services consist of collection of vital statistics, a health education program, a communicable disease control program, a maternal and child health program, an environmental sanitation program, laboratory services, a nutrition program, and a chronic disease program.[51] In addition certain key employees must meet minimum education and experience requirements. Two examples are:

> 1300. Health Officer. The health officer shall be a graduate of a medical school of good standing and repute and shall be eligible for a license to practice medicine and surgery in the State of California; provided, however, that those health officers on a full time basis as of September 19, 1947, shall be considered as meeting the requirements of this section.
>
> 1301. Director of Public Health Nursing. A director of public health nursing appointed after March 1, 1951, shall be a public health nurse who has completed an accredited program of study in public health nursing, holds a bachelor's degree, and has had three years' experience in public health nursing, two of which shall have been in a generalized program in an organized health department.[52]

The Federal Grant-In-Aid Program

The State is the major source of funds flowing to the Department. However, the federal grant-in-aid program which is administered in California by the Department forms a significant part of the funds handled by the Department. These grants-in-aid, also called matching grants, categorical grants, or formula grants, assist states and local communities in providing adequate public health services.

> Two federal agencies [the Public Health Service and the Children's Bureau] in general control the policies under which federal grants-in-aid are available pursuant to Titles V and VI of the Federal Social Security Act of 1935, and pursuant to subsequent legislation of similar purposes, especially the United States Public Health Service Act of 1944.
>
> Passage of the Federal Social Security Act . . . [established] . . . for the first time on a large and substantial basis, a program of grants-in-aid to the states for the performance and improvement of public health services.
>
> A substantial part of the expansion of public health departments both at the local level and at the state level of government can be traced to the federal grants-in-aid program.[53]

A recent study repeats the points made in the 1949 statement just given. "The formula grant type of assistance has played, and continues to play, a major role in the development of public health services in the United States."[54]

The trend in federal grant-in-aid funds has been toward designating funds for certain disease categories rather than giving funds for general support of state public health programs. The chairman of the House Interstate and Foreign Commerce Committee which handles much health legislation summed up recent Congressional legislation in the health field:

> These measures constitute additional steps in providing specific legislative authority for the expenditure of funds to meet particular health problems. This trend is characteristic of most Federal health grant programs with which our committee has dealt over the last several decades.[55]

For example, grants to states for heart disease control and cancer control increased from $2 million in 1958 to $14.5 million in 1962 while the general health grant during the same period remained at approximately $15 million annually.[56] All increases in federal grant-in-aid funds since 1957 have been earmarked for specific diseases like cancer or special groups like the chronically ill and aged.

As might be expected state health departments generally oppose categorization of federal grants. "State officials, from the governor down, naturally favor maximum flexibility in the use of federal grants at the state level."[57] The argument of general support versus categorical support between the states and the Public Health Service is as follows. The federal officials feel that the states have not been moving into new fields and meeting the new problems in public health. Thus the mechanism of specifically earmarking funds is a way to get states to move into new activities. The state health officials say that the federal government should give them the money without so many restrictions on its use because each state knows best what its problems are. There is such a great difference between the problems of say, California and Mississippi, that federal categorical grants cannot possibly fit the needs of all the individual states. This question of "Who knows best?" came up frequently in the many discussions the author had with public health personnel. A similar argument goes on in California

between local health officers and those Departmental personnel who favor tighter categorical controls on and stricter accounting for the federal funds the Department allocates to local health departments. The local health officers argue that funds should be allocated to them on a per capita basis to be used as each local health officer sees fit:

> Categorical grants have been distasteful to local health officers because it is their belief that health department programs must be geared to meet the needs of a community, and the needs vary from one State to another or even from one health jurisdiction to another.[58]

The local health officers point out that there is a great difference between the needs and resources of a sparsely populated, rural county and those of Los Angeles County. They argue that because the individual county knows best what its problems are, the funds from the State should be allocated as a lump sum with as few restrictions as possible.

Financial Support for Public Health

Over the years there has been a steady increase in the budget of the California State Department of Public Health. The Departmental budget from all sources has increased from $23,357,000 in 1951-52 to $60,008,000 in 1962-63.[59] In the same period of time the Department has grown from 795 employees to 1,348 employees.[60] Though the sums of money spent are relatively large, the 1962-63 State appropriation to the Department for State operations, capital outlay, and local assistance was only $40.5 million out of a grand total of $2,702.8 million — 1.5 per cent of the total California budget.[61] It seems

true that at all levels of government the amount spent for health is a small per cent of the total budget. Federal government expenditures for health in 1962-63 were 1.5 per cent of the total U. S. budget.[62] In looking at various county budgets within the State the proportions allotted to local health departments as a per cent of the total county budgets were consistently less than five per cent.

Consistent with the California tradition of strong local control[63] counties provide most of the support for their health departments. Exhibit N is an organization chart of a highly regarded local health department which gives an idea of the services provided at the local level. For the State as a whole in 1962-63 a breakdown of the support for local health programs showed: local funds -- $34.6 million, State funds -- $30.3 million, and federal funds -- $14.2 million.[64] Because the State and federal figures each include $12.0 million for construction of hospital and medical facilities, the State and federal funds available to support health programs at the local level are $18.3 million and $2.2 million respectively, a total of $20.5 million. However, not all of these funds go to local health departments. For example, $8.6 million of the $20.5 million is for assistance to counties for care of crippled children. In some counties the crippled children services program is administered by the social welfare department rather than the local health department. These figures show that the support for local health departments must come primarily from county taxes. Two other examples of county control taken from the health field are (1) each county determines its own eligibility requirements for the crippled

children services program and (2) practically every county supports a county hospital. In 1960 it was reported that "approximately $195 million of local government funds spent on health services goes principally to maintain county hospitals."[65]

Chapter 3. CHRONOLOGY OF THE CHRONICALLY ILL AND AGED PROGRAM

Introduction

In this chapter a chronology of important events in the Chronic Illness and Aging (CI&A) program of the Department is set forth. First, a brief summary of the Community Health Services and Facilities Act of 1961 is given. The Act permitted the Public Health Service to establish the Chronically Ill and Aged Services federal formula grant. The historical review of the CI&A program in California from 1961 to the present (May, 1964) follows. This review concentrates on the major Departmental decisions in the allocation of the CI&A grant received by California. Because of the importance of the allocation of the initial CI&A grant in the fall of 1961 much attention is given to it. The information presented in this chapter is used in the analyses of Chapters 5 and 6.

The Community Health Services and Facilities Act of 1961

President Kennedy's special message on his health program was submitted to Congress on February 9, 1961. The proposed legislation on community health services and facilities was introduced on February 24, 1961. Hearings were held by the House Committee on Interstate and Foreign Commerce and by the Senate Committee on Labor and Public Welfare. Eventually bills were passed by the House and the Senate. Although the

bills differed on some significant points the differences were reconciled by a joint conference committee.[1] President Kennedy signed the final bill into law on October 5, 1961.

The Community Health Services and Facilities Act, which comprises a number of amendments to the Public Health Service Act, has three major objectives: (1) increased availability, scope, and quality of community out-of-hospital health services and facilities which will assist in meeting the health needs of the chronically ill and the aged; (2) increased and expanded health facility research, demonstrations, and experimentation; and (3) increased construction of health research facilities.[2] To carry out these objectives the Act provides[3] for:

1. Matching grants to states for a period of five years for extending local out-of-hospital health services, primarily for the chronically ill and aged,
2. Project grants for a period of five years for studies, experiments, and demonstrations directed toward the development of new or improved methods of providing health services outside the hospital, with particular emphasis on the needs of chronically ill and aged persons,
3. Accelerated construction of public and other nonprofit nursing homes,
4. Liberalized construction assistance for rehabilitation centers,
5. An expanded hospital and medical facilities research program including grants for experimental and demonstration construction and equipment,

6. Increased construction of health research facilities,

7. Increased grants to schools of public health.

The part of the Act which is of interest for this study is the section which increased from $30 million to $50 million annually the ceiling on federal expenditures for public health grants-in-aid to the states and added new Congressional authority to earmark appropriations. A new federal formula grant, Chronically Ill and Aged Services, was established as a result of the Act, and the CI&A funds were earmarked for outside-the-hospital services for the chronically ill and aged. The Public Health Service allotted $6 million for the CI&A grant-in-aid program in 1961-62 which included $2 million previously appropriated to help states improve nursing home programs.[4] The formula used to allocate the CI&A grant to the various states is: "60 per cent on the basis of population over 65, weighted by per capita income; 40 per cent on the basis of total population, weighted by per capita income -- with no state receiving an allocation of less than $40,000."[5] The matching requirements for the first four years are $1.00 of state or local public funds for each $2.00 of CI&A funds; in the fifth year it becomes dollar for dollar.[6]

CI&A funds "are to be used to <u>increase</u> the availability, scope and quality of out-of-hospital services for the chronically ill and the aged."[7] Among such uses are: expansion of home nursing and homemaker services; development of coordinated home care programs; establishment of information and referral services; establishment of screening clinics for periodic health appraisal; provision of direct patient care services

in nursing homes through additions to health department staffs; expansion of public health laboratories to provide diagnostic services for nursing home patients; and the education and training of professional and non-professional personnel.

Another feature of the Act enables the Public Health Service to make Community Health Service project grants to states and to public or nonprofit private agencies or organizations for studies, experiments, and demonstrations looking toward development of new or improved methods of providing health services outside the hospital, particularly for chronically ill or aged persons. The distinction between these project grants and the formula grants to the states is that "the formula grant objective is basically to extend or improve the availability, scope and quality of [chronically ill and aged] services in all states while the project grant objective is to study, conduct experiments and demonstrate new or improved methods of providing such services."[8] Because project grants allow the Public Health Service to deal directly with local agencies, thus bypassing state health departments, they have caused controversy.

Events in California Prior to November 10, 1961

Three decisions seem to stand out in the events that occurred in the Department in connection with the CI&A program between 1961 and the spring of 1964. The first decision, which occurred prior to November 10, 1961, dealt with the Department's initial allocation of the CI&A formula grant. The second decision had to do with a major extension of the Department's original allocation process. This extension, the establishment

of the CI&A Contract program, occurred during the fall of 1962. The third decision, made in the fall of 1963, led to the use of CI&A funds to help support a Medical Care Studies Unit in the Division of Preventive Medical Services. Since there are many meetings and many decisions in the narrative that follows, these three decisions should be kept as landmarks to follow the description of events. In addition, Appendix II gives a list of important dates in the California CI&A program.

Public health personnel in California were well aware of the progress of the Community Health Services and Facilities Act Bill through Congress and what passage of the bill would mean. As early as July 10, 1961, the San Francisco Regional Office of the Public Health Service had forwarded information "concerning the development of projects in connection with the anticipated increased funds in the Chronic Disease and Health of the Aged appropriation."[9]

When the bill appeared "doomed to die" in Congress due to lack of support throughout the country, such organizations as the Association of Schools of Public Health[10] and the Public Health Research Institute of the City of New York[11] urged the Department to support the bill by writing California Congressmen and getting influential people and organizations to do the same. This was done. In addition, on May 19, 1961, the Director sent a letter to all local health officers urging that they contact members of Congress in support of the bill and get other prominent and interested citizens in their communities to do the same. A brief outline of what the bill would mean to California and a list of the Senators and Representatives from California were attached to

the letter. The California Conference of Local Health Officers (CCLHO) at its meeting in May, 1961, sent a telegram to members of Congress from California stating that the CCLHO had endorsed this bill and urged its passage.

With the passage of the bill by Congress on September 20, 1961, the problem of implementing it began. In the process of administering the Community Health Services and Facilities Act the Public Health Service interpreted the general wording of the legislation and established specific policies and procedures. There was a flow of information from Washington to the states. The Public Health Service, through its regional office in San Francisco, furnished material setting out guidelines for the use of the CI&A money. On October 2, 1961, the Regional Office forwarded a packet of material about the Community Health Services and Facilities Act which included ten pages on "Policy and Procedures for Use of Grant Funds for Services for the Chronically Ill and Aged." These pages contained suggested uses for the funds, the matching requirements, and the accountability requirements. On October 4, 1961, a teletype to the Director stated that the Public Health Service had airmailed to him "materials covering the policy and procedure for use of grant funds and the tables of allocations to states and territories. . . ." It also described a conference by telephone that was to take place on October 5, so that the Public Health Service could "talk to all State Health Officers or their representatives simultaneously." On October 20, there was a meeting attended by the members of the Director's Office (the Director, the Deputy Director, and the Assistant Director), key Departmental

personnel from the Divisions of Community Health Services, Preventive Medical Services, and Research, and representatives from the Regional Office of the Public Health Service. "The purpose of the meeting was to discuss the policies under which both the grant funds and the project funds authorized under the new act would be allocated."[12] On October 23, the Regional Office forwarded copies of the Community Health Services and Facilities Act of 1961, the Senate report on H. R. 4998, and the report of the joint Senate-House conference to adjust differences in the two versions of the bill prior to final passage.

Events in California prior to the final decision on use of the CI&A funds made available by the passing of the Act may be confusing for the following reasons. There were differing views both within the Department and within the CCLHO on how the CI&A funds should be allocated. In addition, there had occurred at the same time increases in established federal programs of heart disease control, cancer control, crippled children services, and maternal and child health. Discussion of the CI&A funds was caught up in the broader question of how to allocate the total increase in federal funds.

At the September, 1961, meeting of the Committee on Administrative Practices of the CCLHO the Department told the local health officers that some of the increase in established federal programs would be used to finance existing programs of the Department with the remainder being distributed to local health departments either as subsidy or as special projects. "The State Department of Public Health suggested that the money be used for special projects in local health departments,

since the allocation of this money to many local health departments would not result in an increase in their programs."[13] This last statement refers to the fear that the federal funds given to local health departments on a per capita basis would be used to replace county funds in supporting local health department programs so that there would be no over-all increase in money spent on health. Since the federal funds would go to each county treasury, the local health officers wanted to make sure that they would get the funds for use in their health departments. This was a matter of concern to both the local health officers and to the Department.

The Committee on Administrative Practices considered the advantages and disadvantages of special projects and concluded:

> Some health officers have found it possible to justify programs to local governing bodies after a demonstration made possible with research funds. Other health departments have found it difficult to secure support of their governing body for application for research funds because of the fact that when the funds terminate, the programs, if continued, have to be supported with local funds.[14]

The resolution finally passed by the Committee recommended that the Department:

> . . . notify local health officers of the amount available to their respective jurisdictions [based on a per capita allotment] from additional Federal funds granted in 1961, provided plans are submitted within 60 days for the use of these funds for expenditures not included in their present budgets. If a suitable plan is not submitted by a health department within 60 days, the funds for that jurisdiction will revert to the special project funds.[15]

Thus, the Committee disagreed with the Department's proposal that the money be used for special projects. The plans mentioned in the Committee resolution refer to brief statements by local health officers on

their proposed use of the additional federal funds. Under the Committee resolution every local health officer would receive federal funds upon submission of an acceptable plan. The Committee was well aware that when funds are allocated by means of special project grants not every local health department would receive funds. The local health officers felt that it would be much easier to prepare a plan than to fill out the application form for a Local Special Project grant. Following this meeting of the Committee on Administrative Practices, one local health officer wrote to the Director as follows:

> At the last meeting of the Committee on Administrative Practices, we had urged the State Department of Public Health not to toss the increased federal funds to be expected in this year's budget into the Local Special Project Program. The Committee on Administrative Practices recommended that such funds be offered to local public health departments on the basis of submission of a plan for extension or improvement in the local program over and above that budgeted by the local governing body. . . . It is noted from an earlier communication from your office that $780,000 has been spent in the Local Special Projects Program during the last few years, and I don't think you have brought $780,000 worth of improved public health services to the citizens of California by the method you have been following.[16]

Because the Department considered allocating the CI&A money as project grants to the local health departments and because of the opposition to project grants in general by some local health officers, as indicated by the above quotation, the following background information will help in understanding these divergent views. The Local Special Project program, originally called the Local Project Grant program, was started in the Department in 1957.[17] The program was funded initially by using an increase of $172,000 in the General Health Services formula

grant from the Public Health Service. The Public Health Service had stated that the increase in the General Health Services grant should be used for new or expanded programs especially in the field of services for the chronically ill and aged. The Local Special Project program was a means to insure that the funds were used in the manner specified by the Public Health Service. In addition, $50,000 was taken from the Maternal and Child Health federal grant to support the Local Special Project program. The CCLHO approved the use of these funds in this manner. Because of the source of funds for this program, the applications were limited at first to certain categories. But these limitations have been removed as money from several additional federal categorical grants is now used to support this program.

To obtain a grant under the Local Special Project program a local health department submits an application to the Department in competition with other local health departments. The application includes a budget, a description of the proposed project, its specific aims, the method of procedure, and a plan for evaluation. Support for a project is limited to a period not to exceed three years. This program is administered by the Division of Research which makes recommendations to the Director to fund or not to fund applications. The Division of Research uses an advisory committee and staff from other divisions in the Department in arriving at its recommendations. When an application is approved, a contract with the applicant is drawn up on a reimbursement basis. The principal reason for this program is to get the local health departments to meet new and changing needs.

At the October 2, 1961, meeting of the Division Chiefs, the resolution on the use of the increased federal funds adopted by the Committee on Administrative Practices of the CCLHO was discussed. The Chief of the Division of Research expressed concern as to the future of special project funds and programs. After some discussion it was agreed that a committee of Division Chiefs would be appointed to explore this issue and bring their suggestions to the October 16 meeting of the Division Chiefs. It was further agreed that at the October 16 meeting, the Division Chiefs would recommend a Departmental policy which would be presente at the CCLHO meeting on October 25 and 26, but that no final decision would be made until the matter has been discussed by the CCLHO.[18]

The October 16 meeting of the Division Chiefs was chaired by the Deputy Director in the absence of the Director. Although the discussion centered mainly on the additional heart, cancer, and maternal and child health funds, any precedent set here would affect the allocation of the CI&A money. It was decided that rather than present various alternatives to the local health officers and ask for their preference, it would be best to select one plan and present that to the CCLHO. It was agreed that the increased federal funds should be allocated on the basis of approved applications in accordance with the categorical intent of Congress. After some discussion the decision was reached to allocate the funds on a special project basis to local health departments and other local agencies. This would be done by adding these additional funds to those already used for the Local Special Project program. However, in order to meet the objections of the local health officers

the terms under which the Local Special Project program operated would be changed in accordance with their suggestions. Instead of limiting proposals to research, demonstration, or evaluation, the emphasis would be placed on the extension and expansion of services. The Division of Research was instructed to revise its policies and procedures to accomplish this.[19]

On October 18, the Chief of the Division of Research, who had not been present at the October 16 meeting of the Division Chiefs when the above decision was reached, wrote to the Director opposing the change in the Local Special Project program. Instead, he suggested that if the CCLHO desired, a separate program could be set up in the Department to review or fund proposals whose objectives would be the implementation or extension of established public health activities. He further suggested that the CI&A money be pro-rated on an equitable basis to support the present Local Special Project program, the newly envisioned local agency extension of activities program, and program activities of the Department.[20]

At the October 25 and 26 meeting of the CCLHO, the Director reviewed the history of the allocation of federal funds for public health purposes since 1935. He pointed out that although in recent years the Association of State and Territorial Health Officers had supported increases in General Health Services funds, Congress had made increased appropriations only in specific categories such as heart disease and cancer control. He then presented the tentative plan of the Department for use of the increased funds and the new CI&A money.

> MCH [Maternal and Child Health] "A" funds (approximately $200,000 increase) would be allocated to local health departments by formula, on the basis of approved plans, as recommended by the Committee on Administrative Practices. MCH "B" funds (approximately $139,037) would be used for special MCH projects. Heart funds (approximately $34,458) and Cancer funds (approximately $58,807) would be used for special projects or State contracts. The Chronic Illness and Aging funds (approximately $356,300) would be for new service programs for chronic illness and aging, either in local health departments or other official or non-official agencies.[21]

The last sentence means that agencies other than local health departments could get CI&A money. There was much discussion about this plan:

> It was pointed out by some health officers that in California, where public health services are provided by local health departments, increased funds for expanding programs are needed by local health departments. The apparent incongruity of permitting other official and non-official agencies to share in the increased funds, and yet attempting to secure State legislation to increase Public Health Assistance funds for local health departments was stressed.[22]

The objection to project grants was raised again:

> Some health officers have been unable to utilize project funds because of reluctance on the part of their governing bodies to approve the provision of services through projects, because the services would eventually have to be continued with local funds or discontinued.[23]

A resolution was passed that the "Health Committee of the State Association of County Supervisors and the Public Health Section of the League of California Cities be asked to study the whole program of state and federal fund allocation."[24] A second resolution was passed which stressed the local health officers' desire to have the additional federal funds allocated to local health departments by means of a per capita allotment subject to the submission of an acceptable plan for the use of the funds by each local health officer:

The Conference recognizes the authority and responsibility of the State Health Department to allocate Federal funds in whatever manner it deems appropriate.

The Conference, nevertheless, has been asked by the Director for its advice, and approves the following resolution:

Whereas the State Health Department will receive an increase in Federal funds this year,

and

Whereas approximately $800,000 is potentially available for expanding existing programs or starting new programs in the fields of Maternal and Child Health, Chronic Disease, and Aging,

and

Whereas the greatest public health need for development in these fields is in the local health departments of California,

and

Whereas there is an expression from local government of a lack of financial resources for such development:

Therefore be it

RESOLVED, That the Conference recommend to the Director that the approximately $800,000 be tentatively allocated on the formula basis [a per capita allotment] to each approved local health department;

Provided that no approved local health department be allocated less than $1,000, and

Provided that within 60 days the local health departments submit plans to utilize these funds in the specific areas for which they were appropriated and for bona fide new programs or definable expansion of existing programs,

Provided further that in the event suitable plans have not been submitted within 60 days the allotted funds will be reallocated by the State Department of Public Health for appropriate uses during the remainder of this fiscal year.[25]

As one observer described the meeting, "The local health officers were violent at this meeting; they wanted the increased funds."[26]

On November 2, 1961, pursuant to a resolution passed by the Conference, the Executive Committee of the CCLHO and two other local health officers met with the Director and key members of the Department. The subject of the meeting was the allocation of federal funds allotted to California and the problems raised thereby. The Department agreed that the maternal and child health funds would be allocated to local health departments by formula provided an acceptable plan for use of the funds was submitted within 60 days. Because some local health departments might fail to apply for their tentative allotment, there would be funds available to reallocate. The local health officers suggested that health departments be allowed to submit two plans, one for use of their allotment, the other for funds which would be available if not all departments applied for their allotment.

The Department stated that it planned to use the heart and cancer funds as it had in the past -- for extension of Department activities and for contracts with local agencies.

Two possible ways of allocating the CI&A funds were discussed. The first was to use a plan similar to that for Maternal and Child Health "A" funds. The other was to allocate the funds to any qualified program whether in the local health department or another community health agency provided the local health officer approved of the program submitted by the other agency. The idea of allocating the CI&A funds to local health departments on a project grant basis had been dropped. Later, another suggestion was made that the funds first be offered to the health departments on a formula basis and at the same time, applications be accepted from other local agencies. If

the health departments failed to submit acceptable programs within 60 days, the remaining funds would be allocated to the other applications.

Some general points were made about the CI&A program.[27] Because it is a new appropriation by Congress, "the use of these funds will be carefully scrutinized, and worthwhile contributions in the fields of Chronic Illness and Aging will be essential." On the other hand, it was realized that 60 days was a short time in which to plan and initiate a new program. "It was generally agreed that whatever plan is used this year in the allocation of these Federal funds, it is not essential that the same plan be used in subsequent years." Information regarding the funds would be mailed to the local health officers the week of November 6, and the deadline for applications would be the early part of January, 1962.

The Department Decision on the Initial Allocation of CI&A Funds

On November 10, 1961, all local health officers were notified of the State plan for allocating the CI&A federal formula grant. The plan was described as representing "an effort to strongly support extensive local use of funds despite obvious administrative difficulties both for the State and for local health departments."[28]

The CI&A program was discussed in two parts. First, the Community Health Services project grants available direct from the Public Health Service in Washington were mentioned and attachments describing these grants in detail were provided. Then, the funds that had been made

available to California on the basis of the Public Health Service formula grant were discussed. The purpose of the money was stated. "These funds are categorical in nature specifically for new out-of-hospital services or extension of such services for chronic illness and aging in the 1961-62 fiscal year."[29] An attachment gave the amount of money tentatively allocated to the health department to which the letter was addressed.

The procedure set up by the plan for allocating the funds was:[30]

1. A tentative allotment was made to each health department in proportion to the state public health subsidy.[31]
2. A plan for the use of this allotment must be submitted by January 6, 1962. A plan will be required each year. The health officer may designate a community agency other than the health department to use these funds.
3. Because some health officers will not submit plans or because their plans will not be acceptable, there will be some funds available for reallocation. At the same time as he submits his plan referred to above, the health officer may also submit a supplemental plan which will be in competition with other local health departments for these funds.
4. The plan must include:
   a) A clear concise statement of the objectives to be accomplished with the allotted funds;
   b) A brief statement of how these objectives are to be achieved, including the specific services to be provided and the

relationship of the proposed new or augmented services to related services of other programs, such as those in welfare departments, vocational rehabilitation, county hospitals, visiting nurse associations, and private hospitals;

c) A plan for appraisal (how to determine whether or not to continue this program);

d) A budget for the remainder of 1961-62.

The services, either new or extension of existing ones, are to increase the availability, scope, and quality of out-of-hospital community health services for the chronically ill and aged. However, these funds may not be used to pay for an activity which pertains entirely to a single chronic disease for which there is another federal grant authorized, such as cancer, heart, or mental illness. Also, funds may not be used for salary increases for existing staff. Meeting these requirements is the criterion by which a plan will be judged.

5. Plans will be reviewed by an Advisory Committee composed of the Executive Committee of the CCLHO plus other qualified consultants who will recommend approval, disapproval, or modification to the Director.

6. All plans approved by the Advisory Committee and the Director must also have the acceptance of the governing body of the local health department before funds can be paid.

7. There will be an annual program audit but no fiscal audit.

Twenty-seven examples of acceptable plans under the CI&A program

were included. The letter stated that the CI&A program offered a challenge for the health officer to assume community leadership in a very significant, new public health field.

As previously mentioned, the pressures on the Director during the period leading up to his final decision came from within the Department as well as from the local health officers. Because the positions taken by various groups within the Department remain substantially the same today, it is useful to briefly list these positions and the arguments used by their supporters. The position for each group is the point of view expressed by the leader of the group in discussions with the Director about the CI&A program. It does not mean that everyone in the group held that position.

The differences in positions do not mean that the Divisions of Preventive Medical Services, Community Health Services, and Research have not accepted the Director's decision or have not worked to make the program a success. They have. They have also felt free to make suggestions about the operation of the program and to ask for periodic reviews to see if experience gained in operating the program could lead to improvements. Such a meeting was held with the Director in August, 1963. Details are given in this chapter in the section, "The 1963-64 Allocation of CI&A Funds."

Position of Division of Preventive Medical Services[32]

Funds should be allocated on a project grant basis. Under this arrangement local health departments as well as such institutions as

hospitals, universities, and voluntary organizations submit a detailed proposal for research or demonstration in the area of chronic illness or aging. The projects are for a period not to exceed three years. Because this is a competitive process, there is no assurance that a specific health department will receive a grant, but this is quite acceptable to the Division of Preventive Medical Services.

Arguments in Favor of This Position

1. Allocation by the project grant mechanism helps to ensure that the intent of Congress is carried out. The Department can seek out persons who want to do projects.

2. Precedents for using money in this manner are found in the allocation of cancer control and heart disease grants since these federal formula grants first became available in 1948 and 1950 respectively.

3. Projects are funded for a maximum of three years. This ensures that there will be continuing research, demonstration, and evaluation.

4. The magnitude of the problems of chronic illness and aging is so great that the limited federal funds need to be distributed in large enough amounts to ensure results.

5. Through the project grant mechanism the Department has a better chance of getting studies made in areas it considers important.

Arguments Against Other Proposals

1. Allotment to local health departments by a formula based on population will result, in some cases, in merely substituting federal money for local money. Thus, in many local health departments, there will be no increase in their programs.

2. Allotment by formula results in "force feeding" of some local health departments. The local health officer doesn't want to refuse the allotment but he doesn't have any good projects in mind. So he just comes up with something and the result is that the CI&A money is not used profitably.

3. Allotment by formula means that many counties get less than $5,000.[33] This is too small a sum to do anything with.

4. Some county supervisors are conservative and don't think the public health role should be expanded. So, money going to these counties will probably not give desired results.

5. Under the allotment by formula plan a local health officer could come up with just one new or expanded service and, assuming that the allotment didn't change, he would never have to do anything else to continue to get his money.

Position of Local Health Officers[34]

All CI&A money should be tentatively allocated on a formula basis to approved local health departments, provided that no allocation is less than $1,000. Within 60 days the local health department must

submit a plan to utilize these funds in the specific areas for which they were appropriated and for bona fide new programs or definable expansion of existing programs.[35] If a suitable plan is not submitted within 60 days, the funds are to go to other official or non-official health agencies.

Arguments in Favor of this Position

1. Health department programs must be geared to meet the needs of a community. Problems differ by counties so a per capita allotment is the fairest allocation method. Counties know their own problems best and can use the allotment where it is needed.

2. It is primarily the local health departments that provide the public health operations and services in California. While it may be laudable to use CI&A money for studies and demonstrations, there is still the problem of implementing the findings. If CI&A money is not given to the local health departments then they must go to their county boards of supervisors for funds. A local health department's portion of its county's budget is typically less than five per cent. The local health department's request for funds must compete with those of many other county agencies and must be squeezed to fit into the total funds provided by the county tax rate. Under this procedure it is difficult for local health departments to get funds to implement new programs which studies and demonstrations show to be desirable.

3. A plan submitted by the local health officer will place a moral responsibility on his governing body that the funds be used in accordance with the plan. Assurances can be made that the use of the funds will meet the intent of Congress.

4. This is the first increase in federal funds in several years. The last increase in 1957 was used to set up the Local Special Project program in the Department. Local health departments are in need of financial assistance and they should get this latest increase.

5. The Public Health Service had specifically stated that CI&A funds may be used to expand local out-of-hospital services for the chronically ill and aged.

Arguments Against Other Proposals

1. Submitting project proposals involves overhead in making out applications, quarterly reports, financial audits, and other paperwork. It is a costly and time-consuming method of allocating funds.

2. Small health departments don't have the staff to write "fancy" proposals so they wouldn't get any grants. It is conceivable that allocation by means of project grants could result in practically all of the CI&A funds going to only a few local health departments. However, health problems involving chronic illness and aging exist in every county.

3. In some counties the board of supervisors won't let the health officer take on projects under the Local Special Project program or similar programs.[36]

4. Some local health departments are not research oriented. Service should be their primary function.

Position of Division of Community Health Services

The position of the Division of Community Health Services is in general agreement with that of the local health officers. This division stresses the need for general support funds for local health departments. These funds should continue from year to year in order to be effective. However, the use of a modest amount of the CI&A funds, such as ten per cent, for the CI&A Contract program is a reasonable way to stimulate the demonstration of new approaches to problems.

Arguments in Favor of this Position

1. To carry out any program such as the CI&A program, strong local health departments are needed. It is by supporting and strengthening local health departments that program goals can be achieved.

2. Distribution by a per capita allotment will allow financially hard-pressed local health departments to expand services and provide new ones.

3. Even a small sum is beneficial. It acts as "seed money" to stimulate thinking about CI&A problems in a county, and also provides services and produces action where none existed previously. Thus the method will have state-wide effects.

Arguments Against Other Proposals

1. If a local health department wants to conduct studies or demonstrations, it can apply to the Department for a Local Special Project grant or to the Public Health Service for a Community Health Service project grant.

2. Allocation by the mechanism of the Local Special Project program will not result in an equitable distribution of funds throughout the State.

3. The purpose of these funds is not to fill gaps in our knowledge by undertaking elaborate "significant" research projects, but rather to get CI&A service oriented programs going throughout the State.

Position of Division of Research

The Division of Research proposed that the CI&A money should be divided among three activities: (a) the Local Special Project program administered by the Division of Research, (b) a similar program in which the criterion for approving a project would be the extension of existing services, and (c) staff and other program activities at the Department level.

Arguments in Favor of this Position

1. This method will result in carrying out the intent of Congress.

2. Since the Division of Research already has a proven mechanism in its Local Special Project program for administering research, development, and evaluation projects in all areas of public health, the CI&A program will fit in very well.

Arguments Against Other Proposals

1. There is no need to initiate new methods as the mechanism already exists in the Division of Research to handle the allocation.

The position of the Division of Research is similar to the Division of Preventive Medical Services, the basic question is which Division in the Department will administer the program. The position of the Division of Community Health Services supports the local health departments. The final decision made by the Director and embodied in the November 10, 1961, letter leaned more toward the local health department view -- tentative allotment by formula based on the submission of an acceptable plan. However, from the position of the Division of Preventive Medical Services the Director included points which would make the "plan" in the local health departments' position include some of the more specific justifications of a "project." The Division of Preventive Medical Services thought a plan should include:[37]

1. Clear statement of objectives;
2. Plan to achieve the objectives;
3. Relationship to present program;
4. Plan for appraisal (how a health department will determine whether the program will continue); and
5. Budget.

These requirements for a plan were used with only slight changes in wording in the November 10 notification to local health officers. The final decision made by the Director has been subject to varying interpretation. In general the Division of Preventive Medical Services has emphasized the plan and the Division of Community Health Services has emphasized the allotment.

The 1961-62 Allocation of CI&A Funds

The CI&A program in California started with a big push to get programs in local health departments under way following the November 10, 1961, notification to local health officers. The deadline for submission of plans by local health departments for use of the initial allotment of CI&A funds during the last half of the fiscal year was January 6, 1962. Within the Department some preliminary work had already been done. In August and September, 1961, the Division of Community Health Services had its bureau chiefs prepare reports on the implications for and potential activities of their bureaus under the Act. The regional medical coordinators listed the programs under consideration or ready for implementation in the local health departments in their regions.

The Division of Preventive Medical Services was given the responsibility for the administration of the CI&A federal formula grant. Because this division had the same responsibilities for the other federal formula grants it was the logical division to administer the Department's CI&A program. The Bureau of Chronic Diseases in the Division of Preventive Medical Services was the obvious place to put a chronic illness and aging program. A separate unit called the CI&A Unit was created in the Bureau to administer the CI&A program.

Following the announcement of the Departmental plan on November 10, 1961, meetings were set up in the three regions of California at which the local health officers and members of their staff met with personnel from the Divisions of Preventive Medical Services and Community Health

Services to discuss the allocation of the CI&A funds. At these meetings the ground rules were reviewed, questions were answered, and assistance was given in the formulation of plans. Because the Division of Community Health Services had three regional consulting teams visiting local health departments on a regular basis and because the Division sees its mission as promoting and supporting local health departments, its personnel were the logical ones to do most of the developmental work for the CI&A program.

The problem of personnel to administer the CI&A program was a matter that required immediate attention. The man who had done most of the staff work for the CI&A program in the Bureau of Chronic Diseases during the latter half of 1961 was leaving California as he had completed his year of residency in preventive medicine. The present Chief of the CI&A Unit was recruited and joined the Bureau of Chronic Diseases at the end of January, 1962.[38]

The first meeting of the Advisory Committee to review the plans submitted by the local health departments was set for January 16, 1962. The Executive Committee of the CCLHO filled four of the seven positions on the Advisory Committee. The other three members, a physician, a health educator, and one person representing the general public, were persons outside the Department of Public Health who were well known for their interest in the problems of chronic illness and aging. The staff work done by the Division of Preventive Medical Services in preparation for this meeting consisted in preparing summaries and appraisals of the plans for which comments were solicited from other divisions within the

Department, making copies of the plans so that each Advisory Committee member had a full set to study prior to the meeting, preparing a final briefing on the CI&A program for the Director's Office, and recommending which members of the Department should attend the meeting. An example of one of the many procedural details that required a decision was the question of how to handle the supplemental plans. A local health officer could submit a supplemental plan at the same time he submitted his basic plan (usually referred to as simply the "basic") for use of his tentative allotment. If some jurisdictions did not submit plans or if their plans were not approved, additional funds would become available and the supplemental plans would compete with each other for these funds. The staff proposed and the Advisory Committee agreed that a supplemental plan would be either approved or disapproved. If approved, a rating would be given to the supplemental by each member of the Advisory Committee, "1" for highest to "5" for lowest which is similar to the procedure followed by the study sections of the National Institutes of Health. The average of these ratings would establish a priority for the supplemental. The Advisory Committee thought that all approved supplementals would be funded in order of their priority ranking subject only to the availability of funds. This belief was later to cause a controversy between the Divisions of Preventive Medical Services and Community Health Services.

All basic plans were approved by the Advisory Committee on January 16, 1962. Although some plans were admittedly weak it was thought that the time pressure under which the plans had been prepared, the newness of the program, and the desire to get as many health departments as possible

working on problems of the chronically ill and aged justified approval of all plans. The financial details of this first allocation are presented in the next chapter.

The 1962-63 Allocation of CI&A Funds

With the next fiscal year starting in a few months, work for the 1962-63 program began in the Department immediately following the January, 1962, meeting of the Advisory Committee. Forms for progress reports on the 1961-62 programs and application forms for the 1962-63 plans were prepared. These were sent to the local health officers at the end of February with a deadline of April 30, 1962, for submission of completed forms. The instructions for the plan were more detailed than they were in the November 10, 1961, letter. For example, the instructions for the section on methods and procedures were as follows:

> This section should spell out how objectives are to be attained. The procedures should be appropriate to attain the stated objectives and should be technically and administratively feasible. Included should be:
> 1. Organization of work to be done,
> 2. Services to be rendered,
> 3. Numbers and descriptions of persons receiving such services,
> 4. Observations to be made,
> 5. Measures to be taken, and
> 6. Methods for data collection and analysis.

During the spring of 1962, some questions were raised by local health officers concerning changes at the local level in previously approved programs and concerning the use of fees collected by a local jurisdiction for services supported by CI&A money.[39] In addition, some policy questions were raised by the new Chief of the CI&A Unit concerning its administration. From these two sources there emerged a series of

twelve questions which included such topics as the use of CI&A funds for administrative purposes within the Department, liaison with the regional medical coordinators, handling and review of appraisals and applications, degree of involvement of the Bureau of Chronic Diseases in projects of special interest, the amount of information to be transmitted to the Public Health Service, and the duties and responsibilities of the Advisory Committee. These were the kinds of questions that would be expected to come up at the start of any new program when high level decisions are needed to determine policy and to set precedents. The Chief of the Bureau of Chronic Diseases added some questions to the list and revised some of the others. The Chief of the Division of Preventive Medical Services suggested that a list of policy questions be sent to the Director who "may wish to [bring] them to the attention of the Advisory Committee."[40] A tentative list was circulated in the Divisions of Preventive Medical Services and Community Health Services for comments. Finally a list was put on the agenda of the Advisory Committee which was meeting on June 11, 1962, to review the CI&A plans for 1962-63. The Advisory Committee did not get around to discussing several of the policy questions. On those that were discussed, they generally agreed with the Departmental recommendations. These procedural items are mentioned here to give examples of the extent and kind of administrative problems which the CI&A program caused within the Department.

During May, 1962, the staff work in preparation for the second Advisory Committee meeting was similar to that which preceded the first meeting. In addition, the Chief of the CI&A Unit and other members of

the Bureau of Chronic Diseases met with the regional medical coordinators of the Division of Community Health Services to review the programs started during the year. Although not much time had elapsed since the approval of the basic allotments on January 16, 1962, some 54 programs were under way in the local health departments.

The second Advisory Committee meeting was held on June 11, 1962. The financial details of the second allocation are presented in the next chapter.

At the time of the second Advisory Committee meeting the staff of the CI&A Unit consisted of the chief and one part-time steno-clerk. In addition there was a nurse on loan to the Bureau of Chronic Diseases from the Bureau of Nursing who did some work for the CI&A Unit. The Chief of the Bureau of Chronic Diseases had made a request in the spring of 1962 for another medical officer for the CI&A Unit but this request had been turned down. In October, 1962, a budget was submitted that would have enlarged the CI&A Unit to three medical officers (including the chief), two research technicians, and two steno-clerks. However, it was not until the summer of 1963 that the second and third medical officers were added. So the CI&A Unit was mainly a one-man operation during its first two years. To help administer the CI&A program the Chief of the CI&A Unit received assistance from other members of the Bureau of Chronic Diseases and from the Division of Community Health Services.

The Chief of the Bureau of Chronic Diseases and the Chief of the CI&A Unit had different points of view about how autonomous the CI&A

Unit should be, about the composition and function of the Advisory Committee, and about several other matters. A change in bureau chiefs of the Bureau of Chronic Diseases was made in the spring of 1963 with the new chief formally taking over in July, 1963.

The staff of the CI&A Unit now (May, 1964) consists of three medical officers, one research technician, two public health nurses, and two steno-clerks.[41] Both nurses are on loan to the Bureau of Chronic Diseases from the Bureau of Nursing and spend part of their time in the CI&A Unit. In effect, the CI&A Unit has about the equivalent of one full-time nurse. Of course, the regional medical coordinators and their consulting teams in the Division of Community Health Services play an important part in the administration of Departmental programs which involve local health departments such as the CI&A program.

In September, 1962, the Department learned that the 1962-63 CI&A formula grant to California would be $829,800 instead of $712,600 that had been the figure used in planning for the 1962-63 fiscal year. The Chief of the Division of Preventive Medical Services recommended to the Director that the additional $117,200 could best be used by supporting individuals in universities, hospitals, voluntary agencies, as well as local health departments who wanted to undertake studies in the CI&A field. The procedure for applying for "Chronically Ill and Aging Contract Funds" as this money was subsequently called for Departmental accounting purposes, was more formal and detailed than that required for plans submitted by local health departments, and the emphasis was put on demonstration. By making awards on a competitive basis and by expanding the

range of agencies who could apply, the Division of Preventive Medical Services was able to achieve in this program those things that it had wanted in the CI&A program in November, 1961, but which were largely omitted, i.e., emphasis on studies and demonstrations in new areas, time limits on lengths of grants, greater specificity in proposals, competition in awarding grants, and making grants to organizations other than local health departments.

The reasons given by the Chief of the Division of Preventive Medical Services for not allotting the $117,200 to local health departments on a formula basis subject to the submission of an acceptable plan, were: (1) the amount of money for any one local health department would have been very small, and (2) several months would have been consumed by the allocation process which involves the notification of local health departments of their tentative allotments, the preparation and submission of plans by local health departments, the Departmental review and appraisal of the plans, a meeting of the Advisory Committee, and a final staff review prior to making recommendations to the Director. This process would not have left enough time in the fiscal year for the local health departments to recruit staff and get their programs started. The Chief of the Division of Preventive Medical Services thought that much more could be accomplished if this money were used by the Department for contracts.

The present procedure for handling the CI&A Contract program is as follows. Applications are studied by the medical officers in the CI&A Unit. Comments on the applications are obtained from other members of

the Division of Preventive Medical Services as well as from members of the Divisions of Research and Community Health Services. A meeting of members of the CI&A Unit, the Chief and other members of the Bureau of Chronic Diseases, and the regional medical coordinators of the Division of Community Health Services makes recommendations to the Director for funding or not funding. Letters of approval or disapproval are drafted for the Director's signature.

During the fall of 1962 the Chief of the CI&A Unit was very busy getting the CI&A Contract program started. The regional medical coordinators in the Division of Community Health Services were notified of this new program and through them the word was passed to members of the regional teams and the local health officers. The notification of hospitals, universities, and voluntary agencies was done by the Chief of the CI&A Unit. During the first year of the program he had met many people in the health field. Now, he simply called those he thought might be interested in this new program. This promotion continued through the winter and into the spring of 1963 because a supplemental formula grant of $81,588 from the Public Health Service received in January, 1963, was used for contracts.[42] The Chief of the Division of Preventive Medical Services presented the same arguments to the Director to justify use of the supplemental formula grant to expand the CI&A Contract program as he had used to justify the initiation of the program several months before. By March 4, 1963, twenty-four applications for CI&A Contract funds had been accepted. Thirty-one applications were approved by the end of the fiscal year.

The 1963-64 Allocation of CI&A Funds

On September 13, 1962, members of the Bureaus of Chronic Diseases and Maternal and Child Health met with members of the Division of Community Health Services to begin planning the 1963-64 CI&A and MCH programs.[43] A tentative schedule was set up that called for the local health departments to submit appraisals of their 1962-63 programs and plans for 1963-64 by March 15, 1963. It was agreed that staff and Advisory Committee reviews of these plans would be completed in time to notify the local health departments of the results by June 1, 1963. The staff appraisal would be done by the respective program bureaus with assistance from the regional consulting teams. Consultation to the local health departments in the development of their plans would be channeled through the regional medical coordinators. Forms and accompanying releases pertaining to next year's plans would be worked out jointly between the program units in the Division of Preventive Medical Services and the regional medical coordinators in the Division of Community Health Services. There would be regional meetings of local health officers with regional and program staff during February to insure a clear understanding of the procedures.[44]

On January 4, 1963, a meeting was held at which members of the Divisions of Preventive Medical Services, Community Health Services, and Administration were present. The reason for the meeting was to discuss the allocation of the 1963-64 CI&A and MCH formula grants. The details of the decision reached are given in the next chapter. In the

proposed CI&A budget for 1963-64 ten per cent of the total formula grant was reserved for contracts. So, the innovation of the fall of 1962 had become an accepted part of the CI&A program by January, 1963.

The annual allotment of CI&A funds followed the pattern of the previous year. There were meetings held in various parts of California during January and February, 1963, with local health officers and their staffs to transmit information about the progress reports on 1962-63 activities and plans for 1963-64 which were due on March 15, 1963. Following the receipt of the plans there was the review of the plans with the regional medical coordinators in April, the summaries and appraisals were written, the material was distributed to the members of the Advisory Committee, and the Director's Office was briefed prior to the third Advisory Committee meeting on May 22, 1963. The financial details are included in the next chapter.

Differences between the Divisions of Preventive Medical Services and Community Health Services[45] caused a re-examination of the CI&A and MCH programs during the summer of 1963. A letter dated June 20, 1963, from the Chief of the Division of Preventive Medical Services to the Director started the chain of events which led to a meeting with the Director of all concerned on August 2, 1963. The points raised in the letter were more critical of the MCH program than of the CI&A program. Also, the tone of the letter as well as the contents may have accounted for the sharp reaction it produced in the Division of Community Health Services. The letter questioned the quality of the plans the local health officers submitted, raised the point that the health officers

did not take seriously the paper work needed to secure these funds, and suggested that the Advisory Committee was not critical enough in reviewing these plans. In addition, a change in the method of distributing the funds to the local health departments was suggested. Under the present mechanism there is the possibility that money allotted to a local health department and not spent during the fiscal year will revert to the county general fund at the end of the year.[46]

The five recommendations which ended the letter were that the Department:

1. Should go to reimbursable contracts[47] as the method of allotment to local health departments,
2. Should clarify the criteria that plans of local health departments must meet,
3. Should apprise the local health departments that the CI&A and MCH funds are not their "right,"
4. Should restate the Department's authority to allocate funds to a certain area beyond the per capita allotment if a larger amount is needed to achieve a desired result, and
5. Should achieve closer working relations between program people (Division of Preventive Medical Services) and regional medical coordinators (Division of Community Health Services).

The essential point of this letter was that there should be a tightening up on the accountability of the CI&A and MCH funds. However, there were apparently enough "loaded" words in the letter to generate controversy.

The Division of Community Health Services did not write a point by point reply to this letter but, rather, issued a Position Statement. This statement representing the consensus of the Division generally followed the points which are set forth in the previous section, "Position of the Division of Community Health Services." The basic point in the Position Statement is that the program goals of the Department will be achieved by supporting and strengthening local health departments.[48]

The criteria for approving local health department plans for use of CI&A and MCH money also received attention in the Position Statement. A difference of opinion had arisen between the Division of Community Health Services and the Division of Preventive Medical Services over the latter's recommendation, which had been agreed to by the Director, not to fund the two supplementals with the poorest priority ratings that had been approved by the Advisory Committee at its May, 1963, meeting. The Division of Community Health Services thought that because the supplemental plans met the criteria set forth by the CI&A program[49] and had been approved by the Advisory Committee they should have been funded. The Division of Preventive Medical Services contended that these two were of such poor quality that the recommendations of the Advisory Committee should not be followed.

On August 2, 1963, there was a meeting in the Director's Office attended by representatives of the Divisions of Community Health Services and Preventive Medical Services to discuss the two documents. The discussion often went beyond the five recommendations contained in the

June 20 letter and dealt with the philosophy of public health, the role of public health in medical care, and the delegation of health functions by legislative bodies to agencies other than public health departments. The Chief of the Division of Preventive Medical Services began the meeting by stating that the real argument may be over differing philosophies of public health[50] even though the discussion centers on specific CI&A and MCH programs. The discussion of the CI&A program by the two divisions generally followed the points set out in the previous section on positions taken. The Director stated that the real point being raised by the Division of Preventive Medical Services was to reconsider the decision made two years ago on the method of allocating the CI&A formula grant and to ask the question, "Was it a good one?" As to the June 20 letter, there was general agreement on the last three recommendations. This left the reimbursable contract and the criteria for local health department plans for further consideration. As for reimbursable contracts the Division of Community Health Services was agreeable if the local health departments could live with them. This matter was put on the agenda for the August 22 and 23, 1963, meeting of the Committee on Administrative Practices of the CCLHO.[51] An ad hoc committee composed of the Assistant Chief, Medical, and Assistant Chief, Administrative, of the Divisions of Preventive Medical Services and Community Health Services, and the Assistant Chief, Administrative, of the Bureaus of Chronic Diseases and Maternal and Child Health was set up to go over the ground rules for local health department plans.

When the author asked one participant in a later interview what the August 2, 1963, meeting had accomplished, he replied that meetings like

this were a form of "mild group therapy" and were necessary so that decisions could be made later on. Toward the close of the meeting one of the protagonists said that the meeting was very helpful because the individuals involved in the situation could reach an understanding through face-to-face discussion. This he felt was much better than exchanging sniping memos that could be misinterpreted.

The ad hoc committee to review the Department's ground rules for MCH and CI&A programs in local health departments held several meetings and circulated drafts of revised instructions and application forms for local health departments to members of the Divisions of Preventive Medical Services and Community Health Services for their comments. The results of the committee's work were presented to the Committee on Administrative Practices of the CCLHO at its January, 1964, meeting as an attempt by the Department to simplify and standardize the administration of the CI&A and MCH programs. The only substantive change in the CI&A program as a result of the work of the ad hoc committee was the substitution of a Departmental Review Committee for the Advisory Committee to review the plans submitted by local health departments for use of their tentative MCH and CI&A allotments. This change would begin with the allocation of the 1964-65 CI&A formula grant. The Committee on Administrative Practices approved the suggestions of the ad hoc committee. The use of the Advisory Committee created much additional work for the Department and for the four local health officers who served on the Committee.[52] Any fears that local health officers might have had in 1961 about the allocation of the formula grants had been removed

by the operation of the MCH and CI&A programs during the intervening three fiscal years.

The Medical Care Studies Unit is partially supported by CI&A funds. This Unit was formally established in the Division of Preventive Medical Services in September, 1963, as a direct result of action by the California Legislature. In 1961 the Legislature passed Assembly Concurrent Resolution 94 requesting the Department to make a study of the quality of medical care in California.[53] Even though no State funds were provided, the Department initiated studies in four areas of medical care. Late in the spring, 1963, legislative session, the California Legislature voted $50,000 to support a Medical Care Studies Unit within the Department with the condition that the Department obtain $100,000 of matching funds elsewhere.[54] The Department negotiated for the next several months with a private foundation in an attempt to get the $100,000 needed to match the State funds. When these negotiations failed the Chief of the Division of Preventive Medical Services recommended to the Director that a $50,000 pediatrics study in the Bureau of Maternal and Child Health be placed in the Medical Care Studies Unit and that $50,000 from the 1963-64 CI&A formula grant originally budgeted for the CI&A Contract program be used to make up the $100,000 matching funds. The recommendation was approved by the Director.

In September, 1963, the Director and the Chief of the Division of Preventive Medical Services, met with the Governor, the Director of the Health and Welfare Agency, and the Director of the Department of Finance to discuss the studies in medical care being carried on by

the Department of Public Health. At that meeting the Departmental plan for matching the State funds was presented and approved.

One objective of the Medical Care Studies Unit is to "demonstrate its value . . . as a resource for aiding systematic, long-range planning of public medical care with emphasis . . . placed on out-of-hospital services for the chronically ill and aged."[55] Because of this emphasis on the chronically ill and aged the use of CI&A funds to support the Medical Care Studies Unit was justified.

In February, 1964, the Public Health Service notified the Department that its 1963-64 supplemental CI&A formula grant amounted to $98,522. This was somewhat larger than the previous year's supplemental grant of $81,588 and almost twice the amount the Department had estimated it would receive. The Department of Finance held up the Department of Public Health's use of these funds for two reasons:

1. California overmatches the CI&A federal formula grant. Therefore, it wasn't necessary to use the supplementary grant for CI&A programs.[56]
2. The budget session of the California Legislature was still going on.

Because the Department's budget had estimated the CI&A supplemental grant at $54,000, the Department of Finance thought it might use the amount of the grant in excess of $54,000 in some other department of State government if the Legislature didn't approve funds for some desired programs not in the field of public health. It took several meetings with the Department of Finance and the submission of a list of projects to

be undertaken with the CI&A supplemental grant before the funds were released to the Department of Public Health in late April, 1964. The list of projects to be administered under the CI&A Contract program was drawn up by the Bureau of Chronic Diseases and approved by the Chief of the Division of Preventive Medical Services. The projects were then presented and approved at a meeting on April 13, attended by the Director, Deputy Director, Assistant Director, and representatives of the Divisions of Preventive Medical Services, Community Health Services, Research, and Administration. The list of projects was then forwarded to the Department of Finance.

The reasons given by the Division of Preventive Medical Services for allocating the supplemental grant by means of contracts with local agencies rather than alloting the money on a formula basis to local health departments were that the sum of money was too small to divide up among all local health departments and that the time left before the end of the fiscal year was too short for the local health departments to prepare and submit plans.[57]

As has been indicated in this chapter the Division of Administration participated in many of the meetings about the CI&A program. There are several reasons for the significant role this division plays in Departmental affairs. The funds for support of the Department of Public Health are not generated internally and decisions to establish new positions within the Department require approval from groups outside the Department. The division that represents the Department in its contacts with those parts of its environment where funds are allocated and approval for organizational changes is

sought is in a key position to influence Departmental policy. The Division of Administration represents the Department in many contacts with its environment. One of the important functions of the Division of Administration is to act as liaison between the Department of Public Health and the Department of Finance. Expansions of on-going public health programs and details of financing and staffing new Departmental programs are negotiated with the Department of Finance. The Division of Administration also does much of the work of preparing the annual Departmental budget which goes to the Department of Finance for review. Because of this budgetary responsibility the Division of Administration becomes involved in the internal operations of the entire Department of Public Health. Therefore, the Division of Administration is usually represented at meetings where financial matters and personnel changes in Departmental programs are discussed.

Chapter 4. FINANCIAL DATA OF THE CHRONICALLY ILL AND AGED PROGRAM

Introduction

The fiscal information in this chapter supplements the chronology of events in the preceding chapter. For purposes of clarity these two interrelated aspects are presented separately.

The first part of this chapter deals with the Department's allocation process for the CI&A formula grant. This is followed by the fiscal details for each of the three years the CI&A program has been in operation. Finally there is a fiscal summary covering all three years. The analysis of the Department's CI&A program in Chapter 6 draws upon the material presented in this chapter.

Allocation Process for the CI&A Formula Grant

The amount of the CI&A formula grant that the Department will receive for a fiscal year from the Public Health Service is not known until Congress passes the appropriation bill. Planning in the State Department and the local health departments occurs in the months preceding the start of the fiscal year, although Congress usually doesn't act on the appropriations bill until the fall, several months after the start of the fiscal year. Thus, the amount of money estimated for planning purposes at the State and local level is based on the budget submitted to Congress by the President and on informal conversations with Public Health Service officials.

The first step in the Department's allocation of CI&A funds to local health departments is to decide on the amount of money that will be made available to local health departments. Then by use of a formula[1] this money is tentatively divided among the local health departments and each local health officer is informed of the sum set aside for his jurisdiction. This sum is called the basic allotment or simply the "basic." The local health officer submits a plan showing how his CI&A basic will be used. The plans from all jurisdictions are reviewed by the members of the Departmental Review Committee (formerly the Advisory Committee). The Committee obtains appraisals of the plans from other members of the Department before making final recommendations on funding of the plans to the Director.

It was foreseen that several things could occur which would cause the total amount actually funded to be less than the total amount tentatively allocated. Primarily these are: (1) some jurisdictions would not submit plans, (2) some would submit plans for less than the amount allocated, and (3) some plans would not be approved.

In order for the total amount allocated to local health departments actually to go to them the device of a supplemental plan, or simply a "supplemental," was created. In addition to submitting a plan for the use of his basic allotment, a local health officer could at the same time submit a supplemental plan for use of additional funds that might become available for the three reasons given above. These supplemental plans are either approved or disapproved by the Departmental Review Committee and the approved ones are given a rating. The Committee then

makes its recommendations to the Director for funding or not funding the approved supplementals based upon the ratings and the amount of money available.

The 1961-62 Allocation of CI&A Funds

The 1961-62 CI&A formula grant for California from the Public Health Service was $356,300. As was mentioned in the section, "The Community Health Services and Facilities Act of 1961," in Chapter 3, these funds included money previously appropriated to help states improve nursing home programs. The Nursing Home Contract program in the Bureau of Hospitals was allotted $68,000 of the CI&A grant, $50,000 for contracts and $18,000 for salaries in the Bureau. After this amount was subtracted from the total CI&A grant, the remaining $288,300 was made available to local health departments. The allotment was made by formula and each department was notified of its share on November 10, 1961.

At its January, 1962, meeting, the Advisory Committee approved all forty-one basic plans submitted by local health departments, although some were approved subject to contingencies. The total thus committed came to $258,959. In addition, nineteen supplementals totaling $58,266 were approved and rated. However, to stay within the limit of $288,300 only $29,341 of the $58,266 could be funded.

The thirteen highest rated supplementals used $20,456. The next supplemental in the ratings was for $16,208. The Chief of the Bureau of Chronic Diseases submitted two alternative plans for funding the

supplementals to the Chief of the Division of Preventive Medical Services. In each plan the thirteen highest rated supplementals were to be funded. The plans differed in that one involved funding the fifteenth rated supplemental ($4,700) and only a portion of the fourteenth ($4,185 of the $16,208 requested) while the other plan was not to fund the fourteenth at all but to fund the fifteenth, sixteenth, and a part of the seventeenth which would use all the $29,341 available for supplementals. What happened was that the fourteenth supplemental was not funded at all, the fifteenth was, but no others. Thus, the precedent was set for not funding all approved supplementals when money for doing so was available. Although this practice caused much discussion in the summer of 1963, the precedent was established in February, 1962.

Totaling the amount actually awarded gives $284,115 instead of the $288,300 originally allotted. This is shown in the table:

Basics	$258,959
First thirteen supplementals	20,456
The fifteenth supplemental	4,700
TOTAL	$284,115

This left a little over $4,000 available for use at the State level. As it turned out, the board of supervisors of one county rejected its local health officer's program and another county did not use all of its approved basic. This made an additional $4,000 available for use at the State level. Of this more than $8,000 total, the Division of

Preventive Medical Services used $7,647 and the Division of Community Health Services used $601 for administrative expenses and program development activities connected with the CI&A grant.

Summary of CI&A Funds Used in California in 1961-62

PHS to CSDPH	Regular		$356,300
	Supplemental		0
	Total		$356,300
CSDPH			
Allocated to Local Health Departments (Services at Local Level)			$280,052
State Level Support (Administrative Overhead)			26,248
	Bureau of Chronic Diseases	7,647	
	Bureau of Hospitals	18,000	
	Division of Community Health Services	601	
	Division of Administration	0	
Studies, Experiments, and Demonstrations			50,000
	CI&A Contract Program	0	
	Nursing Home Contract Program	50,000	
	Medical Care Studies Unit	0	
	TOTAL		$356,300

The 1962-63 Allocation of CI&A Funds

The basis for Departmental planning for 1962-63 was that exactly twice the 1961-62 formula grant would be forthcoming in 1962-63, a total of $712,600.[2] But to be sure that the Department wouldn't promise money that might not be forthcoming from Congress the following arrangement was used. Local health departments were asked to submit

two basic plans (Basic I and Basic II), the first to be used if only $356,300 should be the amount of the formula grant, both to be used if $712,600 were granted. In addition, supplemental plans could also be submitted. The tentative allotment by the Department to the local health departments totaled $578,680 for both basics. If $712,600 were the amount of the grant $133,920 would be available for other uses. Deducting the $68,000 for the nursing home program in the Bureau of Hospitals leaves $65,920 for support of staff of the CI&A Unit and other administrative expenses in the Department. The comparable figure for 1961-62 was $8,248.

At its June, 1961, meeting the Advisory Committee approved forty Basic I applications amounting to $270,043 and thirty-seven Basic II applications amounting to $239,293, making a total of $509,336 for approved basic plans. The twenty-six supplementals approved totaled $163,766. One basic plan and four supplementals were disapproved.

The Public Health Service later advised the Department that if Congress approved the President's budget, $829,800 would become available to California as their CI&A formula grant. In August, 1962, the Chief of the Bureau of Chronic Diseases submitted a plan to the Director through the Chief of the Division of Preventive Medical Services suggesting how the $829,800 be allocated.

Chronic Illness and Aging Program, 1962-63:
Recommendation of Bureau of Chronic Disease for Use of Funds

1.	Basic I Local Programs	$270,043
2.	Basic II Local Programs	239,293
3.	Supplemental Local Programs [All approved supplementals would be funded.]	163,766
4.	Exploratory Programs (To be awarded by Bureau of Chronic Diseases; maximum of $2,000 for any one program.)	10,000
5.	Nursing Home Program (Bureau of Hospitals)	58,000*
6.	Administration, Processing, Evaluation, and Consultation by the State Department of Public Health (5% of total allotment). Primarily for additional personnel ($28,344) and related expenses in the Bureau of Chronic Diseases.	41,490
7.	To Be Determined	47,208
	TOTAL	$829,800

(*Note: The allotment for the Nursing Home Contract program should have been $68,000 instead of $58,000.)

The Chief of the Bureau of Chronic Diseases suggested that item 7 in his proposed 1962-63 CI&A budget be used to increase item 4 to $15,000, to employ additional staff at the State level, to spend $5,000 for chronic disease educational materials, and to support additional local projects.

In transmitting these recommendations from the Chief of the Bureau of Chronic Diseases to the Director, the Chief of the Division of Preventive

Medical Services wrote the Director that he concurred with budget items 1, 2, 4, and 5. He continued, "However, I would like to discuss with you whether item 3 should be funded completely as shown, as well as the question of detailed budgeting for items 6 and 7." The final action on item 3 was that the Division of Preventive Medical Services followed the Advisory Committee ratings in funding the supplementals except that the four approved supplementals with the poorest ratings (representing $26,146) were not funded.

In late August, 1962, the Department was officially notified that its 1962-63 CI&A formula grant was $829,800. In October, 1962, the Chief of the Bureau of Chronic Diseases submitted a "Personnel and Equipment Budget Request, Chronic Illness and Aging Program, 1962-63." This budget called for seven positions in the Bureau of Chronic Diseases -- a total of $81,200 -- and three positions in the Division of Community Health Services -- a total of $28,773 -- to administer the CI&A program. The increase in the amount allocated for State level staff in the October budget over the August budget was made up of the funds labeled "To be determined" in the August budget and of the money saved when the four supplementals with the poorest ratings were not funded. Recruitment of a staff in the Bureau of Chronic Diseases took some time and was not completed until the summer of 1963. The suggested and budgeted staff for the Division of Community Health Services never materialized.

As additional CI&A money became available to the Department,

first the $829,800 instead of the planned $712,600 and later a supplemental Public Health Service grant of $81,588, the money was used for contracts, some of which were with local health departments, and for State level support.

During 1962-63 there were many changes and adjustments. As mentioned, four approved supplementals with the poorest ratings were not funded. In addition, some local health officers did not use all of their basic or supplemental allocations, some local health officers revised their plans, and in one county the board of supervisors did not adopt its local health officer's approved plan. The end result was that basics funded totaled $464,891 and supplementals funded totaled $119,845.

The final allocation of the 1962-63 funds is given in the following table:

Summary of CI&A Funds Used in California in 1962-63

PHS to CSDPH	Regular		$829,800
	Supplemental		81,588
	Total		$911,388
CSDPH			
Allocated to Local Health Departments (Services at Local Level)			$584,736
State Level Support (Administrative Overhead)			105,694
Bureau of Chronic Diseases		45,697	
Bureau of Hospitals		18,000	
Division of Community Health Services		12,655	
Division of Administration		24,150	
Retirement, Health, and Welfare		5,192	
Studies, Experiments, and Demonstrations			220,960
CI&A Contract Program		170,960	
Nursing Home Contract Program		50,000	
Medical Care Studies Unit		0	
	TOTAL		$911,390[3]

By comparing the allocation planned on the assumption that $712,600 would be available with the final results given above, the distribution of the additional funds can be determined. These additional funds which total $198,788 consist of $117,200 (the difference between $829,800 and $712,600) and the supplemental Public Health Service grant of $81,588.

Allocated to Local Health Departments		$ 6,056
State Level Support		21,774
Contracts		170,960
	TOTAL	$198,790

The 1963-64 Allocation of CI&A Funds

Planning for the 1963-64 CI&A program assumed the CI&A grant would be $829,800. Since it was fairly certain that the federal grant would be at least this much, the concept of the two basics was dropped. In December, 1962, the Chief of the Bureau of Chronic Diseases recommended that the tentative allotment for 1963-64 be ten per cent greater than the tentative allotment for 1962-63. This would have meant that $636,282 would be available to local health departments.

In January, 1963, representatives from the Divisions of Preventive Medical Services and Community Health Services agreed upon the following preliminary budget:

Proposed Budget for 1963-64 CI&A Grant

Allocated to Local Health Departments (Services at Local Level)		$602,000
State Level Support (Administrative Overhead)		94,000
Bureau of Chronic Diseases	62,000	
Bureau of Hospitals	18,000	
Division of Community Health Services	8,000	
Division of Administration	6,000	
Studies, Experiments, and Demonstrations		134,000
CI&A Contract Program	84,000	
Nursing Home Contract Program	50,000	
TOTAL		$830,000*

(*Note: Budget does not total $829,800 because of rounding.)

At this meeting it was agreed that "in the event of a substantial increase in the CI&A category the budget issue will be reopened; any slight increases, however, will be reserved for contract operations by the Bureau of Chronic Diseases." There was no attempt to define substantial or slight. It was also agreed that "as a general principle . . . approximately 10 per cent of the CI&A Category total should go into services and demonstrations carried out by contracts with local agencies."[4] In 1962-63 nearly nineteen per cent -- $170,960 of a total grant of $911,390 -- has been used for contracts.

At its May, 1963, meeting, the Advisory Committee approved local health department CI&A applications totaling $600,747, of which $513,283 were for fifty-eight basics and $87,464 for nineteen supplementals. As usual, some of the approvals were subject to contingencies. The Departmental staff review agreed with the action of the Advisory Committee in disapproving three basics. In addition, the staff recommended that the two approved supplementals with the poorest priority ratings not be funded and that $4,125 for equipment be deleted from one basic application. The staff recommendations were approved by the Director. There have been other minor changes and undoubtedly there will be more before the end of the 1963-64 fiscal year.

Another budget meeting was needed for the 1963-64 CI&A program because of the decision in September, 1963, to use $50,000 originally budgeted for the CI&A Contract program to support a Medical Care Studies Unit in the Department and the receipt in October of additional information from the Public Health Service on the amounts of the federal grants for 1963-64. The Regional Office of the Public Health Service notified

the Department on October 16, 1963, that the CI&A grant would be $838,400. Although the actual amount of the supplemental CI&A grant from the Public Health Service would not be known for several months the Department estimated that it would be approximately $54,000. This would make a total of approximately $892,400 for the 1963-64 CI&A grant. The budget arrived at in November by representatives of the Divisions of Preventive Medical Services and Administration was:

Revised Budget for 1963-64 CI&A Grant

PHS to CSDPH	Regular		$838,400
	Supplemental (est.)		54,000
	Total		$892,400*
CSDPH			
Allocated to Local Health Departments (Services at Local Level)			588,000
State Level Support (Administrative Overhead)			118,000
	Bureau of Chronic Diseases	78,000	
	Bureau of Hospitals	18,000	
	Division of Community Health Services	12,000	
	Division of Administration	10,000	
Studies, Experiments, and Demonstrations			196,000
	CI&A Contract Program	96,000	
	Nursing Home Contract Program	50,000	
	Medical Care Studies Unit	50,000	
	TOTAL		$902,000*

(*Note: It was assumed that salary savings and unused allotments to local health departments would result in actual expenditures of $892,400, even though the budget total was $902,000.)

In February, 1964, the Department learned that the CI&A supplemental grant amounted to $98,522, almost twice the $54,000 that had been used in planning the 1963-64 CI&A program. The supplemental grant was used to support studies, experiments, and demonstrations under the CI&A Contract program. The latest (May, 1964) estimated budget for the 1963-64 CI&A grant is given in the summary table in the next section.

Financial Summary of the Three Fiscal Years

In order to see how the amounts of money in various categories have changed over the three fiscal years that the CI&A program has been in operation, the information contained in this chapter is summarized in the following tables:

Summary CI&A Funds Used in California: 1961-62, 1962-63, and 1963-64

	1961-62 Actual	1962-63 Actual	1963-64 Actual
PHS to CSDPH			
Regular	$356,300	$829,800	$838,400
Supplemental	0	81,588	98,522
Total	$356,300	$911,390	$936,922
CSDPH			
(Original Tentative Allotment to Local Health Departments)	($288,300)	($578,680*)	($601,940)
Allocated to Local Health Departments (Services at Local Level)	280,052	584,736	590,000**
State Level Support (Administrative Overhead)	26,248	105,694	112,000
Bureau of Chronic Diseases	7,647	45,697	65,000
Bureau of Hospitals	18,000	18,000	18,000
Division of Community Health Services	601	12,655	10,000
Division of Administration	0	24,150	12,000
Division of Laboratories	0	0	6,000
Bureau of Health Education	0	0	1,000
Retirement, Health, and Welfare	0	5,192	(included in above figures)
Studies, Experiments, and Demonstrations	50,000	220,960	235,000
CI&A Contract Program	0	170,960	135,000
Nursing Home Contract Program	50,000	50,000	50,000
Medical Care Studies Unit	0	0	50,000
TOTALS	356,300	911,390	937,000

*This allotment was based on the assumption that $712,600 would be the amount of the 1962-63 formula grant.

**The figures in this column are estimated.

The original tentative allotment of CI&A funds to local health departments by the State Department is not the same as the actual allocation shown after the fiscal year is over and the final figures are in. This is so because some local health departments do not use all of the funds that are tentatively allotted to them prior to the fiscal year.

Chapter 5. USE OF ORGANIZATION THEORY IN ANALYSIS OF THE DEPARTMENT

Introduction

Previous chapters have presented the history of the State Department of Public Health and its handling of the CI&A federal formula grant. What is now needed is some framework within which to explain and understand the behavior observed, to bridge the gap between abstract decision theory models and the actual operations of the State Department of Public Health. Selections from organization theory that were helpful -- and some that were not[1] -- in explaining behavior found in the field of public health and in the Department are given in this chapter. Notwithstanding attempts such as that of March and Simon,[2] organization theory is still probably best described as "a theory which has not yet been effectively systematized or quantified."[3] Nevertheless, the concepts selected from organization theory did provide a systematic method of analysis.[4] Some understanding of the overall organization and of the behavior of members of the organization is needed before specifying the elements of the allocation model for the CI&A grant.

Some of Simon's Concepts on Administrative Behavior

The most helpful set of concepts for analyzing the organization of the State Department of Public Health was the set that Simon presented in his book Administrative Behavior.[5] His analysis is built around the central theme that "organization behavior is a complex network of decisional processes."[6]

> The key to the process is to develop a careful and realistic picture of the decisions that are required for the organization's activity, and of the flow of premises that contribute to the decisions. To do this, one needs a vocabulary and concepts that focus upon the significant and dismiss the irrelevant.[7]

Because individuals do not possess the knowledge, foresight, and calculating ability assumed by classical economic theory, Simon sees organization theory as being "centrally concerned with identifying and studying those limits to the achievement of goals that are, in fact, limits on the flexibility and adaptability of the goal-striving individuals and groups of individuals themselves."[8] Simon places the individual in an organizational setting and examines the influences that the organization brings to bear to ensure that the individual makes decisions consistent with the organizational goals. These influences are the concepts of training, authority, identification (organizational loyalty), efficiency, and communication. Definitions of these five concepts and examples of how they were used in the analysis of organizational behavior in the State Department of Public Health comprise this section.

Training

> Training prepares the organization member to reach satisfactory decisions himself, without the need for the constant exercise of authority or advice. . . . Training may be of an in-service or a pre-service nature.[9]

Pre-service training in medicine provides a common background for many of those in the top positions in the Department. In particular, the Director, the Deputy Director, and the Assistant Director all have M.D. degrees. Although several sections of Chapter 3 emphasize the differences among various groups over methods of allocating

the CI&A formula grant, the differences should not overshadow the many areas of agreement. The similarity in educational background means that the participants talk the same technical language and have a common concern for human welfare.

On the other hand, the emphasis on the M.D. degree leads to some administrative problems in the public health field. The field and the Department tend to equate training as a physician with ability to administer public health programs. This procedure is expressed by Simon as follows:

> When persons with particular educational qualifications are recruited for certain jobs, the organization is depending upon the pre-training as a principal means of assuring correct decisions in their work.[10]

However, because the nature of public health has changed, the clinical training of a physician is not needed to solve many of the new problems which range from research into the effects of urbanization on health to the creation of new techniques of measurement to evaluate public health programs.[11] As public health organizations and programs become more complex there is a constantly increasing need for training in administration. Unfortunately, such training is not included in the medical school curriculum. There is little or no required course work in sociology and psychology. In addition, the lack of mathematics, statistics, and economics in the typical physician's course of studies does not equip him to seek out and use the quantitative approaches to organizational analysis and decision making presently available should he enter the field of public health.

In addition to the M.D. degree physicians going into public health usually obtain a Master of Public Health degree. However, the quantitative

approach to administration is just beginning to be taught in schools of public health. As yet this approach has not found its way into the texts on public health administration.[12] A book like Decision Making in the White House is well received in the Department because it reinforces existing attitudes in the Department toward administration by stating that "Decision-making is not a science, but an art. It requires, not calculation, but judgment."[13]

There is another way in which the preponderance of physicians in key positions in the Department and in the field of public health creates problems. Studies show that an important reason for the choice of a medical career is the desire of an individual for independence and freedom from outside interference.[14] In contrast to this expressed desire, public health offers physicians salaried jobs in bureaucracies. Instead of treating patients individually in his office a public health physician works with community problems in a political atmosphere. Thus it is not surprising that recruitment for public health takes time and positions sometimes remain vacant for extended periods.[15]

In-service training in management is available to Departmental members through the California Interagency Management Development courses offered to management personnel in all State agencies and through the Training Office within the Department. The Department encourages management personnel to take advantage of these opportunities and virtually all have participated. However, only a few courses are offered, and the intent is to give a brief general review of a subject area or to focus on a particular technique. Moreover, the Management

Development courses are usually given in Sacramento and not in Berkeley. Within the Department a three-day seminar on operations research was held several years ago. A two-day session of program budgeting is planned for the fall of 1964. An awareness on the part of management of new concepts and techniques has been the outcome of these courses, but the overall impact thus far has not been great.

Authority

> A subordinate is said to accept authority whenever he permits his behavior to be guided by the decision of a superior, without independently examining the merits of that decision. . . . It follows that authority in the sense defined here, can operate "upward" and "sidewise" as well as "downward" in the organization. If an executive delegates to his secretary a decision about file cabinets and accepts her recommendation without a re-examination of its merits he is accepting her authority.[16]

Authority based on the "right to the last word," authority based on sanctions, authority based on specialized skill or knowledge of a certain subject, and authority based on standard operating procedures are all found in the Department. Authority operating upwards also occurs in the Department. This kind of authority may enable persons to pursue goals which do not further the Department's goals. One reason that authority can operate upwards in the Department is the lack of staff in the Director's Office which causes all staff work to be delegated to the divisions and bureaus. Two examples of this kind of authority follow.

The plans submitted by local health officers to obtain their annual CI&A allotment are subject to staff review by the CI&A Unit and others in the Divisions of Preventive Medical Services and Community Health Services. Final decisions are made after the

recommendations of the Departmental Review Committee are taken into account. The Director then signs the letters of approval or disapproval addressed to local health officers. Because his signing is the extent of his reivew he doesn't independently examine the merits of the decisions. According to Simon's definition this is an example of authority operating upward. The same procedure occurs in the Local Special Projects program where the staff work is done by the Division of Research. The concept of authority is used in Chapter 6 to help determine the decision maker in the Department's allocation of the CI&A formula grant.

Identification or Organizational Loyalty

> In making decisions their organizational loyalty leads them [members of an organized group] to evaluate alternative courses of action in terms of the consequences of their action for the group. [Simon points out that problems may arise when goals of a subunit are not consistent with goals of the organization and the individual identifies with the subunit.] [17]

There appear to be three reasons why organizational loyalty or identification is difficult to achieve in the Department and, consequently, why decisions may be made in terms of subunit goals which do not further the goals of the Department.

The first reason is that most of the Department's budget comes from the State and federal governments already earmarked for certain bureaus or programs. It should be noted, however, that the Department does influence the amount of funds earmarked for its various bureaus and programs through meetings with the Department of Finance, the Office of the Legislative Analyst, and the State Legislature. Thus the typical situation in a private, profit-making corporation

where corporate revenues from sales accrue to the corporation as a whole to be allocated by top management among the various divisions and activities does not exist in the Department of Public Health.

The second reason lies in the history of public health in California. At the State level, public health consisted of several autonomous units prior to the reorganization at the end of World War II which brought about the present structure of the Department. This tradition of unit autonomy persists in the Department to some degree today. A study of union democracy found that where local unions existed prior to the formation of the international union the locals remained strong and resisted efforts to create a centralized international structure.[18] This may partially account for the present organization of the Department which has been humorously described as "a loose confederation of feudal baronies."[19] The post-World War II reorganization of the Department related in Chapter 2 was a federation of already existing bureaus. The 1958 study reported that the integrated concept proposed in the 1943 reorganization plan had never been fully realized in practice.

Finally, it is the author's impression that the California State civil service system causes division chiefs, assistant division chiefs, and bureau chiefs to identify with their subunits of the Department. Civil service regulations require an examination of an individual seeking employment or promotion. All positions at the level of bureau chief and above are specialized for a particular bureau or division. A person does not take an examination to become a bureau chief but to become the bureau chief of a particular bureau. There is also much specialization in positions below the rank of bureau chief.

Approximately 250 classifications, each with its own examination, are used by the Department. The Director must get the approval of the Department of Finance and the State Personnel Board if he wishes to create a new position in the Department of Public Health. Thus the flexibility that exists in private corporations with their ability to shift administrative personnel is difficult to achieve in the Department of Public Health. In the opinion of the author the administrative jobs in the Department of Public Health are not so specialized that one could not have a general examination for administrators who could be transferred or promoted from one bureau or division to another regardless of the special function of the bureau or division.

Efficiency

> To be efficient simply means to take the shortest path, the cheapest means, toward the attainment of the desired goals. [The definition of efficiency may be expanded as follows.] The criterion of efficiency demands that, of two alternatives having the same cost, that one be chosen which will lead to the greater attainment of the organization objectives; and that, of two alternatives leading to the same degree of attainment, that one be chosen which entails the lesser cost.[20]

Efficiency simply means maximum output for given input or minimum input for given output. Efficiency as defined by Simon was not as useful in this study as his four other concepts discussed in this section. The lack of knowledge in the Department about the output of the CI&A program made the efficiency concept difficult to apply. What was needed to deal with the problem of allocating the CI&A formula grant was a more general concept relating alternatives to objectives. The concept of effectiveness, discussed in detail in Chapter 8, was chosen. Effectiveness is a sum of weighted efficiencies, and in this context efficiency refers to the probability that the selection of a particular alternative will achieve a particular objective.

Efficiency in its input-output sense is a well-known concept in economics. However, economic analysis does not seem to be an important tool in the public health field. A review of the articles that have appeared during the past several years in the two leading public health journals, the American Journal of Public Health and Public Health Reports, disclosed few articles based on economic reasoning. For example, articles on the eradication of tuberculosis[21] discuss the problem in terms of what it means in a medical sense to eradicate a disease and whether it is technically possible to do so with present medical knowledge. There is no discussion of the cost involved, of the potential benefits of reducing the incidence of tuberculosis from its present level to zero, or of the uses that might be made of this money in alternative investments in health. Two possible reasons for the lack of economic analysis in the field of public health are:

1) public health personnel are physicians, nurses, social workers, and others whose training typically does not include economics, and
2) economists in significant numbers have only recently begun to study public enterprise.

Communication

> Communication may be formally defined as any process whereby decisional premises are transmitted from one member of an organization to another. . . . Without communication there can be no organization.[22]

A communications flow chart showing the formal and informal channels used by individuals involved in the CI&A program is given in Exhibit L. The informal organization that affects the CI&A program stands out clearly when the communication flow chart is compared

with the formal organization chart in Exhibit F. Exhibit L, Block B, shows the large amount of interaction at all levels between the Division of Preventive Medical Services and the Division of Community Health Services while the formal organization chart shows the interaction between the Divisions occurring between the Division Chiefs or through the Director's Office. The informal organization is discussed later in this chapter in a separate section.

The communications flow chart of Exhibit L also displays the elaborate administrative procedures of the CI&A program. The flow chart of Exhibit M shows another way the Department could allocate the CI&A grant. In this chart communication between the State Department and the local health departments has been reduced to a minimum, and the CI&A Contract program and the Medical Care Studies Unit have been eliminated. The following question, prompted by the two flow charts, is discussed in Chapter 8. In comparison with some simple arrangement for allocating the CI&A formula grant such as the one shown in Exhibit M, are the additional benefits obtained by use of the administrative mechanism shown in exhibit L greater than or equal to the additional costs of maintaining this mechanism?

Simon offers no advice on how organizations should be operated:

> This volume [Administrative Behavior] deals with the anatomy and physiology of organization and does not attempt to prescribe for the ills of organization. Its field is organizational biology, rather than medicine. . . . Any prescriptions for administrative practice will be only incidental to the main purpose of description and analysis.[23]

However, by use of the above concepts taken from Simon,[24] an understanding of organizational behavior is made easier and this can lead to the identification of the elements needed to form a normative model.

The Black Box

The concept of the black box, taken over by operations research from electrical engineering,[25] was the concept used to begin the study of the Department. Briefly, a black box is any system "whose detailed internal nature one wilfully ignores"[26] and "whose input and output characteristics alone are of interest."[27] The representation of the Department as a black box is given in Exhibit J. Four fiscal years are shown: 1951-52, 1952-53, 1961-62, and 1962-63. By 1951 the post-war adjustments had been made[28] and the Departmental structure was similar to the present structure. The total flow of funds into the Department was $23,357,000 in 1951-52 and $20,679,000 in 1952-53. The decrease was due primarily to a temporary decrease in federal funds for hospital construction. However, the trend of expenditures for public health was rising during the 1950's. The total funds for the Department amounted to $44,844,000 in 1961-62 and $59,960,000 in 1962-63. The estimated total for 1963-64 is approximately $72,000,000. As mentioned in Chapter 1 the classification of funds in Exhibit J was helpful in selecting a part for further study.

The CI&A program itself can also be thought of as a black box and its outputs analyzed. Exhibit O shows that in the CI&A program in 1961-62 there was an input of $356,300 and a certain output, in 1962-63 there was an input of $911,390 and a different output, and in 1963-64 the input was similar to the previous fiscal year but there were some differences in estimated output.[29] These inputs and outputs[30] -- especially the changes in outputs -- gave leads for investigation of the mechanism inside the black box. For example, Exhibit O shows that there were

large year to year increases in funds allocated to the Bureau of Chronic Diseases, that the Medical Care Studies Unit did not exist prior to 1963-64, that the CI&A Contract program which amounted to $170,960 in 1962-63 is estimated to decrease to $135,000 in 1963-64, and that the Division of Administration which received $24,150 in 1962-63 will receive only $12,000 in 1963-64.[31] These patterns provided a source of questions for interviews with Departmental personnel and served to guide the search of the files.

The fundamental drawback in applying the black box concept to the allocation of the CI&A formula grant is that the output can be given only in the names of services, demonstrations, and overhead expenses supported by the CI&A money. The output doesn't tell what the money bought in terms of benefits to individuals from new or expanded services. And it is what the money bought that is important for making decisions about resource allocation. Therefore, the black box concept was helpful in defining the resource allocation problem but not in solving it. In the section, "The Decision Maker," in Chapter 6 the Director will turn out to be the ultimate black box in the sense that he will be the unanalyzed unit who is queried and whose reactions are recorded.

The "Principles of Administration"

Another approach to the study of organizations was developed by such men as Fayol, Gulick, and Urwick.[32] Their approach is generally known as "the principles of administration." Because this approach seems to be well established in the public health field and because it seems to be the basis upon which the previous studies of the

Department mentioned in Chapter 2 were made, some discussion and criticism is warranted.

"Principles" include such concepts as "span of control" and "unity of command." The span of control principle states that "no superior can supervise directly the work of more than five or, at the most, six subordinates whose work interlocks."[33] The unity of command principle states that "for any action whatsoever, an employee should receive orders from one superior only."[34] In their book, Koontz and O'Donnell state:

> Principles are used here in the sense of fundamental truths applicable to a given set of circumstances. . . . There are those who object to using the term "principles" for fundamental truths not supported by elaborate and complete statistical verification of their validity. . . . However, the authors have had occasion to see and experience the application of all principles outlined in this book and have found them to be verified in practice by a large number of managers whose work they have observed and whose experiences, recounted in the expanding literature of management, they have studied.[35]

For Fayol, "principles" are "acknowledged truths regarded as proven on which to rely."[36]

A brief discussion of the "principles of administration" is needed because the "principles" approach seems to be deeply ingrained in the public health field. A standard public health text now in its fourth edition is Hanlon's Principles of Public Health Administration. The chapter on "Organizational Considerations in Public Health" stresses the "principles" approach.[37]

> There are certain well-established principles of organization that are applicable equally to public and to private enterprise. In the final analysis, they consist essentially of the application of common sense to the management of a group of people working toward a common goal: the maintenance of a balance between responsibility and authority, consideration of the limits of human capability, the relationship between ultimate productive action and the supplementary needs related to it.[38]

Hanlon's discussion of organizations is in terms of organization by function, by geographical area, or by clientele; relationship of line to staff; and the other phrases from the "principles" literature including the span of control and unity of command mentioned above. Hanlon discusses resource allocation in the following manner:

> The resources available to the total organization are limited and must be carefully and logically distributed among all of the functional units on a basis determined by the over-all purpose and program of the organization. To accomplish this successfully involves continuous efforts for the coordination of all parts of the organization.[39]

Organization theory as described in the introduction to this chapter was not found in the books on public health administration.

The "principles" approach is also found in the training material the California State Personnel Board furnishes the Departmental Training Officer. One lesson covers the art of delegation and the span of control. Another lesson draws from the previously cited work of Koontz and O'Donnell. Still another lesson entitled "Principles of Organization" divides the discussion into six functions: planning, communicating, directing, controlling, coordinating, and developing. This is very similar to Gulick's famous seven functions (POSDCORB): planning, organizing, staffing, directing, coordinating, reporting, and budgeting.[40]

Simon has attacked the "principles" approach and in the introduction to the second edition of his Administrative Behavior stated that he could see no reason "to depart from [his] original evaluation of the 'principles' as essentially useless."[41] Simon's argument against the "principles" approach is succintly stated:

> It is a fatal defect of the current principles of administration that, like proverbs, they occur in pairs. For almost every principle one can find an equally plausible and acceptable contradictory principle. Although the two principles of the pair will lead to exactly opposite organizational recommendations, there is nothing in the theory to indicate which is the proper one to apply.[42]

It was the lack of operational definitions, the difficulty of knowing when to apply which "principle," that led Simon to propose an alternative theory of administrative behavior.[43] In the context of this study the author didn't find the "principles" or the "fundamental truths" helpful in analyzing the problem of resource allocation.

Some Sociological Approaches to the Study of Organizations

Sociologists are interested in various aspects of organizational behavior. Simon refers to the descriptive study of the way in which human beings behave in organized groups as a "sociology of administration."[44] In a survey article Gouldner defines two distinct approaches sociologists have used in the study of organizations.[45] There is a "rational" model which stems from the work of Weber and a "natural system" model which is associated with such names as Selznick and Parsons. Weber's model advocates bureaucracy as the rational way to solve the administrative problems of complex organizations. The other model focuses on disruptions of organizational equilibrium and the mechanism by which equilibrium is maintained. Although the aim of sociological study of organizational behavior has not been to improve decision making within the organization, the concepts of sociologists are essential to those who are interested in problem solving. Ideas from the literature of sociology which are used in

this study include bureaucracy, dysfunctional consequences, coöptation, the informal organization, commitment, displacement of goals, succession of goals, the changing needs of an organization, and ability versus authority.

Bureaucracy

In this study the term bureaucracy is used in its sociological sense. "Colloquially, the term 'bureaucracy' connotes . . . rule-encumbered inefficiency. In sociology, however, the term is used neutrally to refer to the administrative aspects of organizations."[46]

It was Max Weber who first described modern bureaucracy.[47] The State Department of Public Health fits Weber's description of a bureaucracy. For example, laws and administrative regulations fix the jurisdictional area of the Department, and management follows a more or less stable, more or less exhaustive set of rules as set forth in the State Administrative Manual and the Departmental Administrative Manual. There is a hierarchy of authority and appointed officials pursue careers within the hierarchical order. Training is required for management positions and examinations are a prerequisite of employment. Employees have legal guarantees against arbitrary dismissal or transfer.

Weber who saw the reason for the advance of bureaucracy in "its purely technical superiority over any other form of organization,"[48] had this to say:

> Its [bureaucracy's] specific nature, which is welcomed by capitalism, develops the more perfectly the more the bureaucracy is 'dehumanized,' the more completely it succeeds in eliminating from official business love, hatred, and all purely personal, irrational, and emotional elements which escape calculation. This is the specific nature of bureaucracy and it is appraised as its special virtue.[49]

Weber's work on bureaucracy formed the basis for later studies which confirmed, extended, or modified his ideas. The next eight sections deal with behavior found in bureaucracies which is at variance with the nature of bureaucracy as Weber defined it. Examples of such behavior in the Department are given.

Dysfunctional Consequences

Sociologists writing after the pioneering work of Weber have stressed the unanticipated responses of members of an organization to attempts by management to operate the organization along the lines of Weber's rational model.[50] Such unanticipated responses often have dysfunctional consequences. An example of dysfunctional consequences resulted from the Department's reporting procedures required of local health departments for their allotment of CI&A and other federal categorical funds. A series of forms sent by the State Department to local health departments in early 1963 required local health officers to list the health needs of their jurisdictions, to evaluate their overall operation in 1962-63, and to state their program plans for 1963-64. One of these forms pertained solely to the CI&A program. The aim of the Department was to get local health officers to evaluate and to plan in a systematic manner. However, the resultant complaints by local health officers and the ill will expressed towards the Department were dysfunctional consequences.

One local health officer said with reference to the reporting requirements of the CI&A program that there was "too much work for the little amount of money," and another said, "The State rides my neck for nine months for $3,000. It's not worth it."[51]

Comments from two other local health officers refer to reports in general:

> You have to keep so many records and make evaluative reports and post audits. It's just not worth the trouble to apply for these special or categorical funds unless it is a big one. . . . . If the same things are in effect next year I'll tell them just to keep their damn money.[52]

> I would like to bring to your attention the great increase in reports required for the various categorical programs of local health departments. . . . It appears that there is a great deal of effort being made by State staff to dream up different record systems to be submitted to local operating agencies with the request that they be implemented on very short notice and with little prior discussion. . . . We have found ourselves in a vicious circle of developing more reports to keep the [State] consultants in their headquarters office reading the reports instead of visiting in the field and observing and developing first-hand knowledge of local public health operations.[53]

The dysfunctional consequences may, however, lead in the long run to a better relationship between the State Department and local health departments. As a result of the complaints the Department is making a study on the need for and use of all statistical data submitted on a regular basis by local health departments. Also, an ad hoc committee was created which screens all new requests by Departmental personnel for information from local health departments.

Coöptation

"Coöptation is the process of absorbing new elements into the leadership or policy-determining structure of an organization as a means of averting threats to its stability or existence."[54] Coöptation is one of several reasons[55] for the large number of advisory committees found in the field of public health. It seems impossible for any new activity, study, or program to be undertaken without the first official act being the formation of an advisory committee.[56] The

Department has advisory committees in twenty-four different areas ranging from air sanitation to vector control.[57] The composition of the Advisory Committee for the Medical Care Studies Unit illustrates very well the wide range of representation that may be found on advisory committees. Medical care is an area in which public health and other government agencies on the one hand and the private practice of medicine on the other each have an interest and the boundary line between the two is not precisely defined. The ten members of this advisory committee are: the Directors of the State Departments of Public Health, Social Welfare, and Mental Hygiene; the Presidents of the California Medical Association and the California Physicians' Service; a member of the Board of Directors of the California Dental Association; the Director of Medical Economics of the Kaiser Foundation Health Plan; a county hospital administrator; a local health officer; and an economic consultant. There are advisory committees even on activities entirely within the Department. Some examples are the Intradepartmental Data Processing Advisory Committee, the Intradepartmental Research Advisory Committee, and the Personnel and Training Advisory Committee. So the formation of an advisory committee for the CI&A program was an instance of the use of an accepted mechanism in the public health field.[58]

The Informal Organization

The informal organization "refers to interpersonal relations in the organization that affect decisions within it but either are omitted from the formal scheme or are not consistent with that scheme."[59] The communications flow chart in Exhibit L shows that

the informal organization is indispensable to the day-to-day operation of the CI&A program. Block B of the flow chart is only a summary of the many informal contacts that occur between the members of the Divisions of Preventive Medical Services and Community Health Services.

Interpersonal relationships can arise in a variety of ways. For example, some members of the Divisions of Community Health Services and Preventive Medical Services ride in the same car pool. As one member of the car pool expressed it, "We get a number of things ironed out on the way home."[60] Joint visits by members of these two divisions to local health departments to review CI&A programs also help to build the informal organization.

Physical location has its effect on the relationships that will develop. Members of the Division of Preventive Medical Services occupy offices in several different buildings. The Assistant Chief, Medical, and Assistant Chief, Administrative, have offices on the same floor of the main building as the Division of Community Health Services. These members of the Division of Preventive Medical Services have much more face-to-face interaction with the members of the Division of Community Health Services than do the members of the CI&A Unit who are located in another building. Several times the author found the members of the CI&A Unit making plans based on policies that the author knew had been changed from his contacts in the main building.

Another important factor in building the informal organization is the location of a cafeteria in the main office building. Individuals meet there frequently not only for luncheon but also for regularly scheduled coffee breaks. The conduct of Departmental business

is facilitated by the institutionalized means of easy access to administrative personnel provided by the existence of the cafeteria. As one member of the Department remarked to the author, "You can get a 'yes' in the cafeteria more easily than you can in a person's office." Another member is discussing the informal organization with the author said he relied greatly upon the cafeteria as a communication device. He put it this way, "If I didn't have the coffee shop I don't know what I'd do."

Commitment

Organizations develop obligations over a period of time to act in a certain way. Such obligations are called commitments.[61]

> The systematized commitments of an organization define its character. Day-to-day decision, relevant to the actual problems met in the translation of policy into action, create precedents, alliances, effective symbols, and personal loyalties which transform the organization from a profane, manipulable instrument into something having a sacred status and thus resistant to treatment simply as a means to some external goal.[62]

> Plans and programs reflect the freedom of technical or ideal choice, but organized action cannot escape involvement, a commitment to personnel or institutions or procedures which effectively qualifies the initial plan.[63]

Commitments make for stability in organizational behavior. They may be embodied in the budget, in standard operating procedures, or, less formally, in the organization's "memory." By these means the commitments are institutionalized in the organization.[64] Two examples of commitments by the State Department to local health departments are given. The first involves bringing local health officers into the decision making process for the allocation of federal formula grants and the second involves passing on to local health officers a substantial part of the CI&A formula grant.

The Director has made it a practice personally to bring problems affecting local health departments to the semi-annual meetings of the CCLHO and to certain meetings of its standing committees. Although the decisions on allocation of the federal formula grants are part of the Department's duties, the decisions naturally affect local health departments. By consistently informing local health officers of the details about changes in federal formula grants and asking for their advice, the Department has brought the local health officers into the policy determination of the allocation of the formula grants. The pattern in which the Department consults with local health officers has been set so that unilateral action by the Department is unlikely.

The Department has allocated a substantial part of the CI&A formula grant to local health departments in each of the three fiscal years the program has been in existence. In turn, local health officers recognizing a commitment in this flow of funds (1) have established chronic disease programs, (2) have agreed to a change in the California Health & Safety Code which makes it mandatory for every local health department receiving State subvention funds to have a chronic disease program, (3) have had their chronic disease programs approved by their county boards of supervisors, (4) have had civil service positions created where necessary, and (5) have recruited personnel to run the programs. Therefore, when the Department discussed the 1964-65 allocation of the CI&A formula grant, alternatives involving the elimination of allocation of CI&A funds to local health departments were no longer feasible because of the commitment by the Department to local health departments.

Displacement of Goals

> Adherence to rules, originally conceived as a means, become transformed into an end-in-itself; there occurs the familiar process of displacement of goals whereby "an instrumental value becomes a terminal value." (Italics in original)[65]

An example of displacement of goals can be found in the CI&A program. The Departmental rules and regulations governing the allocation of the CI&A grant seem to have become valued as ends-in-themselves rather than as means to achieving a goal. The purpose of the CI&A formula grants to the states was to improve the outside-the-hospital services for the chronically ill and aged. To achieve this goal, evaluation by the Department of its use of the CI&A funds is necessary. However, the emphasis in the Department seems to be on administering the program, i.e., keeping files, scheduling meetings, sending out information by a certain date, and doing other things to ensure a smooth flow of reports, information, instructions, and comments between local health departments and the State Department and among bureaus and divisions within the State Department, rather than evaluating it. There is no lack in the quantity of information flowing through the various communication channels, but the data needed to evaluate CI&A programs in local health departments are lacking.

The complexity of the administration of the CI&A grant is shown in the flow chart in Exhibit L. Block B. shows the amount of interaction between the Divisions of Preventive Medical Services and Community Health Services in administering the program. For example, each year there have been meetings to revise the instructions to local health officers about their CI&A allotments and to revise the application forms and the reporting forms. These meetings are attended by

the Assistant Division Chiefs of the Divisions of Preventive Medical Services and Community Health Services and their subordinates. Drafts of revised forms are circulated in the Department for comment. However, the information needed to evaluate the CI&A programs in local health departments is not collected.

The amount of work that was involved in the proposed change to reimbursable contracts is given in the section "The 1963-64 Allocation of CI&A Funds" in Chapter 3. Reimbursable contracts were a means of accounting for the CI&A funds, not for evaluating the program. Quarterly reports were substituted in 1963-64 for the annual reports the local health officers were previously required to furnish about their CI&A programs. But again the information needed to evaluate the programs was not collected. It is true that the Department has accountability requirements to the Public Health Service for the use of the CI&A formula grant in California and therefore must fulfill these requirements. However, this part of the CI&A program seems to dominate the entire program.

Succession of Goals

Succession of goals refers to innovating behavior in organizations. Instead of goals being displaced by means that become ends-in-themselves, the goals are succeeded by more advanced objectives.

> The attainment of organizational objectives generates a strain toward finding new objectives. To provide incentives for its members and to justify its existence, an organization has to adopt new goals as its old ones are realized. . . . Even complex tasks tended to become routin as they were fully mastered, and this also created a succession of goals, a desire for new challenges to make the job more stimulating again.[66]

The Division of Preventive Medical Services has shown behavior consistent with the concept of succession of goals. The pattern in the Division seems to be to take on a new program, get it running smoothly, and then to move onto another program. In this Division during the past three years several new activities and programs have been undertaken. Among them are studies (1) in location of hospitals, (2) in utilization of hospitals, (3) in evaluation of hospital care, (4) in evaluation of health insurance plans for State employees, (5) in control of cigarette smoking, (6) in chronic illness and aging, (7) in neurological and sensory diseases, and (8) in health problems of seasonal agricultural workers and their families. The Chief of this Division has repeatedly urged public health officials at the State and local levels to move into new areas and to tackle new problems.

Public health in the United States, having largely achieved its traditional goals of sanitation and the control of communicable diseases, now has the problem of defining its role and setting new goals. As pointed out in Appendix III the situation today is in a state of flux with much discussion but with few reports of costs and benefits of public health programs actually undertaken in the suggested new areas. The Department has this problem in common with the whole field of public health. In addition, the Department in the post-World War II era has pursued a major goal of strengthening local health departments. Though there are still areas of weakness, substantial progress has been made towards achieving this goal. Thus the Department has largely attained both the traditional goals of public health and an important goal of its won. This makes the selection of new

goals even more difficult for the Department than for the rest of the public health field.[67]

Changing Needs of an Organization

One reason for the seeming difficulty in getting some local health officers to undertake programs in the new areas of public health may be explained in terms of different stages of development of an organization requiring different types of individuals. Selznick puts it this way. "As new problems emerge, individuals whose ways of thinking and responding served the organization well in an early stage may be ill-fitted for the new tasks."[68] Merton in discussing trained incapactiy has this comment, "Actions based upon training and skills which have been successfully applied in the past may result in inappropriate responses under changed conditions."[69] (Italics in original.) Leavitt mentions the case of the union leader who was useful in winning the battle for company recognition of the union but was out of place when the organizational war was over and the relationship between union and management became more harmonious.[70]

Personal observation has confirmed the finding that many of the positions in the field of public health which are occupied by physicians have to do with matters where the clinical training of the physician has little if any relevance.[71] The problems of allocation of resources and quantitative evaluation of alternative health programs are of increasing importance in the public health field, and the physician is not trained in these areas.

Ability Versus Authority

In Chapter 8 there is a suggestion that persons with backgrounds in economics and operations research could be useful in solving certain public health problems -- or, more generally, problems of the health industry. If members of these disciplines are recruited to public health there may be some unanticipated consequences. What these could be is contained in a book by Victor Thompson.[72] Thompson's thesis is that the most symptomatic characteristic of modern bureaucracy is the growing imbalance between ability and authority.

> Modern bureaucracy attempts to fit specialization into the older hierarchical framework. The fitting is more and more difficult. There is a growing gap between the right to decide, which is authority, and the power to do, which is specialized ability. . . . This situation produces tensions and strains the willingness to cooperate.[73]

With physicians in the positions of authority in the public health field and specialists representing disciplines new to public health with the ability to use tools and techniques unfamiliar to physicians -- there easily could develop the strains and tensions Thompson predicts.

Some Concepts from Cyert and March's Behavioral Theory of the Firm

A recent book, The Behavioral Theory of the Firm, deals with "the business firm and the way it makes economic decisions."[74] Naturally, much of the book is written in terms of prices, profits, sales, production, and business expectations. However, because the authors developed "a set of summary concepts and relations that could be used to understand behavior of a variety of organizations in a variety of decision situations,"[75] their results were applied in this study.

As it turned out, the usefulness of these results in this particular study was limited because their model places emphasis on short-run adaptive behavior. Some of the concepts which Cyert and March develop and elaborate in their descriptive approach will be discussed with reference to public health. These concepts include organizational slack, problemistic search, uncertainty avoidance, feedback, and organizational learning.

Organizational Slack

"Slack consists of the amount of resources channeled into the satisfaction of individual and subgroup objectives."[76] It is the "difference between total resources and total necessary payments."[77] Organizational slack may have several consequences. Two examples taken from the CI&A program are given. One led to innovation within a division and the other led to intergroup conflict.

The additional CI&A funds that became available in the fall of 1962 when the actual federal grant turned out to be larger than the Department had anticipated ($829,800 instead of $712,600) represented slack for the Division of Preventive Medical Services. Because payments to other participants had already been made for 1962-63 (the allocation of $578,680 to local health departments and $68,000 to the Bureau of Hospitals) the Division was free to consider other ways to use the additional $117,200. The Chief of the Division recommended to the Director that the money be used to establish the CI&A Contract program in his Division.

The behavioral theory of the firm predicts that when resources become scarce there is renewed bargaining over the payments made in

better times.[78] When $50,000 originally budgeted for the CI&A Contract program in 1963-64 was used to support the Medical Care Studies Unit, the Chief of the CI&A Unit and the Chief of the Bureau of Chronic Diseases tried to replace this loss by getting partial control of the Nursing Home Contract program in the Bureau of Hospitals which was supported by CI&A funds. As it turned out the Bureau of Hospitals gave up the Nursing Home Contract program. Beginning with 1964-65 this program will be administered by the CI&A Unit as part of its CI&A Contract program.

Problemistic Search and Incrementalism

Cyert and March stress that search in an organization is stimulated by a problem rather than by random curiosity or by a search for understanding. Problemistic search is directed towards finding a solution to a specific problem.

> There is search when existing decisions are perceived as inadequate. . . . The first satisfactory alternative evoked is accepted. Where an existing policy satisfies the goals, there is little search for alternatives. . . . We assume that organizations make decisions by solving a series of problems; each problem is solved as it arises; the organization then waits for another problem to appear. . . . This assumption of a 'fire department' organization is one of the most conspicuous features of our models.[79]

Because the "incrementalism" of Lindblom[80] has many features in common with Cyert and March's behavioral theory of the firm, these concepts will be discussed together. Both are descriptive theories, Lindblom's is derived from observation of decision making in government while Cyert and March's is derived from observation of decision making within the firm. An example of the similarity of the two approaches is shown by comparing what they say about search for a solution to a problem.

Cyert and March state that search is based initially on two simple rules: "(1) search in the neighborhood of the problem symptom and (2) search in the neighborhood of the current alternative."[81] For Lindblom, investigations "are focused on incremental alternation of existing social states."[82]

Some Departmental behavior can be explained in terms of search. An example from the November 10, 1961, decision of the allocation of the first CI&A grant supports this. Then two examples from the CI&A program are given where the concept of search does not lead directly to the selection of an alternative because there is more than one satisfactory alternative available. Finally a class of behavior that the concept of search as defined above omits is mentioned.

In order for the states to get CI&A funds the Public Health Service requires them to have, among other things, an organized health department and to submit an acceptable plan. In the November 10, 1961, decision the Department adopted similar rules of eligibility for funds with respect to local health departments. Only those jurisdictions with full-time health departments were eligible and they had to submit an acceptable plan to the Department for use of the CI&A money.

However, the search model with its sequential attention to alternatives and selection of the first satisfactory alternative needs to be modified when there are two or more satisfactory alternatives evoked simultaneously.[83] The federal formula funds for heart and cancer are retained at the State level while maternal and child health and general health funds are largely passed on to local health departments. So in discussions within the Department prior to November 10,

1961, about retaining the CI&A grant at the State level or passing it on to local health departments there were two satisfactory alternatives available, both in the neighborhood of the problem symptom. Proponents of each alternative could point to precedents to support their solution. The same situation of two readily available, satisfactory alternatives occurred with respect to the formula for allocating the CI&A grant to the local health departments. The State subvention funds are allocated to local health departments on a population basis with a lump sum minimum, while the formula the Public Health Service uses to allocate the CI&A grant to the states involves per capita income and population over 65 in addition to total population and a lump sum minimum.

The concept of problemistic search seems to leave out the conscious pursuit of goals by a decision maker and the phenomenon of the succession of goals. The succession of goals was discussed in an earlier section of this chapter. A decision maker pursuing certain goals over a long period of time is taken up later in this chapter in the section, "Windfallism."

Uncertainty Avoidance and Feedback

A way of avoiding uncertainty is to negotiate with the environment, "seek ways to make it controllable."[84] The use of advisory committees and the manner in which the Department works with the local health departments through the California Conference of Local Health Officers are ways in which the Department interacts with its environment rather than taking the environment as an exogenous factor.

To overcome problems that may arise from the general difficulty of measuring progress in many public health activities, the Director exposes himself to feedback from groups affected by Departmental decisions. In some cases there is feedback because of the public nature of the Department. For example, the meetings of the State Board of Public Health, of which the Director is the executive officer, are open to the public, and meetings alternate between Berkeley and Los Angeles. In other cases the Director takes the initiative. He attends the semi-annual meetings of the CCLHO. After making a general review of developments in the public health field since the last CCLHO meeting he answers questions from the local health officers. A member of the Director's Office attends the meetings of the committees of the CCLHO. Within the Department the monthly Administrative Staff meetings give bureau chiefs and other key Departmental personnel an opportunity to present items directly to the Director and to ask questions.

Another method cited by Cyert and March for avoiding uncertainty is the "feedback-react decision procedures."[85] These procedures focus on short-run behavior based on reaction to feedback. Organizations "may and frequently do, forecast sales and develop some long-run production plans on paper, but the actual production decisions are more frequently dominated by day-to-day and week-to-week feedback data from inventory, recent sales, and salesmen."[86] Because Cyert and March focus on short-run decisions based on feedback they encounter difficulty when they discuss innovation. Their attempt to explain innovation in the same analytical framework used for production-level decisions was not successful.[87] Innovating behavior found in the

Department based on long-run pursuit of goals is discussed in this chapter in the section, "Windfallism."

Cybernetics, from whence the term feedback is taken, concerns "control and communication in the animal and the machine."[88] The emphasis is on a control system which has been defined as "an apparatus designed to maintain some 'state' of the system in the face of changes in its environment."[89] Some difficulties in applying this concept in the public health field are that the result of an action must be measurable, and measurable in the same terms as the goal so that progress or lack of it can be ascertained. The corrective action taken upon result of feedback presupposes that the relationship between input and output is known. In the case of the allocation of the CI&A funds the Department has only a general idea of how the funds are used in local health department programs and in demonstrations funded under the CI&A Contract program. The present feedback system does not enable the Department to judge whether more effective use of the CI&A money could be obtained by its reallocation. Some suggestions for improving this situation are contained in Chapter 8.

Organizational Learning

Organizational learning is closely related to feedback. Wiener, after defining feedback as a method of controlling a system by reinserting into it the results of its past performance, goes on to make this distinction between feedback and learning.

> If these results are merely used as numerical data for the criticism of the system and its regulation, we have the simple feedback of the control engineers. If, however, the information which proceeds backward from the performance is

> able to change the general method and pattern of perform ance, we have a process which may well be called learning.[90]

An example of learning in a system that includes physicians, hospitals, and laboratories involves the diagnosis of cancer. There is evidence that the increasing use of microscopic examination of tissue (histopathology) to confirm a diagnosis of cancer has resulted in more correct diagnoses of cancer by physicians. Following the admission of a patient to a hospital based on a physician's diagnosis of cancer, histopathology either confirms or refutes the diagnosis. The physician is given this information. The hypothesis that feedback has resulted in learning is consistent with the observed increase in the per cent of cases diagnosed as cancer and subsequently confirmed by histopathology of the total cases diagnosed as cancer during the period 1945 to 1960.[91]

The exchange of correspondence between the Divisions of Preventive Medical Services and Community Health Services about the CI&A and MCH programs in local health departments which resulted in the August 2, 1963, meeting in the Director's office can be analyzed in terms of lack of organizational learning. Because the information requested by the State Department from local health departments was not specific enough to evaluate the MCH and CI&A programs in local health departments, let alone to compare the programs of different departments, the benefits obtained by the Department's allocation of the federal grants were not clearly known. This led to a situation in which the Division of Preventive Medical Services said that the written documentation from local health departments was bad while the Division of Community Health Services said that the actual situation in the field

was better than appeared on paper. Both statements were probably true, but because little learning had taken place there was no way to resolve the conflict between the two divisions.

Windfallism

Incrementalism and the behavioral theory of the firm do not effectively treat innovation and long-run pursuit of goals.[92] It appears that another term is needed to describe the phenomenon of a decision maker pursuing a goal over a long period of time and seizing upon an unexpected opportunity -- a windfall -- to introduce a new program which would help achieve his goal. Three instances of this, each occurring in the Division of Preventive Medical Services when additional funds unexpectedly became available, can be cited. They are (1) the establishment of the Local Special Projects program in 1957, (2) the initiation of the CI&A Contract program in 1962, and (3) the formal establishment of the Medical Care Studies Unit in 1963. The Chief of the Division of Preventive Medical Services suggested the CI&A Contract program and the Medical Care Studies Unit. He was Chief of the Bureau of Chronic Diseases in 1957 and was instrumental along with the present Chief of the Division of Research in setting up the Local Special Project program.

These three examples have major features in common: (1) funds unexpectedly became available, (2) these funds were used to set up a new program rather than to expand an existing program, (3) the new program had a research orientation, (4) the Division had more control in the new program as compared with the existing program over what

projects would be funded and the manner in which the research would be conducted, and (5) the Chief of the Division of Preventive Medical Services believed that the new program would carry out the intent of Congress better than the existing program.

Gresham's Law of Planning

Simon popularized "Gresham's Law of Planning" which states that "programmed activity tends to drive out nonprogrammed activity."[93] This Law expresses the belief that daily routine will take precedence over planning.[94] It follows from this law that in order to get a nonprogrammed activity specific units must be created in the organization to do it. The organizational structure of the National Foundation for Infantile Paralysis is one example of how to deal with nonprogrammed activity.[95] Local chapters were not allowed to do research; all research was done or sponsored by headquarters. The reason for this arragnement was that the local chapters had a programmed activity -- caring for polio patients -- which would have driven out the nonprogrammed activity -- research to eliminate polio. Had chapters been given the responsibility for research, they might easily have neglecte research in favor of caring for patients.

The hypothesis that Gresham's Law leads to in the public health field is that local health departments, whose primary responsibilities lie in services at the local level -- a programmed activity -- will not be able to accomplish significant research -- a nonprogrammed activity. Two pieces of evidence support this hypothesis. In the CI&A program most local health officers have elected to use their

allotment of funds for extension of services rather than for studies to demonstrate new methods for providing outside-the-hospital services for the chronically ill and aged. Secondly, the Local Special Projects Program which was started by the Department in 1957 to enable local health officers to obtain funds for research projects received this evaluation in 1963.

> Only three publications in the professional literature resulted from the 19 projects. . . . This appears to be an extremely modest output. . . . One of the difficulties regular staff members [of local health departments] encountered was finding time to plan the [research] projects.[96]

Although some local health officers do research, it is the author's impression after a year of close contact with the public health field in California that only a few of the local health officers are oriented to research. If it is true that most of them cannot be expected to do research, then the State Department of Public Health or the University of California would have the primarly responsibility for research in public health in California.[97]

Chapter 6. THE ANALYSIS OF THE CHRONICALLY ILL AND AGED PROGRAM

Introduction

Building on the analysis of the previous chapter this chapter concentrates on the problem of the Department's allocation of the 1964-65 CI&A federal formula grant. The allocation takes place within the framework described in the previous chapters. The allocation problem facing the Department is broken down into its four elements: the environment, the decision maker, the objectives, and the alternatives. Each part is discussed in turn. The model built from these parts is covered in Chapter 8.

The Environment

The environmental setting of a problem consists of those things that influence the solution of the problem but which the decision maker cannot change, at least in the short run. The significance of the environment lies in the extent to which it shapes and limits the Department's plans and operations.

Included in the environment within which the Department allocates the CI&A grant are several organizations which the Department must take into consideration in planning its CI&A program. These organizations include other State bodies that can exert control over the Department, other State agencies that have health program functions, and other organizations that deal with CI&A activities such as the United States

Public Health Service, local health departments, the California Medical Association, county medical societies, and voluntary health organizations. The environment also includes the technology of the chronically ill and aging field and the effect the Department's lack of knowledge about the technology has on the operation of the CI&A program.

Besides the other organizations that influence the Department's operations, the environment includes the financial resources which support the Department. Exhibit K shows the Department's budget in four selected fiscal years, 1951-52, 1952-53, 1961-62, and 1962-63, and converts the total Departmental budget into per capita figures in constant 1951-52 dollars. These calculations show that in terms of per capita constant dollars the Department's budget fell after 1951-52 and did not rise again to the 1951-52 level until 1962-63. It is no wonder that the increase in federal funds in 1961 caused intense interest in several bureaus and divisions in the Department and resulted in much discussion about ways to use the money. The local health officers' concern over the increase in federal funds in 1961 is related in the section, "Events in California Prior to November 10, 1961," in Chapter 3. Because the per capita State subsidy to local health departments had not been increased since 1947 and because increases in public health funds were difficult to get at the local level, the local health officers wanted a share in the increased federal funds and fought hard to get it.

Control Over the Department by Other State Organizations

There are several State bodies which can influence Departmental behavior and thus could affect the CI&A program. This section will deal with (1) the Health and Welfare Agency, (2) the State Legislature,

(3) the State Personnel Board, and (4) the Department of Finance. Because of its importance in the operation in the CI&A program the Department of Finance is discussed in the section, "The Objectives," later in this chapter.

The Department of Public Health is one of four departments in the Health and Welfare Agency. There have been three directors of the Agency since it was established in 1961. The third director was appointed in May, 1964, but his appointment does not become effective until July 1. The rapid turnover in directors during the relatively short life of this Agency has meant that up to now the Agency has had little influence on Departmental operations. However, the administrator of the Agency can choose the extent to which he involves himself in the operations of the Department of Public Health.

The State Legislature has great power over the Department through its control of funds and review of the budget. In addition to the negative forms of control based on withholding funds or deleting positions, the Legislature can create. As was mentioned in Chapter 2 the Legislature created the Divisions of Dental Health and Alcoholic Rehabilitation within the Department. The Legislative Analyst heads the investigative staff for the State Legislature. Each year his investigators scrutinize the line item budgets of all State agencies and prepare a lengthy report. The most recent effort ran 877 pages.[1] The report is used by the legislative committees in their annual hearings on the Governor's budget. Use of the CI&A funds to establish a CI&A Unit within the Department was approved by the State Legislature when the Legislature approved the Governor's budget which contained

a one-sentence statement that seven positions were established in the Department of Public Health for a federally financed program for the chronically ill and aged.

Taking an opposite action, the State Legislature, for example, killed a recent Departmental proposal even though no State funds were involved. The Director had proposed in the Department's 1964-65 budget that a Division of International Health be created within the Department. Its budget of $125,000 was to be met by a private foundation. Although no State funds were requested, the Legislature killed the proposal at its spring, 1964, budget session. The Legislature thought that the Department of Public Health should concentrate its efforts on the health problems in California and suggested that there were other organizations that could do the work of the proposed Division of International Health.

The State Personnel Board is listed as part of the environment because it administers the California State civil service system. Civil service was discussed in connection with the section, "Identification or Organizational Loyalty," in Chapter 5. Approval by the Board would be needed if the Department wished to create a new job classification or classification series. Any changes in salary schedules require the approval of the State Personnel Board.

Competition and Fragmentation in the Provision of Public Health Services

There is competition among various State departments to administer health programs in California. For example the former Director of the State Health and Welfare Agency asked the Department of Public Health and the Department of Mental Hygiene to submit separate proposals for

the use of the funds made available by recent federal legislation in the field of mental retardation. There was the understanding that only one of the proposals could be implemented.

The Department does not have control over all State programs affecting the chronically ill and aged. Therefore, the Department either has to enlist the cooperation of other State agencies in carrying out a program or it settles for less than a comprehensive job by limiting itself to its jurisdictional area. It has already been mentioned that in the field of medical care there are twenty such programs in ten different State agencies. For example, expenditures for the Medical Assistance for the Aged program which is administered by the Department of Social Welfare are estimated at almost $100,000,000 for 1964-65. This sum is greater than the entire budget of the Department of Public Health for 1964-65. In the field of licensing, the Department of Public Health licenses hospitals and nursing homes while the Department of Social Welfare licenses boarding homes, rest homes, and other institutions for the elderly.

The fragmentation of health services similar to that at the State level is also found at the local level.[2] The three county agencies having the most to do with public health programs for the chronically ill and aged are the local health department, the county hospital, and the county welfare department. In only one county are these three agencies under the local health officer. In a few counties the local health officer is also the director of the county hospital. Typically the three positions are filled by three different individuals. Some CI&A programs at the local level, such as a comprehensive home nursing care program, require the cooperation of all three agencies.

Other Organizations that Influence the Department

Still other organizations that influence the Department include the Public Health Service, the California Medical Association, county medical societies, and voluntary health organizations.

The organizations that make up the environment of the Department of Public Health seem to lie on a continuum that ranges from those organizations that influence the Department's plans and operations in general to those that have a direct influence on the Department's decision to allocate the 1964-65 CI&A formula grant. This study puts the State Legislature, the State Personnel Board, and the Health and Welfare Agency in the category of organizations that exert general influence on the Department of Public Health, and it puts the Department of Finance, the Public Health Service, the California Medical Association, county medical societies, voluntary health organizations, and local health departments in the category of organizations that have much more direct influence over the Department's annual allocation of the CI&A grant. The organizations in the latter category reappear in the section, "The Objectives," later in this chapter. The organizations in the former category do not. Once it was decided in 1961 that California would accept the CI&A federal formula grant the State Legislature was not overly concerned with the Department's administration of the program. Accepting federal funds to help the chronically ill and aged was not a controversial topic. All the departments in the State government operate under the civil service system. The civil service regulations enforced by the State Personnel Board are just the rules of the game. Up to now the administrators of the Health

and Welfare Agency have not concerned themselves with the Department's operation of the CI&A program.

Local Health Departments

Local health departments play such an important role in the CI&A program that they are discussed in this section as well as in the section, "The Objectives," later in the chapter. Although the Department allocates most of the CI&A formula grant to local health departments it has difficulty in influencing the local health departments' use of CI&A funds and other federal formula grant funds because local health departments (1) are financially independent of the Department, (2) are reluctant to build new programs based on federal funds, and (3) have a wide choice of approved ways to use federal funds, especially in a broad categorical area such as chronic illness and aging.

(1) Financial Independence

The budgets of all local health departments in 1962-63 totaled approximately $55.1 million. Of this amount, local funds accounted for $34.6 million, State funds for $18.3 million, and federal funds for $2.2 million. The California Health and Safety Code provides that if a local health department is certified by the State Department the local health department automatically receives its share of the State "Assistance to Local Health Departments" funds based on a per capita allotment. Departmental personnel could think of only one instance during the past fifteen years when a local health department was not certified and did not get its share of State funds. Other State funds such as the "Assistance to Counties for Care of Crippled Children" are allocated on various matching bases which make

State funds available if counties make certain expenditures. Thus in any given year the State Department of Public Health exercises little control over the allocation of State public health funds. Therefore, the Department has no control over the use of local funds and little control over the use of State funds by certified local health departments. The Department's functions are mainly to administer (account for) the State funds, to provide consultation to local health departments, and to aid in their program development. However, over a period of time the Department can and does work with members of the State Legislature, the State Board of Health, and the Conference of Local Health Officers to change the California Health and Safety Code.

The Department has real discretion in its allocation of the federal formula grants. However, the $2.2 million from federal formula grants that was allocated for the support of local health department programs was only four per cent of the total of the budgets of all local health departments which amounted to $55.1 million in 1962-63. The CI&A funds allocated by the Department to local health departments in 1962-63 amounted to $584,730, slightly more than one per cent of the $55.1 million.

The merger of the Los Angeles City and Pasadena City Health Departments with the Los Angeles County Health Department on July 1, 1964, will result in one local health department to serve 36 percent of the State's population. The enlarged health department will employ 1,730 persons, several hundred more than the State Department of Public Health employs. The proposed 1964-65 budget for this new health department is $15,250,682 of which $12,612,158 comes from local sources,

$1,652,520 from State subvention funds, and $986,004 from federal funds. As pointed out earlier in this section the State Department has real discretion only in the allocation of federal funds. The federal funds make up approximately six percent of the Los Angeles County Health Department's 1964-65 budget. With 94 percent of its budget coming from State subvention funds and local funds and with a staff larger than the State Department, the Los Angeles County Health Department can be relatively independent of the State Department.

The distribution of the CI&A funds among the 38 local health departments that elected to participate in the CI&A program in 1962-63 and 1963-64 is given in the following table.

Distribution of CI&A Funds to Local Health Departments

Amount of Allocation	Number of Local Health Departments in Category	
	1962-63	1963-64
$ 102,000	1	1
93,000	1	1
45,000	1	1
30- 40,000	1	0
20- 30,000	2	5
10- 20,000	10	7
5- 10,000	12	12
1- 5,000	10	11
	38	38

This table for the CI&A program, shows that approximately 60 per cent of the local health departments received less than $10,000 each in CI&A allocations in 1962-63 and in 1963-64. To give an idea of the magnitude of the CI&A allocation compared to the total budget of a local health department two typical examples are cited. One department with a budget of $2,500,000 received a $15,000 CI&A allotment. Another with a budget of $500,000 received $3,600. In each case the CI&A allotment is less than one per cent of the total budget.

The conclusion of this section is that because the Department controls the allocation of such a small per cent of the funds which support local health departments its influence on local health departments' programs cannot come from fiscal measures. It should be remembered that local health departments are a part of their county or city governments and not a branch of the State Department.

(2) Reluctance to Build New Programs Based on Federal Funds

There are several reasons why local health officers are reluctant to take federal funds allocated by the State Department, especially to support new programs in their departments. These reasons include the large number of federal programs with separate record keeping and reporting requirements and the uncertainty surrounding the continuation of federal programs. The federal funds are fragmented into many programs, each requiring a separate application if a local health department wishes to apply for funds. Twenty such programs are listed in Exhibit P. Success in obtaining these funds brings with it accounting and reporting requirements. In view of the relatively small sums involved the added overhead appears as a burden to local health

officers. Reactions of local health officers to the accounting and reporting requirements were given in the section, "Dysfunctional Consequences," in Chapter 5.

Problems arise when the federal government cuts the funds available for a particular program. The local health officer must decide whether to try to find money elsewhere to continue the program or cut back or discontinue the program. To get the money from local sources means the local health officer must negotiate with his county administrative officer and board of supervisors. To cut back or discontinue a program means transferring or laying off personnel and probably receiving complaints from the recipients of the reduced or eliminated service. These administrative problems cause the county boards of supervisors as well as the local health officers to view federal funds with suspicion. When President Johnson submitted his budget to Congress in January, 1964, he recommended cuts in the CI&A federal formula grant as well as in two other formula grants. This meant that if the recommendation were to be approved by Congress, California would receive approximately nine per cent less CI&A money in 1964-65 than in 1963-64. When this news was given to the local health officers attending the January, 1964, meeting of the Committee on Administrative Practices one local health officer made the following comment to the Director.

> This is why my board [of supervisors] doesn't want me to handle any of your funny money. Build something up, tear it down, expand and then have to retrench. . . . This is why local governments don't want any of this bait money the State and federal governments are always offering us.

In 1963-64 seven of the forty-five local health departments eligible to participate in the CI&A program did not choose to do so

In addition, four others did not request the full amount available to them. For 1964-65 seven of the forty-three[3] eligible local health departments did not choose to participate in the CI&A program and five others did not request the full amount of their tentative CI&A allotment. Thus about one-fourth of local health departments either refused the federal money or did not take as much as was offered them.

Consistent with the uncertainty surrounding the continuation of federal funds for a particular program, the local health officers have played it safe in their use of CI&A funds. The table in the next section shows that in 1963-64 35 of the 62 CI&A programs in local health departments fell into the general categories of home nursing services and disease detection. These programs are established programs well known in the public health field. They are easy to staff and get in operation and relatively easy to support if necessary with local funds. A public health nurse is the only professional person needed to implement a home nursing program. Disease detection programs typically hire a private physician on a fee for service basis to run a clinic one day a week or one day a month. In either case a local health officer has much flexibility if federal funds are cut off. Public health nurses are used in many different programs. A local health officer could easily shift a public health nurse from a home nursing program to an authorized but vacant position in another part of his department. The arrangement with a private physician could be terminated. These two programs do not require a local health officer to get a new professional classification authorized by his county civil service system or to recruit specialized talent. In addition, it is

also easier for a local health officer to get his board of supervisors to approve an expansion of an existing program or the creation of a new program in a well established kind of service than to get them to approve the creation of a program that pioneers in new methods of providing outside-the-hospital services for the chronically ill and aged.

(3) Wide Variety of Approved Ways to Use CI&A Funds

There are many different programs that the Public Health Service has listed as eligible for support by CI&A funds. A page taken from a Public Health Service document showing the wide range of projects possible under the formula grant is reproduced as Exhibit Q. This information was given to local health officers in 1961 to provide them with examples of programs they could implement with their CI&A allotment. Each year the instructions to local health officers about the CI&A program have repeated the wide variety of ways the allotment may be used. The following table summarizes the approved CI&A programs in local health departments in 1963-64.

Local Health Department Programs Supported by CI&A Funds, 1963-64

Types of Programs (11)	Number of Programs (62)
Home Nursing Services	22
Disease Detection	13
Nutrition Services	4
Homemaker Services	4
Nursing Home Services	3
Rehabilitation Activities	3
Chronic Disease Departments	3
Surveys and Studies	3
Training and Education	3
Health Education	3
Volunteer Services	1

The wide variety of approved ways local health departments may use their CI&A allotment reduces the State Department's ability to influence the use of CI&A funds at the local level should the Department wish to do so. After local health departments start CI&A programs that are on the Department's list of approved CI&A programs, it would be difficult for the Department suddenly to say to the local health departments that some of these programs would no longer be eligible for support by CI&A funds.

Lack of Basic Information about the CI&A Program

There is a definite lack of knowledge of the technology of providing outside-the-hospital services for the chronically ill and aged. In this section two examples of such lack of knowledge are given, one at the State level and one at the individual program level. Then the three main categories into which the Department has allocated the CI&A formula grant -- allocations to local health departments primarily for services at the local level; allocations for studies, experiments, and demonstrations mainly for studies supported by the CI&A Contract program; and allocations to the Department to pay for the expenses the Department incurs in administering and promoting the CI&A program -- are examined briefly to show that the information needed to evaluate the use of CI&A funds in these three categories is not available.

Although more is known about the extent and types of chronic illness in the State of California as a whole than in individual counties, it is difficult to obtain from the State data what the demand is for outside-the-hospital services for the chronically ill and aged. For example, a classification of the total population in California hospitals by diagnostic category and type of payment is not available. In fact, the total population at any one time is not known. Therefore, it is impossible to estimate the cost in terms of money and trained personnel of providing home care nursing throughout the State. Another limitation on the use of State data, which are collected by the Department through periodic sample surveys of households, is that the data are not available by counties and counties furnish most of the public health services in California.[4]

Individual CI&A programs have not been evaluated. For example, a popular CI&A program in local health departments has been multiphasic screening for such diseases as diabetes and glaucoma. Screening does not result in a statement that a certain person has a certain disease. Rather, screening is used to examine quickly and inexpensively a large number of persons to identify those who may have a disease and to get them to see their own physicians for further examination and diagnosis. However, it is not known what an efficient screening program is. For example, some screening programs get their clients from senior citizen clubs, some from applicants for Old Age Security, and some from visitors to county fairs. In screening for diabetes a standardized testing procedure is not uniformly applied. Even if the same equipment is used, different screening clinics select different blood sugar levels for the line between a "positive" finding with a recommendation to the person to see his physician and a "not positive" finding. Because individual CI&A programs have not been evaluated it is not possible to decide on the basis of a benefit-cost analysis which one of two programs, say multiphasic screening or home care nursing, should be supported in a local health department if funds are limited.

Exhibit O shows that in the three years the CI&A program has been in existence the Department has allocated $1.5 million to local health departments where the money has been used primarily for services. Thus local health departments have received approximately two-thirds of the total of $2.2 million California has received in CI&A federal formula grants. However, with few exceptions, the reports submitted by local health officers on their CI&A programs do not contain information needed to make even a rough evaluation of their programs. One reason

for this is the lack of statistical personnel in local health departments. Another reason is that the State Department has not spelled out to local health departments the service statistics needed to evaluate programs. There are no Departmental recommendations based on studies of CI&A programs to guide local health officers in determining which programs and which methods of administration would be best for their jurisdictions.

There is no formal mechanism by which information about a CI&A program in one county is conveyed to another county. Members of the Department's regional consulting teams may transmit impressions of programs from one department to another in their region, or local health officers may discuss informally their CI&A programs when they get together at various meetings which are called for other purposes. But there have been no meetings or sessions at which local health officers or the directors of chronic disease programs in local health departments have met to exchange information about their programs or to hear a presentation about recent developments in some phase of chronic illness and aging.

The Department's allocation of CI&A funds for studies, experiments, and demonstrations totals $506,000. Most of this sum has been used in the CI&A Contract program. The other two programs classified in Exhibit O under the heading "Studies, Experiments, and Demonstrations " are the Bureau of Hospitals' Nursing Home Contract program and the Medical Care Studies Unit. Beginning in 1964-65 the Nursing Home Contract program will be merged with the CI&A Contract program and will be administered

by the CI&A Unit. The Medical Care Studies Unit currently (May, 1964) has four studies under way. Because none of these studies has been completed it is too early to evaluate the research undertaken. Therefore, the discussion of the CI&A funds allocated for studies, experiments, and demonstrations becomes a discussion of the CI&A Contract program.

Since the inception of the CI&A Contract program in the fall of 1962 more than 50 programs have been supported. These programs cover a wide range as some titles listed below indicate:

Developmental Project for Total Rehabilitation of the Multiple Handicapped Sensory Disabled Person

Glaucoma Screening in Families of Patients with Glaucoma

Development of a Rehabilitation Service in Rural Counties

Survey of Medical Aspects of Retirement Communities

Establishment of a County-Wide Homemaker's Service

Diagnostic Evaluation Services for the Chronically Handicapped

Many of the comments made about the allocations to local health departments could be repeated here. The reports submitted by the recipients of the contract awards lack the information needed to evaluate their projects. There is no mechanism set up by which recommendations for public health practice based on the studies, experiments, or demonstrations are made available to local health departments and other agencies involved in furnishing services to the chronically ill and aged.

The Department uses part of the CI&A formula grant to pay for the Department's costs of administering the CI&A grant and promoting CI&A activities throughout the State because it is State policy that the costs to the State of administering federally funded programs be paid for from the federal funds. The Department of Finance checks this when reviewing the Department's annual budget request. It is because of this State policy that the salaries and expenses of the members of the CI&A Unit are taken from the CI&A formula grant. Also, some CI&A money goes to the Divisions of Administration and Community Health Services to help pay for expenses incurred because of the CI&A program. As shown in Exhibit O a small sum was given to the Division of Laboratories in 1963-64 to pay for blood tests run for diabetes screening programs in rural counties which have no laboratory facilities. The Bureau of Health Education received a token amount for its contribution to the CI&A program. The administrative overhead and program development costs charged to the CI&A program have averaged 11 per cent during the existence of the program. It is difficult to say if this figure is too small or too large, especially when the benefits from the CI&A funds allocated for services and demonstrations have not been evaluated.

The Decision Maker

The basic decisions about the CI&A program have been made by the Director. At first glance this might not appear to be the case. In discussion with the author, the Director described the function of the Director's Office as one of reviewing, questioning, and judging proposals that have been prepared by the bureaus and divisions. In the ten years in his present position the Director has not built a staff in the Director's Office. He has elected to delegate staff work to the divisions and bureaus. The use of divisions and bureaus to do program analysis and evaluation gives the bureau and division personnel more of an opportunity to have their ideas expressed in the operation of programs than if there were some group in the Director's Office doing Departmental studies and analyzing division and bureau recommendations from a Departmental viewpoint. Nevertheless, observation by the author over a period of one year of the decision process of the CI&A program leads to the conclusion that the Director is the decision maker.

The conclusion that the Director has made the basic decisions about the CI&A program rests on the analysis of the three major decisions in the CI&A program. Before beginning this analysis consideration will be given to three other places where the basic decisions could have been made -- at the meetings of the California Conference of Local Health Officers, at the semimonthly meetings of the Division Chiefs with the Director, or in the Division of Preventive Medical Services -- and state why these alternatives are rejected. Then

the three important decisions in the Department's CI&A program -- the crucial decision of the allocation of the first CI&A grant in November, 1961, and two important extensions of this decision that occurred when CI&A funds were used to establish the CI&A Contract program and the Medical Care Studies Unit -- are analyzed.

The total increase in federal funds that became available to the State Department of Public Health in the fall of 1961 amounted to $800,000. The new CI&A program made up less than half this amount. The California Conference of Local Health Officers and its Executive Committee were involved in discussions with the Department of Public Health prior to the initial decision in November 1961, on the allocation of the $800,000. The Department made a strong presentation to the October, 1961, meeting of the CCLHO on the need for carrying out the intent of Congress in the use of these funds in California. The Director presented the Department's proposal that some of the increase in federal funds would be retained by the Department for support of activities at the State level and for contracts with local agencies and the rest would be allocated to local health departments. The Director stated that the Department preferred that allocation to local health departments be made by means of project grants rather than by per capita allotments because of the need to ensure that the federal funds would not merely replace local funds with the result that there would be no increase in services at the local level. The local health officers, on the other hand, would have preferred to have the entire increase in federal funds allocated like the State subvention subsidy -- a per capita allotment with no prior approval required by the State

Department of the local health departments' use of the funds. Because of the Department's strong stand on the need for carrying out the intent of Congress the local health officers suggested a compromise. The local health departments would submit plans showing how the increase in federal funds would be used for new programs or identifiable increases in on-going programs, and the money would be allocated on a per capita basis based upon the submission of plans acceptable to the Department.

The final decision by the Director allocated the CI&A grant and part of the MCH grant in the manner described in the compromise. However, the plans to be submitted by local health officers had to include many of the items contained in project grant proposals. The remaining funds were retained by the Department for support of activities at the State level and for contracts with local agencies. Hence the final decision by the Director on the allocation of the increase in federal funds did not simply reflect the desires of the local health officers although the Department's proposal was modified by the recommendations of the CCLHO. The CCLHO did not participate in the decisions to use CI&A funds to support the CI&A Contract program and the Medical Care Studies Unit.

In informal discussions the author had with some division chiefs the semimonthly meetings of the division chiefs with the Director were described as "an information disseminating medium" and as "a debating society." When one division chief said that the Director had not brought a certain organizational matter before a meeting of the division chiefs another one answered him by saying that the Director does not have to get the advice and consent of the division chiefs as the President of the United States must obtain the advice and consent of

the Senate for ratification of treaties. In a conversation with the author the Director said that he viewed the semimonthly meetings of the division chiefs as a forum for the discussion of policy questions. These meetings enable the Director to get the reactions and recommendations of the division chiefs before he makes his final decision.

The attitude of Departmental members reinforces the belief that the Director is the decision maker. As a meeting of some of the division chiefs, assistant division chiefs, and bureau chiefs with the Director was ending, there was joking as to who was staying behind to get in another word with the Director on a decision that was expected in the near future. Another instance occurred when a similar group was returning from a meeting at the State capital. Some decisions were needed and they were to be discussed on the drive back to Berkeley. As there were too many persons for one car, the man who was going to drive the other car told the Director that he was going to be right behind the Director's car and that he would bump it every now and then so that the Director wouldn't forget that he was interested in his decision.

Based on the author's observation of the semimonthly meetings of the division chiefs with the Director and on the author's interviews with various division chiefs it does not appear that these semimonthly meetings have the primary function of making basic decisions. While it is true that recommendations of the division chiefs may be adopted as Departmental policy, the Department's decision making process stands in contrast to the process of some corporations where decisions emerge from executive committee meetings as committee decisions and are recognized as such.

Another place where the basic decisions about the CI&A program could have been made is in the Division of Preventive Medical Services. The CI&A Unit is one of ten sections in the Bureau of Chronic Diseases. The Bureau in turn is one of seven bureaus in the Division of Preventive Medical Services. The Chiefs of the Unit, the Bureau, and the Division will be considered in turn as candidates for the position of "decision maker" and the reasons for rejecting each of them given.

The Chief of the CI&A Unit can be eliminated as a candidate for the decision maker. He was not a member of the Department when the original decision on the allocation of the CI&A grant was made in November, 1961. Neither of the other two important extensions of the CI&A program was suggested by him.

The Chief of the Bureau of Chronic Diseases at the time the Community Health Services and Facilities Act was passed by Congress did not participate in the top level Departmental meetings held prior to the November 10, 1961, decision. His proposal for the use of the additional $117,200 in CI&A money that became available in the fall of 1962 was not adopted. Instead the money was used to initiate the CI&A Contract program. This bureau chief transferred to another position early in 1963 but he remained as acting Bureau Chief for the rest of the fiscal year. By the time the present Chief of the Bureau of Chronic Diseases, who was recruited from outside the Department, took over, the CI&A program was established and operating basically as it is today.

The last candidate from the Division of Preventive Medical Services for the position of decision maker for the CI&A program is the

Chief of the Division. He holds a prominent position in the Department and in the field of public health. He suggested the use of CI&A funds to support the CI&A Contract program and the Medical Care Studies Unit. If the Chief of the Division of Preventive Medical Services were to be the decision maker for the Department's CI&A program, it would be necessary to show that authority operated upwards in the three major Departmental decisions about the CI&A program. According to Simon's definition of authority quoted in Chapter 5, authority operates upwards when the superior in the hierarchy accepts the recommendation of his subordinate without independently examining the merits of that recommendation. The analysis of the three major decisions in the CI&A program which follows will show that authority did not operate upwards and that, therefore, the Chief of the Division of Preventive Medical Services was not the decision maker for the CI&A program.

The Department's initial allocation of the CI&A formula grant in November, 1961, was the fundamental decision. The commitment to local health departments that resulted from this decision greatly reduced the number of feasible alternatives available to the Department during the five fiscal years authorized by Congress in the Community Health Services and Facilities Act of 1961. The Department's November, 1961, decision honored the previous support to a nursing home program that the CI&A formula grant had absorbed and allotted the remainder of the CI&A funds to local health departments. The November 10, 1961, letter to local health officers announcing the Department's decision stated: "This plan represents an effort to strongly support extensive local use of funds despite obvious administrative difficulties." The Chief

of the Division of Preventive Medical Services was one of several Departmental members who had recommended that the CI&A formula grant be allocated on a project grant basis with hospitals, universities, and voluntary organizations as well as local health departments eligible to submit proposals.

The chronology of the CI&A program and the account of the positions taken by various individuals and groups related in Chapter 3 shows that the Director prior to his November, 1961, decision was under strong pressure from several sources who had differing plans on how the Department should allocate the CI&A formula grant. The Director's decision did not adopt the position of any one group or individual, although it leaned more toward the position of the local health officers. At the August 2, 1963, meeting of the members of the Director's Office with members of the Divisions of Preventive Medical Services and Community Health Services to discuss the CI&A and MCH programs, the Director reiterated his desire to see the 1961 plan for the allocation of the CI&A grant work and urged that the Departmental members furnish the local health departments the support and consultation needed to make it work.

Because the 1961-62 CI&A program was in operation for only half the fiscal year, the Department's plan for 1962-63 was that the 1962-63 CI&A formula grant would be twice the 1961-62 grant. Therefore, the amount of tentative allotment to local health departments was doubled. The CI&A Contract program was started because of the windfall that occurred when the 1962-63 CI&A formula grant was $117,200 larger than anticipated.

The suggestion by the Chief of the Division of Preventive Medical Services that the windfall be used to set up the CI&A Contract program was an example of borrowing a proven technique from another program. For many years part of the Heart Disease Control and Cancer Control federal formula grants had been used for project grants to support studies in agencies other than local health departments. The Chief of the Division of Preventive Medical Services had been instrumental in initiating these heart and cancer studies some years before when he was Chief of the Bureau of Chronic Diseases. Besides the well established precedents for using federal formula grant money in this manner the Chief presented the Director two reasons for not allocating the windfall in the fall of 1962 in the same way as the rest of the 1962-63 grant had been allocated. The first reason was that it was too late in the year to use the same procedure for allocating the additional CI&A funds to local health departments as had been done in the spring. The time taken by the allocation process, which involved requiring the local health departments to devise and submit plans for use of the CI&A funds, processing and reviewing these plans in the Department, convening the Advisory Committee, reviewing the recommendations of the Advisory Committee, and finally notifying the local health officers, would not have left time for the local health officers to recruit staff and to get the new programs started. The second reason was that the per capita allocation to local health departments of the $117,200 would mean that most local health departments would get too small an amount of money to be of any use. Thus, when the Chief of the Division of Preventive Medical Services presented his recommendation to the Director

to use the windfall to start the CI&A Contract program the Director in agreeing to the establishment of this program was deciding in favor of an alternative method of using federal formula grants that had been used for years elsewhere in the Department and for which the results were thought to be good. The Director knew of the results obtained from using federal heart and cancer funds to support studies by organizations other than local health departments and he knew the reasons why the Department's allocation procedure used in the spring of 1962 would be difficult to use in the fall of 1962. With this information he could independently examine the merits of the recommendation made by the Chief of the Division of Preventive Medical Services. Hence, the Director's approval of using the windfall to support the CI&A Contract program is not an example of authority operating upwards according to the definition previously stated in this paper.

The formal establishment in the fall of 1963 of the Medical Care Studies Unit, which brought together in one program some activity already going on in various bureaus in the Division of Preventive Medical Services and expanded it, can be considered an offshoot of the CI&A Contract program. Instead of contracting with outside agencies such as hospitals, universities, and voluntary agencies to make studies, the Medical Care Studies Unit supports studies by Departmental staff. As has been related in Chapter 3 these studies in the field of medical care were requested by the State Legislature in 1961 following a recommendation contained in the report of the Governor's Committee on Medical Aid and Health, Health Care for California. The Chief of the Division of Preventive Medical Services served as Coordinator of the Study which

resulted in this report. Although the State Legislature had not voted money in 1961 when it requested that studies be undertaken, the Department had made a start.

In the late spring of 1963 the State Legislature voted $50,000 to support studies in medical care in the Department of Public Health provided the Department obtained $100,000 in matching funds elsewhere. For several months the Department negotiated with a private foundation to try to secure the needed money. When these negotiations failed the Chief of the Division of Preventive Medical Services met with his Assistant Chief, Administrative, and the Assistant Chief of the Division of Administration to discuss the problem of finding matching funds. The participants do not recall which one first suggested that $50,000 originally budgeted for the CI&A Contract program be used to make up one-half the matching funds, but they all were in favor of the idea. A $50,000 pediatrics study in the Bureau of Maternal and Child Health was put in the Medical Care Studies Unit to provide the other half of the matching funds. The Chief of the Division of Preventive Medical Services presented the group's recommendation to the Director and he approved. Since the Department was already conducting studies in medical care at the request of the State Legislature there was a natural desire on the part of the Director and of other Departmental personnel to get State funds to help support these studies. The Director was well acquainted with the value of the studies already being done by the Department in the field of medical care and he wanted them continued. Because he believed in the principle of the State Legislature furnishing funds when it requested the Department to take on additional

(the decision maker, the environment, the alternatives, and the objectives) identify the elements of the allocation problem? A model for the Department's allocation of the 1964-65 CI&A grant was developed and used to demonstrate the feasibility of decision making and resource allocation in a public agency. Research was limited to a study of the allocation of the CI&A grant by the Department into the following three categories: services, demonstrations, and administrative overhead. It is shown that systematic processing of values makes possible the ranking of objectives and the determination of the efficiency of the alternatives in achieving these objectives.

responsibilities he was desirous of finding matching funds in order to obtain the $50,000 in State funds. When the private foundation failed to provide the matching funds, the Department was hard put to find $100,000. The Director readily accepted the use of the CI&A funds and the transfer of the pediatrics study to provide the required $100,000 matching funds because this was a feasible means of accomplishing his purposes of getting the State funds and expanding the studies in medical care. Because the Director's approval was an informed decision, it would not seem to be an example of authority operating upwards.

The purpose of this section was to identify the Director as the decision maker for the allocation of the CI&A formula grant. However, the decision maker is the Director at a certain point in time. After he has received recommendations from Departmental members, after he has received suggestions from other individuals and organizations that form the environment in which the Department of Public Health exists, after he has evaluated the information directed to him by the divisions and bureaus of his Department, and after he has considered the implications of the decision to be made upon the internal workings of the Department and upon the Department's relation with its environment, then he is the decision maker.

The Objectives

Although there are general objectives which guide all of the activities of the Department, these objectives are stated in such broad terms that it was necessary as part of this study to determine a set of

objectives pertinent to the Department's allocation of the CI&A grant. Seven such objectives and a discussion of each one make up this section.

In the most recent State budget the objectives of the Department are stated:[5]

> The Department of Public Health, in co-operation with local health departments, is responsible for the prevention of disease and the provision of a healthful environment for the people of California.

The Director defined the objectives of the Department as follows:[6]

1. To carry out specific responsibilities required by law and to exercise broad leadership in the field of public health in the State.
2. To facilitate effective and efficient administration by local health departments in order that as much responsibility as possible may be assumed by them.
3. To maintain a program of investigation and research designed to provide continuing knowledge of the health status of the people of California, to identify conditions associated with ill-health, and to develop new technical and administrative methods of disease prevention and control.

Because many different State activities in the area of chronic illness and aging could be justified on the basis of helping to achieve these broad, general objectives, a set of goals with operational significance for the allocation of the 1964-65 CI&A formula grant was needed. However, the Department has not defined these goals. On the basis of the history and the analysis given in the previous chapters it appears there are seven goals or objectives appropriate for the CI&A program. These goals denote the set of requirements or constraints that an alternative must satisfy to be acceptable.[7] Different persons in the Department could pick out different constraints and say that this constraint is the goal they wish to achieve subject to satisfying the other constraints.

The behavior of those connected with the CI&A program and the decisions taken can be explained as consistent with the pursuit of one or more of these goals. Examples of such decisions and behavior are given for each goal. Different persons involved in the CI&A program emphasized different objectives at different times. However, because these persons influenced the program the Director must take into account all the objectives (the set of requirements or constraints) in arriving at the final decision on the allocation of the annual CI&A grant.

It was important for the experiment described in Chapter 8 that the meaning of each objective was the same for the Departmental members as for the researcher. Therefore, the language of the objectives was edited several times in order to ensure that the meaning was understood by Departmental members. Successive drafts of the set of objectives were read by the persons who would participate in the experiment and revisions were based upon their comments.

The objectives encompass medical and scientific goals, the relationship of the Department with its environment, and the psychological needs of Departmental members. The order of listing of the objectives does not indicate their relative importance. The objectives are:

1. "To increase the availability, scope, and quality of out-of-hospital community health services for the chronically ill and aged."[8] This is a personal health care objective.

The federal legislation which set up the CI&A formula grant mechanism stated that the funds were to be used to establish and expand outside-the-hospital health services for the chronically ill and aged. Pursuit of this goal carries out the intent of Congress. The

Department's suggestion at the September, 1961, meeting of the Committee on Administrative Practices of the CCLHO would have allocated the increased federal funds to local health departments on a project grant basis. The project grant mechanism is a means of ensuring that the funds are used for new or expanded programs in local health departments thus carrying out the intent of Congress.

In Chapter 4 several instances are related where members of the Division of Preventive Medical Services recommended that the Department not fund some of the basic and supplemental CI&A plans of local health departments that had been approved by the Advisory Committee but with poor ratings. Not funding these plans that had little merit showed the Department's desire to carry out the intent of Congress.

By providing support for local CI&A programs through the allocation of most of the CI&A grant to local health departments the State Department was able to get the California Conference of Local Health Officers to agree to have "services in chronic disease" included in the California Health and Safety Code as a basic service that a local health department must offer in order to qualify for State subvention funds. In California, local health departments provide most of the services in the public health field. In many local health departments services such as home care nursing that did not exist prior to November, 1961, are now offered.

The Department initiated the CI&A Contract program which allows the Department to support studies, experiments, and demonstrations by organizations such as medical schools, hospitals, and voluntary agencies as well as by local health departments. By this means more of

the talent and resources available in the State to work on CI&A problems can be utilized.

The argument between the Divisions of Preventive Medical Services and Community Health Services over the operation of the CI&A program as typified by the meeting on August 2, 1963, reported in the section, "The 1963-64 Allocation of CI&A Funds," in Chapter 3, was about the means to achieve the personal health care objective. There was no question about the objective itself. Most of the professional Departmental personnel connected with the CI&A program are physicians so it is natural that they think of ultimate beneficiaries of the program even though they do not deal directly with the beneficiaries.

2. To strengthen and support local health departments by providing funds for new or improved services in chronic disease. This objective includes the maintenance of good relations with the local health departments.

There is a long series of events dating back to the Department's acceptance of the recommendation of Dr. Haven Emerson to organize public health in California around the local health department[9] which show the Department's desire to strengthen and support local health departments. As pointed out in Chapter 2 the post-World War II studies of the Department have emphasized the need for the Department to offer consultation to local health departments. The recommendations of these studies have led to the establishment of three regional consulting teams in the Division of Community Health Services. In addition the program units such as the CI&A Unit furnish consultation in their program areas. Because local health departments provide most

of the direct public health services in California the role of the Department as consultant and advisor to local health departments is understandable.

The importance of local health departments in California is shown by the Director's 1958 statement of one of the three basic functions of the Department.

> To do everything possible to facilitate effective and efficient administration by local health departments in order that the execution of as many functions as possible may be delegated to them. Local health departments have about six times as many professional and technical employees as the State Department of Public Health, and they are close to the problems and the public. It is imperative that this department face, in realistic fashion the question of effective consultation to local health departments.[10]

Substantially the same desire was reiterated by the Director in 1963.[11]

The November 10, 1961, letter from the Director's Office stated that the allocation of CI&A funds represented "an effort to strongly support extensive local use of funds." In each of the three fiscal years the program has been in operation, the major portion of the funds has gone to local health departments. There is no legal reason for local health departments to get money from federal formula grants like the CI&A grant. In fact, the Public Health Service reported in 1962 that most states did not pass on any of their CI&A grants to local departments.[12] After listening to criticisms of the MCH and CI&A programs in local health departments at the August 2, 1963, meeting with members of the Divisions of Preventive Medical Services and Community Health Services, the Director said he wanted to try to make the present method of allocating the grants work by having the Department provide necessary support and consultation to local health departments.

A final piece of evidence to illustrate this objective concerns the behavior of the Department when it learned that President Johnson's budget proposed a cut in the CI&A formula grant. The decision of the Department was to keep the 1964-65 CI&A allotment to local health departments unchanged even though the Department faced a possible nine per cent reduction in the amount of CI&A funds it would receive from the Public Health Service. If a cut were necessary it would be made in the CI&A Contract program.

The State Department needs the local health departments to carry out public health service programs because there is no other mechanism readily available. In addition, local health officers acting through the CCLHO have a veto written into the California Health and Safety Code over the standards required for local health departments to qualify for State subvention funds. The cooperation of local health officers is necessary to carry on a public health program in California. As related in the section, "Events in California Prior to November 10, 1961," in Chapter 3, the local health officers reacted strongly to the Department's initial plan for the use of the increase in federal funds which included the new CI&A formula grant. They particularly objected to letting other agencies apply for the funds and several local health officers objected to the allocation of funds by means of project grants.[13] The Conference passed a resolution asking that the Health Committee of the County Supervisors Association of California and the Public Health Section of the League of California Cities study the whole program of State and federal fund allocation. In summary, local health departments are the recognized means of providing most of the public health services

in California, they have a veto over State standards local health departments must meet to receive State subvention funds, and they have political means to challenge the Department.

3. To add to knowledge in the field of chronic illness and aging by doing and supporting significant demonstrations and specific investigations aimed at improving and extending outside-the-hospital services for the chronically ill and aged.

A program of research is one of the three general Departmental objectives stated by the Director. The Division of Preventive Medical Services carries on more research than any other division in the Department whether measured in number or total dollars of special projects. The Chief of the Division, who has more than fifty publications to his credit, has shown a continuing interest in research. While Chief of the Bureau of Chronic Diseases he started research projects on cancer and other chronic diseases. The section, "The 1958 Report," in Chapter 2 points out that by 1958 research had developed into an important Departmental function especially in the area of chronic diseases. In the section, "Windfallism," in Chapter 5 his part in starting the Local Special Project program, a research oriented program, was related.

An example of a large scale investigation by the Division of Preventive Medical Services supported by federal funds is the development of the tumor registry in California using the Cancer Control federal formula grant. The information accumulated in this manner has resulted in various publications such as the 400-page monograph, Cancer Registration and Survival in California,[14] which is based on over 110,000 cancer cases diagnosed in California hospitals.

The research orientation of the Division has led its members to support use of CI&A funds in ways that would lead to increased knowledge of new and improved methods of providing outside-the-hospital services for the chronically ill and aged. Using CI&A funds to establish the CI&A Contract program and to help create the Medical Care Studies Unit are examples of this. Also, these two uses of funds are both ones in which the Department can use agencies other than local health departments to conduct studies.

4. To show the Public Health Service that the states can do a good job with federal formula grant funds so that the trend to centralizing the funding of indivisual projects in Washington does not continue. This objective also includes the maintenance of good relations with the Public Health Service.

The Community Health Services and Facilities Act of 1961 which provided for the CI&A federal formula grants to states also allowed the Public Health Service to make project grants directly to local agencies for the development of new or improved methods of providing outside-the-hospital services especially for the chronically ill and aged. Although state health departments are asked to comment on the proposals submitted by local agencies to the Public Health Service, the Public Health Service has the authority to bypass a state government in awarding these project grants. Two recent Public Health Service programs have been set up on a project grant basis. They are the Neurological and Sensory Disease Service Project Grant program and the Migrant Health Project Grant program. The Venereal Disease Control formula grant has been changed to a project grant. The Tuberculosis Control formula grant may be the next to be changed.

The Director does not favor the spread of the project grant mechanism in the allocation of federal grants by the Public Health Service:

> In general, we believe that the formula grants serve a real purpose in helping to demonstrate the value of new and improved programs and in extending valuable public health services.[15]
>
> It is our considered opinion that the trend to elimination of formula grants is a serious one and is not in the best interest of public health. We cannot emphasize this too strongly.[16]

Therefore, to keep the formula grants the Department needs to show the Public Health Service that this mechanism does carry out the intent of Congress in providing outside-the-hospital services for the chronically ill and aged.

Biennially, the Department must submit a State Public Health Plan to the Public Health Service setting forth what the Department intends to do with the CI&A and other federal formula grants during the coming two years. The Public Health Service must approve the plan before the State qualifies for its share of the federal funds. The Public Health Service requires the Department to keep the CI&A grant separate from other grants in accounting for the use of the funds and in satisfying the matching requirements. The Public Health Service audits the fiscal records kept in the Division of Administration and the program records kept in the CI&A Unit. In general, the Public Health Service has much discretion in setting guidelines for public health programs that affect the states and in interpreting the intent of Congressional legislation.

5. To conduct the CI&A program in such a manner that the Department of Finance is satisfied with the Department of Public Health's administration of this federal grant. This objective also covers the influence of the State government acting through the Department of Finance on the CI&A program.

After federal funds are received by California they are subject to all regulations and restrictions on their use that State funds are. The department that acts as watchdog for the Governor in these matters is the Department of Finance. Because the Department of Finance prepares the budget the Governor submits to the State Legislature, it scrutinizes the budget requests of all departments. Approval by the Department of Finance is needed before any new program can be undertaken by the Department of Public Health even though the program is financed entirely by federal funds. The establishment of the CI&A Contract program in the fall of 1962 had to be cleared with the Department of Finance before it could be put into effect.

California's overmatching of the federal formula grants also brings the influence of the Department of Finance into the operations of the Department of Public Health. A simple example will illustrate the concept of overmatching. Suppose a federal formula grant to a state is $1,000,000 and the matching requiement is one dollar of state money for one dollar of federal money. If the state is already spending $1,600,000 in the categorical area covered by the grant, $600,000 of the federal grant may be placed in the state's general fund. Given the circumstances of the example, only $400,000 of the federal grant must be spent in the categorical area specified by the grant.[17] Because California overmatches the federal formula grants the Department of Finance in early 1964 raised the question of the

Department of Public Health's intended use of the $98,522 CI&A supplemental grant from the Public Health Service.[18] It required several meetings with the Department of Finance to secure release of the supplemental grant to the Department of Public Health.

6. To get the support of various community and voluntary agencies in carrying out the Department's CI&A program. This objective includes the maintenance of good relations with the California Medical Association, the county medical societies, and other voluntary agencies.

In many Departmental programs, especially those that involve medical care, there is a place for both public health and the private practice of medicine, and the dividing line is not clearly drawn. One reason that the president of the California Medical Association was made a member of the Advisory Committee of the Department's Medical Care Studies Unit was to assure private physicians a voice in the development of the Department's medical care programs. The usual answer by the Director and other key members of the Department to questions regarding the influence of the California Medical Association on the Department's operations was that the Department considers the reaction of the Association in planning any new program. This is particularly true in instances where the Department must decide whether or not to accept a new federal program and on what terms.

In local health department programs such as glaucoma screening the local health officer may contract with an ophthalmologist to conduct a clinic on a regularly scheduled basis such as a half day per month. Of course, the ophthalmologist is a member of the county medical society. Changes in the CI&A allotment could affect relations with the county medical society through those members that perform work on a contract

basis for the local health department. Moreover, some local health officers contract with voluntary agencies in their jurisdictions to perform certain CI&A service programs. For example, in some cases the Visiting Nurse Association of a county receives CI&A funds from the local health officer to expand its home care nursing program. In cases such as these changes in the CI&A allotment to local health departments would affect voluntary agencies. Because of their limited resources local health departments need the cooperation and assistance of county medical societies and local chapters of the various voluntary agencies to provide public health services.

7. To achieve self-fulfillment and enhance the prestige of those who administer the CI&A program in the Department. This objective includes the natural desire to be identified with a good, well-respected program.

Departmental personnel from the members of the CI&A Unit to the members of the Director's Office have a personal interest in the CI&A program. The many meetings about the CI&A program attended by members of the Director's Office and other key personnel testify to the interest in the program. People in the Department consider California to be a leader in the public health field and take pride in this fact. They feel that the Public Health Service and other state health departments are influenced by actions taken and results obtained in California.

The Director in planning the CI&A program must take into consideration the needs of the Departmental members who administer the program.[19] The need of the professional members of the CI&A Unit for something more in the content of their work than repetitive acts requiring little initiative or intelligence is illustrated in the following two instances.

The members of the CI&A Unit think of the CI&A Contract program as being more satisfying to them than the allotment of funds to local health departments because in the Contract program the members of the CI&A Unit have much more voice about which projects will be supported. They have an opportunity to work with people and develop proposals. After the initial problems associated with the beginning of any new program had been resolved, many of the duties of administering the CI&A program in the CI&A Unit became routine. It was then that the Chief of the Unit introduced the idea that each of the medical officers in the Unit would take on the study and evaluation of some piece of the CI&A program as an additional responsibility.

The Alternatives

An extremely large number of alternative allocations of the CI&A grant are available to the Department. Merely shifting a few dollars from one category to another results in a different allocation. It becomes necessary to select from this large number of alternatives those which were seriously considered by the Department in allocating the CI&A formula grants. In this study nine alternatives have been selected. These cover a wide range of feasible Departmental programs yet are few enough in number for a decision maker to evaluate them in terms of the seven objectives set forth in the previous section.

Alternatives Considered But Rejected

The Department's alternatives in allocating the CI&A federal formula grant are limited to the fiscal year 1964-65. Alternatives involving

CI&A grants over a period of several years are rejected. There are several reasons for this. One is the rapid proliferation of alternatives over time. For example, if ten alternatives are considered for each of the next three fiscal years, 1,000 different combinations are possible. Even if many of these 1,000 possibilities could be eliminated as not feasible, the number remaining would be unmanageably large.

Another reason for limiting the alternatives to 1964-65 lies in the uncertainty about the continuation of the CI&A federal formula grant. The present federal CI&A program will end after the 1965-66 fiscal year unless the U. S. Congress votes to continue the program. At the present time (May, 1964) it is not known whether the program will be continued or not, and, if continued, at what level of expenditure and with what changes. Thus an alternative stretching over three years would have to include an assumption that a certain program would or would not be approved by Congress and a reaction to the Congressional action by the Department.

The alternative that the Department refuse the 1964-65 CI&A formula grant was considered but not used. The decision taken in 1961 to accept the grant has committed the Department to continue receiving the grant during the initial five-year period voted by Congress unless something very drastic occurs to cause a re-evaluation. It is hard for states to refuse federal funds, as such funds can be viewed as the return of tax money collected from the state by the federal government. California with its higher than average per capita income does not get back a proportionate amount in federal formula grant programs because per capita income enters into the federal formulas

with an inverse weighting. This weighting penalizes states with higher than average income such as California while favoring states with lower than average income such as Mississippi and Alabama. For example, California has more than seven times the population of Mississippi but receives only three times as much money from the regular CI&A formula grant. If California doesn't accept the federal formula grants, the money is reallocated to other states.

Another alternative for allocating the 1964-65 CI&A formula grant that was considered and rejected is the alternative of keeping all the CI&A grant at the State level and not allocating any of it to local health departments. The initial commitment made to local health departments in 1961 precludes this alternative. This point is discussed under "Commitment" in Chapter 5.

Still another alternative for allocating the 1964-65 CI&A grant that was considered but rejected is for the Department to make an estimate of the marginal benefits obtained from allocating increments of $1,000 or $5,000 to each local health department. Similar calculations would be made for allocations to studies supported by the CI&A Contract program and the Medical Care Studies Unit. The Department would allocate the CI&A funds so that the benefits from the last dollar increment to each local health department and each study would be the same for all local health departments and all studies. Although this is the way recommended by classical economic theory, an earlier section in this chapter, "Lack of Basic Information About the CI&A Program," pointed out that the information required to estimate the benefits obtained from allocating CI&A funds to local health departments

and to studies supported by the CI&A Contract program and the Medical Care Studies Unit is not available.

Nine Departmental Alternatives for Allocating the 1964-65 CI&A Federal Formula Grant

Among the many possible alternatives nine seem to span the range of feasible Departmental alternatives for allocating the 1964-65 CI&A federal formula grant. There are several reasons for choosing these nine alternatives. First, these alternatives do not reflect radical changes from past practice because the commitments made by the Department's allocation of the CI&A formula grant in the three previous fiscal years precludes radical changes. Secondly, the model for allocating the CI&A formula grant presented in Chapter 8 assumes that utility is linear over the relevant range. This assumption is a reasonable one when only incremental changes are involved. Finally, the incremental changes provide a test of the model in Chapter 8. It appeared to the author from his discussions with members of the Department that they had different opinions about which means would best achieve certain goals. Thus the alternatives were chosen to see if differing evaluations of such means as demonstrations, project grants, reporting requirements, and programs in local health departments would be reflected in the experiment reported on in Chapter 8.

The nine Departmental alternatives for allocating the 1964-65 CI&A federal formula grant deal with the allocation of funds among the three major categories: allocations to local health departments to provide services; funds retained at the State level to support studies, experiments, and demonstrations; and funds used to pay the Department's

costs of administering the CI&A program. The last category is called administrative overhead, but it includes the program development and promotion activities of the members of the CI&A Unit and others in the Department.

All the Departmental alternatives for allocating the 1964-65 CI&A formula grant contain a reduction of $75,000 compared to the previous year's grant. Prior to January, 1964, the Department had anticipated that its 1964-65 CI&A grant from the Public Health Service would be about the same as in 1963-64.[20] However, President Johnson in his budget message to Congress in January, 1964, recommended a cut in the CI&A and two other federal formula grants. If Congress does not restore the cut, the regular CI&A grant to California will be reduced about $75,000. Attempts are being made to have Congress restore the cut but the final outcome is not known at this time (May, 1964). Because the allocation decision has to be made by the Department prior to Congressional action, the sum used in planning for 1964-65 is the amount that will come to California if Congress does not restore the cut in the CI&A formula grant contained in the President's budget. In this case California will receive approximately $763,000 ($838,000 less the $75,000 proposed cut) in the regular grant. In February, 1965, California will learn the amount of the supplemental CI&A grant.

Alternatives 1 through 7 are similar in that each alternative keeps the total amount of CI&A funds for the local health departments unchanged from the 1963-64 level and retains $50,000 for the Medical Care Studies Unit. Because of the Department's commitment to local health departments and the State Legislature's request that the

Department carry out studies in medical care, it seemed that most of the alternatives should keep these two significant items the same but consider other possible changes in the CI&A program that are thought to be important by Departmental members. Alternatives 8 and 9 on the other hand do allow for variations in the total amount of CI&A funds for local health departments and the Medical Care Studies Unit.

Alternative 1 makes no change in current Departmental procedures but does allow for the reduction of the CI&A Contract program by $75,000. Alternative 2 limits to three years the time period that a particular program in a local health department could be supported by CI&A funds. Alternative 3 would use the CI&A Contract funds and the supplemental CI&A grant from the Public Health Service to support one or at most a few large programs instead of many small ones as under present practice. Alternative 4 would use the CI&A Contract funds and the supplemental CI&A grant to run a service program at the State level. Alternative 5 would reduce the number of reports local health departments must submit to get their CI&A allotment. Alternative 6 introduces two new factors into the formula the Department uses to allocate CI&A funds to local health departments. Alternative 7 substitutes project grants for the per capita allotment as the means of allocating CI&A funds to local health departments. Alternatives 8 and 9 both reduce the total amount of CI&A funds local health departments will receive. Alternative 8 would reduce each of the three major categories by nine per cent to adjust for the $75,000 reduction in the 1964-65 CI&A formula grant. Alternative 9 takes the entire $75,000 from the allocation to local health departments.

A listing of the alternatives selected and the differences among them follows:

1. The first alternative for allocating the 1964-65 CI&A formula grant keeps the tentative allotment to local health departments the same as in 1963-64. The formula for allocating funds to local health departments remains the same as do all the other administrative regulations.

   The first alternative also keeps the funds for the Department's administrative overhead and for the Medical Care Studies Unit the same.

   The CI&A Contract program is to bear the brunt of the proposed $75,000 cut. The supplemental CI&A grant from the Public Health Service is to be used for the CI&A Contract program.

   Procedures for obtaining CI&A funds remain the same, i.e., local health departments will continue to fulfill the current reporting requirements. Applicants for the CI&A Contracts will have to submit their applications in the present manner.

This is the alternative that has been chosen by the Department. Even if Congress doesn't restore the cut contained in the President's budget the CI&A Contract program will have funds from other sources. There is usually a difference of $15,000 to $20,000 between the amount tentatively allocated to local health departments and the amount actually used. This difference along with any salary savings and the supplemental CI&A grant from the Public Health Service that will be received by the Department in February, 1965, will be available for the CI&A Contract program. Because the contracts under the CI&A Contract program are written for a period of not longer than one year, the program can be readily expanded or cut back. Departmental practice has been to use the CI&A Contract program to absorb fluctuations in the CI&A formula grant. Also, the Department has flexibility in the use of funds allocated for the CI&A Contract program. For example,

in 1963, $50,000 originally budgeted for the CI&A Contract program was transferred to the Medical Care Studies Unit.

2. The second alternative is the same as the first except that support for a particular CI&A program in a local health department would be restricted to a fixed period of time. The first alternative does not restrict support for a particular CI&A program in a local health department to a fixed period of time.

Suppose the limit for support of a particular program were set at three years. Then after three years support for that program would end and the local health department would have to submit a plan for another program in order to continue to receive its CI&A allotment. The feature of restricting support to a fixed period of time is a built-in mechanism for evaluation and probable expansion of services for the chronically ill and aged. Presumably the local health department could evaluate its program after three years and decide whether to discontinue or support it with local funds.

3. The third alternative is the same as the first except that all CI&A Contract program funds and supplemental CI&A grant funds would be used for a single large demonstration, or at most a few, arranged by the Department. The first alternative uses the CI&A Contract program to support many small projects.

At present the CI&A Contract program supports many small studies and demonstrations. Alternative 3 would change the procedure and would support only one or a few large demonstrations. The CI&A formula grant is very small in comparison with the problems that exist in such a broad field as chronic illness and aging. By using the CI&A Contract program funds and the supplemental CI&A grant from the Public Health Service for a single demonstration, a significant project

could be undertaken. In addition, the abilities of the members of the CI&A Unit and others in the Department would be concentrated in assisting one project. Under the present procedure the members of the CI&A Unit spend much time in reading and ranking many applications for CI&A Contract funds. An example of this alternative would be to take one county hospital and set up an outside-the-hospital service. This would allow some patients now in the hospital with chronic illness to be supported in their homes or in nursing homes. Such a program would include rehabilitation for the chronically ill and aged. The results of the demonstration should lead to the establishment of similar programs by other counties if the evaluation of the demonstration warranted it.

4. The fourth alternative is the same as the first except that all CI&A Contract program funds and supplemental CI&A grant funds would be used to run a service program at the State level. The first alternative has no service program at the State level.

An example of a service program would be a disease detection program using multiphasic screening methods on suitable populations. This alternative would involve hiring staff at the State level to furnish services. The Department could keep a close control over the program if this alternative were adopted. Also, the Department would be in a good position to coordinate a service program if the target population were a group such as migrant farm workers who move from county to county.

5. The fifth alternative is the same as the first except that the CI&A funds allocated to local health departments would be handled like the State subvention funds which have much simpler reporting requirements than the present method by which local health departments get CI&A funds. The first alternative requires a local health department to submit an acceptable plan for its intended use of its CI&A allotment and to submit quarterly reports on the use of the CI&A funds if its plan is approved.

It is now a part of the California Health and Safety Code that all local health departments must furnish services in chronic disease in order to qualify for State subvention funds. Under this alternative no information about the CI&A program in a local health department would be requested other than what is needed to justify receiving State subvention funds and to satisfy the accountability requirements the Public Health Service has placed on the CI&A federal formula grant. No prior approval by the State Department of a local health department's plan for use of its CI&A allotment would be required. Special program reporting to the Division of Preventive Medical Services would be eliminated. The reports eliminated would include the plan to use the tentative allotment, the quarterly reports on the use of the actual allotment, and the evaluation of the use of the funds at the end of the fiscal year.

6. The sixth alternative is the same as the first except that the formula for allocating CI&A funds to local health departments is changed by introducing two other factors besides total population into the formula, namely population over 65 and per capita income.

Population over 65 and per capita income are both used by the Public Health Service in allocating the CI&A formula grant to the states. The population age 65 and over is subject to more chronic illness than other age groups,[21] and because of the lower incomes due to retirement

of wage earners, persons in this age group are less able to afford medical expenses. The argument used to support inclusion of this factor is that it tends to put money where the need is. Total population is kept in the formula because problems of chronic illness do occur in age brackets other than 65 and over. Per capita income enters as an inverse weighting factor because counties with high per capita incomes are better able a priori to support CI&A programs with local funds than counties with low per capita incomes.

7. The seventh alternative is the same as the first except that the local health departments' share of the CI&A grant is allocated by project grants rather than by per capita allotments based on submission of acceptable plans. There is no guarantee that a particular local health department will receive any CI&A funds from the State Department as there is in the first alternative.

This alternative does not change the total amount of CI&A funds allocated to local health departments but it does remove the guarantee that each local health department will receive CI&A funds if it submits an acceptable plan. Under the project grant arrangement the proposals from local health departments would compete with each other for CI&A funds. The Department would have much more discretion in deciding which local health department proposals would be funded than it now has. The argument in favor of project grants over per capita allotments is that the project grant mechanism would improve the quality of the CI&A programs in local health departments and would ensure that the CI&A funds were used to carry out the intent of Congress.

This alternative is probably not a feasible one for 1964-65 since it could result in failure to fund some acceptable local health department programs. The local health departments have built CI&A programs

on the belief that funds would continue to be allocated as long as their programs were run in a satisfactory manner. However, the alternative was included because of the desire to test the differing views on project grants the author encountered in the Department.

8. In the eighth alternative the proposed cut of $75,000 in the CI&A formula grant is absorbed by reducing each of the three major categories -- allocation to local health departments for services at the local level; state administrative overhead costs which include program development activities; and studies, experiments, and demonstrations -- by approximately nine per cent of the 1963-64 levels. All Departmental rules, regulations and administrative procedures remain the same in 1964-65 as in 1963-64.

The $75,000 cut is approximately nine per cent of the total regular grant of $838,000 so the three major categories of the CI&A program are cut equally. Cutting each category equally is a "fair" way to handle the $75,000 reduction. The supplemental Public Health Service grant would be used for the CI&A Contract program.

9. In the ninth alternative the proposed cut of $75,000 in the CI&A formula grant is absorbed by reducing the allocations to local health departments $75,000 and leaving allocations to other categories the same as in 1963-64. All Departmental rules, regulations, and administrative procedures remain the same in 1964-65 as in 1963-64.

The argument in favor of this alternative is that since the Department let the local health departments share substantially in the increase in federal funds in 1957 and in 1961, either by direct allocation or by reserving the money at the State level and allocating it to local agencies by means of project grants, then when cuts occur in federal programs the funds going to local programs should be cut. Even though some of the CI&A formula grant was retained at the State level for administrative costs of the CI&A program, the entire cut would be taken from the allotment to local health departments.

Chapter 7. SELECTION OF THE METHOD OF MEASURING VALUE FOR USE IN THIS STUDY.

The model developed in this study for the allocation of the 1964-65 CI&A federal formula grant by the California State Department of Public Health uses the Churchman-Ackoff approximate measure of value. In this context value refers to subjective value and is synonymous with utility. Other methods of measuring value were, of course, considered but the Churchman-Ackoff method seemed to provide the most effective approach for this particular problem.

Methods of Measuring Value (Utility)

The Churchman-Ackoff Approximate Measure of Value

The Churchman-Ackoff approximate measure of value is a procedure for estimating the values an individual associates with objectives.[1] Some of the critical assumptions underlying the approximate measure of value method are:

1. For every outcome O_j, there corresponds a real non-negative number V_j, to be interpreted as a measure of the true importance of O_j. In this study an outcome is whether or not an objective is achieved.
2. If O_j is more important than O_k, then $V_j > V_k$ and if O_j and O_k are equally important, then $V_j = V_k$.
3. If V_j and V_k correspond to O_j and O_k respectively, then $V_j + V_k$ corresponds to the combined outcome O_j and O_k.

The third assumption permits values to be added.[2] Because it implies that the objectives are independent and are valued individually rather than in clusters this assumption is a strong one. Moreover, it simplifies the utility function. The importance of such a simplified function is brought out in Chapter 8 where the model for the allocation of the CI&A grant is discussed. An analogous situation in economics to the assumption of additivity of values here would be the calculation of the utility of a bundle of goods as the sum of the utilities of the different goods making up the bundle, with no allowance made for complementary or competitive goods.[3]

The procedure used for obtaining the values of the set of objectives in this study is described in detail in Appendix VI under the first task. Briefly, the subject ranks a set of objectives in order of importance to him and then indicates his preference between pairs of subsets of the set of objectives. From these choices a numerical values (v_j) may be associated with each objective.

Ursala Hicks, writing of the conflicting objectives of England's 1947 Agricultural Act, expressed the idea which underlies the need for a measure of value.

> With such a medley of aims it is not surprising . . . to find . . . inconsistency and incompatibility in practice as well as imperfect success in achieving the preferred objectives. In such a case however it should be possible by breaking down the separate aims, and giving them appropriate weights, to reach more precise and consistent results in practice.[4]

Other Methods of Measuring Value

Increased interest in decision making under conditions of risk and uncertainty and the use of utilities in decision theory models have

led to many recent attempts to measure utility. Several methods besides the Churchman-Ackoff method have been proposed. These other methods are cited in two extensive bibliographies by Edwards[5] and in other articles footnoted in this section. The literature of utility measurement and closely related fields is extremely large.

The concept of utility, a well-known concept in economics, has changed considerably over the years. The attempt to use utility as a criterion for choosing actions goes back at least to an article written by Bernoulli in 1738.[6] Later in 1789 Bentham, a leader of the utilitarianism movement, wrote:

> By utility is meant that property in any object, whereby it tends to produce benefit, advantage, pleasure, good, or happiness (all this in the present case comes to the same thing), or (what comes again to the same thing) to prevent the happening of mischief, pain, evil, or unhappiness to the party whose interest is considered.
>
> By the principle of utility is meant that principle which approves or disapproves of every action whatsoever, according to the tendency which it appears to have to augment or diminish the happiness of the party whose interest is in question. . . . Of an action that is conformable to the principle of utility, one may always say either that it is one that ought to be done, or at least that it is not one that ought not to be done.[7]

The desire to measure utility slackened after it was demonstrated that indifference curve analysis based on ordinal utility was sufficient to sustain the theory of riskless choice. Thus much of the economic theory of consumer behavior could be explained without a quantitative concept of utility.

The assumptions underlying an ordinal utility scale are that the subject can indicate whether he prefers one state to another or is indifferent between them. An ordinal utility scale assigns numbers to objects so that the magnitudes of the numbers reflect the preference

ranking of the states of objects or commodity bundles by the consumer. Today utility is used as an index, rather than as a property of an object. As Luce and Raiffa phrase it, "One alternative possesses a larger utility than another because it is more preferred, not the other way around."[8]

The modern revival of interest in utility stems from the work by von Neumann and Morgenstern[9] who showed that "under the conditions on which indifference curve analysis is based very little extra effort is needed to reach a numerical utility."[10] They called their index cardinal utility although it differed from what the neoclassicists meant by cardinal utility.[11]

Two objections raised against the use of the von Neumann-Morgenstern method for obtaining an interval scale of utility are that the method assumes (1) that the subject knows what the true probabilities are, i.e., that the subject's subjective estimates of the probabilities are the same as the probabilities used in the gambles required by this method of measuring utility, and (2) that a subject neither likes nor dislikes gambling.

An experiment by Mosteller and Nogee to measure the utility of small sums of money was based on the method proposed by von Neumann and Morgenstern.[12] The two objections made above apply to the Mosteller and Nogee experiment. In this experiment subjects played a game using poker dice. The subjects could choose to play or not to play in each of a series of gambling situations. The bets involved the possibility of winning or losing only a few pennies. From the information on which offers were accepted and which were refused, a utility curve was constructed for each subject. The results showed (1) that the utility

of money was not a linear function of the amount of money, (2) that predictions based on maximization of expected utility were better than predictions based on maximization of expected amounts of money, and (3) that subjects were not as consistent about preference and indifference as von Neumann and Morgenstern had postulated.

Another experiment to measure the utility of money was performed by Davidson, Suppes, and Siegel.[13] Their method attempted to overcome the objections about probability and the utility of gambling which marred the Mosteller and Nogee experiment. The sums of money involved were similar to the sums used by Mosteller and Nogee. To meet the objections leveled against Mosteller and Nogee, Davidson and his colleagues did two things. First they obtained an event whose subjective probability was empirically determined to be one-half. (It should be noted that Davidson, Suppes, and Siegel found that subjective probability did not equal objective probability for many obvious events like flipping a coin or rolling an ordinary die.) Secondly, to try to eliminate utility for gambling as a confounding factor, they selected alternatives so that the subjects were always offered choices between gambles. The subjects were not given a choice between accepting or rejecting gambles. The divisibility of money was needed to get an event whose subjective probability was one-half. The divisibility of money was also needed to construct an equal interval utility scale for sums of money.

Davidson, Suppes, and Siegel in another experiment developed a procedure for determining a utility function which uses linear programming. The objects to be valued were phonograph records instead of sums of money. Because of the nature of the procedure they adopted, "no matter what responses the subject makes to the options presented him, a numerical utility function can be computed."[14] Their interpretation

of the results of the linear programming model has been criticized in a recent article.[15] For the purposes of this chapter another point is of more importance. Davidson, Suppes and Siegel state:

> In general the utility function ϕ obtained by linear programming is not unique; the minimum θ is compatible with a convex polyhedron of solutions. The best single choice for ϕ is probably the centroid of this convex polyhedron. Due to limited computational facilities we actually used the first solution obtained.[16]

The lack of uniqueness of the utility function is also present in methods using an ordered metric scale. The problem created by the lack of uniqueness of the utility function is that difficulties may arise when the utilities are used in a model to select alternatives. Examples can be constructed which show two sets of utilities, each consistent with the subject's choices, leading to the selection of different alternatives. One alternative has the maximum expected utility with one set of utilities and another alternative has the maximum expected utility with the other set of utilities. In a situation like this the criterion of "maximize expected utility" does not lead to a unique choice among the alternatives. Of course the same situation can occur with the Churchman-Ackoff method. How the problem of non-uniqueness was dealt with in the experiment of this chapter will be discussed later. As stated in the quotation just given, Davidson, Suppes, and Siegel took the first solution obtained. In a similar situation Suzuki used the centroid of the solution set.[17]

Suppes and Winet present a set of axioms guaranteeing measurement of utility on an interval scale.[18] As a demonstration of their method they propose that a housewife be asked to make a series of choices among subsets of a set of six household appliances. However, no actual results from performing such an experiment are given. The authors point out that

with just six items their axioms cannot be realized. Actually they would get an ordered metric scale. As the number of items increases successively closer approximations to an interval scale are obtained. With just seven objectives an ordered metric scale would be the best that could be obtained in this study by adopting the method of Suppes and Winet. Suppes and Winet consider a set of independent commodities, i.e., the commodities involved are assumed to be neither complementary nor competitive with respect to each other. A similar assumption of independence is made for the seven objectives associated with the allocation of the CI&A formula grant.

Coombs and Beardslee present a method of measuring utility which results in an ordered metric scale.[19] In a pilot study one subject was presented with various household items as stakes and prizes. Subjective probability was assumed equal to objective probability. The technique worked well for the one subject.

Coombs and Kormita used an individual's preferences among bets to get an ordered metric scale for measuring the utility of money.[20] They assumed that an event with an objective 50-50 probability had the same subjective probability for the subjects. The utility scales were used to make predictions about subjects' preferences among bets and 29 out of 30 predictions were confirmed.

The foregoing experimental attempts to measure utility are typical examples of the literature in the field. The experiment takes place in a laboratory setting, usually with students as subjects. More often than not the object whose utility is being measured is a sum of money.

There have been attempts to measure utility in an industrial setting. These, too, have been subject to criticism or have failed

to achieve their objectives.

Bellman and Dreyfus point out the difficulty of utility measurement in industrial and military processes.

> One of the major difficulties encountered in any study of economic, industrial, or military processes is that of determining the individual and collective utility functions. In many situations we neither know the precise form of the functions involved, nor even precisely what quantities should be maximized. This is particularly the case in processes involving human beings.[21]

Grayson used the von Neumann-Morgenstern procedure to get utility functions of small, independent oil and gas operators.[22] Thus his study is open to the criticisms of the von Neumann-Morgenstern method mentioned earlier in this chapter. Grayson required his subjects to make a series of investment decisions about hypothetical drilling offers. Three pieces of information were given the subjects: the cost of investment, the probability of finding gas or oil, and the payoff if gas or oil were found. Grayson was primarily interested in seeing if utility functions could be derived under field conditions. He reported "mixed success." He was able to get utility functions for most of his subjects. Some of the subjects objected to the complexity of the experiment and the time it took. Grayson concluded that even if the concepts of decision theory were not adopted in total now by the oil and gas operators "(1) to realize the problems that they are now handling implicitly in their minds, and (2) to think about them in a formal manner. Indeed, I believe that this may be the highest payoff for application of decision theories in the early stages."[23]

Green made a study of sixteen middle management employees of a large chemical company.[24] A utility function for percent return on investment was obtained for each subject based on the von Neumann-

Morgenstern method. Green's conclusions about the practical application of formal utility theory in investment decision were not optimistic.

> It would seem that even the process of deriving utility functions is not easy. None of the respondents was familiar with probability concepts in any technical sense. . . . It would appear that they experienced difficulty in conceptualizing the problem and in being able to discriminate among small probability values. . . . The problems encountered in even deriving utility functions are hardly trivial. One can then imagine the difficulties faced in attempting to use these measures on a day-to-day, operational basis.[25]

Reasons for Selecting the Churchman-Ackoff Method

There are several reasons why the Churchman-Ackoff approximate measure of value was selected to determine the values of the seven objectives for the CI&A program rather than one of the methods just described. The Churchman-Ackoff method does not use a gamble to obtain a utility function. Thus the question of agreement between a subject's subjective probabilities and the objective probabilities used in the gambles doesn't arise. The questions asked in the Churchman-Ackoff method are probably easier for subjects to understand than the questions asked about the gamble in the von Neumann-Morgenstern method.

The divisibility of money allowed Davidson, Suppes, and Siegel and other researchers to make very small changes in the amounts won or lost in the gambles used to obtain the subject's utility scale for money. Small changes enabled the experimenters to be precise in their measurements. Utility measuring techniques which rely on incremental changes in the object or objects being valued are not suitable for measuring the utility of indivisible objects such as the seven objectives in this study.

The experiment using linear programming and the experiments involving choices which result in an ordered metric scale lead to non-unique solutions. For that matter, so does the Churchman-Ackoff method.

The non-uniqueness of the solution set obtained by use of the Churchman-Ackoff method warrants further discussion. The set of questions asked the subjects about their preferences among subsets of the set of objectives orders some of the utility differences. It does not give a complete ordering and thus is not an ordered metric scale. The set of linear inequalities obtained from the questions used in the Churchman-Ackoff method has a convex solution set. Which solution should be chosen for the values of the objectives? As previously mentioned, when faced with the same situation Davidson, Suppes, and Siegel took the first solution they obtained and Suzuki took the centroid of the solution set. There is no compelling reason to select any one of the infinite number of solutions.

There is one way which, with luck, eliminates the need to answer the question about which solution to choose. In principle, linear programming could be used to obtain all the extremal points of the solution set. Then the effectiveness of each of the nine alternatives in this study could be calculated using one extremal point for the values of the objectives. The alternative with the greatest effectiveness would be noted. The procedure would be repeated with each extremal point. If every extremal point resulted in the same alternative having the greatest effectiveness, so would every point within the solution set and there would be no need to proceed further. Under these circumstances an interval scale would not be needed. Rather than venturing into what

could have been a very time consuming job with no assurance of success and not wanting to pick arbitrarily one solution to use for the values of the objectives, the author adopted the following method to select one solution to use for the values of the objectives.

Stevens proposed that methods of psychophysical scaling that ask for direct subjective appraisals be subjected to experimental tests rather than rejected on a priori grounds.[26] He thought it might be easier to measure utility on a ratio scale than on an interval scale.[27] Of course, a ratio scale contains all the properties of an interval scale. Preliminary results of one experiment which was favorable to the attempt to measure utility on a ratio scale were reported by him. This suggestion by Stevens that an approach requiring a direct judgment might succeed in measuring utility on a ratio scale led to the second task in the experiment. The first task, ranking objectives, was not a difficult task for most of the Departmental members because the concept of ordering was familiar to them. The ratio scale was presented as an extension of the ranking the subjects had done in the first task. The objective that the subject had ranked as most important was arbitrarily given a value of 100. A vertical scale marked off from 0 to 100 was placed in front of the subject and an arrow marked "1" was placed opposite 100. The subject then placed the remaining six arrows numbered "2" through "7" on the scale to indicate the ratio he believed each objective had to the value of 100 assigned to the first objective. The details of the procedure are given in Appendix VI under the second task. After the subjects had indicated a value on the ratio scale for each objective, their number assignments on this scale were compared with their verbal choices of the first task to arrive at a final numerical value for each objective. For example, if a subject had stated in the first

(verbal) task that he would rather achieve the objective he had ranked as most important than achieve the combination of objectives he had ranked second and third in importance, the numerical value he had assigned on the ratio scale to the first objective should be greater than the sum of the values assigned to the second and third objectives. If the separate ratings in the two tasks were not consistent the subject was asked to change his verbal choice or to change his number assignment to achieve consistency. This all subjects did without apparent difficulty except in two cases.

It could be argued that if a technique had been used to rank the objectives so as to result in an ordered metric scale, checking the results of a subject's verbal choices against his placement of the objectives on the numerical scale described above would have achieved an even better final assignment of utilities to objectives. Apart from a desire on the author's part to test the Churchman-Ackoff approximate measure of value, there is the practical consideration of the amount of time that can be spent in an experiment under field conditions. The subjects of experiments such as the one in this study are not students being paid by the hour for their participation; they are busy executives whose interest the researcher must hold during the experiment and whose assistance the researcher will need in subsequent interviews and informal discussions. Seven objectives means fifteen inequalities between pairs of intervals. Because the procedure adopted in this experiment was to force consistency during the experiment, the checking of intervals could have been time consuming. The Churchman-Ackoff method gave four to six inequalities that had to be checked against the numerical ratings on the ratio scale. Usually the inconsistencies

were resolved without much trouble. However, in one case, the resolution of one inconsistency created another, the resolution of the second created a third, and so it went. Finally, the subject, in exasperation, asked the author what values he needed to place on the numerical scale in order to make his ratings consistent with his verbal choices. A priori it would appear that consistency between fifteen inequalities generated by verbal choices and fifteen inequalities generated by numerical ratings would be difficult to achieve without confusing the subject or losing his interest.

All methods of measuring utility have their drawbacks. The Churchman-Ackoff method was selected because (1) it is well adapted to the situation of qualitative, indivisible objectives, (2) it can be administered in a reasonable length of time and thus is a practical way to proceed under field conditions (3) it does not make use of a gamble to obtain a utility function[28] nor does it require that subjective probabilities of "benchmark events" be obtained,[29] and (4) the accounts in the literature of the application of the Churchman-Ackoff method are not given in nearly as much detail as the reports on the use of the von Neumann-Morgenstern method. In general, for this particular problem the Churchman-Ackoff method requires simpler assumptions than other methods of measuring utility which achieve an interval scale and has advantages over those methods which fail to achieve an interval scale.

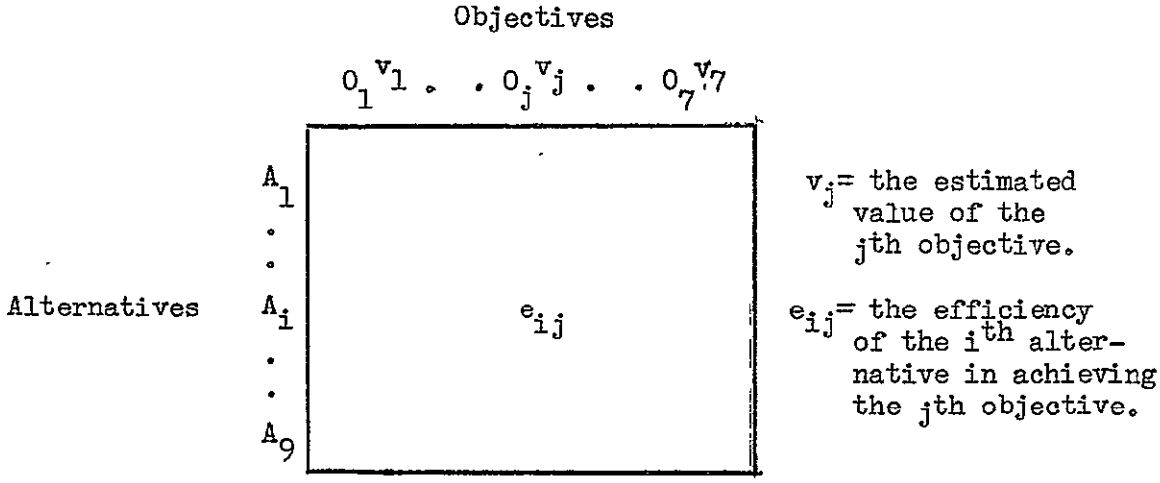
Chapter 8. A MODEL OF THE CI&A PROGRAM, ITS APPLICATION, AND THE RESULTS.

A Model of the CI&A Program

Description of the Effectiveness Model

The model developed for use in this study attempts to measure the effectiveness of alternative courses of action under consideration by an individual.[1] The procedure for measuring effectiveness requires two component measure: (1) the relative importance (value or utility) of each objective and (2) the efficiency of each alternative in achieving each objective, i.e., the probability that the selection of a particular alternative will achieve a particular objective.

Details of the experimental procedure used in this study to obtain a measure of effectiveness are given in Appendix VI under the fourth task. Briefly, the procedure is as follows. After obtaining the subject's relative values (the v_j's) of the objectives, the subject is asked to evaluate the efficiency (the e_{ij}'s) of each alternative in achieving each objective. The subject responds with a number ranging from 0 to 100. A 0 means the selection of a particular alternative is practically certain not to achieve a particular objective; a 100 means the selection of a particular is practically certain to achieve a particular objective. The efficiency matrix which results from this procedure is shown below.



The criterion used in this study to select the "best" alternative calls for the calculation of the effectiveness, the weighted sum of the efficiencies ($\sum_j e_{ij} v_j$) of each alternative, and calls for the selection of the alternative with the highest weighted sum. The weighted sum of the efficiencies is also called by Churchman and Ackoff the expected value of the alternative. It will be shown in the next section, "The Effectiveness Model as a Decision Theory Model," that the use of this term is justified.

The model to measure effectiveness described above depends on the verbal judgments of individuals. There is no estimate of the accuracy or the bias of the judgments. This defect, however, is shared by the other methods of estimating preference. In addition, the model assumes that persons choose actions (in this study the actions are the alternative allocations) in terms of the importance of goals and of the probabilities that actions will achieve goals.[2]

Reasons for Selection of the Model[3]

There are two features of the problem of allocating the 1964-65 CI&A formula grant which led to the selection of the effectiveness model

described in the previous section: (1) detailed consequences in terms of services for the chronically ill and aged were not known by the State Department of Public Health; and (2) the objectives were difficult to measure in terms of a common scale. The model selected is well adapted to situations having these features.

The section, "Lack of Basic Information about the CI&A Program," in Chapter 6 pointed out that the knowledge necessary to apply classical economic theory (allocate the CI&A funds to alternative uses until the marginal benefit from the last dollar in each category is equal to the marginal benefit from the last dollar in all other categories) is not available. Because of the lack of information about outcomes resulting from the Department's allocation of the CI&A formula grant a benefit-cost analysis to determine the optimal allocation of the CI&A grant was not attempted. A linear programming model was not used to obtain the optimal allocation of the grant because of the lack of information and the difficulty of quantifying objectives.

There are published reports which indicate that the model used in this study has been used successfully to solve problems in private industry.[4] In addition to the findings in the experiments mentioned in the discussion of utility measurement there is some evidence that two of the basic assumptions of the model, additivity of values and the use of the maximization of expected utility as an indication of rational behavior, are useful in studies of decision making.[5]

Four studies in which the assumption of additive values was used successfully are cited. One of these is a food preference study in which four different value laws were tested: a square root law, a logarithmic law, a negative exponential law, and an additive law. Even

though the test was deliberately constructed "to give a better chance for diminishing returns to be manifested in the results" the final conclusion was that the experiment had shown "that either the linear [additive law] or the negative exponential law gives a good fit to limited data on food preferences."[6] In a second instance a point system was used successfully by the United States Army for discharging soldiers after World War II. It was based on a linear system of weighting such factors as length of service, number of children, and time overseas.[7] In a third instance a linear programming model was used to solve a problem of assigning electronic equipment to naval ships. Additivity, of course, is one of the basic assmuptions necessary for the use of linear programming. The linear objective function to be maximized was the value (military worth) of the assignment of equipment to ships. The relative values were obtained by asking naval officers to rank equipment models in order of preference and to rank the differences between models in order of preference. The author concluded that "the results appear to be satisfactory in the sense that no improvement in the procurement-allocation plan yielded by the scheme has been forthcoming."[8] Finally, there is the report of an experiment involving 24 subjects who acted as personnel managers and made choices among pairs of hypothetical applicants for an executive position. Each subject was required to make 77 choices. Not many details of the experiment were given but the authors reported that only two subjects made more than four choices from the total of 77 that were not consistent with their additive model.[9]

In addition, the assumption of the additivity of values is widely used in various personnel selection and job evaluation techniques. Some examples are: (1) weighting responses to items on an application

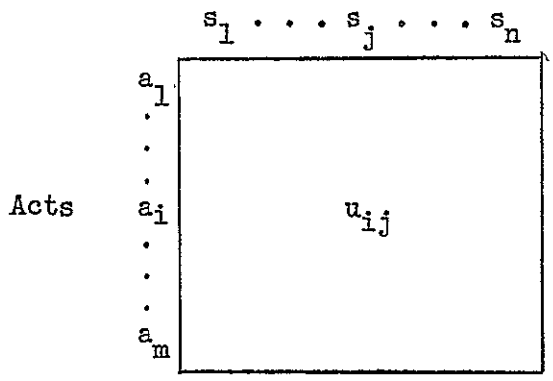
blank to predict whether or not applicants will be successful on the job,[10] (2) rating proficiency of employees on specific jobs,[11] and (3) evaluating various jobs in a company to determine their salary classification.[12]

Two reports show decision making behavior consistent with the hypothesis that decision makers were acting as if to maximize their expected utility. In one study in which parents were given problems involving behavior of children Brim reported that "both mothers and fathers selected among child-rearing alternatives as if they were maximizing their expected utilities."[13] In the other study Marschak reported experimental evidence that subjects exhibited "rational" behavior, i.e., chose the act with the highest expected utility. He stressed the conditions conducive to "rational" behavior: ". . . when and only when stress is absent (e.g., memory is not overloaded, ample time is provided, etc.) and, above all, when and only when the structure of the problem is very simple and is laid bare, by the use of lucid syntax, tabular presentation, etc."[14]

The Effectiveness Model as a Decision Theory Model

One of the points the author set out to investigate was whether a resource allocation problem in a public health agency could be formulated in decision theoretic terms. A standard formulation of a decision theory problem is:[15]

States of the World



a_i = the i^{th} act

s_j = the j^{th} state of the world

The states of the world form a mutually exclusive and exhaustive listing of those relevant aspects of the environment about which the decision maker is uncertain.

u_{ij} = the utility of the consequence of each pair (a_i, s_j)

Problem: Given an m by n array of numbers u_{ij}, choose a row (act) which is optimal in some sense -- or, more generally, rank the rows (acts) according to some optimality criterion.

If an a priori probability distribution over the states of the world exists, or is assumed as meaningful by the decision maker, then one criterion for the solution of such a problem calls for the calculation of the expected utility for each act $(\sum_j u_{ij} p_j)$ and calls for the selection of the act with the maximum expected utility.

The model used for the Department's allocation of the CI&A formula grant can be rephrased in standard decision theory terms.[16] As pointed out earlier, the Director and others in the Department are uncertain as to the results of the present method, let alone of the alternative methods, of allocating the CI&A funds to services, demonstrations, and administrative overhead. Because the information is not available to describe the consequences which would result from the selection of alternative allocations of the CI&A formula grant, the utilities of such outcomes could not be ascertained, and a model based on the available information had to be used. The model for allocating the CI&A grant considers only the uncertainty of whether or not objectives will be achieved. Seven objectives and two possible states -- achieved or not

achieved — for each objective mean 2^7 or 128 mutually exclusive and exhaustive outcomes. Here is where the assumption of the additivity of values greatly simplifies the problem. As will be shown only seven outcomes need to be considered instead of 128.

In the CI&A problem the decision maker is faced with:

A set of acts (alternative allocations): $a_1, \ldots, a_9$

A set of outcomes: $O_1, \ldots, O_7$

Let $z_j = \begin{cases} 1 \text{ if outcome } O_j \text{ is achieved} \\ 0 \text{ otherwise} \end{cases}$

The criterion of the maximization of expected utility leads to the following general formulation of the problem. Conditional probabilities are used because the probability that an outcome will be achieved is not independent of the act chosen.[17]

$$\max_a \sum_z U(z_1, \ldots, z_7)\, P(z_1, \ldots, z_7 \mid a)$$

Each of the 128 outcomes is a vector $(z_1, \ldots, z_7)$. For example, (0,0,1,0,0,0,0) is the outcome in which only the third objective is achieved. The utility of an outcome is $U(z_1, \ldots, z_7)$. However, by making use of the additivity of values assumption the utility function may be simplified and writted as follows:

$$U(z_1, \ldots, z_7) = z_1\, u(1,0,0,0,0,0,0) + \ldots + z_7\, u(0,0,0,0,0,0,1)$$

Substituting the utility function into the general formulation above and simplifying:

$$\max_a \sum_{z_1} \ldots \sum_{z_7} \left[z_1\, u(1,0,0,0,0,0,0) + \ldots + z_7\, u(0,0,0,0,0,0,1) \right] P(z_1, \ldots, z_7) \mid a)$$

$$\max_a u(1,0,0,0,0,0,0) \sum_{z_1} \cdots \sum_{z_7} z_1 P(z_1, \ldots, z_7 \mid a) + \cdots$$

$$+ u(0,0,0,0,0,0,1) \sum_{z_1} \cdots \sum_{z_7} z_7 P(z_1, \ldots, z_7 \mid a)$$

$$\max_a u(1,0,0,0,0,0,0) \sum_{z_1} z_1 \left[\sum_{z_2} \cdots \sum_{z_7} P(z_1, \ldots, z_7 \mid a \right. + \cdots$$

$$\left. + u(0,0,0,0,0,0,1) \sum_{z_7} z_7 \left[\sum_{z_1} \cdots \sum_{z_6} P(z_1, \ldots, z_7 \mid a) \right] \right.$$

$$\max_a u(1,0,0,0,0,0,0) \sum_{z_1} z_1 P(z_1 \mid a) + \cdots + u(0,0,0,0,0,0,1)$$

$$\sum_{z_7} z_7 P(z_7 \mid a)$$

$$\max_a u(1,0,0,0,0,0,0) P(z_1 = 1 \mid a) + \cdots + u(0,0,0,0,0,0,1)$$

$$P(z_7 = 1 \mid a)$$

Now the utility of each outcome and the probability of each act to achieve each outcome are all that are needed to determine the act which maximizes expected utility. This is the same information required to calculate the expected value of each alternative in the effectiveness model. Thus the use of the term, expected value, in the effectiveness model is justified. The first and second tasks of the experiment described in the next section of this chapter are a way to obtain the utilities and the fourth task is a way to obtain the conditional probabilities.

The Experiment

Modifications and Clarifications

A few modifications in the experimental design were made as a result of pretests of the interview procedure. The most important modification was the elimination of the sixth alternative. This alternative was the one that modified the allotment to local health

departments by introducing two new factors, population over 65 and per capita income, into the allocation formula. Invariably the subjects wanted to know what the effect of the new formula would be on allocations to specific local health departments. Although two different allotments to local health departments had been prepared by using the new factors with two different sets of weights in the allocation formula, the alternative was not important enough to justify the time required for the subjects to compare and evaluate the consequences of the current allotment to 43 local health departments with two other allotments. More basic, of course, is the point that only these two particular weightings of the new factors in the formula would be judged rather than the overall question of the desirability of changing the allocation formula.

Chapters 5 and 6 were distributed to the participants in the experiment several weeks prior to the interviews so that there would be ample time for the author to discuss any questions they might have. Some discussion followed. As a result, the language used to describe the objectives was revised several times. It was essential to the success of the experiment for the participants to have a clear understanding of the seven objectives and to agree that these were the objectives that influenced Departmental behavior in the allocation of the CI&A formula grant. The discussion between the author and the various participants showed that there was a variety of reactions to the objectives. The first reaction of some was to say that the personal health care objective, the first objective listed in Chapter 6, was the only objective and that the other objectives were means to this end. In these cases the author pointed out several examples of behavior that

would achieve one of the other objectives but not the personal health care objective. With two exceptions noted below, agreement was reached that the other objectives could be considered as ends in themselves. Another point raised by Departmental members was that the objectives were not unique to the CI&A program. One person told the author that he agreed that the objectives were correct but that many of them were also objectives of other Departmental programs. This point was cleared up by stating that the objectives were not meant to be unique to the CI&A program.

One subject was unable to respond to the tasks in the experiment. He thought it was artificial to separate the objectives because all of the things mentioned in the objectives were needed for a good program. In the fourth task after he read the first alternative and was asked the probability that the selection of the first alternative would achieve the various objectives, he said, "I'm getting a headache trying to think out these possibilities. This is like a crossword puzzle." He went on to say, "I don't think of these things in relation to each other [the probability that an alternative would achieve an objective] and I don't think of them in numerical terms." Referring to the scale of probabilities he said, "When you start talking about 90 or 50 or 75 I just don't think that way."

Methodology

Individual interviews in which participants were asked to complete four tasks were held with twelve key Departmental members closely involved with the CI&A program. The members were the Director, the Deputy Director, the Assistant Director; the Chiefs, the Assistant Chiefs, Medical, and

the Assistant Chiefs, Administrative, of the Divisions of Preventive Medical Services and Community Health Services; the Assistant Chief of the Division of Administration;[18] the Chief of the Bureau of Chronic Diseases; and a medical officer in the CI&A unit.[19] Each interview lasted between one hour and fifteen minutes and one hour and thirty minutes. The details of the experimental procedure used during the interviews are given in Appendix VI. Summary results of the experiment are given in Exhibit T.

The first two tasks were based on the Churchman-Ackoff approximate measure of value method described in the previous section of this chapter. In the first task each subject ranked the seven objectives and made choices among subsets of the set of objectives.

In the second task a unique set of values for the objectives was obtained by asking the subjects to rate the objectives on a ratio scale. The verbal choices of the first task and the ratings of the second task were then compared for consistency. Where there were inconsistencies the subjects were asked to reconsider and change either their verbal choices or their numerical ratings to achieve consistency.

The third task applied only to members of the Divisions of Preventive Medical Services and Community Health Services. Members of the Division of Preventive Medical Services were asked to rank the objectives in order of importance as they believed the Division of Community Health Services would rank them, and the members of the Division of Community Health Services were asked to rank the objectives as they believed the Division of Preventive Medical Services would rank them.

The fourth task required the subjects to fill in the efficiency matrix discussed earlier in this chapter. The efficiency of each alternative to achieve each objective was obtained from each subject. Also, the subjects were asked to read the set of alternatives and to indicate which alternative they thought would be the best way to allocate the 1964-65 CI&A formula grant and which would be the second best way. A period of informal discussion, immediately after the completion of the four tasks, provided the investigator with the subject's reactions to the tasks and with their general reactions to the experiment.

Following the experiment the investigator calculated the effectiveness of each alternative. If the alternative with the highest effectiveness had not been rated by the subject as his first or second choice of how he thought the 1964-65 CI&A formula grant should be allocated, the subject was re-interviewed and asked to comment on why he had not chosen that alternative.

Results and Discussion

First Task

The first task, the assigning of values to the seven objectives, was the easiest task for the subjects. Nevertheless, there were some problems.

One choice among the subsets of objectives caused most of the subjects some difficulty and caused considerable difficulty in two cases.[20] This was the choice between the objective the subjects had ranked as most important and the combination of the second, third, and sixth ranked objectives. In this part of the experiment it was hard

for the subject to conceive of the value of an objective alone. The tendency was to think of these objectives as a cluster rather than individually. One subject commented that there was "some overlap" in the choice situation. Another said that "choices are never this absolute, not all black or all white." The additivity assumption used in the experiment implies the objectives are independent and the members of the Department are not used to valuing an objective by itself. It was the choice between the first ranked objective and the combination of the second, third and sixth ranked objectives that was hard to make; the choices between other combinations caused no trouble.

The two subjects who had the most difficulty with the task both ranked the personal health care (services) objective first and the adding-to-knowledge-by-doing-demonstrations objective second. One of these subjects said it was impossible for him to separate the two objectives because he would never agree to a "service only" program. "If the feds said to me, here is $900,000 for a service program to put VNA [Visiting Nurse Association] type activities everywhere in California but you can't use any of the money for demonstrations, I would reject it." The other subject said that the requirement to choose between his first ranked objective and the combination of his second, third, and sixth ranked objectives forced him to make "an unrealistic choice" because the second objective would always lead to the first. After some discussion with the author about demonstrations funded by the CI&A Contract program this subject said that in his opinion results of demonstrations were always translated into practice.

However, as was noted in the section, "The Lack of Basic Information about the CI&A Program," in Chapter 6 there is no mechanism through

which the results of "demonstrations are made available to local health departments and other agencies involved in furnishing services to the chronically ill and aged."

Practically all of the subjects ranked the objectives dealing with services, local health departments, and new knowledge from demonstrations in the top three. The objectives dealing with the Public Health Service, the Department of Finance, and the psychological needs of Departmental members tended to be ranked towards the bottom of the order. The general agreement in the rankings of the objectives was borne out by calculating the Spearman rank correlation coefficient for several pairs of rankings. The correlation coefficients ranged from .62 to .93. Such coefficients would occur by chance only between one and ten percent of the time. The limitation imposed by the small number of objectives in the model prevents more precise statements about the correlation coefficients. The complete rankings of all subjects are given in Exhibit T.

Second Task

The purpose of the second task was to compare the assignment of numerical values to objectives implicit in the choices of the first task with the ratings of the objectives in the second task in order to get a unique set of values for the objectives. The objective the subjects had ranked highest in the first task was arbitrarily assigned a value of 100 on a scale of 0 to 100. The subjects indicated the values of the other six objectives as ratios of the value of 100 previously assigned to their most important objective. For example, an objective considered by a subject to be one-half as important as his top ranked objective would receive a value of 50. The numerical ratings of the second task

were checked for consistency against the ranking of objectives and the verbal choices among subsets of objectives in the first task. Inconsistencies were pointed out and the subjects were asked to reconsider and change either their rankings, their verbal choices, or their numerical ratings. Of the eleven subjects who participated in the experiment, only one had no inconsistencies between the first and second tasks. Of the remaining ten who had inconsistencies, six changed their numerical ratings only, three changed their verbal choices and numerical ratings, and one changed the rank order of his three lowest ranked objectives and also changed his numerical ratings.

All changes in the ratings of objectives on the numerical scale were downward. After this pattern had developed the author asked one of the subjects after the experiment was over why he thought his ratings and those of others were such that a downward adjustment was always necessary for consistency. He replied, "The objectives are all good. You didn't put any nasty ones in. It's all peaches and cream."

In general the second task went smoothly. Two subjects had trouble with the additivity assumption. In his verbal choice one subject preferred the first objective to the combination of the second, third, and sixth. But his ratings on the numerical scale for the combination of the three objectives added up to well over 100. When the inconsistency was pointed out, the subject argued that the average of the three objectives should be considered rather than their sum. The choices of the second subject showed the same inconsistency. Moreover, he had considerable difficulty in recognizing the inconsistency.

The number of shifts in numerical ratings makes it doubtful whether the subjects' original ratings on the ratio scale expressed their actual

values of the objectives. Nevertheless, the second task provided a good check on the number assignment implicit in the first task. Faced with a numerical scale and their verbal choices, the subjects had to reconsider if they really preferred one subset of objectives to another. The use of the ratio scale also makes the additivity assumption explicit and permits the subjects to react to it. With the two exceptions already noted the idea of additive values was readily grasped by the subjects and they were able to adjust their values and choices to achieve consistency. The original ratings by all subjects of the objectives and the final ratings after consistency between the first and second tasks was achieved are given in Exhibit T.

Third Task

The third task required the members of the Division of Preventive Medical Services to rank the seven objectives as they thought the Division of Community Health Services would rank them and, conversely, required the members of the Division of Community Health Services to rank the seven objectives as they thought the Division of Preventive Medical Services would rank them. This task involves the image held by each of these divisions of the other. From conversations throughout the Department the author gained the impression that a stereotype existed for each division. The Division of Preventive Medical Services was thought of as being primarily interested in research and not interested in local health departments while the Division of Community Health Services was thought of as being primarily interested in local health departments and not interested in research.

The results of the third task show that each of the two divisions accepted the stereotype of the other. The opinions of the chief, the assistant chief, medical, and the assistant chief, administrative, of each division are combined in the opinion ascribed here to each division as a whole. The two objectives mentioned in the stereotype and the abbreviations used for them in the next table are:

RES — To add to knowledge in the field of chronic illness and aging by doing and supporting significant demonstrations and specific investigations aimed at improving out-of-hospital services for the chronically ill and aged.

LHD — To strengthen and support local health departments by providing funds for new or improved services in chronic disease. This objective includes the maintenance of good relations with the local health departments.

Objectives	(1) How PMS Said CHS Would Rank the Objectives	(2) How CHS Did Rank the Objectives	(3) How CHS Said PMS Would Rank the Objectives	(4) How PMS Did Rank the Objectives
RES	(4, 5, 4)	(2, 2, 2)	(1, 2, 1)	(2, 2, 2)
LHD	(1, 1, 1)	(1, 3, 3)	(5, 7, 6)	(3, 3, 3)

(One example will explain how the table is to be interpreted. The triplet of rankings (4, 5, 4) refers to the rankings given by the top three administrators of the Division of Preventive Medical Services.)

PMS stands for the Division of Preventive Medical Services.
CHS stands for the Division of Community Health Services.

Columns (1) and (3) in the table show that the image each division holds of the other bears out the stereotype. Columns (2) and (4) show how the divisions did rank the objectives. The actual rankings are quite similar for the two divisions.

Another table uses the values obtained in the second task to show how the divisions rated the two objectives. Recall that the most important objective was arbitrarily assigned a value of 100.

Objectives	The Numerical Rating PMS Gave to the Objectives			The Numerical Rating CHS Gave to the Objectives		
RES	99	90	95	45	90	45
LHD	80	80	90	100	85	39

The important points brought out by this table are that all the members of the Division of Preventive Medical Services rated LHD high and, even more surprising, two of the three members of the Division of Community Health Services rated RES higher than LHD.

Because the Director is identified as the decision maker for the allocation of the CI&A grant a discussion of group decision making and the interpersonal comparison of utilities is not required. In a more extended study of the Department the Churchman-Ackoff method might be a good way to get one segment of the organization to tell about another segment's preferences. In addition to using what an individual says his preferences are, the observation of others could be considered also. This point will not be pursued further here but it does raise the possibility of using the Churchman-Ackoff method in the study of group decision making.

To summarize the third task, if all the rankings and ratings are taken at face value, and if the difficulty some subjects had in thinking of objectives separately is assumed not to affect the results, the rankings of each division's objectives by the other followed the stereotype, but the rankings and ratings the divisions gave themselves did not bear

out the stereotype, at least for the CI&A program. It may be that the divisions play out their roles verbally but that there is not as much conflict as their images indicate there should be because the values of the two divisions as they rank themselves are not as far apart as their images of each other.

As Schumpeter wrote:

> So true is it that, in science as elsewhere, we fight for and against not men and things as they are, but for and against the caricatures we make of them.[21]

Fourth Task

Although the fourth task was a complex one, the subjects, for the most part, were able to do it successfully. The subjects had to keep several things in mind: the alternatives, the objectives, and a scale of probabilities. First, each was asked to estimate the probability that each alternative would achieve each objective. This required a total of 56 estimates from each subject. Secondly, each was asked to select the alternative which he believed was the best way to allocate the 1964-65 CI&A grant. Finally, each was asked to select the second best alternative for allocating the grant. A detailed description of each alternative is given in the section, "The Alternatives," in Chapter 6.

The comments made by the subjects during this task showed that they gave thought to the consequences of each alternative in arriving at their estimates of probabilities. Usually the subjects commented briefly before estimating the probability that an alternative would achieve an objective. They made such statements as these:

> The Department of Finance would think that the State might have to pick up support of State level programs if Federal funds were withdrawn, so they wouldn't like it.

> The big local health departments would like it; the little local health departments wouldn't.
>
> I think it is good for the local health departments to do some thinking and planning. It pushes them a little.
>
> The Public Health Service would accept it but they wouldn't be so happy so it would go down to 65.

Everyone agreed that the ninth alternative was less likely to achieve the objective of strengthening and supporting local health departments than the first alternative. The ninth alternative was the one that would cut $75,000 from the amount available to local health departments while the first alternative would not affect the amount of money allotted to local health departments but would cut $75,000 from the CI&A Contract program. The agreement on such an "obvious" point supports the belief that the subjects were responding to the task and discriminating among the objectives and alternatives.

The analysis of the relative probabilities showed much agreement among the subjects. Everyone agreed that the seventh alternative (changing the allocation mechanism for local health departments to a project grant basis) would be less likely to achieve the local health department objective than the first alternative (retaining the per capita allotment based on submission of an acceptable plan). However, some subjects indicated that their answers would have been different if the question had been asked in 1961. Those who advocated project grants at that time said that a change now would be too disruptive of the CI&A programs already established. Thus the seventh alternative wasn't a feasible one for 1964-65.

All subjects except one agreed that the third alternative (using the CI&A Contract program for one or at the most a few large demonstrations)

would achieve the new knowledge objective better than the first alternative (using the CI&A Contract program to support many small projects). Everyone agreed that the first alternative was more likely to achieve the personal health care and the local health department objectives than to achieve the new knowledge objective. All except one agreed that the third alternative would be more likely to achieve the prestige and self-fulfillment objective than the first alternative. When the one who disagreed was considering this particular probability he said, "An individual might like it [one big demonstration] but if he were a real public health man he would want the broader base [of many small projects]." Therefore, in terms of achieving this objective he gave a higher probability rating to the first alternative than to the third.

All except one agreed that the fifth alternative (reducing the reporting requirements of local health departments) would be less likely to achieve the personal health care objective than the first alternative (keeping the reporting requirements of local health departments the way they are now). The one who disagreed is a former local health officer.

The three members of the Director's Office agreed in practically all cases in their evaluation of which alternative was more likely to achieve a particular objective. There was a little more diversity among the others who participated in the experiment. Among the latter group there were differences over which alternative was more likely to achieve an objective, but the split was within divisions rather than along division lines. One subject said when he made a choice that ran counter to the general belief within his division, "I know this will make me a heretic in this division." But, as the examples already given show, there was much agreement. Undoubtedly some of this unity came about because of

the time in the life of the program when the questions were asked. After three fiscal years of operation, only incremental changes could be considered for the fourth year. As previously mentioned, those in the Division of Preventive Medical Services who had advocated project grants in the discussions about the CI&A program prior to November, 1961, said that use of project grants now to allocate funds to local health departments was not feasible. However, they said that if the program were just starting their answers would have been different.

When asked to select their first and second choices among the eight alternatives for allocating the 1964-65 CI&A grant, eight of the twelve subjects picked the first alternative as their first choice. The first alternative is the alternative actually adopted by the Department in the spring of 1964. Four other alternatives each received one first place vote. The second choices were scattered among the alternatives with the third alternative receiving more choices than any other. The results are summarized in this table.

	No. of 1st Place Choices	No. of 2d Place Choices
Alt 1	8	2
Alt 2	1	2
Alt 3	1	3
Alt 4	1	0
Alt 5	1	2
Alt 7	0	0
Alt 8	0	1
Alt 9	0	2

Analysis Using the Model

The purpose of the effectiveness model developed in this study is to tell the decision maker how he ought to allocate the 1964-65 CI&A formula grant. The criterion for the selection of one alternative

from the eight alternatives in the model is the maximization of effectiveness. This criterion is essentially the same as the criterion of the maximization of expected utility. Rational behavior in terms of this study is defined as selecting the alternative with the highest effectiveness.

Because the Director was identified as the decision maker in Chapter 6, a comparison of his choices of alternatives with the rankings by the model is given first. The Director selected the first alternative as his first choice. This is the choice he actually made for the CI&A program in the spring of 1964. In this experiment he picked the third alternative as his second choice. Calculations using the model showed that the first alternative had the highest effectiveness and the third alternative had the second highest effectiveness. Thus in terms of the model for allocating the CI&A grant the Director was a "rational" decision maker, i.e., his behavior was consistent with the hypothesis that he chose his alternatives as if he were maximizing expected utility.

Of the eleven participants who completed the tasks in the experiment, seven selected as their first or second choice the alternative the model ranked first. Of these seven there were four whose first and second choices were also ranked first and second by the model. The complete results are:

Subjects	Model Ranking of Subject's 1st Choice	Model Ranking of Subject's 2d Choice
A	2	3
B	1	2
C	1	2
D	1	6
E	3	1
F	N/A	N/A
G	6	1
H	2	3
I	5	2
J	1	2
K	1	2
L	2	3

Of the twenty-two first and second choices made by the eleven subjects, the model ranked nineteen of them as first, second, or third in effectiveness. A test which supports the hypothesis that the subjects chose alternatives as if they were maximizing expected utility is to calculate the probability that four of the eleven subjects would have made "perfect choices" by chance. A "perfect choice" is one in which the subject's first and second choices of alternatives are the same as the alternatives ranked first and second in effectiveness by the model. The probability of four perfect choices among the eleven subjects is .0000545.[22]

The first and second choices of four subjects (A, H, I, and L) did not include the alternative the model ranked first in effectiveness.

During the experiment subject A hesitated between alternative eight and alternative nine for his second choice. "If I were outside the Department I'd pick number eight, but being in the Department I'll pick number nine." Alternative eight was the alternative the model ranked first and alternative nine was the alternative the model ranked third.

Subject H was asked to comment on the seventh alternative, the alternative the model had ranked first. The seventh alternative would allocate

CI&A funds to local health departments by means of project grants. The subject said that this alternative would be all right after CI&A programs were established in local health departments. However, he did not think this alternative was the way to get a new program started because the assurance of continuing support for local health departments is lacking.

The seventh alternative was the alternative the model ranked first for subject I. When this subject was looking over the alternatives at the end of the final task prior to making his selections, he pulled out the seventh alternative as his first choice. Then he rejected it saying that the project grants called for in the seventh alternative were not feasible for 1964-65. However, he added that the seventh alternative was something "we should work for as a goal for two or three years from now."

When subject L selected his first and second choices of alternatives at the end of the fourth task he eliminated the fifth alternative because it was "just a change in reporting requirements." The fifth alternative is the one the model ranked highest for him in effectiveness. When asked to comment on this alternative he said, "I agree with it. We have asked for too many reports [from local health departments]."

Subject D was the only subject for whom a correction was made. When this subject was choosing among the alternatives at the end of the fourth task he said his first choice wasn't the one that would best achieve his objectives. He said he couldn't select the one that would because of the "commitments" to local health departments and "traditions" built up in California. The model ranked the third alternative first for him. Later when the subject was asked about the third alternative

(using the CI&A Contract program to support one or at most a few large demonstrations) he said that, as he had indicated before, he had favored this alternative in 1961 but it was not feasible now. It turned out that he had misunderstood the meaning of the alternative and thought that the third alternative called for using the entire grant for a few large demonstrations. When he realized that it was just the CI&A Contract program that would be changed he said that this alternative would be his first choice. Because the author had originally obtained the idea for this alternative from an earlier interview with subject D, the subject's first choice was changed to the third alternative.

Subject G was asked about his first choice which was ranked sixth by the model. The subject had had some difficulty with the scale of probabilities during the last task. During the experiment he said with reference to the fourth task, "It's too complex for me." Changing one probability to agree with a pattern he had followed on other alternatives would have raised the rank of the alternative he selected from sixth to second, but the change was not made.

Summary and Conclusions

Three Basic Questions

The field research in the California State Department of Public Health was shaped by the three hypotheses set forth in the first chapter. In this chapter the hypotheses are rephrased as questions. The answers to these questions are all affirmative.

1. Can a resource allocation problem in a public health agency by formulated in decision theoretic terms and can a model yielding a normative solution be derived?

A model for the Department's allocation of the 1964-65 CI&A grant has been developed and used. The probabilities and utilities needed for the model were obtained by the systematic processing of information furnished by Departmental members in a series of four tasks. Most of the subjects were able to complete the tasks successfully. The results were consistent with the hypothesis that the subjects would choose alternative as if they were maximizing expected utility. In particular, the Director the person identified in Chapter 6 as the decision maker for the allocation of the CI&A formula grant, selected as his first and second choices the alternatives the model ranked highest and second highest in effectiveness.

The normative feature of the model is the criterion which says that the decision maker ought to choose that action with the highest effectiveness. Marschak calls such a criterion a norm.

> We discussed in the first lecture some norms "recommended" to decision makers who face uncertainty. These norms or behavio: postulates are similar to the rules of logic or geometry. It is not asserted that such norms are fully obeyed by all or ev a sizable proportion of men or women, in our own or any other civilization, just as logicians and mathematicians do not assert that all or the majority of their countrymen or members of any other society are immune to errors of logic or arithmetic. It is merely recommended that these errors be avoided. Recommended norms and actual habits are not the same thing.[23]

> Clearly this is an idealized picture [a decision maker using estimates of probabilities of possible events to help select a decision rule, that, on the average, produces good results in terms of his goals], a <u>norm</u>, a piece of logic not of psychology. To prefer efficiency to inefficiency is itself a norm. Is it therefore a useless exercise? I don't think so. Psychologists tell us how often, and by what kind of people, certain logical -- or, for that matter, arithmetical -- errors are made; this does not make arithmetic and logic useless. In fact we do try to teach children arithmetic. We are concerned when our students lack logic. And I suppose, teachers of Business or of Military Art are rather anxious to inculcate the ability of efficient decision.[24] (Italics in original.)

Because of the problems of measuring utilities and probabilities and the problems of combining them to achieve a preference ordering of the alternatives, decision theory is in a state of ferment today. With the present state of decision theory it remains to be seen if the norms of decision theory such as the choice of the action that maximizes expected utility are as useful to executives as the avoidance of errors in arithmetic and logic are to people in general.

Standard presentations of decision theory models assume a great deal of work has already been done.[25] The alternatives are known, the probabilities of the states of the world are known and the outcomes of all the action-state pairs are known and have been measured in utiles. As chapters 2 through 7 of this study show, the acquisition of this information is a costly and time consuming process. However, the present method of decision making in the CI&A program is also costly. Exhibit L, Exhibit O, and the chronology of the CI&A program in Chapter 3 show just how costly it is.

2. Can the goals of a decision maker be identified and incorporated in such a model?

Objectives for the CI&A program were identified and used in the model. The objectives are listed and discussed in Chapter 6. The Director stated that in his opinion the set of objectives used in the model covered all the important things that were considered in making decisions to allocate the CI&A formula grant. Because the Director was the decision maker his acceptance of the objectives was essential for the study.

Some other members of the Department expressed reservations over the set of goals. The members agreed that the items mentioned in the

objectives had significant influence on the CI&A program; but they felt (1) that the goals were not independent as assumed in the model, (2) that some of the goals were constraints, and (3) that some of the goals were means to an end.

The independence of objectives is the simplest assumption to make about the relationship among objectives. If the interactions among the goals are weak the assumption of independence may not affect the usefulness of the model. Although some subjects tended to think of some of the objectives in groups rather than in isolation, the results of the model indicate that the assumption of independence is a reasonable one.

The second reservation illustrates the difficulty of selecting a set of objectives that will satisfy twelve persons each with different positions, duties, and responsibilities. As stated previously, one person's goal may be another person's constraint. The different roles the twelve members play in the Department help define the goals that each will emphasize in defining his appropriate behavior and the goals that each will consider as constraints on his behavior.

The third reservation, the means-end chain, created problems for several participants. One member told the author that he considered the objective of strengthening and supporting local health departments as a means of achieving the goals of providing services for the chronically ill and aged and of acquiring new knowledge of how to better provide these services. He continued, "We may lose sight of this in making our decisions," and indicated that the means may become an end. Another said that the acquisition of new knowledge was not a goal but a means of improving services because new knowledge was always translated into improved services for the chronically ill and aged. As previously stated

by the author, this is not always so. Admittedly, it is often difficult to recognize that a means to an end has become an end in itself.

3. Can organization theory yield the insights needed to explain the behavior of members of the Department and to identify the elements of the allocation problem?

The use of organization theory did yield insights into the behavior observed in the Department. Chapters five and six are the answer to this question. In this study identification of the goals that are important to specific individuals led to an understanding of organizational behavior.

Simon has stressed that some goals generate alternatives while others test alternatives.[26] A division of a set of goals into those that are used to generate alternatives and those that are used to test alternatives will be made differently by different members of an organization.

One would expect a diverse group such as the twelve who participated in this experiment to view the same set of goals differently. An example of how different divisions of the same set of goals generated different alternatives is provided by the behavior of Departmental members when they first faced the problem of allocating the CI&A formula grant in the fall of 1961. Those Departmental members who value research and the acquisition of new knowledge highly suggested the use of project grants as the method of allocation. Later, in the fall of 1962, when there was an unexpected increase in the amount of CI&A grant, they suggested the CI&A Contract program. The CI&A Contract program is essentially a project grant program with the projects limited to those lasting one year or less. Those Departmental members who value local health departments highly and want to strengthen them suggested a

distribution of CI&A funds among all local health departments. Each group checked its alternative against the other goals such as providing services for the chronically ill and aged and maintaining good relations with the Department of Finance and found its alternative achieved the other goals. Thus the situation arose where two groups facing the same problem and considering the same set of goals (or constraints) arrived at different yet feasible plans for solving the problem because the goals that generated alternatives were different for each group.

By 1964 the feasible set of alternatives had shrunk. The commitments and expectations created by the allocations of the three intervening fiscal years had eliminated alternatives that were feasible in 1961. Much more agreement was shown over the allocation of the CI&A formula grant for 1964-65 because the range of feasible alternatives which could be evoked by emphasis on different goals was much narrower than in 1961. In addition, new federally financed programs, such as programs for vaccination of children and services for the mentally retarded, requiring basic administrative decisions comparable to those required for the CI&A program in 1961, have come along to compete for the limited time of the top administrative personnel in the Department. In short, the degree of agreement about the 1964-65 CI&A program shown in the experiment probably occurred because the range of feasible alternatives had become quite narrow and because the attention of Departmental members was being diverted to more pressing problems.

Limitations of the Study and of the Use of the Model

Decision theory can be defined as a guide for breaking down a single, complex decision into many simple decisions which members of an organization

can make reasonably well by drawing on their past experience. The study of assigning electronic equipment to naval ships mentioned earlier justified its decision theory model this way:

> The purpose of the method described here is not to replace the system of military command by a mathematical system; it is to transform a command decision which because of its enormous complexity must needs be made on a largely haphazard basis into a set of less complicated command decisions, each of which can be decided intelligently on the basis of the military judgment and experience of the deciding officers.[27]

This reason for the use of decision theory is not applicable in this study because the experimental procedure used, involving the values of objectives and the probabilities that alternatives would achieve objectives, was unfamiliar to many Departmental members. Some new and different kinds of judgments were required of them. In the naval study, on the other hand, the officers were required to make judgments about pieces of equipment with which they were thoroughly familiar.

One subject who performed the tasks without difficulty said to the author with reference to the experimental procedure, "I don't like your game." Another subject who had difficulty with the tasks implied in his comments that the decision approach left out the uniqueness of human beings.

> You can't quantify biological processes. There are three billion people in the world and one thing we know is that they are all different. In fact, we keep learning just how different they are. I'm not saying we shouldn't try to quantify, but . . .

Some of the reluctance on the part of public health professionals to use quantitative methods in administration results from their unfamiliarity with the methods. The lack of quantitatively oriented courses in the educational background of physicians and others in public health has already been noted in Chapter 5. However, some of the reluctance

is probably due also to a feeling that the quantitative approach doesn't include all the things a public health administrator takes into consideration when he makes decisions. Simon experienced a similar situation in his attempt to build a mathematical model of verbal concepts contained in The Human Group by George Homans.[28] Simon related Homans's reaction this way:

> Professor Homans has been kind enough to go over the equations . . . with me. He concludes that the mathematical treatment does not do violence to the meanings of his verbal statements, but that the equations do not capture all of the interrelations he postulates -- that they tell the truth, but not the whole truth.[29]

In general the limitations found by Grayson and Green in their attempts to obtain utility functions in industrial situations were found also in the study of decision making in the Department. The limitations on the use of decision theory include the confusion caused by the complexity of the experiment, the reluctance of subjects to try to use decision theory methods in solving problems, and the difficulties involved in putting decision theory into effect on an operational basis in an organization whose members are not familiar with the concepts of quantitative methods in management.

The lack of continuity is another limitation of this study. The researcher enters the Department, a period of time passes, he turns in a report, and then he departs. No individual or group with training in operations research is left to continue organizational studies. Two ongoing investigations directly related to the study of the CI&A program will be mentioned later, but the direct contact between the researcher and top management is lacking in both of them.

In summary, it is doubtful if the Department will adopt the concepts of decision theory to study the allocation of funds in other programs.

This way of formulating problems is too far removed from the experience of Departmental members to be convincing to them. In addition, there is no one in the Department to analyze other programs as the CI&A program was analyzed.

To understand behavior in an organization a researcher must learn the manager's problems and how he views the world. Chapters 5 and 6 show the extent to which the author was able to do this in the California State Department of Public Health. The reverse process, the manager understanding what the researcher is trying to do, is also necessary for a successful study. Some evidence that this occurred in the Department is found in the statement to the author by one of the key management personnel at the conclusion of the study. He said, "Too often we decide on the basis of what will get us into the least trouble. Now maybe we can think more objectively about decision making." Certainly much more research needs to be done to bridge the gap between the scientist and the manager, between the abstract models of rational decision making and decision making behavior of managers of complex organizations. [30]

The best that can be expected from the study of the CI&A program is that more consideration will be given by the Department to the quantitative approach to management. As noted in the following sections, there is some evidence that this may occur.

Benefits of the Study to the Department

The main benefit to the Department from this study was the demonstration that some of its management problems could be analyzed in a systematic way through the use of operations research and organization theory. Early skepticism had been voiced in the Department that a study

of values in public health decisions was possible. At the time the study was proposed one division chief remarked to the author, "There is such utter confusion with respect to aims in public health that no study like this can possibly succeed." At the conclusion of the study the same division chief said that the study reinforced his belief that program evaluation should be done and that the study demonstrated that decisions can be looked at objectively. The Director said that the study showed that one "can look at decisions objectively and evaluate." He continued that the study had "given us a broadened scope of decision making. . . . Now we can think more objectively about decision making."

The study pointed out some gaps in the Department's CI&A program. At present the Department lacks the information to judge whether more effective use could be made of the CI&A grant by changes in its allocation. The Department also lacks the information to enable it to fulfill its leadership role of assisting local health departments and others regarding better ways to run their present CI&A programs.

This study of the CI&A program helped generate support for two studies now under way which will fill in some of the gaps in the CI&A program and give the Departmental management a better knowledge of the efficiencies used in the model. These are studies of home care nursing and disease detection programs. Chapter 6 showed that these are the two most popular chronic disease service programs in local health departments, accounting for 35 of the 62 CI&A programs in 1963-64.

After a broad study of the kind described in this paper, detailed studies are needed to convince Departmental members that the quantitative approach can help them in solving specific problems. At present a study of disease detection programs is being conducted by a graduate

student in operations research and economics at the University of California. A continuing relationship between the Department and the University in these areas would seem highly desirable. There is a need in the Department for persons with training in economics and operations research to complement the medical and statistical skills already available.

Directions for Further Work and Research

The need for program evaluation has been stressed in this study. Exhibit L shows a flow chart of the present, complex administrative mechanism of the Department's CI&A program. The cost of maintaining this communication network is not known but a part of the cost can be identified. The category, "State Level Support," in Exhibit O shows that $243,942 has been spent by the Department for administrative overhead and program development costs of the CI&A program since the program's inception in late 1961. Of course, the total cost of maintaining the communication network is much more than this. Exhibit M shows a possible "minimum" arrangement for allocating the CI&A grant. When these two charts are compared the question arises whether the additional benefits obtained from the use of the administrative mechanism of Exhibit L as compared to the "minimum" mechanism in Exhibit M is equal to or greater than the additional costs of maintaining the present system. The answer is that no one knows. This is not to say that the Department's CI&A program is not effective; it is just that no one knows how effective it is. As Exhibit L shows there is no lack in the quantity of communications, but there are deficiencies in the quality of what is communicated. As mentioned in the section in Chapter 5, "Organizational Learning," the feedback from the

local health departments to the State Department does not contain the information needed to evaluate the CI&A programs. The State Department has never spelled out to the local health officers what service statistics and other data are needed to evaluate CI&A programs. A step to remedy this situation is the current study of home care nursing programs In this study the information that should be collected by local health officers is specified. This information along with information availabl in the Department should be sufficient to evaluate the programs.

The above statements should not be interpreted to mean that more information would result in better decisions. Certainly different information is needed but not more. If simple, standardized service statistics of CI&A programs are substituted for the present hit-or-miss narrative reports from local health departments, the local health departments may well collect less information than they do now. Simple, standardized service statistics are also needed from the recipients of grants from the CI&A Contract program.

Two events beyond the control of the Department may force program evaluation within the Department. First, the State Legislature has placed a dollar ceiling on the amount of research that may be undertaker by the Department. The Department is at the ceiling now. Unless the ceiling can be raised, new research projects can be taken on only by dropping some current projects. Secondly, the Governor's Office has begun to stress program and performance budgeting. It has told the departments of the State government to begin to think in these terms and to make plans for future conversion to this new kind of budgeting.

Overall studies of programs like this one for the CI&A program and specific studies within the overall framework like the ones in disease

detection and home care nursing can be made for other Departmental programs. Such studies would be particularly useful in programs where allocated funds are used primarily for services, i.e., the crippled children services program, the farm workers health services program and the maternal and child health services program.

In the section in Chapter 6, "Competition and Fragmentation in the Provision of Public Health Services," some of the other departments of State government that administer health programs were mentioned. As was pointed out, expenditures for the Medical Assistance for the Aged program, administered by the Department of Social Welfare, are estimated at almost $100,000,000 for 1964-65. This sum is greater than the entire 1964-65 budget of the Department of Public Health. Some studies in the health field at a higher level of State government such as the Health and Welfare Agency would seem to be desirable. (The Health and Welfare Agency includes the Departments of Public Health, Social Welfare, Mental Hygiene, and Rehabilitation.) An exploratory study at this level of State government would give a comprehensive picture of the State's programs in the health field and would show what gaps or duplications, if any, exist.

This study of decision making and resource allocation in a public health agency was a new experience for the author and for the California State Department of Public Health. The effects of the study on the Department are difficult to measure. Any prediction about the future of operations research in the Department would be merely a guess. To a large extent the Department's use of quantitative analysis in management decision making will depend upon the rate with which the field of public health will adopt new goals and new administrative techniques. It is

obvious that some persons in public health are reluctant to change whereas others seek change. Two divergent opinions were evident in this study. One member of the Department told the author that the problems of the CI&A program "are a symptom of a convulsion in public health. Public health must change or die." In contrast to this another said, "Some people in public health are too impatient. In public health progress isn't measured in weeks or months or even years, it is measured in decades." Progress in the use of operations research in public health administration will depend on which of these views will prevail.

Exhibit A. 1943 Organization Chart, Proposed by the American Public Health Association

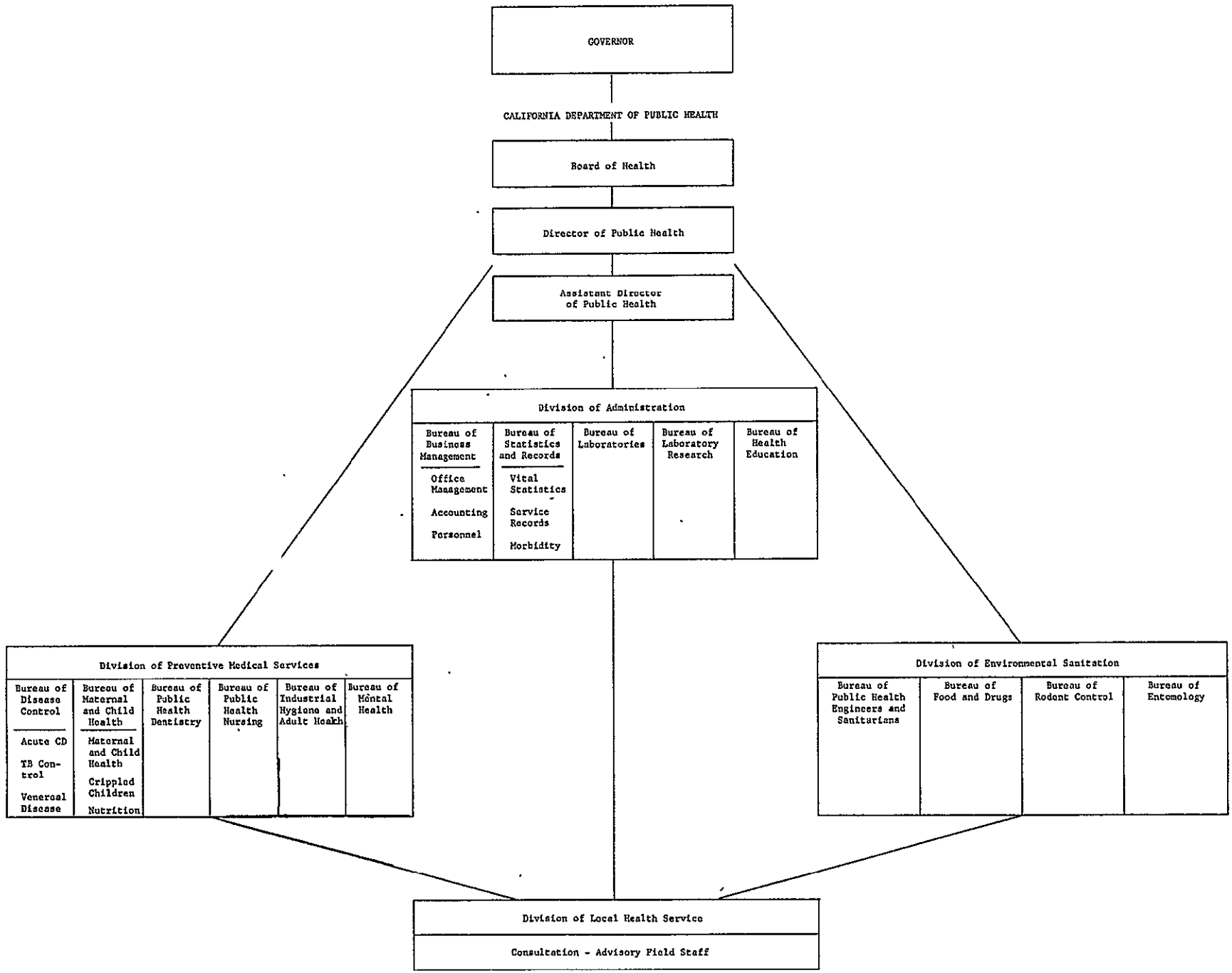


Exhibit B. 1943 Organization Chart Proposed by the Department of Finance

FUNCTIONAL ORGANIZATION
DEPARTMENT OF PUBLIC HEALTH
RECOMMENDED BY DEPARTMENT OF FINANCE IN 1944

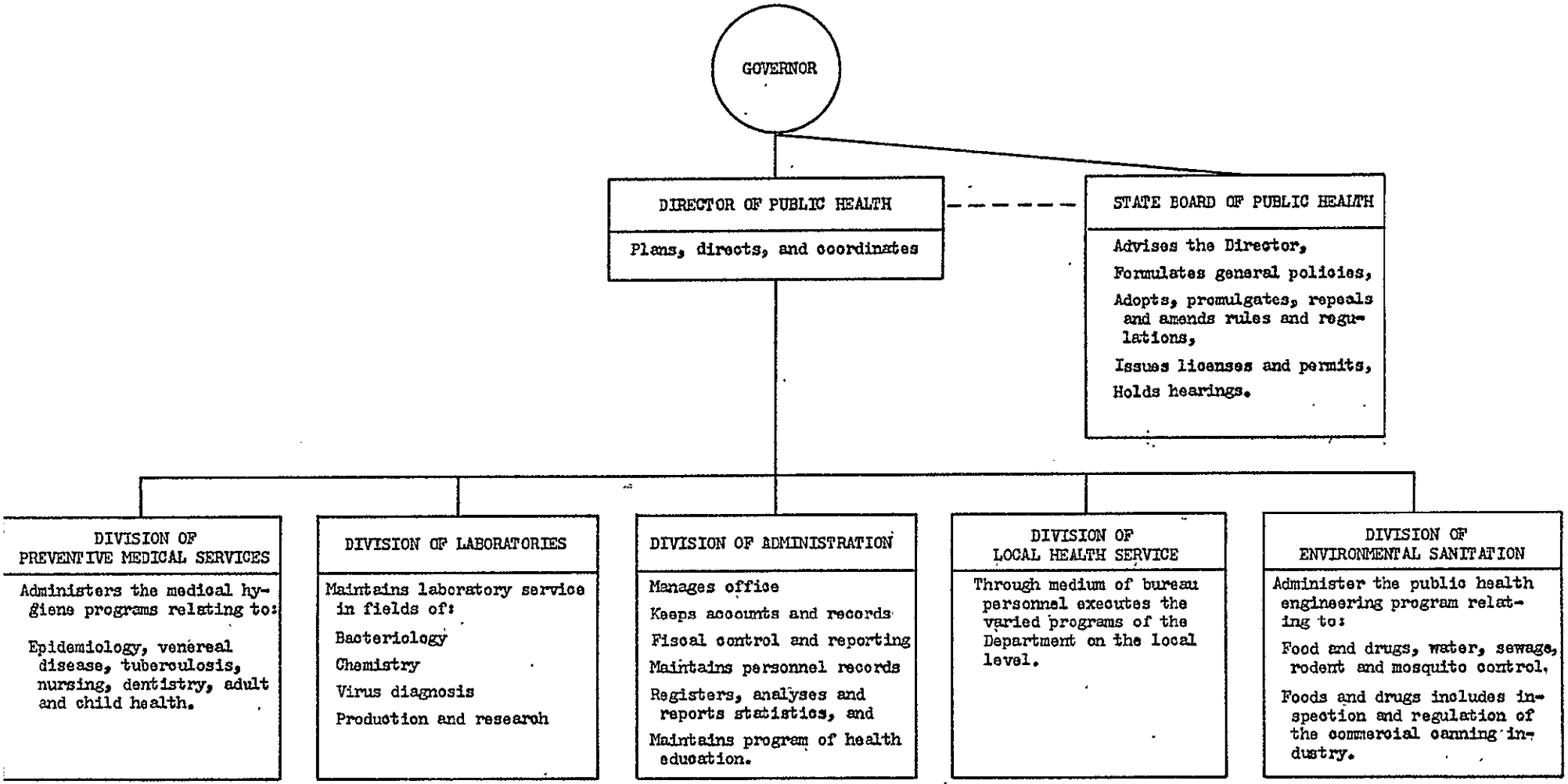


Exhibit C 1948 Organization Chart Proposed by the American Public Health Association

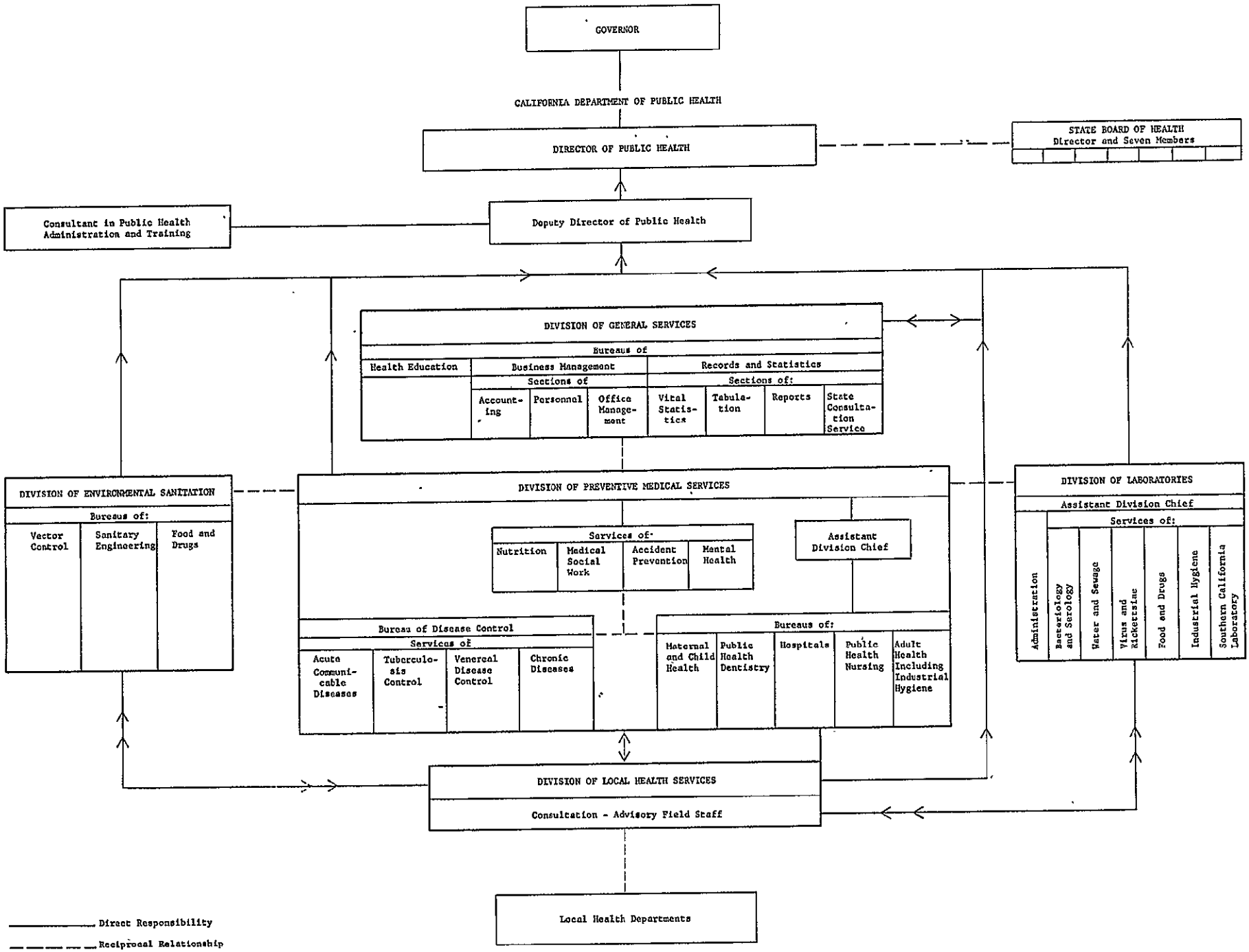


Exhibit D. Actual Departmental Organization Chart - October, 1958

CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH
EXISTING STRUCTURE
SHOWING DIVISIONS AND BUREAUS
OCTOBER, 1958

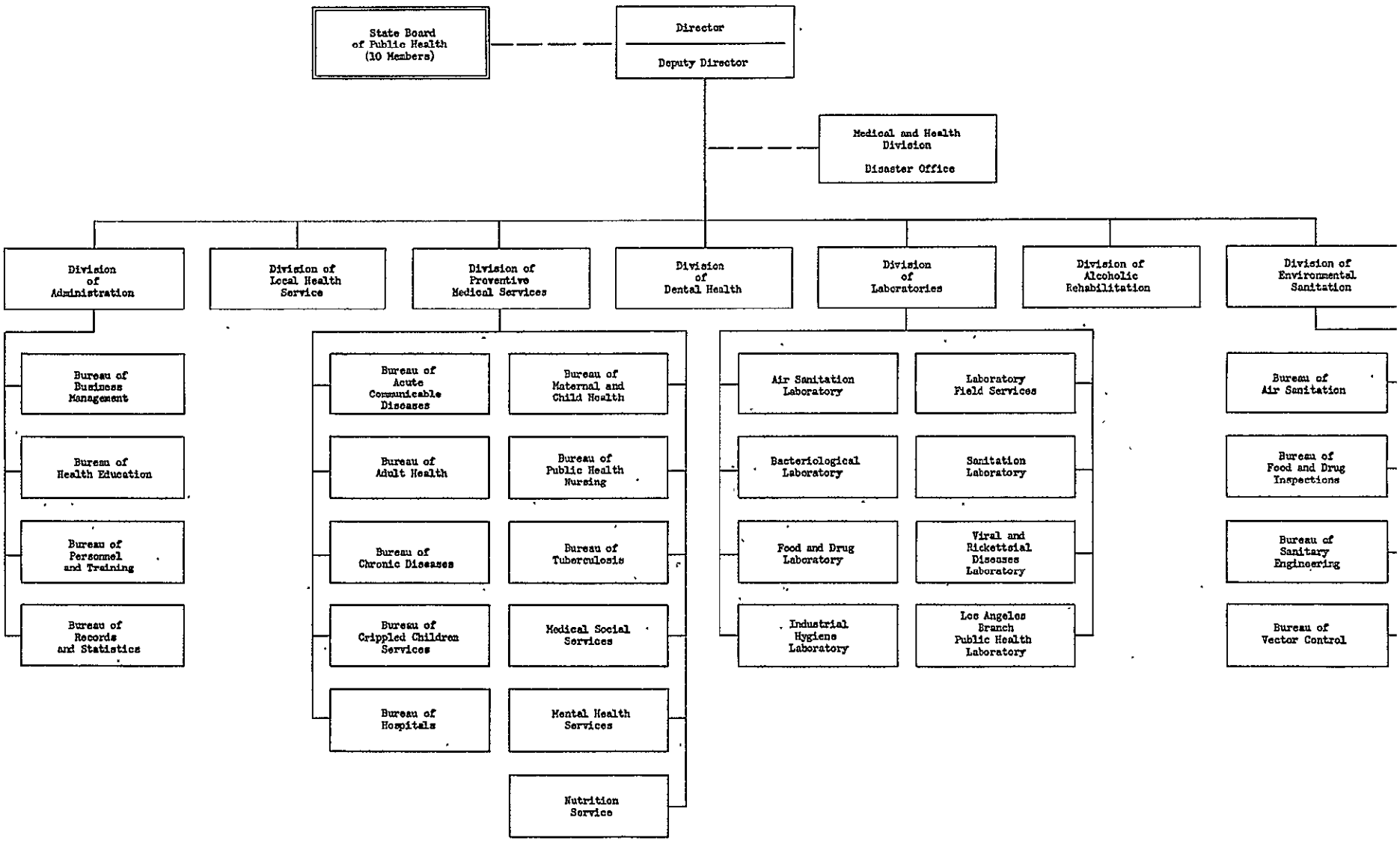
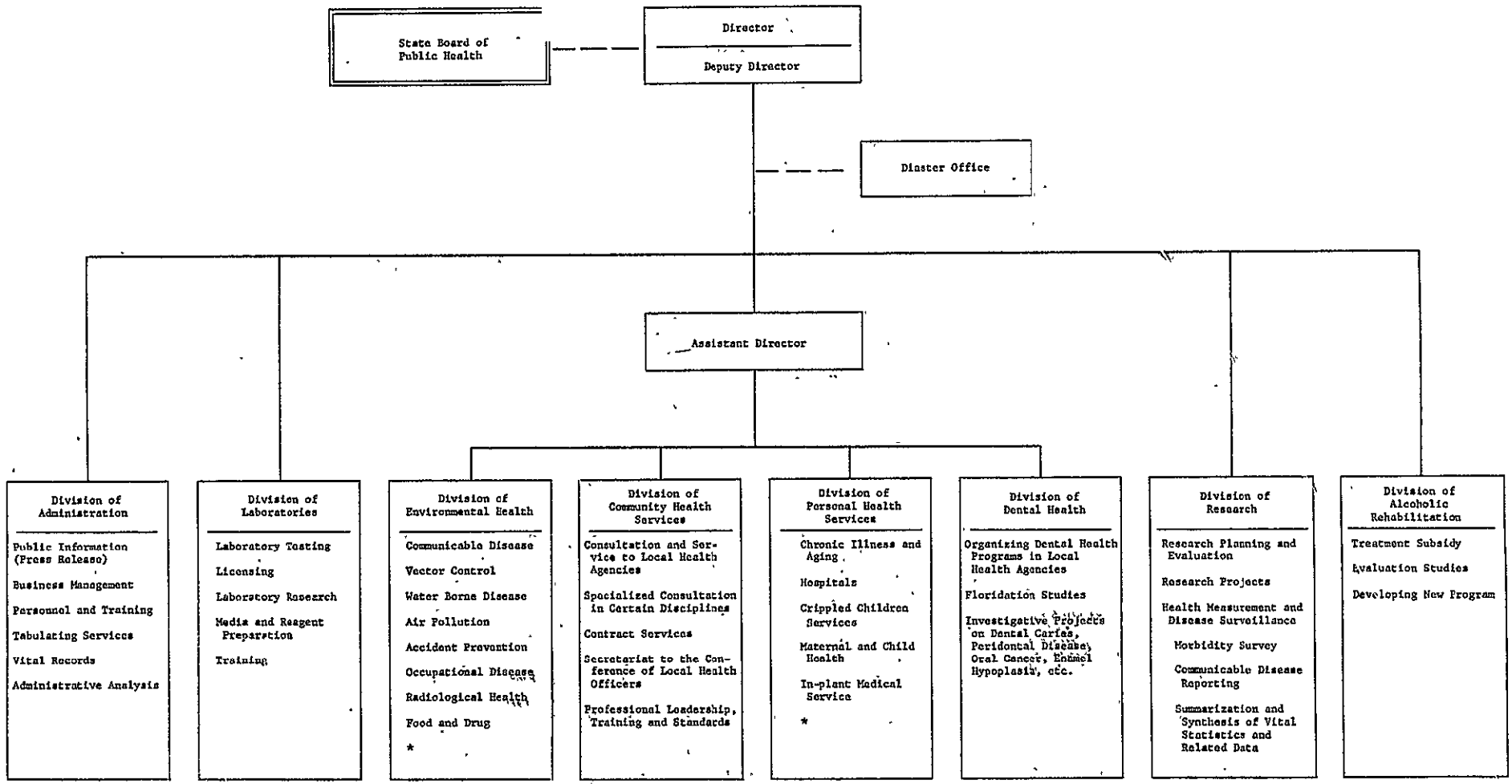


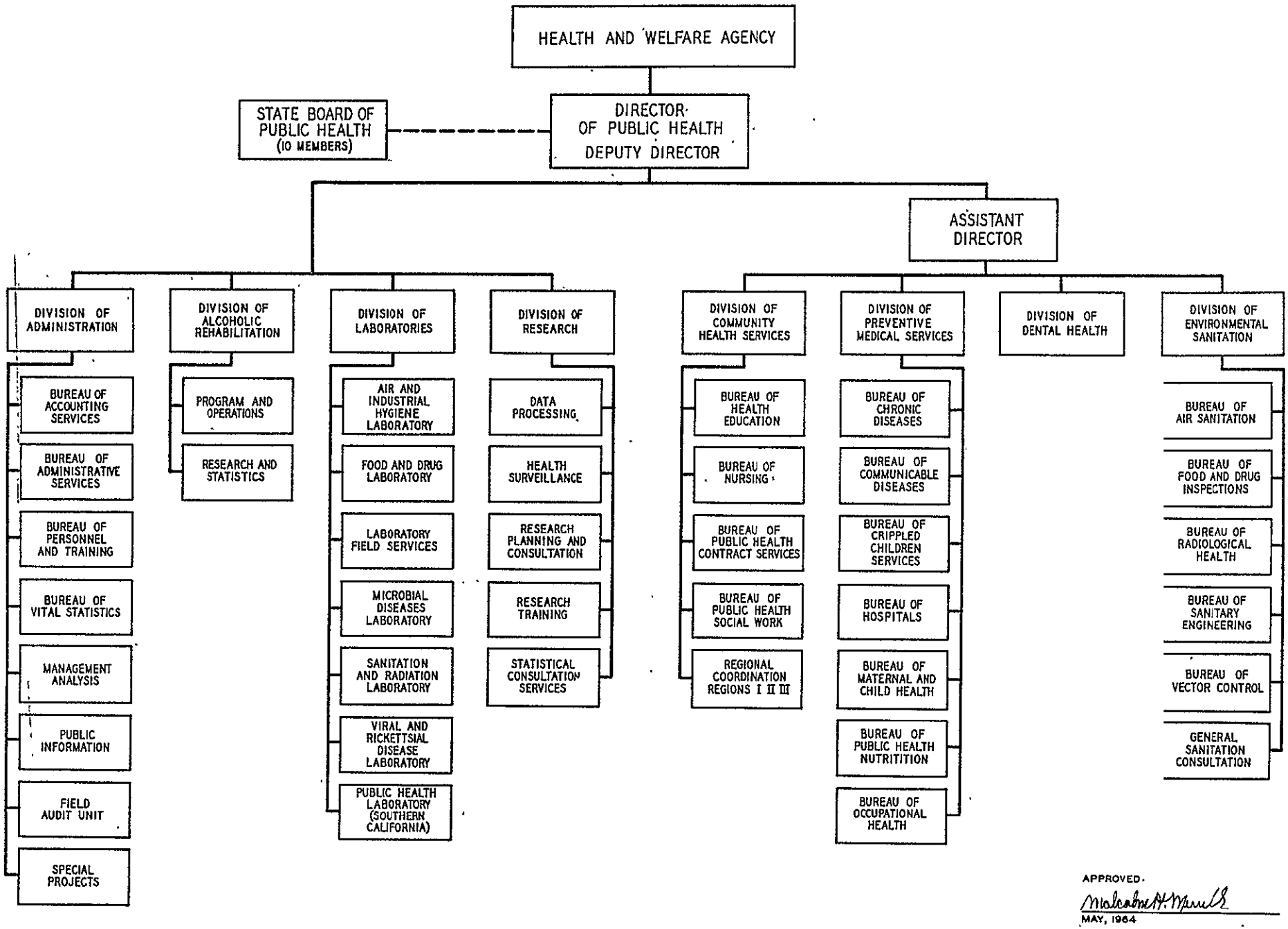
Exhibit E. 1958 Organization Chart Proposed by the Department of Finance



* Not a complete listing of functions.

Exhibit F

STATE OF CALIFORNIA DEPARTMENT OF PUBLIC HEALTH



APPROVED.

Malcolm H. Merrill

MAY, 1964

Exhibit G Agenda of October, 1963, CCLHO Meeting

Introductions

Director's Hour -- State Director of Public Health

Opening of Business Session

Report on Results of Mail Vote

Report of Committee on Health Services and Medical Care -

1. Progress Report

2. Amendment to Standards and Recommendations relative to full-time nutritionist

   Shall Recommendation No. 12 be amended as shown below?

   Recommendation 12. It is recommended that a qualified person trained in the field of nutrition be available to every local health department, and that every health department serving 500,000 or more people employ at least one such person on a full-time basis.

3. "Guide for Services in Nutrition"

   Shall the proposed guide outlined in Attachment 1 be endorsed by the Conference?

4. Occupational Health and Nursing

   Shall the Conference approve the Report of the Committee of Directors of Nursing as stated in Attachment 2?

Report of Committee on Communicable Disease and Laboratories -

5. Progress Report

6. Implementation of Vaccination Assistance Act

7. Usefulness and continuation of the List of Lost Tuberculosis Cases

Shall the list of lost tuberculosis cases continue to be published?

8. Policies and Standards for Tuberculosis Control in California

Shall the Conference approve the recommended statement as shown in Attachment 3?

9. Procedure for Improving the Reporting of Communicable Diseases

Shall the Conference endorse the statement contained in Attachment 4?

Report of Committee on Environmental Health -

10. Progress Report

11. Insecticide Dispensers in Food Serving Establishments

Shall the Conference endorse the amended State policy as stated in Attachment 5?

12. Self-Inspection Form for Fairs, Circuses and Carnivals

Shall the Conference approve the proposed revised Self-Inspection Form as shown in Attachment 6, to be incorporated into the "Sanitation Guide for Fairs, Circuses and Carnivals"?

Report of Committee on Administrative Practice -

13. Progress Report

14. Special Public Health Funds and Accounts

Shall the Conference approve the proposed amendment to Title 17, Section 1327, California Administrative Code, as shown in Attachment 7?

15. Inclusion of Family Planning Services in Recommendations

Shall the Conference approve the addition of Recommendation 19 to the Recommendations pertaining to Basic Services, as shown in Attachment 8?

16. Allocation of MCH and CI&A Funds

Shall the Conference endorse the proposal of the State Health Department that allocation of MCH and CI&A funds be administered through the mechanism of reimbursable contracts where this is possible and agreeable to the local health department and the State?

17. Inventorying Health Center Space

Shall the Conference approve the proposed new method for inventorying health center space as described in Attachment 9?

18. Rural Health Committee

Shall the Conference approve the formation of a Rural Health Committee, as a standing committee of the Conference, composed of the health officers of the contract counties plus representative health officers from full-time health departments?

19. Informational Reports — Discussion

20. Items from the Floor

21. Report of Resolutions Committee

22. Report of Nominating Committee

23. President's Closing Remarks and Introduction of New President

Exhibit H: Organization Chart of State Government - Before Grouping Departments into Agencies

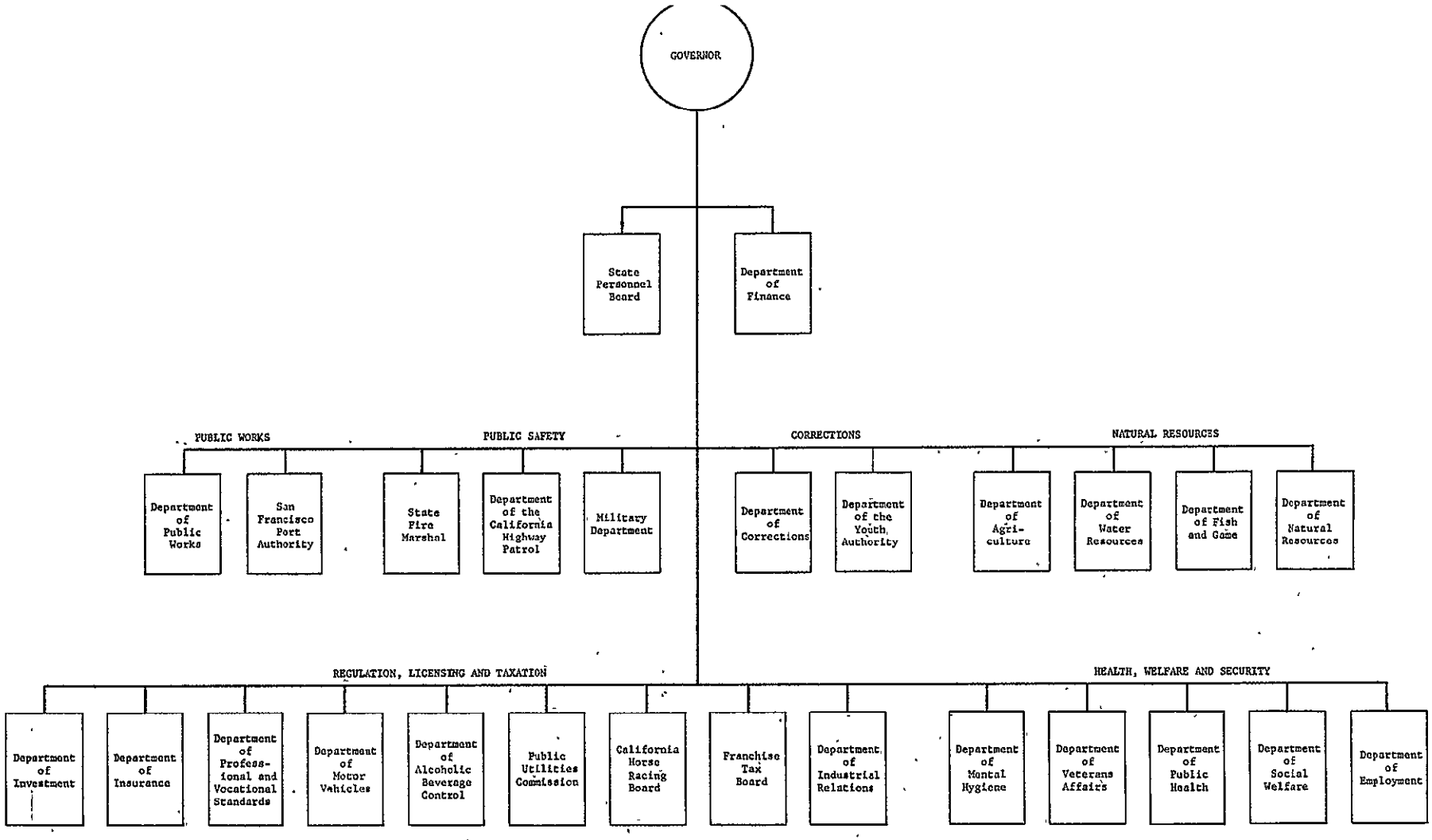
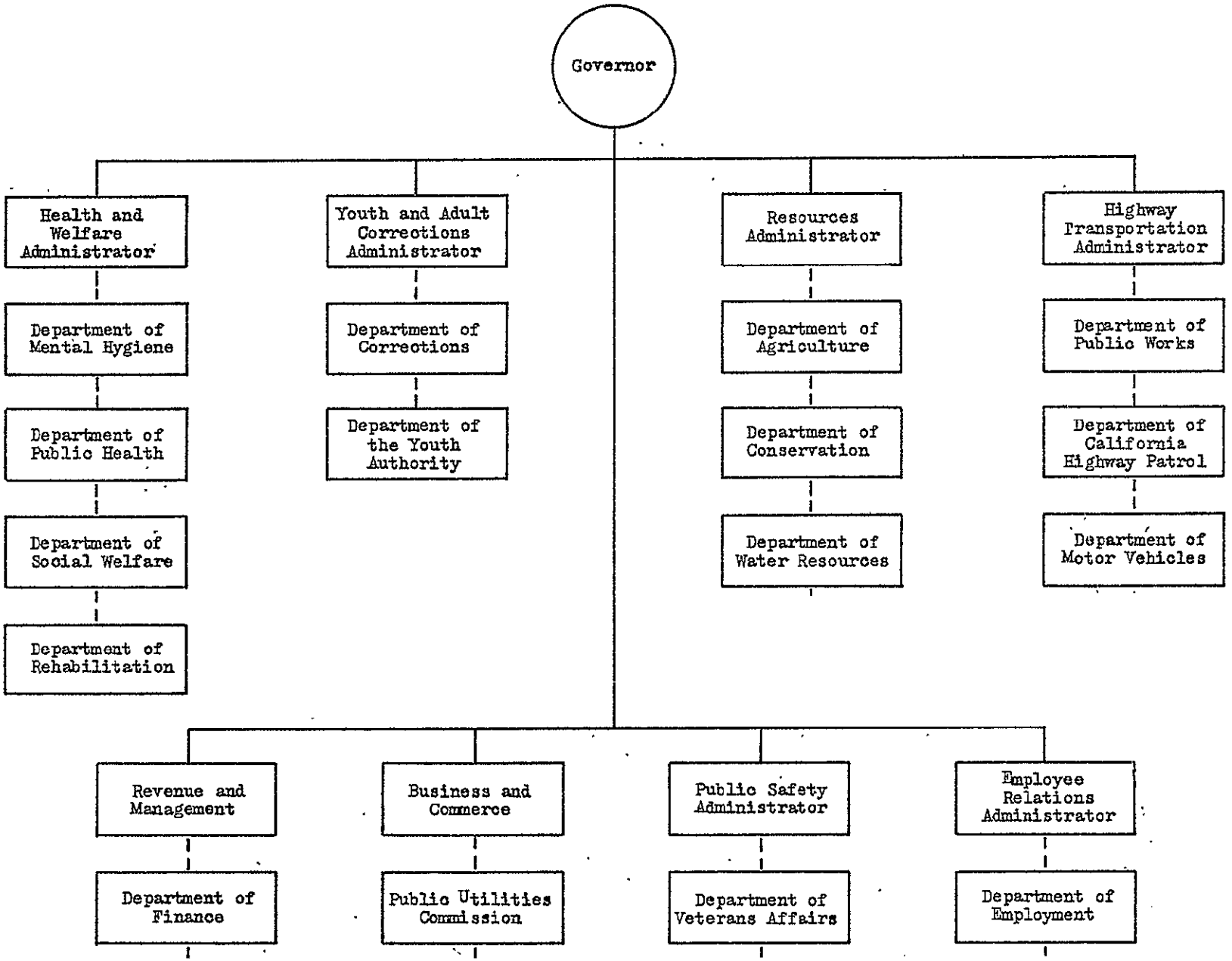


Exhibit I. Organization Chart of State Government - After Grouping Departments into Agencies



* Not a complete listing.

Exhibit J Black Boxes of the State Department of Public Health (1951-52, 1952-53, 1961-62, 1962-63)

Definition of Terms Used in the Black Boxes:

State Level Operations refers to the operations carried out by the Department. Salaries and expenses of Departmental employees are in this category. Some funds classified here reach the local level through Department contracts with hospitals, universities, voluntary agencies, and local health departments. For example, the CI&A Contract program is included in this category.

Assistance to Local Agencies consists of funds earmarked for the following categories.

Assistance to Counties for Care of Crippled Children

Assistance to Counties for Tuberculosis Sanatoria

Assistance to Counties Without Local Health Departments

Assistance to Local Health Departments

Assistance to Local Agencies for Gnat Control

Assistance to Local Agencies for Mosquito Control

Assistance to Local Agencies for the Treatment of Physically Handicapped Children

Assistance to Local and Non-profit Agencies for Hospital Construction

Special Projects Activities consists primarily of grants from the National Institutes of Health and the Bureau of State Services of the Public Health Service for specific research projects.

Reimbursements are activities carried out by the Department for other agencies of the State government for which the Department is reimbursed by these agencies.

STATE DEPARTMENT OF PUBLIC HEALTH
1951-52 ACTUAL
(000)

State Funds	16,120		State Level Operations*	5,381
Federal Funds	5,828		State Funds	3,952
Chronically Ill and Aged	---		Federal Funds	1,429
General Health	610		Assistance to Local Agencies	16,568
Cancer Control	188	STATE	State Funds	12,168
Heart Disease Control	70		Federal Funds	4,399
Maternal and Child Health	451	DEPARTMENT		
Crippled Children	263	OF		
Tuberculosis Control	303	PUBLIC		
Venereal Disease Control	142	HEALTH		
Radiological Health	---			
Neurological and Sensory Disease	---			
Hospital Construction under Hill Burton Act	3,719			
Medical Facilities Construction under Wolverton Act	---			
Retirement Fund Contributions	81			
Special Projects Activities	186	Total Flow: 23,357	Special Projects Activities	186
Reimbursements	201		Reimbursements	201
Capital Outlay	1,022		Capital Outlay	1,022

*For consistency with allocation procedures of subsequent years, approximately $55,000 in this category was reclassified as Special Projects Activities.

STATE DEPARTMENT OF PUBLIC HEALTH
1952-53 ACTUAL
(000)

State Funds	15,891		State Level Operations	5,925
Federal Funds	3,970		State Funds	4,422
Chronically Ill and Aged	---		Federal Funds	1,503
General Health	670		Assistance to Local Agencies	13,936
Cancer Control	185	STATE	State Funds	11,469
Heart Disease Control	72		Federal Funds	2,467
Maternal and Child Health	482	DEPARTMENT		
Crippled Children	395	OF		
Tuberculosis Control	289	PUBLIC		
Venereal Disease Control	139	HEALTH		
Radiological Health	---			
Neurological and Sensory Disease	---			
Hospital Construction under Hill Burton Act	1,736			
Medical Facilities Construction under Wolverton Act	---			
Special Projects Activities	182	Total Flow: 20,679	Special Projects Activities	182
Reimbursements	198		Reimbursements	198
Capital Outlay	438		Capital Outlay	438

STATE DEPARTMENT OF PUBLIC HEALTH
1961-62 ACTUAL
(000)

State Funds	31,819		State Level Operations	11,417
Federal Funds	11,307		State Funds	9,090
Chronically Ill and Aged	356		Federal Funds	2,327
General Health	963		Assistance to Local Agencies	31,710
Cancer Control	239	STATE	State Funds	22,729
Heart Disease Control	274	DEPARTMENT	Federal Funds	8,980
Maternal and Child Health	1,209	OF		
Crippled Children	944	PUBLIC		
Tuberculosis Control	252	HEALTH		
Venereal Disease Control	---			
Radiological Health	---			
Neurological and Sensory Disease	---			
Hospital Construction under Hill Burton Act	6,567			
Medical Facilities Construction under Wolverton Act	502			
Special Projects Activities	1,217	Total Flow: 44,844	Special Projects Activities	1,217
Reimbursements	436		Reimbursements	436
Capital Outlay	64		Capital Outlay	64

STATE DEPARTMENT OF PUBLIC HEALTH
1962-63 ACTUAL
(000)

State Funds	40,480		State Level Operations	13,038
Federal Funds	17,011		State Funds	10,208
Chronically Ill and Aged	912		Federal Funds	2,830
General Health	989		Assistance to Local Agencies	44,454
Cancer Control	244	STATE	State Funds	30,273
Heart Disease Control	398	DEPARTMENT	Federal Funds	14,181
Maternal and Child Health	1,207	OF		
Crippled Children	880	PUBLIC		
Tuberculosis Control	234	HEALTH		
Venereal Disease Control	---			
Radiological Health	113			
Neurological and Sensory Disease	24			
Hospital Construction under Hill Burton Act	8,044			
Medical Facilities Construction under Wolverton Act	3,969			
Special Projects Activities	2,010	Total Flow: 60,008	Special Projects Activities	2,010
Reimbursements	500		Reimbursements	500
Capital Outlay	6		Capital Outlay	6

Exhibit K Total Dollar Flows of Department Corrected for Price Change and Population Increase

	1951-52	1952-53	1961-62	1962-63
Total Flow	23,357,000	20,679,000	44,844,000	60,008,000
Total in 1951-52 Dollars	23,357,000	19,512,000	30,328,000	39,005,000
Per Capita 1951-52 Dollars	$2.10	$1.68	$1.84	$2.29
Index	117	124	173	180
Population	11,130,000	11,638,000	16,453,000	17,044,000

Source on price index information:

1951-52, 1952-53: State of California Budget for the Fiscal Year July 1 1958, to June 30, 1959. Submitted to the California Legislature, 1958 Budget Session (California State Printing Office, October, 1957), p. A-40. A discussion of the derivation of the index is given on pages A-39 and A-40.

1961-62, 1962-63: Telephone call to Department of Finance, State of California, on January 17, 1964.

Source on Population Figures:

Attachment to Memorandum to All State Agencies from the Director of the Department of Finance dated August 7, 1963. The attachment is headed "Table 1. Estimated Population of California, 1950 to 1965."

The figures are estimated as of July 1. The population figure of 11,130,000 for 1951-52 is the population estimated for July 1, 1951. The same is true for other fiscal years.

ALLOCATION OF THE CI&A FORMULA GRANT
(FY 1963-64 - $937,000)

A CROSS SECTIONAL VIEW

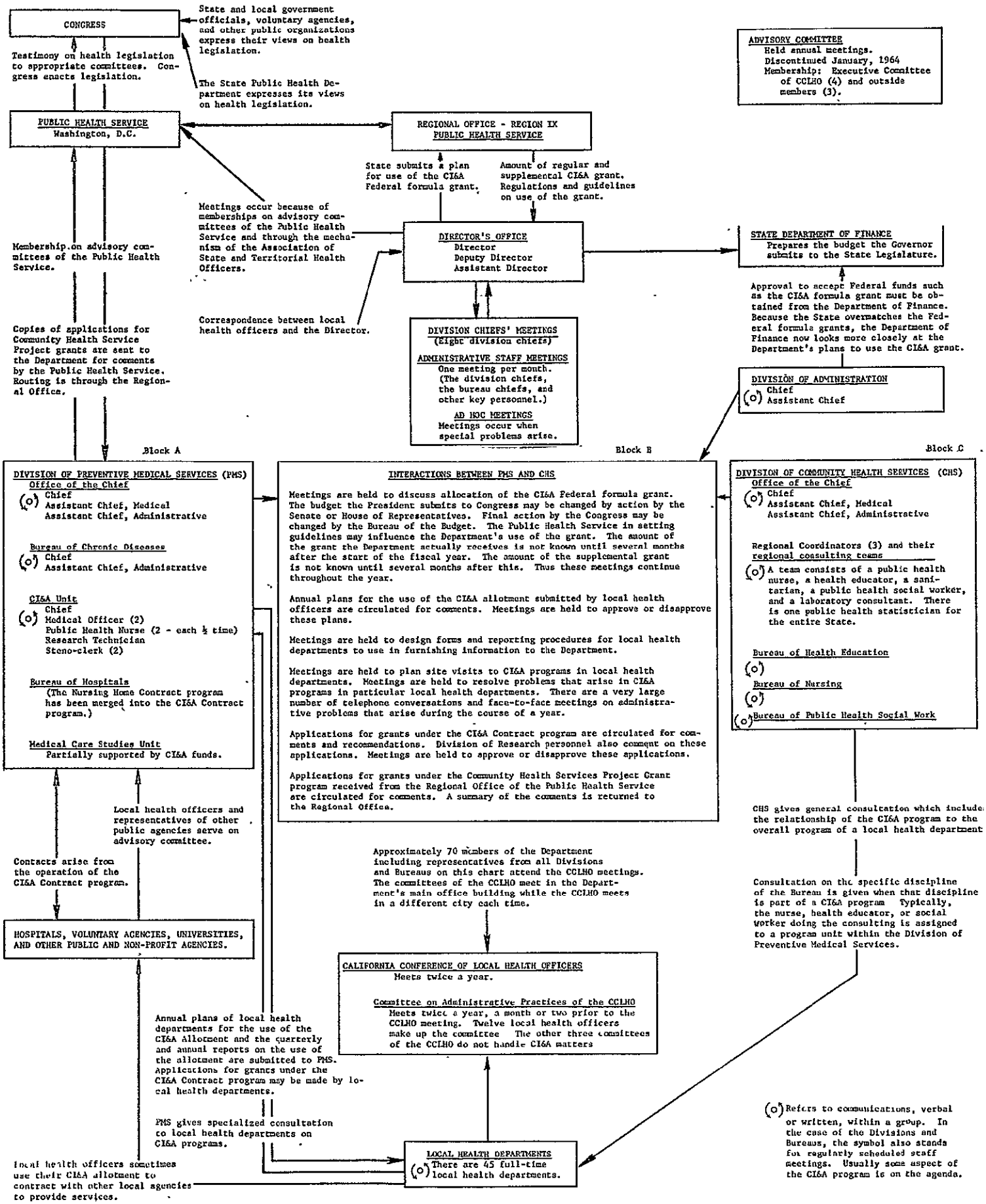


Exhibit M

"MINIMUM" COMMUNICATIONS NETWORK - CI&A PROGRAM
(Assuming entire grant is allocated to local health departments)

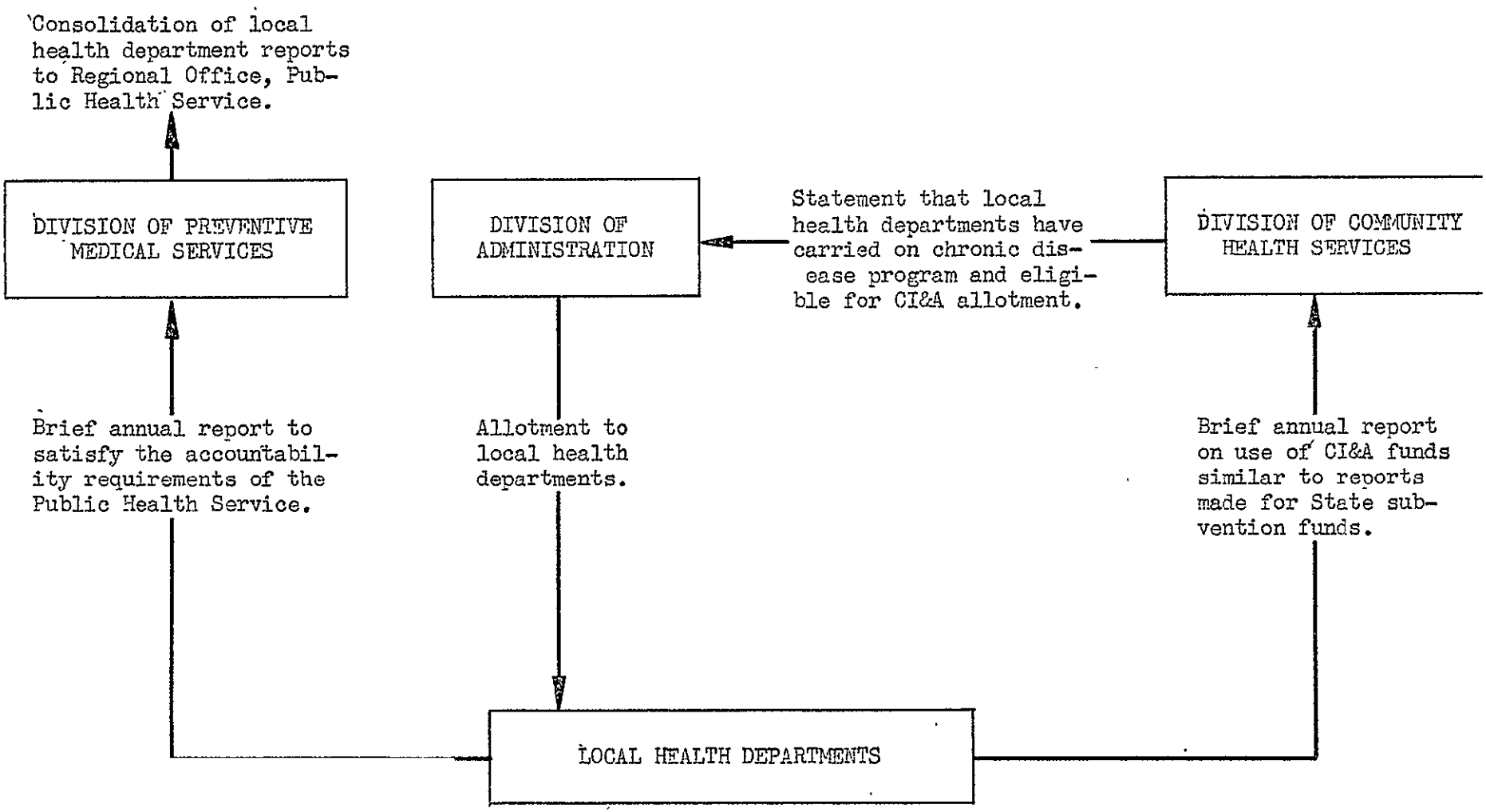


Exhibit N. Organization Chart of a Local Health Department

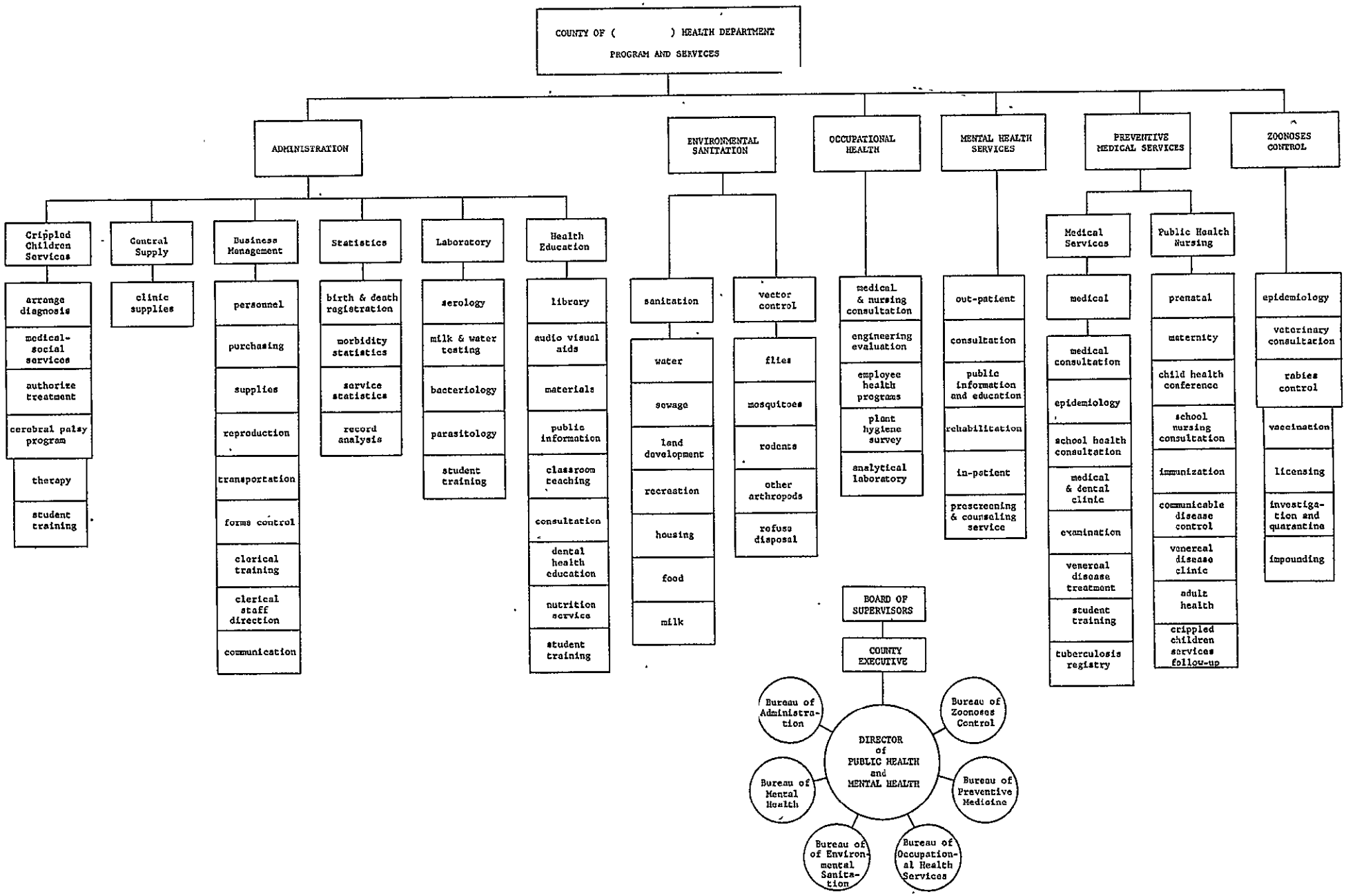


Exhibit O

Input-Output Table for CI&A Federal Formula Grants to California

Output	1961-62 (Input: 356,300)	1962-63 (Input: 911,390)	1963-64 (Est.) (Input: 937,000)	TOTALS (Input: 2,204.690)
Allocated to Local Health Departments (Services at Local Level)	280,052	584,736	590,000	1,454,788
State Level Support (Administrative Overhead)	26,248	105,694	112,000	243,942
Bureau of Chronic Diseases	7,647	45,697	65,000	118;344
Bureau of Hospitals	18,000	18,000	18,000	54,000
Division of Community Health Services	601	12,655	10,000	23;256
Division of Administration	0	24,150	12,000	36;150
Division of Laboratories	0	0	6,000	6;000
Bureau of Health Education	0	0	1,000	1;000
Retirement, Health, and Welfare	0	5,192	(included in above figures)	5,192
Studies, Experiments, and Demonstrations	50,000	220,960	235,000	505,960
CI&A Contract Program	0	170,960	135;000	305;960
Nursing Home Contract Program	50,000	50,000	50;000	150;000
Medical Care Studies Unit	0	0	50,000	50,000

Exhibit P Special Programs for the Support of Selected Local Health Activities

Public Health Service Research Grants

Local Special Projects Program

Community Health Services Project Grants

Chronic Illness and Aging Program

Maternal and Child Health Program

Community Cancer Demonstration Project Grants

Cancer Epidemiology and Control Funds

Heart Disease Control and Epidemiology Funds

Neurological and Sensory Disease Service Project Grants

Special Projects for Health of Seasonal Agricultural and Migratory Workers and their Families

Tuberculosis Control Project Grants

Venereal Disease Assistance Grants

Vaccination Assistance Project Grants

Demonstration Project Grants in Water Supply and Pollution Control

Chronic Illness and Aging Contract Funds

Mental Health Project Grants

Community Service Projects for Older Persons

Social Security Cooperative Research and Demonstration Grant Program

Funding of Cancer Society Service Demonstration Projects

Other Means of Federal Support for Local Operations

Exhibit Q

SAMPLES OF TYPES OF OUT-OF-HOSPITAL ELIGIBLE ACTIVITIES UNDER THE COMMUNITY HEALTH SERVICES AND FACILITIES ACT OF 1961

Extension, improvement, and development of such activities as the following could qualify for State matching-funds.

- NURSING CARE OF THE SICK AT HOME: To extend health department nursing services to include care of the sick at home; Expand nursing service programs in official and non-official agencies currently providing care of the sick at home; Establish additional nursing services providing care of the sick at home to pioneer more comprehensive health services to people; Establish or expand nursing services providing care of the sick at home through use of licensed practical nurses; Establish recruitment and short-term training programs for orienting nurses to programs for care of the sick at home; Incorporate restorative services activities in the programs for care of the sick at home.

- HOMEMAKERS SERVICES: To expand current housekeeper home services to include personal care services of homemaker programs; Establish new homemaker programs in official or nonofficial agencies to provide any or all of such activities as shopping, preparing and serving meals, cleaning, light laundry work, mending, caring for children, acting as parental substitute, and assisting the ill and handicapped in carrying out activities of daily living; Establish short-term training and recruitment programs for homemakers.

- COORDINATED HOME CARE: To expand the services of local health departments and other official or non-official health agencies to include coordinated home care; Expand existing coordinated home care programs to include a more comprehensive range of services to meet the total patient needs; Develop current limited home care services programs into coordinated home care programs; Encourage existing coordinated home care programs to broaden their services to meet the needs of more of the community; Establish elemental pilot health and related service programs such as: bedside nursing, dental, nutritional, social food service and other health and related services preliminary to merging into effective coordinated home care programs; Incorporate restorative services activities in the programs for care of the sick at home.

- INFORMATION AND REFERRAL SERVICES: To establish or expand services for centralization of community-wide information on facilities and services for persons with long-term illness; Provide coordinated social, medical and health related evaluation, professional counseling and placement services to insure comprehensive care; Develop, publish and distribute guide materials for use by the community in establishing information and referral service programs.

- PERIODIC HEALTH APPRAISAL: To establish continuing screening clinics to serve as an adjunct to physical examinations and health counseling by physicians - these clinics to make maximum use of technicians, in order to reduce cost and make comprehensive periodic health appraisals available to more persons.

- NURSING HOMES: To expand consultation services in such areas as: nutrition, nursing, engineering, business management, medical records, etc. (through employing consultants at State and local levels); Develop training materials such as films, filmstrips, slides, guides and handbooks relating to specific subjects such as: How to Prepare a Menu, How to Establish a Record System, How to Use Volunteers, and numerous other areas; Provide direct patient care service to patients in nursing homes by increasing personnel of local health department staffs - physical therapists, nutritionists and nurses of a local health department staff giving service to a number of homes; Collect vital statistics on nursing homes and their patients on a regular annual basis and make these statistics available to various interested persons; Develop and maintain a regular educational program for nursing home administrators and their staff personnel - including university extension courses and correspondence courses on such things as: nursing care, food service management, administration, building care and management, etc; Develop and maintain a regular cost reporting system for nursing homes and related facilities - to yield valuable information on a regular basis; Develop and maintain a model nursing home that could be used for research and for training of personnel; Expand public health laboratory facilities to perform certain routine diagnostic services for nursing home patients - diabetes screening tests, etc.

- EDUCATION AND TRAINING: To stimulate and assist education and training of professional and non-professional personnel concerned with the services for the long-term ill or aged - accomplished through formal courses in educational institutions at the undergraduate or graduate level, seminars or institutes or short courses in educational institutions, or in-service training in service agencies and institutions, Develop educational and guide materials for community use in developing new programs.

Exhibit R. Organization Chart of the Executive Branch of the Government of the United States

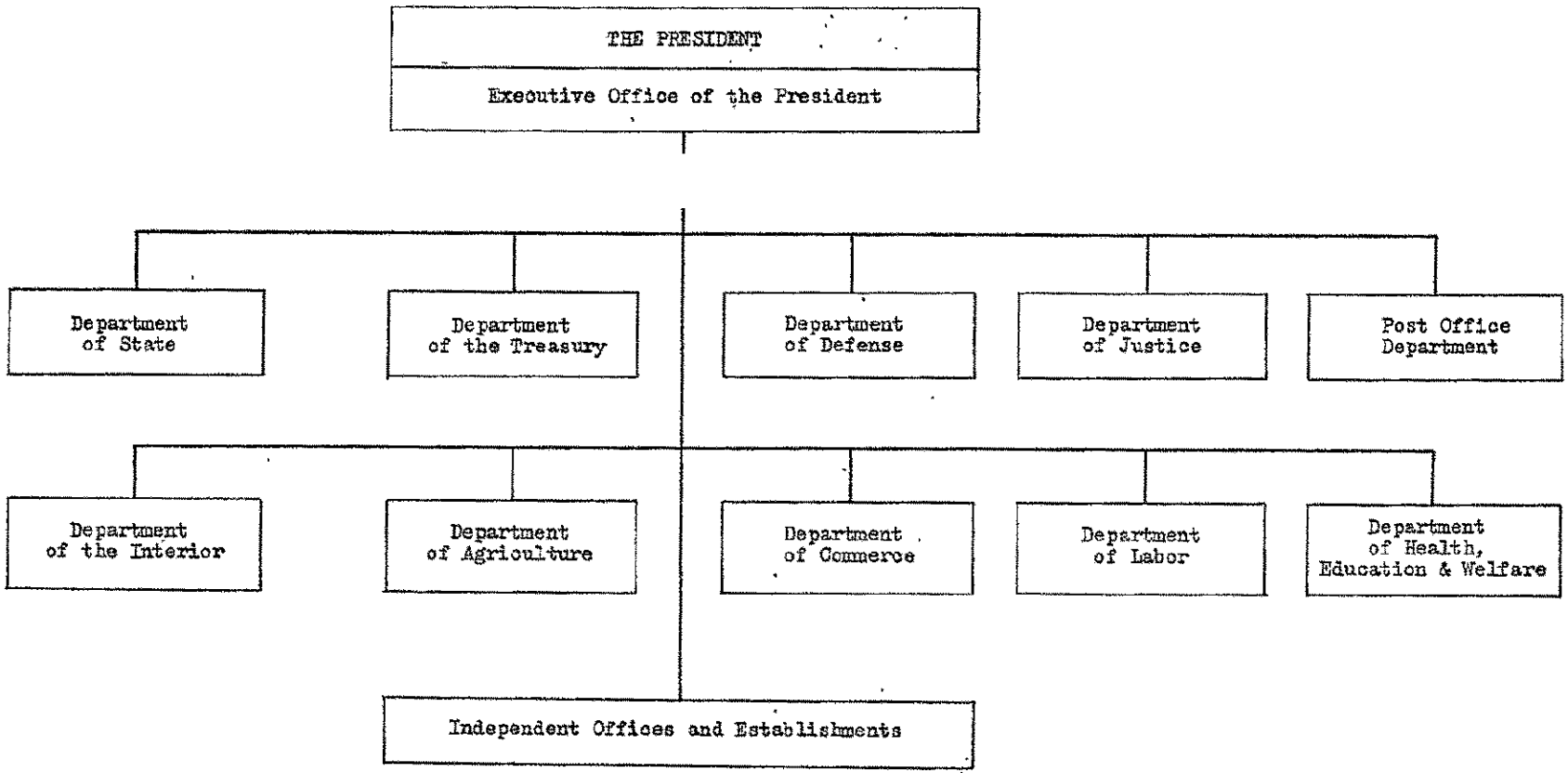


Exhibit S. Organization Chart of the Department of Health, Education and Welfare

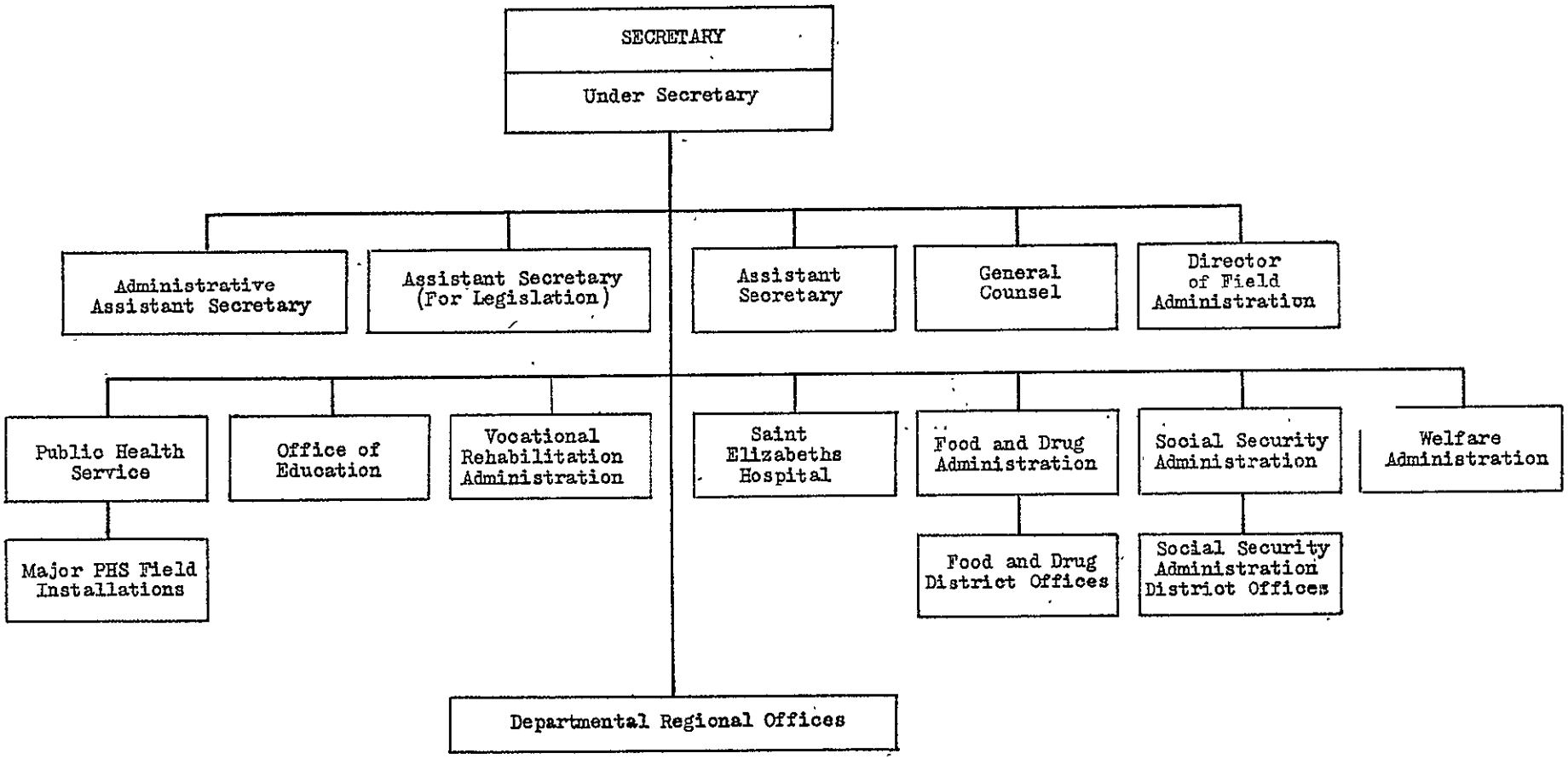


Exhibit T

Summary of Experimental Results

SUBJECTS

	Rank Order	Director's Office A	Director's Office B	Director's Office C	Division of PMS D	Division of PMS E	Division of PMS F	Division of CHS G	Division of CHS H	Division of CHS I	Other J	Other K	Other L
	1	MED	MED** MED	MED	MED	MED	MED	LHD	MED	MED	PSY	MED	LHD
	2	RES	LHD LHD	RES	RES	RES	RES	RES	RES	RES	MED	LHD	MED
	3	LHD	RES-RES	LHD	CMA*	LHD	LHD*	MED	LHD	LHD	LHD	CMA	RES
FIRST	4	CMA	CMA CMA	PHS*	LHD	PHS	CMA*	CMA	CMA	CMA	RES	FIN	CMA
TASK	5	FIN	PHS FIN	FIN	PSH*	PSY	FIN	FIN	FIN	PHS	CMA	PHS	FIN
	6	PHS	FIN PSY	CMA	FIN*	CMA	PHS	PSY	PHS	FIN	FIN	RES	PHS
	7	PSY	PSY PHS	PSY	PSY	FIN	PSY	PHS	PSY	PSY	PHS	PSY	PSY

		(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
	1	100	100	100	100	100	100	100	100	100	100	100	N/A	100	100	100	100	100	100	100	100	100	100	100	100
	2	90	90	90	50	50	50	99	99	90	90	95	N/A	95	45	90	90	90	45	95	95	90	74	95	50
	3	85	85	50	35	25	25	90	80	80	80	90	N/A	90	40	85	85	89	39	90	90	80	25	90	45
SECOND	4	75	75	40	30	25	25	90	80	65	60	90	N/A	80	25	75	65	75	35	89	89	40	24	80	40
TASK	5	50	40	10	20	15	15	50	10	40	31	N/A	N/A	45	15	50	30	67	15	60	60	25	23	75	25
	6	45	35	25	14	10	10	50	10	20	-9	N/A	N/A	25	4	30	4	66	14	25	3	0	0	65	4
	7	35	25	20	9	5	5	10	3	10	8	N/A	N/A	10	0	10	0	25	5	10	1	0	0	25	0

		For Div. of CHS:			For Div. of PMS:		
	1	LHD	LHD	LHD	RES*	MED	RES
	2	MED*	MED	MED*	MED	RES	MED
	3	CMA	CMA	CMA	CMA	PHS	CMA
THIRD	4	RES	PHS	RES	PSY	FIN	PSY
TASK	5	PHS*	RES	FIN	LHD	CMA	PHS
	6	FIN	PSY	PHS	FIN	PSY	LHD
	7	PSY	FIN	PSY	PHS	LHD	FIN

Summary of Experimental Results (Cont'd)

FOURTH TASK

	SUBJECTS											
	Director's Office			Division of PMS			Division of CHS				Other	
	A	B	C	D	E	F	G	H	I	J	K	L
First Choice	Alt 1	Alt 1	Alt 2	Alt 3# (Alt 1)	Alt 1	Alt 1	Alt 3	Alt 1	Alt 5	Alt 4	Alt 1	Alt 1
Second Choice	Alt 9	Alt 3	Alt 1	Alt 8	Alt 3	Alt 5	Alt 2	Alt 9	Alt 1	Alt 3	Alt 5	Alt 2
Model Ranking of Subject's 1st Choice	2	1	1	1#	3	N/A	6	2	5	1	1	2
Model Ranking of Subject's 2d Choice	3	2	2	6#	1	N/A	1	3	2	2	2	3

* - Tie.
\# - Allowing reconsideration explained in text; otherwise the model ranking is 6 and 7.
** - Original ranking before reconsideration following second task.
N/A - Not answered.
(1) - Original rating of objectives.
(2) - Final rating of objectives after reconciling inconsistencies between first and second tasks.
PMS - Preventive Medical Services.
CHS - Community Health Services.

Exhibit T

Code	Explanation
LHD	To strengthen and support local health departments by providing funds for new or improved services in chronic disease. This objective includes the maintenance of good relations with the local health departments.
MED	To increase the availability, scope, and quality of out-of-hospital community health services for the chronically ill and aged. This is a personal health care objective.
PSY	To achieve self-fulfillment and enhance the prestige of those who administer the CI&A program in the Department. This objective includes the natural desire to be identified with a good, well-respected program.
FIN	To conduct the CI&A program in such a manner that the Department of Finance is satisfied with the Department of Public Health's administration of this Federal grant. This objective also covers the influence of the State government acting through the Department of Finance on the CI&A program.
PHS	To show the Public Health Service that the States can do a good job with Federal formula grant funds so that the trend to centralizing the funding of individual projects in Washington does not continue. This objective also includes the maintenance of good relations with the Public Health Service.
CMA	To get the support of various community and voluntary agencies in carrying out the Department's CI&A program. This objective includes the maintenance of good relations with the California Medical Association, the county medical societies, and other voluntary agencies.
RES	To add to knowledge in the field of chronic illness and aging by doing and supporting significant demonstrations and specific investigations aimed at improving and extending out-of-hospital services for the chronically ill and aged.

Appendix I. GLOSSARY

Advisory Committee	- the advisory committee for the CI&A program.
CAP	- Committee on Administrative Practices, one of the standing committees of the California Conference of Local Health Officers.
CCLHO	- California Conference of Local Health Officers.
CHS	- Division of Community Health Services, California State Department of Public Health.
CI&A	- Chronically Ill and Aged.
Conference	- California Conference of Local Health Officers.
CSDPH	- California State Department of Public Health.
Department	- California State Department of Public Health.
Department of Finance	- one of the departments of the State government of California. Among its many duties this Department conducts management survey studies of other State departments and puts together the Governor's budget which is presented to the State Legislature.
Director	- Director of the California State Department of Public Health.
Director's Office	- the Director, the Deputy Director, and the Assistant Director of the CSDPH.
Division chief	- The Department is divided into eight divisions each headed by a chief. The divisions in turn are subdivided into bureaus.
Governor	- Governor of California.
Legislature	- State Legislature of California.
LHD	- local health department.
LHO	- local health officer.
MCH	- Maternal and Child Health.
PHS	- Public Health Service.

PMS	- Division of Preventive Medical Services, California State Department of Public Health.
Public Health Service	- a division of the Department of Health, Education, and Welfare, U. S. Government.
Regional Medical Coordinator	- a medical officer in the Division of Community Health Services in charge of one of the three regional consulting teams.
Regional Office	- Regional Office of Region IX, Public Health Service, located in San Francisco, California.
State	- California.
State Department	- California State Department of Public Health.
State Department of Public Health	- California State Department of Public Health.
State Legislature	- State Legislature of California.

Appendix II. IMPORTANT DATES - CHRONIC ILLNESS AND AGING PROGRAM

February 9, 1961	- President Kennedy sends Health Message to Congress which contains a recommendation for the Community Health Services and Facilities Act.
October 5, 1961	- President Kennedy signs the Community Health Services and Facilities Act of 1961. (PL 87-395)
October 25, 1961	- The California Conference of Local Health Officers passes a resolution recommending how the Department should allocate the additional Federal funds available to the State in fiscal 1961-62.
November 10, 1961	- Much activity in the California State Department of Public Health culminates in a letter to all local health officers outlining the Department's plan to use the "Chronically Ill and Aged Services" (CI&A) federal formula grant and the increases in other federal grants. The amount of CI&A money allotted to the local health department is included.
January 6, 1962	- Deadline for local health departments to submit plans for use of their 1961-62 CI&A allotment.
January 16, 1962	- First meeting of the Advisory Committee to review the 1961-62 plans submitted by the local health departments.
April 30, 1962	- Deadline for local health departments to submit progress reports on use of 1961-62 funds and to submit plans for use of the 1962-63 CI&A allotment.
June 11, 1962	- Second meeting of the Advisory Committee to review the 1962-63 plans submitted by the local health departments.
September 6, 1962	- The Bureau of Chronic Diseases is officially notified that the 1962-63 CI&A formula grant will be $829,800 instead of $712,600. Meetings and discussions are held on ways to use the increased funds. The CI&A Contract program emerges as the way to use the additional funds.
January 4, 1963	- A tentative allocation is made by the Department for the 1963-64 CI&A formula grant.

January 30, 1963 - A supplemental CI&A grant of $81,588 is received by the Department from the Public Health Service. These funds represent a reallocation of CI&A funds from other states which did not use the CI&A grant allotted them by the Public Health Service. The grant is used to expand the CI&A Contract program.

March 15, 1963 - Deadline for local health departments to submit progress reports on use of 1962-63 funds and to submit plans for use of the 1963-64 CI&A allotment.

May 22, 1963 - Third Advisory Committee meeting to review the 1963-64 plans submitted by the local health departments.

June 20, 1963 - A letter from the Chief of the Division of Preventive Medical Services to the Director raises questions about the MCH and the CI&A programs.

July 26, 1963 - In answer to this letter the Division of Community Health Services issues a Position Statement.

August 2, 1963 - A meeting is held in the Director's office attended by representatives of the two divisions to resolve the issues raised. A subcommittee is formed to work out program details for the 1964-65 allocation of the MCH and the CI&A formula grants.

September 17, 1963 - The Medical Care Studies Unit is formally established in the Department with the help of $50,000 from the 1963-64 CI&A grant. The State Legislature appropriated $50,000 in State funds for studies in medical care with the requirement that the Department obtain $100,000 of matching funds elsewhere. CI&A funds make up one-half the matching requirement.

October 16, 1963 - The Department learns that the 1963-64 CI&A formula grant will be $838,400.

January 29, 1964 - President Johnson's proposed 1964-65 budget calls for a reduction in the CI&A formula grant and in two other formula grants. The Department learns that if this budget is approved by Congress, California will receive $75,000 less in its 1964-65 regular CI&A grant than in 1963-64.

February 1, 1964 - The Department learns that the 1963-64 supplemental CI&A formula grant will be $98,522, almost twice what the Department had anticipated. The Department of Finance wants to know how the Department plans to use the supplemental grant.

March 12, 1964 - Local health departments are notified that their tentative allocation from the 1964-65 CI&A formula grant will be the same as in 1963-64. May 1, 1964 is set as the deadline for local health departments to submit progress reports on use of 1963-64 CI&A funds and to submit plans for use of the 1964-65 CI&A allotment.

April 14, 1964 - A list of projects to be supported by the 1963-64 supplemental CI&A grant is forwarded by the Department of Public Health to the Department of Finance. The projects are approved by the Department of Finance.

May 28, 1964 - A meeting of the Departmental Review Committee (which replaced the Advisory Committee in January, 1964) is held to review the 1964-65 plans submitted by local health departments.

Appendix III. BRIEF HISTORY OF PUBLIC HEALTH

Introduction

This appendix contains a brief history of public health in western society and presents some of the problems facing public health today in the United States. A broad definition of public health is contrasted to a restrictive definition to give two viewpoints of public health. A brief sketch of changes in public health from the time of the Greeks to the Industrial Revolution in England follows. After a few sentences on public health in the early days of the United States, the development of public health programs in the United States federal government is given. The presentation is based on a standard public health text, The Principles of Public Health Administration.[1] The appendix concludes with some remarks on the changing nature of public health and the different philosophies of public health.

Definitions

Public health has been defined as

> . . . the science and art of (1) preventing disease, (2) prolonging life, and (3) promoting health and efficiency through organized community effort for
>
> (a) the sanitation of the environment,
> (b) the control of communicable infections,
> (c) the education of the individual in personal hygiene,
> (d) the organization of medical and nursing services for the early diagnosis and preventive treatment of disease, and
> (e) the development of the social machinery to insure everyone a standard of living adequate for the maintenance of health,
>
> so organizing these benefits as to enable every citizen to realize his birthright of health and longevity.[2]

The American Medical Association defined public health in the following manner.

> The art and science of maintaining, protecting and improving the health of the people through organized community efforts. It includes those arrangements whereby the community provides medical services for special groups of persons and is concerned with prevention or control of disease, with persons requiring hospitalization to protect the community and with the medically indigent.[3]

Those in public health see the scope of activities of their subject matter as being very broad. Hanlon divides public health activities into four categories.

1. Those fields in which activity must be on a community basis:
   a. The supervision of the food, water, and milk supplies of a community.
   b. Insect control
   c. Prevention of atmospheric and stream pollution
2. Those fields dealing with preventable illnesses, disabilities, or premature deaths:
   a. Communicable diseases, including infestations
   b. Dietary deficiencies
   c. Effects of addicting drugs and narcotics
   d. Allergic manifestations and their community sources
   e. Certain mental, personality, and behavior disorders
   f. Occupational health
   g. Cancer (limitation of progression; prevention to extent possible)
   h. Cardiovascular diseases
   i. Certain risks of maternity, growth, and development
   j. Certain hereditary conditions
   k. Home, community, and industrial accidents
   l. Rehabilitation of victims of accidents and disease
   m. Dental caries
3. Those fields of medicine which need organized official leadership:
   a. Facilitation of pregraduate and postgraduate education
   b. Promotion of equitable distribution of personnel and facilities
4. Research - no health department can ignore scientific investigation and evaluation and remain progressive.[4]

In contrast to this comprehensive list of activities the American Medical Association recommended that

> . . . the services of departments of public health should be limited to:
>
> 1. vital statistics
> 2. public health education
> 3. environmental sanitation
> 4. public health laboratories
> 5. prevention and control of communicable diseases
> 6. hygiene of maternity, infancy, and childhood, if private facilities are unavailable.[5]

Ancient Times to Post Industrial Revolution[6]

Although the Egyptians had some interest in disease and its causes, their "knowledge" was based on folklore and superstition. The early Hebrews, however, had in their Mosaic Laws specific sanitary rules, and the Incas of South America used crude drug substances. The Greeks had adopted good sanitary practices in cleanliness and disposal of wastes and had accurately observed and recorded diseases, even though their beliefs concerning bodily physiology were erroneous. The Roman government provided many public sanitary services such as paving and draining the streets and removing garbage and rubbish.

During the Middle Ages in Europe the Roman and Grecian sanitary practices were given up. Bodily needs were considered sinful and only the soul was deemed worthy of attention. Leprosy spread throughout Europe, and later, cholera and bubonic plague (the black death) decimated the continent.

In the years following the Middle Ages advances were made in medicine. Dissection and surgery were practiced, rational theories of the spread of infection and the circulation of blood were developed,

and the microscope was invented. Nevertheless, progress in medicine was slow. As late as 1891 Oliver Wendell Holmes wrote, "if the whole materia medica as now used could be sunk to the bottom of the sea, it would be all the better for mankind -- and all the worse for the fishes."[7]

The Industrial Revolution in England caused the crowding of workers in urban centers under unsanitary conditions. Although the first sanitary legislation was passed in England in 1837 it was a study in 1842 by Edwin Chadwick that led to real reforms.[8] One result of this study was the appointment in 1848 of the first medical officer of health for London. The advances in public health and sanitation in England influenced the development of public health in the United States.

Some Aspects of Public Health Programs of the United States Federal Government

Early History

The first public health programs in the United States were at the local level. As cities grew local groups were formed to deal with problems of water supply and sewage disposal. Although there is some controversy over which city was the first to establish a local health department, it is agreed that some were founded in the 1790's. Organized public health departments at the state level came later. A motivating force for state action was the Report of the Sanitary Commission of Massachusetts published in 1850.[9] This report set forth ideas and programs that form the basis of much of modern public health practice. In 1869 Massachusetts established the first state board of health, beating California by one year. Details about public health in California are given in Chapter 2.

Increasing interest in public health during the nineteenth century led to the first National Quarantine Convention in 1857. The formation of the American Public Health Association in 1872 reflected the broadening scope of interest in public health matters. Even with these advances a need was felt for a national public health service, and in 1879 Congress passed a bill creating the National Board of Health. This board did not survive beyond its first four years. Its powers and functions were taken over by the Marine Hospital Service, the forerunner of the Public Health Service.

The Public Health Service[10]

In 1798 the Congress of the United States passed the Marine Hospital Service Act which established the Marine Hospital Service. This act authorized the President of the United States to appoint physicians in each port to furnish medical and hospital care for sick and disabled seamen.

> Since that time, the concept has prevailed that where national health needs are not being met elsewhere -- because of the complexity of the problems, or the insistence of the need, or the magnitude of the resources required -- the Federal Government has an obligation to help.[11]

Twenty cents a month was collected from each seaman's salary by the Treasury Department. In effect, this arrangement was the first prepaid, comprehensive medical and hospital insurance plan in the United States. Because the funds were collected by the Treasury Department the Marine Hospital Service was made a part of the Treasury Department.

The Port Quarantine Act of 1878 gave the Marine Hospital Service responsibility to prevent the introduction of epidemic diseases into the United States. The Service was also authorized to investigate the

origin and causes of epidemic diseases. In 1887 a hygenic laboratory was established. From this small beginning medical research has become an important part of the Public Health Service. The National Institutes of Health, one of the principal bureaus of the Public Health Service, evolved from this one small laboratory.

In 1902 the Marine Hospital Service's name was changed to the Public Health and Marine Hospital Service, and the Service was put under a surgeon general. In 1912 the name was changed, this time to the Public Health Service. In 1939 the Federal Security Agency was set up which consolidated many of the federal health, welfare, and educational services. Thus, at long last, the Public Health Service left the Treasury Department. In 1953 the Federal Security Agency was raised to cabinet status by President Eisenhower and became the Department of Health, Education, and Welfare.

The passage of the Federal Social Security Act in 1935 enabled the Public Health Service and other agencies of the federal government to make grants-in-aid to the states for health purposes. Since many of the grants required matching state funds, this act proved to be an incentive for states to create or modernize their health departments. Additional Congressional legislation in 1944 and in the post-World War II period has greatly increased the responsibilities of the Public Health Service. The number of full-time employees has increased from approximately 16,000 in the years immediately following World War II to almost 35,000 in 1962-63.

The principal activities of the Public Health Service are:

1. To provide medical and hospital care to beneficiaries designated by Congress.

2. To help states and communities develop preventive, curative, and restorative services for the general public, including manpower, facilities, and methods through which such services are provided.

3. To conduct national programs in the field of environmental health involving research and assistance to state and local agencies in the development of adequate means for controlling air pollution, water pollution, radiological hazards, occupational hazards, and community sanitation problems.

4. To conduct and support research focused on current health problems. The research program includes laboratory, clinical, epidemiological, engineering, statistical, and administrative studies.

The Children's Bureau

The Children's Bureau was established by Congressional action in 1912 and was placed in the Department of Commerce and Labor. When this department was split into two departments in 1913 the Children's Bureau remained with the Department of Labor. The stated purpose of the Bureau was to investigate and report on all matters pertaining to the welfare of children.

The Sheppard-Towner Act of 1921 permitted federal grants-in-aid to the states to attack problems of maternal and child health. The Children's Bureau administered these grants-in-aid which resulted in the creation and improvement of state bureaus of maternal and child health. Congress allowed the Children's Bureau to die in the late 1920's but it was revived and given additional responsibilities in the Social Security Act of 1935. In 1946 the Bureau became part of the Federal Security Agency. The Bureau is now a part of the Welfare Administration in the Department of Health, Education, and Welfare.

The Department of Health, Education, and Welfare

The Department of Health, Education, and Welfare came into being in 1953 when the Federal Security Agency was raised to cabinet level. The purpose of the Department has been stated as follows:

> . . . to help promote the general welfare of the 185 million men, women, and children who make up our national family. It is concerned with their present well-being — their hope for the future. Its constant aim is to improve the conditions of life in which we all share, to enlarge the capacity of individuals to create for themselves and their society a good — a better -- life.[12]

The general welfare clause of the Constitution of the United States provides the basic authority for most of the federal legislation in the field of health, education, and welfare.

> The Congress shall have power to lay and collect taxes, duties, imports and excises, to pay the debts and provide for the common defense and general welfare of the United States.[13]

To carry out its responsibilities the Department received appropriations totaling $5,324 million in 1962-63. The Public Health Service received $1,584 million and the Children's Bureau received $79 million of this total. Most of the Department's budget goes to the states in the form of grants-in-aid to match or supplement state and local expenditures for health, education, and welfare programs, and to colleges, universities, hospitals, and scientific institutions as grants for research and training programs. In 1962-63 states and local units received $3,721 million in this manner.[14]

An organization chart of the executive branch of the United States is shown in Exhibit R and an organization chart of the Department of Health, Education, and Welfare is shown in Exhibit S.

The Changing Nature of Public Health

Public health in the United States, having fairly well solved its problems of traditionally defined sanitation and the control of communicable diseases, is now faced with changing its goals and defining its role in achieving these new goals. Considerable discussion is now going on regarding the redefinition of public health goals.

The changing patterns of morbidity and mortality in the United States form the background for the changing nature of public health. Today a variety of new goals and roles are being proposed for public health. There is a need for urgency in the redefinition of public health because increasing numbers of non-public health agencies administer an ever greater variety of health programs. This has led some public health officials to fear for the survival of public health as a strong, separate agency of government. No attempt will be made here to give an answer to the question of what public health should do.

Public health has been criticized for continuing to emphasize its traditional functions at a time when the importance of these functions has declined.

> Public health training continues to place emphasis on the traditional aspects of communicable disease, epidemiology, sanitation, . . . at a time when their public health functions have become of relative diminished significance. . . . The progressive control of acute disease has led to its diminishing influence as a current public health problem. In 1901 over 40 percent of deaths in the United States were caused by acute conditions; currently the proportion is not quite 10 percent. It is now the chronic diseases which are steadily growing in importance. Currently, over 80 percent of United States mortality arises from this source.[15]

The California Health Survey of 1954-55 showed that acute illness caused far fewer days of disability than chronic illness.

> Of the 24 days of disability experienced on the average by each Californian during the year covered by the Survey, over 16 days were attributed to chronic illness and less than 8 days to acute illness.[16]

The changes in living patterns as well as in disease patterns which occurred in the United States during this century have far-reaching implications for public health. In 1900, 30,000,000 people (40 percent of a total population of 76,000,000) lived in urban areas. By 1960, 125,000,000 (70 percent of a total population of 179,000,000) lived in urban areas.[17] Urbanization and changing patterns of disease have caused the present discussion within public health about its future role in an affluent, urbanized society.

The World Health Organization has defined health as "a state of complete physical, mental, and social well being and not merely the absence of disease or infirmity."[18] With such a definition it is no wonder that almost any activity may be seen as related to health. In fact, much of human endeavor has been seriously suggested as the proper concern of the public health field.

> I am sure that most of us in public health derive our greatest intellectual satisfaction from the conviction that what makes our field unique is the ambitiousness of its purposes and the range of its commitments. These very ambitions have led public health to seek to embrace all the sciences that bear on human health, and these are simultaneously biological, physical, psychological, and social.[19]

> Recently public health has expanded its horizon to include most of the factors of social interaction that determine how completely man can realize his full potential for living. Within its sphere of action are many mental, social, and economic aspects of health and disease formerly thought to lie in other fields.[20]

> Health departments must bear the responsibility for effective leadership in meeting all needs in community health. . . . A healthful community must be considered in positive terms -- a place where suitable recreational facilities are provided, where planned urban and suburban development is conducive to mental health, where living and working is a pleasure, not merely endurable.[21]

> Certainly our health department personnel must include and more actively promote mental and emotional health, better nutrition, fluoridation, community planning (including recreation, and health and medical care), better training and education, family planning, occupational health, better housing, progressive patient care, including rehabilitation, training, and research.[22]

New hazards in the environment and accident prevention have been singled out as important new areas in which public health should plan a leading role.

> The environment has once again emerged as a significant problem area. Booming populations, housing shortages, failing septic tanks, detergents in water supplies, mass pollution of waterways, fallout, and other radiological hazards, air pollution, pesticides, chemical additives to foods, untested drugs, accidental injury and death, noise from jets, and countless additional problems posed by the environment are requiring the health worker's attention.[23]

> Pesticides, detergents, manufacturing processes, radiation, and atomic energy have vast potential for good and we should be able to assure health safeguards in their use.[24]

> Does the health officer have the courage to tangle with the auto manufacturer, the highway designers, the traffic engineer, the police, the planner, the architect and builder of houses, and the airplane designer? All these forces and more determine the accidents he wants to conquer.[25]

> Our number one health problem -- namely, traffic killing and crippling.[26]

Even world peace has been suggested as a goal which public health is uniquely equipped to help achieve. In discussing man's new ability to obliterate himself, Brock Chisholm asks who will teach the new ways needed to deal with the problem of the survival of the human race:

> If public health people do not, who is going to do the teaching, the training, the research, the development of attitudes that need to be done? . . . The only people who have been taught to look ahead, to prevent uncomfortable, dangerous things happening to their fellowmen, are the people working in the fields of public health and preventive medicine.[27]

Boulding argues for a strong public health role in the prevention of war.

> Yet I would be prepared to argue that war is the greatest single public health problem of the twentieth century, and it is certainly one of the greatest reducers of the average expectation of life. . . . It seems to me entirely legitimate, therefore, to use public health research funds for peace research. . . . The danger of war is the major public health problem facing mankind today and the public health movement should get solidly behind its solution. . . . I propose, therefore, that the public health movement initiate a campaign to internationalize civil defense, starting with a joint Russian-American civil defense commission, with the objective of putting world civil defense under the World Health Organization, which seems to me the appropriate body to deal with it.[28]

Survival of public health as a recognized and separate entity in government has been discussed by leaders in the field. An editorial in the American Journal of Public Health quoted the director of the Albuquerque Health Department:

> Too many health agencies have lost out on important environmental health programs and responsibilities by steadfastly refusing to become involved in environmental health matters where there is not a known cause-and-effect relationship to communicable disease and physical well-being. Whenever a health agency has refused to go beyond the traditional and known, a portion or the entire program is taken over by some other agency.[29]

The editorial went on to point out that other governmental agencies are being given the responsibility for health programs.

> Air pollution and housing are now too often handled by the building department, industrial hygiene by the labor department, and pesticides, frequently along with such traditional health agency activities as milk and meat inspection, by the agricultural department. Why this retreat from challenging problems? Where is the spirit of the pioneer health workers?[30]

Wegman uses medical care as an example of an activity that is being taken over by other governmental agencies.

> If the public health profession continues to avoid becoming involved in medical care because it is a matter of controversy, it will not be too long before organized public health will find itself a distinct appendage, with the likelihood that in the long run whatever organization does become responsible for medical care will develop a public health program of its own. This is not just a theoretical possibility; precisely such a development has taken place in other countries where social security agencies responsible for medical care have developed their own preventive services.[31]

Another writer challenges the idea that the general hospital should replace the public health department as the focal point for community health services. He also comments on the fragmentation of health services.

> Those who consider that the general hospital renders the local health department outmoded seem to overlook the fact that most hospitals lack even the first steps toward extending their services out into the community through outpatient and mental health services.
>
> Unfortunately, there has been a recent movement to assign new health services, or even to split off segments of operating health services, to more politically oriented, or at least more unified, agencies.[32]

Roemer makes the same point about the fragmentation of health services. After listing sixteen areas of organized health programs he states:

> Yet the public agency [the public health department] we like to think is "the key health organization" in any State or community has little or nothing to do with the vast majority of these organized health programs. . . . Whatever may be the total explanation, public health agencies have only exceptionally assumed responsibility for any of the wide variety of organized health services outside the classic sphere of preventive medicine. . . . It is not too late for public health agencies to halt the trend to fragmentation and assume their responsibilities as centers of comprehensive health service organization. It is not a parochial attachment to the public health profession that leads me to make this plea, but rather a conviction that all health services in the United States can be most effectively provided for people if they are organized, coordinated and administered by agencies that are motivated by a philosophy of prevention and are in a position to see the total human need without bias or vested interest. More than any other branch of government, public health agencies are in the strategic position to play this role.[33]

The confusion and fragmentation in the health field today is stressed by Crabtree.

> I know of no other area of public concern where societal action is organized in so chaotically fragmented a fashion as human health. Confusing and cumbersome as the situation may appear at the national level, the picture locally and in our several states almost defies description.[34]

The author encountered the phrase, "philosophy of public health," many times in his interviews with persons in the public health field. Usually the phrase occurred in the context of an explanation of disagreement with someone, i.e., "We have different philosophies of public health." It was difficult for the author to clarify exactly what was meant by "philosophy of public health." One way in which a philosophy of public health might be developed is by basing it on the concept of prevention. If this base is used the promotion of health by the prevention of disease is given primary emphasis. The argument goes like this. "Prevent. If you can't prevent, then control. If you can't control, then rehabilitate."

Regardless of the basic concept any philosophy of public health would have to answer at least the following three questions. The differences in philosophies of public health come out in answers to these questions and seem to be differences in attitudes toward governmental action.

(1) What are the legitimate activities and programs for public health? This question does not refer to whether a program or activity should be carried out but, rather, whether it is in the public sphere and is a legitimate activity for a governmental agency to undertake.

(2) By whom should public health programs be administered? If the activity or program is judged to be appropriate for governmental action then two questions arise. (a) Which level of government -- local, state, or federal -- should administer the program? (b) At a given level of government which agency

should administer the program, e.g., public health, social welfare, etc. These are difficult questions requiring organizational analysis.

(3) What means should be used to achieve public health goals? The means selected reflect a decision regarding the amount and type of governmental power that will be used to achieve a desired health goal. Again the attitude towards governmental action is basic. Are discussion and persuasion the way to achieve a certain goal? If not, to what extent is coercion required?

In responding to the first question many public health officials would not agree that all the programs urged upon them in the quotations at the beginning of this section are proper ones for public health departments. Certain areas such as medical care and family planning are controversial and many public health officials have been reluctant to undertake these programs.

Another area of disagreement lies in differences regarding whether a program should be administered at a given level of government by a public health agency or by some other governmental agency. The quotations on the fragmentation of public health show that many non-public health agencies administer health programs. Also, there is a difference of opinion regarding whether a given public health program should be the responsibility of a local, state, or federal agency. The whole matter of states' rights and federal, state, and local interrelationships comes into play. A local health officer from a southern state argued as follows:

> The neglect of local and state responsibilities, and the usurping of main tax sources by federal and, to some extent, state government has led to over-centralization. Municipal leaders should see that in bypassing the states, their action can lead to inordinate confusion and complexity and eventually to further federal domination. Health is much too personal to be administered from Washington. Its administration through sound local health department leadership is both democratic and effective.[35]

On the other hand officials in urban areas, frustrated by rurally dominated state legislatures, have turned to the federal government for assistance in solving some of their local problems.

Thirdly, a public health official must have a point of view regarding the means he believes appropriate for achieving his department's goals. Suchman points out that the changing nature of public health had made it necessary for public health officials to consider ways to change individual and group behavior.

> The externally imposed, mass disease prevention measures previously utilized in the control of infectious, communicable diseases are inappropriate for reducing the incidence of the chronic, degenerative diseases. Here the focus must be on the individual and his behavior, rather than upon noxious elements in his environment. Public health must now "motivate" the individual citizen to change his behavior and must secure community support for changes in the "social environment," rather than assuming its own control of the physical environment.[36]

> Thus we find the field of public health today intimately and bewilderingly involved with such "nonmedical" problems as organizing political support for fluoridation, seeking legislation to provide adequate medical care, securing community support for voluntary health measures, motivating individuals to take advantage of mass screening programs or to change their eating, drinking, and living habits.[37]

Breslow suggests a legal approach in dealing with some aspects of health and human behavior.

> I would submit that the law should protect people against entrapment in habits deleterious to their health. . . . I'm not suggesting that we undertake prohibition either of liquor or cigarette smoking. Rather we must find some legal means to minimize the entrapment of individuals in habits which bring harm. We need more than education; we need the strength and character of the law to achieve a social good.[38]

A review of what public health officials might do to discourage cigarette smoking illustrates the wide range of actions available to them. Officials with different "philosophies of public health" arrive at different courses of action. The association between smoking and lung cancer has been documented and given widespread publicity. Some in public health believe that giving the people this information is sufficient since persons can decide for themselves whether to smoke or not. Others believe direct action is indicated. Removing cigarette machines from all public buildings, furnishing high schools with educational material on smoking, educating community leaders on the dangers of smoking, sponsoring legislation to make cigarette manufacturers label their product as a potential health hazard, operating clinics to help persons who want to stop smoking, and supporting higher taxes on cigarettes to discourage consumption are illustrations of such action.

Cigarette smoking raises the question of the value an individual places on his health, especially in those areas where his behavior and his health are not seen by him as being closely related. Even though there has been considerable publicity regarding the possible deleterious effects of cigarette smoking, an individual does not see an immediate cause-and-effect relationship between his smoking and illness. This may be reason there has been no outcry from the general public for governmental action against cigarette smoking.

From the foregoing it is obvious that the field of public health is in a state of flux. There is some evidence that this is a sign of vitality and reflects a desire to expand the field to meet new challenges. In the post-World War II period some public health departments have undertaken programs in such new areas as radiological health, air

sanitation, mental retardation, and medical care. However, until detailed studies and evaluations of these and other programs are reported, the articles in public health journals will remain merely exhortations for one or another view of public health.

Appendix IV. THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS

A clear cut case of goal change by an organization is found in the history of the National Foundation for Infantile Paralysis.[1] The Foundation was organized on January 3, 1938, "to discover, coordinate and disseminate knowledge of the cause of infantile paralysis, how it may be prevented and how its after-effects may be ameliorated."[2] The following series of quotations from the Annual Reports of the Foundation show that by 1952 or 1953 the medical problem of achieving the goal of conquering polio appeared to be solved. Yet it was not until 1958, over five years later, that new goals were announced. It could be argued, therefore, that in the case of public health where goal achievement is not so clear cut or so speedily obtained, the problem of changing goals will not be resolved quickly.

1948

> It [the Annual Report] reports the greatest expansion in scientific research, based on new and promising 'leads' of any year since the National Foundation was formed in 1938.[3]

1949

> It appears likely that 1949 will prove to have been a turning point in the history of infantile paralysis. Along the research front it was a year of brilliant achievement. Against the dark background of the epidemic, National Foundation research projects wrote confident words of encouragement that we may be able to halt the rising tide of polio in the not-too-distant future. Ironically, as cases mounted, our strides were growing, too, toward the long-sought goal of polio control.[4]

1951

> From laboratories and research centers came encouraging news of substantial accomplishments in virus studies, new test-tube victories that presage the coming of a direct and specific attack upon paralytic polio in man himself.[5]

1952

This is the story of an anxious year in the fight against polio. . . . more people felt the impact of infantile paralysis than ever before in the nation's history. . . . Ironically, the year was one of surging hope for the final conquest of polio. Science was on the march. New discoveries were being exploited in the laboratory and in the field. . . . The ultimate conquest of polio, if not imminent, at least appeared to lie just beyond the horizon.[6]

Polio researchers were making encouraging reports of extraordinary accomplishments. To the uninitiated it may have appeared at times that the conquest of polio was already at hand.[7]

1953

History will record 1953 as the year in which the final phase of the war on polio began. It became apparent as the year progressed that the tide of battle had turned. At long last, victory was in sight. . . . In March, 1953, the nation was elated by the announcement that a vaccine had been produced and given to 161 human beings without a single ill effect.[8]

1954

1954 was the great year of trial for the Salk vaccine as a possible preventive of paralytic polio. . . . If the vaccine under trial in 1954 proved effective, its success would signal the beginning of the end of polio. It would also prove for all time the power of a voluntary organization to solve one of the world's major health problems.[9]

1955

When the Salk vaccine was declared by scientists safe and effective on April 12, 1955, a goal that once had seemed only a bright dream came into the realm of reality. . . . It was no happenstance. Rather, it was a planned miracle. The goal of scientific control of polio had guided every hope and plan of your National Foundation for Infantile Paralysis.[10]

1957

In the life of any organization which has proved progressively successful in its chosen endeavors there comes a time for appraisal and basic decision. Sometimes it is our achievements, rather than our failures, that signal the hour for unbiased revaluation, perhaps for drastic readjustment. At such a time the questions an organization must ask itself are these:

> Do the hopes and well-being of large numbers of people still depend on your continuing effort?
>
> Is the success attained the limit of the organization's capabilities in meeting important needs?
>
> Does the organization have something of on-going value to society -- an inventory of experience, skills and human resources; a record of past performance and a continuity of work in progress and in prospect; a spiritual momentum -- values too urgently needed by society to be thrown away?
>
> Is the organization adaptable to new endeavors, to the meeting of new challenges?

The prospect of bringing an end to paralytic polio was promising long before April 12, 1955, when the feasibility of mass immunization with the Salk vaccine was officially affirmed -- bright enough indeed, so that those who were charged with the guidance and stewardship of the National Foundation realized the time was approaching for a technical, social and spiritual stock-taking and, based on this appraisal, a decision on the future of the organization.

The appraisal, made by two independent research organizations, was objective, candid and thoroughgoing. When it was completed, the decision followed logically and irrefutably. Your National Foundation is to continue as a force, greater than ever before, for the well-being of the people of the United States. The new directions in the health field in which it can best move to meet urgent needs are to be announced some time in 1958.[11]

1958 (from the New York Times)

> The National Foundation for Infantile Paralysis announced yesterday that henceforth its dimes would also march against arthritis and congenital defects.
>
> . . . . . .
>
> Mr. O'Connor emphasized that the foundation's long-range plans do not limit it to those specific fields. Rather, he said, the group will be a major force in medical research, patient care and professional education. It will be flexible enough to meet any new health problems as they arise, he added.
>
> . . . . . .
>
> Mr. O'Connor said the foundation had been seriously considering changes in its objectives since 1952, when its leaders realized the probable effectiveness of the Salk vaccine. Starting in 1954, he said, the organization made "the most complete and profound" survey of the health field that has ever been made in

this country. Knowing the qualifications of its own organization, he went on, the foundation looked for fields of usefulness in important areas where the job was not already being adequately done.

. . . . . .

The new program was disclosed at a morning press conference at the Waldorf-Astoria Hotel. A closed-circuit television broadcast in the afternoon also brought the news to fund officials, volunteer workers, physicians and newsmen in fifty-two cities throughout the nation.[12]

Appendix V. MEDICINE, PUBLIC HEALTH, AND LITERATURE

The point of this appendix is to present some quotations from outstanding authors which illuminate an attitude towards medicine, have relevance to current health problems, and show the changing nature of medicine and public health. No attempt is made to be comprehensive. Many novels and plays have had doctors as characters but their actions are not pertinent to this appendix.

In Molière's time (1622-1673) when there was little science to healing, his play Le Médecin malgré lui (The Physician in Spite of Himself) reflected this fact.

> Maybe I'll stick to medicine for the rest of my life. I think it's the best trade there is, for whether you do well or badly, you get paid just the same. We never get blamed for doing a bad job; and we cut the cloth we work on to please ourselves. A cobbler making shoes can't spoil a piece of leather without paying for the damage; but in this job we can spoil a man without its costing us a penny. The blunders aren't our fault; they're always the fault of the man who dies. In short, the nice thing about this profession is that dead men have a most marvelous decency and discretion; you never hear a dead man complain of the doctor who killed him.[1]

In Le Malade Imaginaire (The Imaginary Invalid) Molière depicted the state of medicine in France in the 17th century.[2]

> Argan. So according to you doctors know nothing?
>
> Béralde. Precisely. Most of them know their classics, talk Latin freely, can give the Greek names of all the diseases, define them and classify them, but as for curing them -- that's a thing they know nothing about.
>
> . . . . . .
>
> Argan. But doctors must believe in their art because they have resort to it themselves.
>
> Béralde. That's because there are some of them who share the popular errors from which they profit . . . [Dr. Purgon] is a doctor

> through and through, a man with more faith in his rules than anything capable of mathematical proof. . . . It's no good bearing him ill will for the harm he does you -- he'll send you into the next world with the best of intentions and in killing you off do no more for you than he would do for his own wife and children or, if need arose, for himself.

Modern public health had already begun by 1882 when Ibsen wrote The Enemy of the People.[3] In this play Dr. Stockmann discovered that the mineral baths in the town were a menace to health because of pollution of the water supply by filth from the tanneries. He had a sample of the water analyzed and found "beyond a shadow of a doubt the presence of decayed animal-matter in the water. . . . The use of this water, both internally and externally, is in the highest degree dangerous to health."[4] Because the town depended upon the baths and the resulting influx of tourists for prosperity Dr. Stockmann, rather than being rewarded for discovering this information, was voted an enemy of the people.

An actual occurrence which bears a close resemblance to Ibsen's drama was the 1963 typhoid epidemic at the ski resort of Zermatt, Switzerland.

> The decision [to close hotels and restaurants] came as an aftermath to a strongly worded statement by the Valais medical association charging that the outbreak had been concealed for more than two months.
>
> A Zurich doctor . . . reported in January that a patient he was treating had been found to be ill with typhoid after a stay in Zermatt. It was not until this month that the presence of typhoid was officially confirmed.
>
> . . . . . .
>
> The medical association . . . also accused public health authorities of failure to take the necessary measures to combat the typhoid outbreak from the start.
>
> In addition, the doctors said, the authorities "falsely reassured Zermatt's residents and visitors by issuing a statement denying the possibility of contagion by water."
>
> . . . . . .
>
> The doctors did not say that news of the outbreak was kept secret in order not to scare away visitors at the height of the skiing season. However, this was the implication of their statement and Swiss newspapers are saying it openly.[5]

In 1913 George Bernard Shaw wrote The Doctor's Dilemma which contained a long introduction entitled "Preface on Doctors."[6] That the medical profession was then not the high income class it is today -- at least in the United States[7] -- is shown by Shaw's remark, "doctors are hideously poor."[8] Shaw saw a conflict between public health measures and private doctors' practice.

> But just as the best carpenter or mason will resist the introduction of a machine that is likely to throw him out of work, . . . so the doctor will resist with all his powers of persecution every advance of science that threatens his income.[9]

For Shaw it followed from the poverty of doctors and their resulting interest in augmenting their income that unnecessary surgery and treatment would occur.

> That any sane nation, having observed that you could provide for the supply of bread by giving bakers a pecuriary interest in baking for you, should go on to give a surgeon a pecuniary interest in cutting off your leg, is enough to make one despair of political humanity. . . . The process metaphorically called bleeding the rich man is performed not only metaphorically but literally every day by surgeons who are quite as honest as most of us. After all, what harm is there in it? The surgeon need not take off the rich man's (or woman's) leg or arm: he can remove the appendix or the uvula, and leave the patient none the worse after a fortnight or so in bed, whilst the nurse, the general practitioner, the apothecary, and the surgeon will be the better.[10]

Sinclair Lewis echoed Shaw's theme in the following description of the fashionable Rouncefield Clinic where his fictional doctor, Martin Arrowsmith, worked. "He [Arrowsmith] was never able to rise to the clinic's faith that any portions of the body without which people could conceivably get along should certainly be removed at once."[11]

A different view of doctors is found in the comment by Maurois on why Tchekov had doctors in his plays.

> He [Tchekov] had a firm belief in medicine, and was angry with Zola for treating it with scorn in Dr. Pascal. "This fellow Zola," he said to Kuprin, "knows nothing whatever about it. He just sits

> in his study and invents. I wish he'd come here and see how our country doctors live and what they do for the poor." Later on, there were always overworked and sympathetic doctors in his plays.[12]

Shaw saw the Medical Officer of Health (M.O.H.) as the way to remove the bad consequences he believed resulted from the pecuniary interest of physicians in illness.

> His [the M.O.H.] position depends, not on the number of people who are ill, and whom he can keep ill, but on the number of people who are well. He is judged, as all doctors and treatments should be judged, by the vital statistics of his district. . . . He has a safe, dignified, responsible, independent position based wholly on the public health.[13]

Shaw believed strongly in the Medical Officers of Health.

> For the M.O.H. as we know him is only the beginning of that army of Public Hygiene which will presently take the place in general interest and honor now occupied by our military and naval forces. It is silly that an Englishman should be more afraid of a German soldier than of a British disease germ, and should clamor for more barracks in the same newspapers that protest against more school clinics, and cry out that if the State fights disease for us it makes us paupers, though they never say that if the State fights the Germans for us it makes us cowards.[14]

In England the National Health Service program that came into being after World War II brought about some of the things that Shaw advocated although the British Medical Association successfully opposed the introduction of a salary system for physicians.[15]

> The British have shown that a National Health Service program can remove the dollar sign from medicine, can provide fair income to the purveyors of medical services, and can increase the total amount of medicine, as well as improve its distribution.[16]

The curing of disease has been revolutionized since the time of Molière. Health conditions have improved over the centuries, and medical science has played a part in bringing about this improvement. A well-known medical historian expressed results from the changes that had occurred in the following way:

> The general death-rate indicates the number of people dying in a year for every 1,000 population. It has been decreasing

steadily. In most countries it was hardly ever under 50 in the 18th century, while today [1942] it is between 8 and 15 in the countries of Western civilization. . . . As a result of improved health conditions and particularly as a result of the reduced infantile mortality, the average life expectancy has increased considerably. A child born in Europe in the 15th century had an average life expectancy of from twenty to twenty-five years, while it is between sixty and sixty-six today in the economically advanced countries.[17]

Appendix VI EXPERIMENTAL PROCEDURE

The experiment in Chapter 8 consisted of a series of four tasks. The twelve members of the Department who have the most influence on the allocation of the CI&A formula grant participated in the experiment. The time required for each participant varied from one hour and fifteen minutes to one hour and thirty minutes.

The experiment was conducted in an informal manner and the subjects were encouraged to ask questions about anything that was not clear to them and to make comments upon the tasks during the course of the experiment. At the beginning the subjects were told briefly what would occur during the session.

First Task (Measure the value of the objectives of the CI&A program.)

To start the first task the subject was given a card with the following statement which the author also read aloud. The same procedure was used for each task.

> Here are seven cards, each with one objective of the Department's CI&A program written on it. These are the same seven objectives contained in the preliminary draft of Chapter 6 previously furnished you.
>
> The first task is to rank the seven objectives in order of importance to you. Which objective would you most like to achieve, which objective comes next, etc.

The subjects read the objectives and then put them in rank order. The rank order was recorded and the task proceeded by giving the subjects this card.

> I will now divide the objectives into two groups. I am arbitrarily putting the objective you ranked as most important in each group. This is the only objective common to the two groups.
>
> Now consider this group of four objectives [01, 02, 03, and 06]. Rank them in order of importance to you. Which objective would you most like to achieve, which objective comes next, etc.

The rank order of the subset of objectives was checked against the rank order of the seven objectives. Any inconsistencies were pointed out to the subject and he was asked to reconsider his rankings and to make the adjustments necessary to achieve consistency.

The subject was then asked the following question.

> Which would you prefer to achieve: 01 (the objective you have ranked as most important) or the combination of 02, 03, and 06?

If the combination was preferred the subject was asked to indicate his preference between 01 and the combination of 02 and 03.

The final question about the subset of objectives was:

> Which would you prefer to achieve: 02 or the combination of 03 and 06?

The same series of steps was repeated with the other subset of objectives (01, 04, 05, and 07).

The choices involving the two subsets of objectives, (01, 02, 03, and 06) and (01, 04, 05, and 07), were checked to see if they were feasible. If they weren't the author pointed out the inconsistency to the subject and asked him to reconsider his choices and make adjustments to achieve consistency.

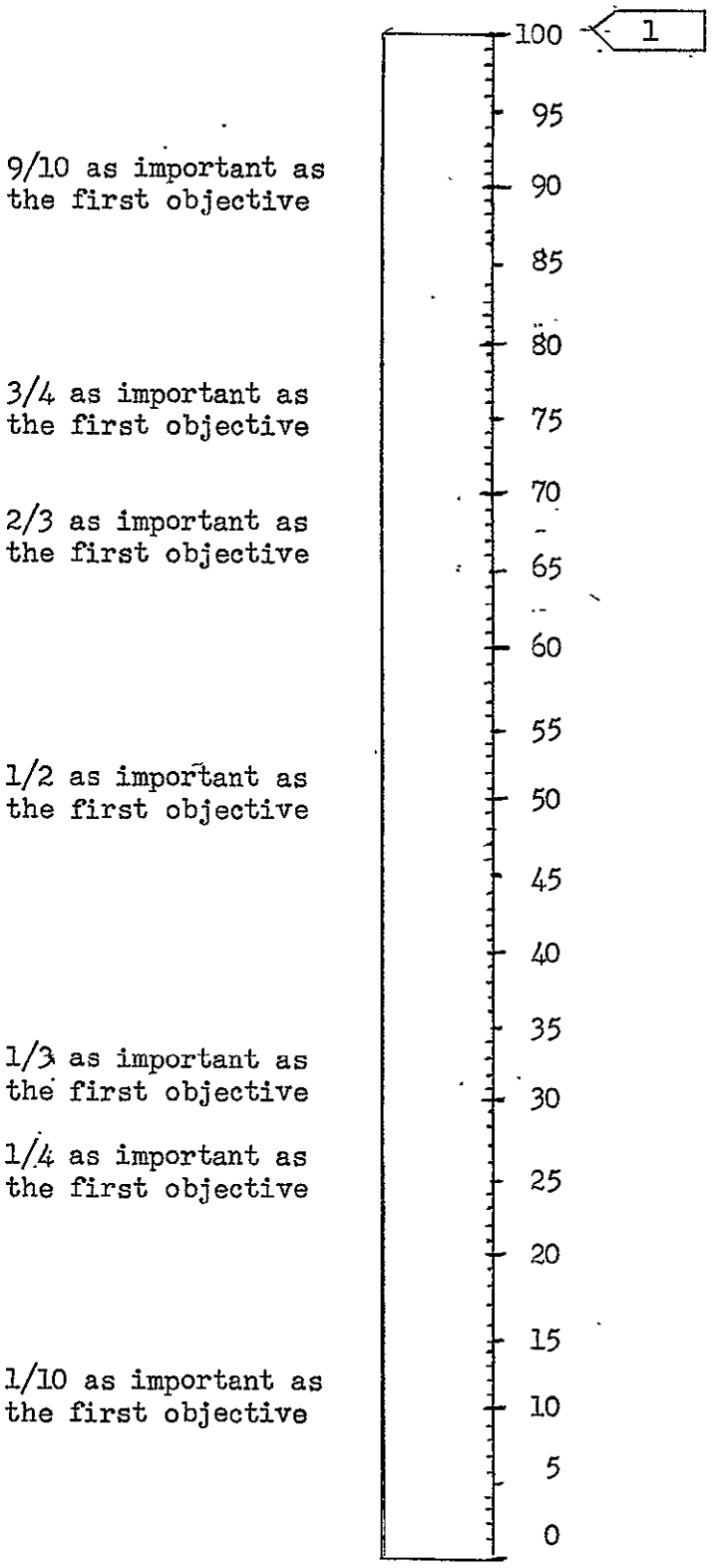
Finally the choices involving the two subsets of objectives were checked with the original ranking of the seven objectives. Again any inconsistencies were pointed out and the subject was asked to reconsider and to make adjustments necessary to achieve consistency.

Second Task (obtain a ratio scale for the values of the objectives.)

> The instructions given the subject for the second task were:
>
> The second task is to place an arrow for each objective on this scale of 0 to 100. I am going to arbitrarily place the objective that you valued most highly at 100. Then I want you to place the other six objectives on this scale as follows. If you think an objective is 3/4 as important as the first objective, place its arrow by 75. If you think an objective is 1/3 as important as the first objective, place its arrow by 33. If you think an objective is 1/10 as important as the first objective, place its arrow by 10, etc.

The scale is reporduced on the next page. If there was an inconsistency between the results of the first and second tasks the subject was told that the best elements of the two methods, his verbal choices in the first task and his ratings on the numerical scale in the second task, would be used to arrive at a final set of ratings. The specific inconsistencies were then pointed out. The subject was asked to reconsider and to change either the verbal choices or the ratings to achieve consistency.

Second Task


1
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35
30
25
20
15
10
5
0
9/10 as important as the first objective
3/4 as important as the first objective
2/3 as important as the first objective
1/2 as important as the first objective
1/3 as important as the first objective
1/4 as important as the first objective
1/10 as important as the first objective

Third Task (How the Divisions of Community Health Services and Preventive Medical Services view each other.)

The third task was limited to the members of the Divisions of Community Health Services and Preventive Medical Services. The seven cards with the objectives on them used in the first task were given to the subjects along with the following instructions.

> The third task is to rank the objectives in order of importance as you believe the Division of Community Health Services (Preventive Medical Services) would rank them. Which objective do you think the Division of Community Health Services (Preventive Medical Services) would most like to achieve, which objective comes next, etc.

Fourth Task (Obtain the probabilities that alternatives will achieve objectives.)

The final task was a complex one. The subjects had seven cards with the objectives on them, eight cards of a different color with the alternatives on them, and a scale with probabilities marked off on it. The scale is shown on the last page of the appendix. The instructions to the subjects were:

> The final task concerns various alternatives the Department might have adopted to allocate the 1964-65 CI&A grant. All alternatives for 1964-65 contain a reduction of $75,000 compared to the previous year's grant. This reduction will occur if Congress accepts President Johnson's recommendation to cut the 1964-65 CI&A formula grant.
>
> Your task is to rate each alternative, on a scale of 0 to 100, on the probability you think the alternative has in achieving each of the seven objectives. In this task the ranking you have given to the objectives in previous tasks plays no part.
>
> The meaning of the ratings is given on the page with the scale.
>
> To repeat, your rankings of the objectives are immaterial for this task. You are asked to evaluate alternatives in terms of achieving objectives regardless of whether you consider the objectives important or not.
>
> It is all right at any time to change ratings previously given.

The author went over the scale with the subjects to get them familiar with the responses required for the task. The subjects were given the card with the first alternative on it and the seven cards with the objectives on them. They were asked to give the probability that the

selection of the first alternative would achieve each of the seven objectives. The procedure was repeated with the second alternative, and so on through all eight alternatives. The score card for subject B is reproduced below:

	Objectives*						
	PHS	LHD	CMA	MED	FIN	PSY	RES
Alt 1	75	90	90	95	75	67	60
Alt 2	75	25	25	25	10	20	40
Alt 3	75	75	90	85	75	92	70
Alt 4	75	65	65	75	25	22	60
Alt 5	50	90	90	75	38	30	20
Alt 7	80	50	90	50	60	67	60
Alt 8	75	85	80	90	75	67	60
Alt 9	75	80	80	80	50	67	60

*The code for the objectives is explained in Exhibit T.

Alternative 6 was eliminated because of problems of interpretation that showed up in pretesting.

The score card was kept where the subject could see it at all times. After the subject had rated the first alternative the rest of the task went smoothly.

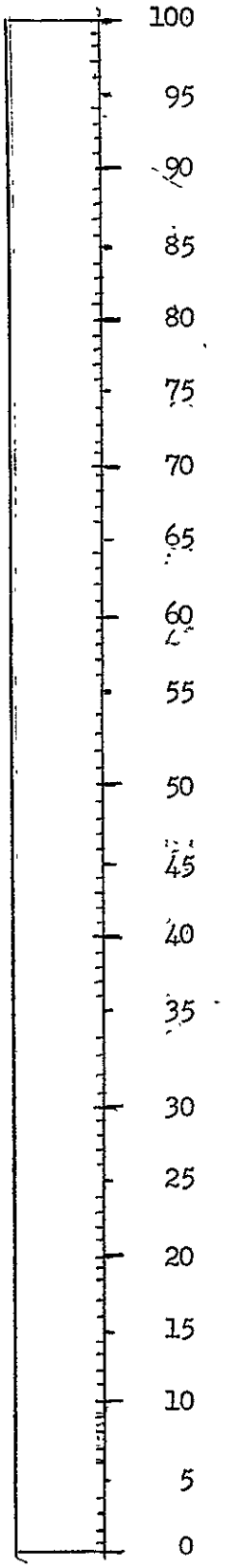
After the probabilities were recorded for all alternatives the subjects were handed this card.

> Given the world as it is with such organizations as the California Medical Association, the California Association of Local Health Officers, and the Department of Finance active in the health field in California, which of these eight alternatives do <u>you</u> think would be the best way to allocate the 1964-65 CI&A grant? All things considered, which alternative would <u>you</u> select as the best one?
>
> Which alternative would <u>you</u> select as the second best?

The response to these two questions ended the experiment. The subjects were asked if they had any comments about the experiment.

Later the author calculated the effectiveness of each alternative by summing the products of the probabilities and the values ($\sum_j e_{ij} v_j$). If the alternative with the highest effectiveness had not been chosen by the subject as the best way or the second best way to allocate the 1964-65 CI&A grant, he was re-interviewed and asked to comment on the alternative with the highest effectiveness.

Fourth Task



A rating of 100 means that you think the selection of the alternative is virtually sure to achieve the objective (the probability of attainment is practically 100 per cent).

A rating of 80 means that you think the selection of the alternative is four times as likely to achieve the objective as not to achieve it.

A rating of 50 means that you think the selection of the alternative is equally likely to achieve or not to achieve the objective (or that you don't know if the selection of the alternative will help or hurt the achievement of the objective).

A rating of 20 means that you think the selection of the alternative is four times as likely not to achieve the objective as to achieve it.

A rating of 0 means that you think the selection of the alternative is practically certain not to achieve the objective (the probability of attainment is practically zero).

FOOTNOTES

Chapter 1

1. "The American people are not satisfied with better-than-average health. As a nation, they want, they need, and they can afford the best of health: Not just for those of comfortable means. But for all our citizens, old and young, rich and poor. In America, there is no need and no room for second-class health services."
Excerpts from President Johnson's special message to Congress on health and medical care. New York Times, February 11, 1964.

2. U.S., Department of Health, Education, and Welfare, Handbook on Programs: 1963 Edition (Washington: U.S. Government Printing Office, 1963), xi.

   The words "fiscal year" will not be repeated each time. Instead the twelve month period from July 1, 1962, to June 30, 1963, will be represented by 1962-63.

3. U.S., Public Health Service, Background Material Concerning the Mission and Organization of the Public Health Service (Washington: U.S. Government Printing Office, 1963), 29.

4. California, Budget for the Fiscal Year July 1, 1964 to June 30, 1965, Submitted by the Governor to the 1964 Budget Session of the California Legislature.

   California Legislature, Senate, Interim Committee on State and Local Taxation, Report of the Senate Interim Committee on State and Local Taxation, Part Two: The Costs of Selected Governmental Services in California, 59th Session, 1949, 36.

5. California, Department of Public Health (internal document), Draft: Medical Care Studies Unit, Appendix I: Public Medical Care Programs Administered by the State of California (April 3, 1963).

6. California, Department of Public Health (internal document), Expenditures by Local Health Jurisdictions by Source of Funds, 1962-63.

7. Some recent publications which deal with "medical economics" as well as the health field in general are:

S. E. Harris, The Economics of American Medicine (New York: Macmillan Company, 1964).

H. M. Somers and A. R. Somers, Doctors, Patients, and Health Insurance (Garden City, New York: Doubleday & Company Anchor Books, 1962; first published by the Brookings Institute in 1961).

Several issues of periodicals have been devoted to the health field. Four such issues are:

"Government and Medicine in the United States," Current History, 45 (1963).

"Medicine and Society," Annals of the American Academy of Political and Social Science, 346 (1963).

"Meeting Health Needs by Social Action," Annals of the American Academy of Political and Social Science, 337 (1961).

"Health: Are We Getting Our Money's Worth?," New Republic, November 9, 1963.

8. C. W. Churchman, "Decision and Value Theory," in R. L. Ackoff (ed.), Progress in Operations Research (New York: John Wiley & Sons, 1961), 35-64.

S. P. Hayes, "Behavioral Management Science," Management Science, 1 (1955), 177-179.

G. Katona, "Rational Behavior and Economic Behavior," Psychological Review, 60 (1953), 307-318.

M. Shubik, "Objective Functions and Models of Corporate Optimization," Quarterly Journal of Economics, 75 (1961), 345-375.

9. An extended discussion of operations research is given in R. L. Ackoff, "The Meaning, Scope, and Methods of Operations Research," in R. L. Ackoff (ed.), Progress in Operations Research, 1-34.

Another view of operations research is found in H. J. Miser, "Operations Research in Perspective," Operations Research, 11, (1963), 669-677. This article contains many references and illustrates the differences that exist among people in the operations research field as to what operations research is or should be.

For background information see F. N. Trefethen, "A History of Operations Research," in J. F. McCloskey and F. N. Trefethen (eds.), Operations Research for Management (Baltimore: Johns Hopkins Press, 1954), 3-35.

10. Some writers have relegated operations research to middle management problems. They advocate such things as heuristic problem-solving techniques or cybernetics for top management problems.

    H. A. Simon, The New Science of Management Decision (New York: Harper & Brothers, 1960), 8.

    S. Beer, Cybernetics and Management (London: English Universities Press, 1959), 18.

11. Failure to solve a problem so that its solution furthers the overall goals of the organization leads to the suboptimization problem in operations research. See C. Hitch and R. McKean, "Suboptimization in Operations Research," in McClosky and Trefethen, 168-186.

12. Health Information Foundation, An Inventory of Social and Economic Research in Health (9th ed., New York: 1960).

13. See Chapter 5 for a discussion of the concept of the "black box."

14. Some chronic illnesses are arthritis, diabetes, cancer, and heart diseases.

15. In 1963-64 the Public Health Service allotted $58,050,000 to the states by means of the formula grants. Other formula grants totaling $49,875,000 were made to the states by the Children's Bureau, a part of the Department of Health, Education, and Welfare but separate from the Public Health Service. Thus the states received almost $108,000,000 which was theirs to allocate within the broad limits of the various categories such as chronic illness and aging.

    Public Health Service data are from a letter dated October 16, 1963, from the San Francisco Regional Office of the Public Health Service to the Department. The Children's Bureau data are from a letter dated February 12, 1964, from the Children's Bureau to the Department. A total of $60,000,000 was made available to the states by the Children's Bureau but $10,125,000 was withheld for "Mental Retardation Special Projects" and "projects of regional or national significance."

16. W. A. Wallis and H. V. Roberts, Statistics: A New Approach (Glencoe, Ill.: The Free Press, 1956), 6-7.

    Similar statements have been made by philosophers, systems engineers, economists, and historians. See:

    C. W. Churchman, Prediction and Optimal Decision (Englewood Cliffs, N. J.: Prentice-Hall, 1961), 70-92.

H. H. Goode and R. E. Machol, System Engineering (New York: McGraw-Hill, 1957), 144.

J. Robinson, Review of Six Lectures on Economic Growth by S. Kuznets, Journal of Political Economy, 69 (1961), 74.

E. H. Carr, What is History? (Harmondsworth, England: Penguin Books, 1964; first published by Macmillan in 1961), 7-30.

17. The communications flow chart seems to work well in a stable environment where there is a repetitiveness in the operation studied such as weekly or monthly schedules and where changes in the routine occur infrequently. In contrast the Department's CI&A program (1) has been in existence scarcely two and one-half years (May, 1964), (2) has had its budget increased from $356,300 in 1961-62 to $937,000 in 1963-64, (3) has had an increase in personnel in the CI&A Unit from one to seven, (4) has had major modifications such as the establishment of the Medical Care Studies Unit and the CI&A Contract program and the replacement of the Advisory Committee by the Departmental Review Committee.

18. The members of the Director's Office are the Director, the Deputy Director, and the Assistant Director. There are no staff personnel in the Director's Office.

Chapter 2

1. The pre-World War II period is not pertinent to this study and thus receives only passing mention. The sweeping reorganization following the two studies made in 1943 made such a sharp break with the past that the Department as it functions today really began then.

   A discussion of the development of public health in the United States is given in Appendix III.

2. American Public Health Association, A Study of the California State Department of Public Health (New York: American Public Health Association, 1943), 16.

3. G. P. Jones, "Early Public Health in California," California's Health, 2 (1944-45), 101. This volume of California's Health contains a series of eight articles covering the period from 1848 to 1909. The page references are 73-75, 83-88, 95-96, 100-102, 107-108, 145-152, 153-160, 177-179. Also see G. P. Jones, "Thomas M. Logan, M.D., Organizer of California State Board of Health," California's Health, 2 (1945), 129-133.

4. California, Department of Finance, Division of Budgets and Accounts, Organizational Survey, State Department of Public Health, 1943.

5. American Public Health Association.

6. Letter from Director to Department of Finance dated July 30, 1957.

7. American Public Health Association, 20.

8. American Public Health Association, A Study of the California State Department of Public Health (New York: American Public Health Association, 1948).

9. American Public Health Association (1943), 17.

   "The State Board of Public Health consists of ten members, seven of whom are physicians, including the Director of the Department, one dentist and two lay members. Members are appointed by the governor. It functions as a policy-making, regulating, judicial, and licensing body."
   California, Department of Finance, Organization and Cost Control Division, California State Government: A Guide to Its Organization and Functions (Sacramento: Printing Division, Documents Section, 1958), 73.

10. American Public Health Association (1943), 19. "At present there are some fourteen bureaus in the Department, each responsible directly to the Director. Such a plan is incompatible with good administration."

11. The main organizational difference between the American Public Health Association's report and the Department of Finance's report is that the latter provided for one more division than the former, five instead of four. The Department of Finance recommended a separate division entitled the Division of Laboratories while the American Public Health Association placed the laboratories under the Division of Administration.

12. See Exhibit B.

13. "Experts in business administration say that the chief executive officer cannot be expected to administer effectively the activities of more than six other executives if those executives are carrying on work of real scope and value."
American Public Health Association (1943), 19.

"Many organizational weaknesses . . . stem from the fact that so many bureaus and divisions may now report directly to the department head. . . . It is agreed by authorities on management that in the most efficient organizations, the executive may not effectively exert a span of control extending to more than 6 or 8 subordinates."
Department of Finance, 3.

14. American Public Health Association (1943), 26.

15. Department of Finance (1943), vi, vii.

16. "The Department of Public Health has offices in Sacramento, San Francisco, Berkeley, and Los Angeles. . . . This has resulted in a rather loose network holding the units together. Each bureau has become almost a self-contained unit with its own records, requisitioning, secretarial force and quarters."
Ibid., 30.

17. Ibid., 9. B.

18. American Public Health Association (1943), 56.

19. H. Emerson (Chairman, Subcommittee on Local Health Units, Committee on Administrative Practice, American Public Health Association), Local Health Units for the Nation (New York: The Commonwealth Fund, 1945).

It was a progress report for this book that is referred to in the following quotation from page 56 of the 1943 American Public Health Association study.

"A Committee of the American Public Health Association recently submitted to each of the states a tentative outline for developing full-time health services which would cover the entire state. This plan has been reviewed by the Director and the Chief of Local Health Service and revised to meet the possibilities and needs of California. There is then in the central office of the State Department of Public Health a plan for developing full-time health service for the entire state."

20. American Public Health Association (1943), 27.

21. Department of Finance, 12.

22. American Public Health Association (1948), 3-4.

23. Ibid., 6, 7.

24. Ibid., 8-9.

25. See footnote 19.

26 American Public Health Association (1948), 11.

27. The organization chart of the Department following the two 1943 studies is given in Exhibit B. As this chart shows the five divisions recommended by the Department of Finance were adopted rather than the four recommended by the American Public Health Association.

28. Ibid., 47-48.

29. California, Department of Finance, Organization and Cost Control Division, Survey 925: General Management Survey for the Department of Public Health (1958).

30. Letter from the Director to the Department of Finance dated July 30, 1957.

31. Department of Finance (1958), 14.

32. Ibid., 30

33. Ibid., 29, 32.

34. Ibid., 15, 16, 19.

35. Department of Finance (1943).

36. Department of Finance (1958), 5, 13.

37. Ibid., 1, 43.

38. See Appendix III.

39. Department of Finance, A Guide, 71.

40. California, Department of Public Health, Standards and Recommendations for Local Public Health Departments (Berkeley: Department of Public Health, 1960).

California, Department of Public Health, Laws Relating to State Financial Aid for Local Health Administration (Berkeley: Department of Public Health, 1960).

California, Department of Public Health, Laws Relating to Local Public Health Administration (Berkeley: Department of Public Health, 1959).

The basic references are:

California, Health and Safety Code (Sacramento, California: Printing Division, Documents Section, 1961).

California, California Administrative Code, Title 17, Public Health (Sacramento, California: Bureau of Printing, 1956).

41. California Legislature, Senate, Interim Committee on State and Local Taxation, Report of the Senate Interim Committee on State and Local Taxation, Part Two: The Costs of Selected Governmental Services in California, 59th Session, 1949 , 21, 33.

42. California, Laws (1960), 46.

43. Ibid.

44. Ibid.

45. Ibid., 45

46. Ibid. Note that the vote of a sparsely populated county counts just as much as the vote of Los Angeles County.

47. Ibid., 44. There are now (April, 1964) 45 full-time local health officers. Typically, local health departments are organized on a county basis although there are still five cities that maintain separate health departments. A county board of supervisors appoints its own local health officer. He is an employee of the county, not the State.

48. The four committees are Health Services and Medical Care, Communicable Disease and Laboratories, Environmental Health, and Administrative Practices. Each committee meets twice a year as does the full Conference.

49. The meetings are attended by Departmental personnel, especially by those whose items are up for consideration.

50. California, Standards and Recommendations, 5.

51. A nutrition program and a chronic disease program were not required services of local health departments when the CI&A program began. In fact, the existence of the CI&A program undoubtedly hastened their adoption by the California Conference of Local Health Officers and by the State Board of Public Health.

52. California, Standards and Recommendations, 6, 7.

53. California Legislature, Report, 25, 27, 70.
A good discussion of the development of the federal grant-in-aid program is given on pages 27 through 34.

Additional information about the federal grant-in-aid program can be found in A. Smithies, The Budgetary Process in the United States (New York: McGraw-Hill, 1955).

The Community Health Services and Facilities Act of 1961, which will be discussed in detail in Chapter 3, should be added to the list of significant federal legislation in the health field.

Information about the history of the Public Health Service and the Children's Bureau is given in Appendix III.

54. U.S., Public Health Service, Final Report of the Working Group on Public Health Service Formula Grants, (1963, multilithed).

The following formula grants are administered by the Public Health Service: general health, tuberculosis control, cancer control, heart disease control, community mental health services, chronic illness and aging, water pollution control, and radiological health. (Ibid., 2.)

55. Quoted in the September 23, 1963, issue of Washington Report on the Medical Sciences.

56. U.S., Department of Health, Education, and Welfare, Handbook on Programs (Washington: U.S. Government Printing Office, 1962), 55, 59.

57. Advisory Commission on Intergovernmental Relations, Modification of Federal Grants-in-Aid for Public Health Services. A Commission Report (Washington: January, 1961).

In those states that overmatch the federal grants the power of the federal government to earmark funds for specific purposes is reduced. Overmatching is discussed in the section, "Control Over the Department by Other State Organizations," in Chapter 6.

58. Minutes of the September, 1962, meeting of the Committee on Administrative Practices of the CCLHO.

59. See Exhibit J.

60. In contrast, local health departments had 5,236 full-time budgeted positions. California, Department of Public Health, Division of Community Health Services, Compensation of Full-Time Professional and Technical Public Health Personnel in Local Health Departments in California. Salary Ranges and Number of Positions Budgeted, Fiscal Year 1963-64 (November, 1963).

61. California, Budget for the Fiscal Year July 1, 1964 to June 30, 1965, submitted by Edmund G. Brown, Governor, to the 1964 Budget Session of the California Legislature, pp. A-49, A-56, A-59, and A-61.

62. U.S., The Budget of the United States Government, Fiscal Year Ending June 30, 1965 (Washington: U.S. Government Printing Office, 1964), 41, 112. This per cent is based on total expenditures of $92.6 billion and expenditures of $1.4 billion on "Health, Services, and Research," listed under the general heading of "Health, Labor, and Welfare."

63. The 1963 desk calendar distributed by the County Supervisors Association of California has stamped on it in large gold letters, "HOME RULE IS THE GOLDEN RULE IN THE GOLDEN STATE."

64. Local figures are taken from an internal Department report, "Expenditures by Local Health Jurisdictions by Source of Funds, 1962-63." State and federal figures are taken from Exhibit J.

65. Governor's Committee on Medical Aid and Health, Health Care for California (Berkeley; California State Department of Public Health, 1960), 33.

The local funds ($34.6 million) for support of health programs mentioned at the beginning of the paragraph were solely for the support of local health departments. This sum of money did not include local funds used for the support of county hospitals.

Chapter 3

1. U.S., Congress, House, Committee on Interstate and Foreign Commerce, Community Health Services and Facilities Act of 1961, 87th Congress, 1st Session, 1961, Report 599 to accompany H.R. 4998.

   U.S., Congress, Senate, Committee on Labor and Public Welfare, Community Health Services and Facilities Act of 1961, 87th Congress, 1st Session, 1961, S. Report 845 to accompany H.R. 4998.

   U.S., Congress, House, Community Health Services and Facilities Act of 1961, 87th Congress, 1st Session, 1961, Conference Report No. 120 to accompany H.R. 4998.

   U.S., Congress, Public Law 87-395 (Community Health Services and Facilities Act of 1961), 87th Congress, 1st Session, 1961, H.R. 4998

   Theodore J. Bauer, Community Health Services and Facilities Act of 1961, Executive Memorandum, No. 10 of '61, U.S. Dept. of Health, Education, and Welfare, Public Health Service, Bureau of State Service (October 20, 1961).

2. Bauer, 3.

3. Ibid., 3-6.

4. The CI&A program is not the same as the Community Health Services and Facilities Act. Prior to 1961 the Public Health Service had funds available for programs in the areas of chronic illness and aging such as the nursing home program and the long term illness program. However, the Act with the increase in the ceiling and the authority to earmark appropriations allowed the Chronically Ill and Aged Services to become a major formula grant program.

5. Bauer, 3. Minimum allocation is now $60,000.

6. The matching requirements presented no problem to California because of expenditures already being made by the State for programs that can be classified under the heading, "chronically ill and aged." Thus, the State Legislature did not have to vote funds for any new programs in order for the State to qualify for the CI&A grant.

7. Bauer, 4.

8. U.S., Public Health Service, Policy and Procedures for Use of Grant Funds for Services for the Chronically Ill and Aged, undated documen received by Department in September, 1961.

9. Letter dated July 10, 1961, from the Regional Chronic Diseases Consultant, Public Health Service, to the Director, State Department of Public Health.

10. Letter to the Director dated May 11, 1961.

11. Letter to the Chief, Division of Preventive Medical Services, dated May 8, 1961.

12. Memo to file by the Assistant Chief, Division of Research, dated October 23, 1961.

13. Minutes of the meeting.

14. Ibid.

15. Ibid. The reference to special projects is explained in the next paragraph.

16. Letter dated September 19, 1961.

17. R. Dyar and G. McKray, "The California State Program to Promote Local Health Department Research," American Journal of Public Health, 50 (1960), 316-320.

18. Minutes of the meeting.

19. Ibid.

20. Letter to the Director dated October 18, 1961.

21. Minutes of the meeting.

22. Ibid.

23. Ibid.

24. Ibid. The correct name for the State Association of County Supervisors is the County Supervisors Association of California.

25. Ibid.

26. Personal comment to author.

27. Minutes of the meeting.

28. Letter dated November 10, 1961, to all local health officers from the State Department of Public Health.

29. Ibid.

30. Ibid.

31. The State public health subsidy is the formula allotment defined in the section, "Statuatory Requirements and Restrictions," in Chapter 2. Briefly stated, the formula is a per capita allotment with a lump sum minimum.

32. As this position has developed over the past two years it now includes keeping money at the State level for administrative and research purposes and for funding demonstration projects under the Chronic Illness and Aging Contract Funds program.

33. In 1962-63 ten of the thirty-eight local health departments that participated in the CI&A program received less than $5,000. In 1963-64 eleven of the thirty-eight received less than $5,000. There are forty-five full-time local health departments (May, 1964) eligible to receive a CI&A allotment but not all elect to do so.

    There are some persons who believe that even small allotments do good. In a comment to the author a local health officer said that his small allotments were beneficial because they "stimulated my staff" and "woke them up."

34. This was evidenced by the majority vote in the October, 1961, meeting of the CCLHO. Of course, not all health officers felt this way in 1961. Furthermore, two years of experience with the program have led some local health officers to complain that the paperwork and program reviews required by the present allocation method are objectionable. The complaints are discussed in more detail in the section, "Dysfunctional Consequences," in Chapter 5.

35. A per capita allotment with no strings attached would be preferred by many health officers; however, this is not feasible due to the accountability requirements of the Department and the Public Health Service. As one local health officer expressed it to the author his "dream" would be a "one line budget," i.e., he would get a lump sum of money to use as he saw fit for public health purposes in his county.

36. One reason that a county board of supervisors may dislike projects is that they are for a fixed period of time. After two or three years of operation of some new activity the funds from the State or federal government may be withdrawn. Then the county must either use its own funds to continue the activity or drop it.

37. Minutes of a meeting held on November 2, 1961.

38. The CI&A Unit is one of the ten sections of the Bureau of Chronic Diseases.

39. Permission to charge fees was explicitly set forth in the Community Health Services and Facilities Act of 1961.

40. Letter dated May 28, 1962, from the Chief of the Bureau of Chronic Diseases to the Chief of the CI&A Unit quoting the Chief of the Division of Preventive Medical Services.

41. The second steno-clerk was added in June, 1963, the second nurse in August, 1963, and the research assistant in October, 1963.

42. In a letter dated January 22, 1963, the Chief of the CI&A Unit summarized the contract applications received and expected. In the last paragraph he wrote happily, "The information concerning the availability of funds is getting around rapidly. (Who needs a public relations staff?)"

43. Because of the similarity of procedure in allocating the additional MCH and the new CI&A money, the administrative problems of these two programs are often discussed jointly.

44. Minutes of the meeting.

45. See the previous sections which discuss the positions taken by the two divisions.

46. On April 16, 1963, the Department learned that one local health department was not going to use $5,000 of its allotment because it had been unable to hire a physical therapist for its program. The Department was able to stop the June, 1963, check to this county. If the Department had not learned of this until later, the payment would have been made, the money not used during the fiscal year for the therapist, and the $5,000 would have reverted to the county general fund on June 30, 1963.

47. A reimbursable contract (not to be confused with contracts written under the Chronically Ill and Aging Contract program) provides for a written contract between the Department and a county board of supervisors covering the programs which the local health officer puts in his plan for the use of his tentative CI&A allotment. If his plan is approved, a contract is drawn up. Payments are made by the Department to the county quarterly in arrears upon receipt of a statement that the money has been spent in accordance with the program. Under the procedure now in effect two payments were made to the counties in the fiscal year 1962-63, one in January, 1963, and one in June, 1963. Under the proposed reimbursable contract plan if a public health nurse is not hired until the second quarter of the fiscal year, no money for her salary would be paid during the first quarter.

Some local health officers favor reimbursable contracts because they have more assurance that they will get the CI&A money allotted to them. All funds go from the Department to the county treasurer. The reimbursable contract is a means of earmarking the public health money which goes to the county for public health purposes. However, when the CCLHO at its October, 1963, meeting voted on the proposal that reimbursable contracts be used to allocate CI&A and MCH funds, there was a tie vote and the endorsement motion lost. One argument against the reimbursable contract was that this was a move in the direction of project grants and would reduce the discretion of the local health officer. As one local health officer put it during the discussion, "Why buy any headaches?"

48. The following quotation is taken from page five of the Position Statement:

> We subscribe to the thesis that new or extended program activity cannot as a rule be successfully superimposed on an already overburdened, underbudgeted and overcommitted local staff unless financial assistance -- both supportive and specialized, and consultative assistance -- both general and programs, are readily available and offered on a basis acceptable to the local health departments and to local governing bodies.

49. See the section, "The Departmental Decision on the Initial Allocation of CI&A Funds," in this chapter where the criteria as set forth in the November 10, 1961, letter are given.

50. The Section on "The Changing Nature of Public Health" in Appendix III explains some of the controversy over different philosophies of public health. Also, Chapter 8 discusses some studies that could be made in the CI&A program to learn which method or what mixture of methods is the best to get the desired results from the use of the CI&A formula grant.

51. At this meeting the following resolution was passed: "RESOLVED, That the Committee on Administrative Practices recommend that the method of allocation of CI&A and MCH funds be by mutually-agreeable reimbursable contracts, wherever possible, or as direct allocation if required by the local jurisdiction." This resolution was put on the agenda for the October CCLHO meeting where it was defeated by a tie vote. See footnote 47 for more details.

52. The Committee on Administrative Practices of the CCLHO at its January, 1964, meeting approved the Departmental recommendation to discontinue the CI&A Advisory Committee and to replace it with a Departmental Review Committee. The Departmental Review Committee

is composed of persons from the C1&A Unit, the Bureau of Chronic Diseases, and the Division of Community Health Services.

53. "The State Department of Public Health is hereby requested to collect and analyze data necessary for the development of standards in governmental health services, appraise continually the quality of care provided, and periodically report its findings to the public." California, Legislature, Assembly Concurrent Resolution No. 94, filed with Secretary of State June 12, 1961.

This Resolution was taken almost verbatim from a recommendation made by the Governor's Committee on Medical Aid and Health in its December, 1960, report entitled Health Care For California.

54. Minutes of the September 20, 1963, meeting of the State Board of Public Health.

55. California, Department of Public Health (internal document), Draft: Medical Care Studies Unit, (April 3, 1963), 1.

56. Overmatching is discussed in Chapter 6 in the section, "Control Over the Department by Other State Organizations."

57. Letter dated April 14, 1964, from the Chief, Bureau of Chronic Diseases, to the Assistant Chief, Division of Administration.

Chapter 4

1. The allotment is made in proportion to the State public health subsidy, i.e., the State subvention funds for assistance to local health departments, received by each local health department. The formula by which the State public health subsidy is determined is given in the section, "Statuatory Requirements and Restrictions," Chapter 2. Briefly stated, the formula is a per capita allotment with a lump sum minimum to each county.

2. Recall that the 1961-62 program was in effect only the last half of the fiscal year. Also, it was known that the Public Health Service planned to increase the total allotment of CI&A funds for the United States in 1962-63. In addition, the President's budget had already been submitted to Congress.

3. Total does not agree with total PHS to CSDPH due to rounding.

4. Letter dated January 11, 1963, from the Assistant Director to the Director.

Chapter 5

1. There are several important areas in the broad field of organization theory that will not be mentioned. Either research being done is not directed to answering questions of decision making and resource allocation or work has not progressed far enough yet to be useful in an organizational study like the one reported here. Sociometry and small group studies fall into this category.

2. J. G. March and H. A. Simon, Organizations (New York: John Wiley & Sons, 1958). The dust jacket calls the book "a sound scientific treatment of the theory of organizations."

3. Ackoff, (ed.), 13.
Other writers seem to agree with this view.

"The theory of organization is more a set of words than a reality." M. Shubik, "Approaches to the Study of Decision-Making Relevant to the Firm," Journal of Business, 34 (1961), 110.

"The study of organizations is even more diffuse than the study of the economic activities of the firm; as a result, it is harder to characterize briefly. . . . Organization theory means different things to different people."
R. M. Cyert and J. G. March, A Behavioral Theory of the Firm (Englewood Cliffs, N.J.: Prentice-Hall, 1963), 16.

"Organization theory as a distinct area of study and research has recently emerged from a combination of several academic disciplines. It is not yet sufficiently mature for the content and methods of research to have jelled into a coherent, readily apparent whole."
A. H. Rubenstein, Review of Modern Organization Theory, edited by M. Haire, Journal of Business, 35 (1962), 81.

An idea of the diversity of topics treated, viewpoints expressed, and approaches taken in organization theory can be seen in collections such as the following.
M. Haire (ed.), Modern Organization Theory, (New York: John Wiley & Sons, 1959).
A. H. Rubenstein and C. J. Haberstroh (eds.), Some Theories of Organization (Homewood, Ill.: Richard D. Irwin, 1960).

A reason for this diversity is given in Rubenstein and Haberstroh, p. 2. "There is not a single, well-defined community of scholars with responsibility for research in organization theory, as there

is for physics, psychology, or economics. Thus, we find many people working in fields as diverse as neurology, mathematics, animal sociology, and philosophy who may be contributing . . . to [a] theory of organizational behavior. Other contributions come from . . . human relations, operations research, management science, occupational psychology, and management itself. Some workers in sociology, social psychology, political science, and anthropology are directly concerned with the development of organization theory for its own sake."

4. "Each organization, like each personality, represents a resultant of complex forces, an empirical entity which no single relation or no simple formula can explain. The problem of analysis becomes that of selecting among the possible predicates set forth in the theory of organization those which illuminate our understanding of the materials at hand."
P. Selznick, "Foundations of the Theory of Organization," American Sociological Review, 13 (1948), 30-31.

5. H. A. Simon, Administrative Behavior (2d ed.; New York: Macmillan Company, 1959).

6. Ibid., 220.

7. Ibid., xxii.

8. H. A. Simon, "Comments on the Theory of Organizations," American Political Science Review, 46 (1952), 1134. Simon uses the term "bounded rationality" to describe the individual who does not have the attributes assumed by classical economic theory. For a discussion of bounded rationality see H. A. Simon, Models of Man (New York: John Wiley & Sons, 1957), 196-206, 241-260.

9. Simon, Administrative Behavior, 15.

10. Ibid., 15.

11. M. I. Roemer, "The Nonmedical Health Administrator: His Training and Value," California's Health, 21 (1964), 113-115. Roemer, a professor of public health and a physician, stresses the need for nonmedical administrators in public health. A start in this direction has been made in the Department by the creation of the position of Assistant Chief, Administrative, in the Divisions of Preventive Medical Services and Community Health Services.

12. J. J. Hanlon, Principles of Public Health Administration (4th ed.; Saint Louis: C. V. Mosby Company, 1964).

H. L. Blum and A. R. Leonard, Public Administration: A Public Health Viewpoint (New York: Macmillan Company, 1963).

E. A. Confrey (ed.), Administration of Community Health Services (Chicago: International City Managers' Association, 1961).

R. B. Freeman and E. M. Holmes, Jr., Administration of Public Health Services (Philadelphia: W. B. Saunders Company, 1960).

H. S. Mustard and E. L. Stebbins, An Introduction to Public Health (4th ed.; New York: Macmillan Company, 1959).

13. T. C. Sorenson, Decision-Making in the White House (New York: Columbia University Press, 1963), 10.

14. S. King, Perceptions of Illness and Medical Practice (New York: Russell Sage Foundation, 1962), 173-174, 188-189.

    K. W. Back, R. E. Coker, Jr., and T. G. Donnelly, "Public Health as a Career of Medicine: Secondary Choice Within a Profession," American Sociological Review, 23 (1958), 533-541.

15. "A chronic problem in most public health agencies is the inability to recruit qualified personnel in many professional and technical categories. Physicians, dentists, nurses, sanitary engineers, nutritionists, social workers, among other classes of health manpower, are in short supply."
    L. J. Rosner, "Methods for Meeting Personnel Shortages," Public Health Reports, 78 (1963), 369.

16. Simon, Administrative Behavior, 11-12.

17. Ibid., 12.

18. S. M. Lipset, M. Trow, and J. Coleman, Union Democracy (New York Doubleday & Company Ahcnor Book, 1962; first copyrighted by The Free Press in 1956), 442, 465.

19. Personal comment to author made by members of two different divisions.

20. Simon, Administrative Behavior, 14, 122.

21. F. L. Soper, "Problems to Be Solved if the Eradication of Tuberculosis Is to Be Realized," American Journal of Public Health, 52 (1962), 734-745.

    J. E. Perkins, "Can Tuberculosis Be Eradicated?" Public Health Reports, 78 (1963), 419-422.

    E. T. Blomquist, "Program Aimed at Eradication of Tuberculosis," Public Health Reports, 78 (1963), 897-905.

22. Simon, Administrative Behavior, 154.

23. Ibid., 220.
    This point is repeated on page xlv where Simon states that his book "represents an attempt to construct tools. . . . We do not yet have . . . adequate linguistic and conceptual tools for realistically and

significantly describing even a simple administrative organization . . . in a way that will provide the basis for scientific analysis of the effectiveness of its structure and operation."

24. An interesting attempt to apply these concepts in a study of the United States Forest Service is found in H. Kaufman, The Forest Ranger (Baltimore: John Hopkins Press, 1960).

25. "The Problem of the Black Box arose in electrical engineering. The engineer is given a sealed box that has terminals for input, to which he may bring any voltages, shocks, or other disturbances he pleases, and terminals for output, from which he may observe what he can. He is to deduce what he can of its contents." W. R. Ashby, An Introduction to Cybernetics (New York: John Wiley & Sons Science Editions, 1963; first published by Chapman & Hall, 1956), 86.

26. G. B. Dantzig, Linear Programming and Extensions (Princeton: Princeton University Press, 1963), 32.

27. Ackoff, (ed.), 26.

28. For example, the recommendation made in 1943 that the State furnish a public health subsidy to counties in place of furnishing personnel was implemented by the State Legislature in 1947. California Legislature, Report of the Senate Interim Committee, 21.

29. See Exhibit O.

30. "The primary data of any investigation of a Black Box consists of a sequence of values of the vector with two components: (input state, output state.)" Ashby, 89.

31. The approximately $12,000 the Division of Administration will receive in 1963-64 is closer to the actual expenses incurred by the Division because of the CI&A program than the $24,150 it received in 1962-63. The excess in 1962-63 resulted from some savings made at the end of the fiscal year when funds allocated to local health departments were returned because local circumstances changed and the money could not be used. It was too late in the year to do anything with the funds and they were shown as support for the Division of Administration.

32. H. Fayol, General and Industrial Management, trans. C. Stoors (London: Sir Isaac Pitman & Sons, 1949).

L. Gulick and L. Urwick (eds.), Papers on the Science of Administration (New York: Institute of Public Administration, 1937).

L. Urwick, The Elements of Administration (New York: Harper & Brothers, 1944).

33. Urwick, 52-53. On pages 119-129 Urwick lists twenty-nine "principles" and gives a brief statement about each one.

34. Fayol, 24.

35. H. Koontz and G. O'Donnell, Principles of Management (2d ed.; New York: McGraw-Hill Book Company, 1959), viii-ix.

36. Fayol, 42.

37. The fourth edition of Hanlon was published in 1964. However, of the eleven references in the chapter on organizational considerations in public health only two are to material published after 1946.

38. Ibid., 226.

39. Ibid., 250.

40. L. Gulick, "Notes on the Theory of Organization," in Gulick & Urwick, (eds.), 13.

41. Simon, Administrative Behavior, xxxiv. A discussion of the "principles" is found on pp. 20-36.

42. Ibid., 20.

    Haire, writing in a similar vein, uses the word "myths" to describe the customary discussion of issues found in the "principles of administration" literature. See M. Haire, "What is Organized in an Organization?" in M. Haire (ed.), Organization Theory in Industrial Practice (New York: John Wiley & Sons, 1962), 1-12.

43. This difficulty was foreseen by the authors whom Simon attacks. For example, Fayol writes, "Principles are flexible and capable of adaptation to every need; it is a matter of knowing how to use them, which is a difficult art requiring intelligence, experience, decision and proportion." Fayol, 19.

    Koontz and O'Donnell put it this way: "What is required, of course, is a careful balancing in a given situation of the inefficiencies of spans against those of levels." Koontz and O'Donnell, 83.

    Urwick also raises the problem of the interplay of several principles. "The dilemma is a real one. In a large organization the complex of different principles which demand consideration in the structure of authority and responsibility may be most serious." L. Urwick, "Organization as a Technical Problem," in Gulick and Urwic, (eds.), 57.

    A strong defense of the "principles of administration" literature as well as an attack on Simon's approach is contained in E. C. Banfield, "The Decision-Making Schema," Public Administration Review,

17 (1957), 278-285. For the counterattack see H. A. Simon, "'The Decision-Making Schema': A Reply," Public Administration Review, 18 (1958), 60-63.

44. Simon, Administrative Behavior, 253.

45. A. W. Gouldner, "Organizational Analysis," in R. K. Merton, et. al., Sociology Today (New York: Basic Books, 1959), 400-428.

46. P. M. Blau and W. R. Scott, Formal Organizations (San Francisco: Chandler Publishing Company, 1962), 27-36.

47. H. H. Gerth and C. W. Mills (trans. and eds.), From Max Weber: Essays in Sociology (New York: Oxford University Press Galaxy Book, 1958; first published by Oxford University Press in 1946), 196-244. M. Weber, The Theory of Social and Economic Organization, trans. A. M. Henderson and T. Parsons, ed. T. Parsons (New York: Free Press Paperback, 1964; first published by Oxford University Press in 1947), 329-341. Also see A. W. Gouldner, "Metaphysical Pathos and the Theory of Bureaucracy," in A. Etzioni (ed.), Complex Organizations: A Sociological Reader (New York: Holt, Rinehart and Winston, 1961), 71-82.

48. Gerth and Mills, 214.

49. Ibid., 215-216.

50. An appraisal of Weber's study of bureaucracy and the subsequent work of Merton, Gouldner, Selznick and others is found in March and Simon, 36-47, and in Blau and Scott, 27-36.

51. Personal comments to author.

52. Personal comments to author.

53. Letter to Director dated June 14, 1963.

54. Selznick, TVA and the Grass Roots, 13.

55. Three other reasons are: (1) to get technical advice, (2) to get community interest and support for public health matters, and (3) to give representatives of groups affected by decisions in the public health field an opportunity to make their views known. This last reason can be thought of as an attempt to simulate the market place. For a discussion along similar lines see C. E. Lindblom, Bargaining: The Hidden Hand in Government, RM-1434-RC (Santa Monica: The Rand Corporation, 1955).

56. This is also true at the federal level. The Public Health Service has 178 public advisory groups in which 1,700 non-federal consultants participate. U.S., Public Health Service, Background Material Concerning the Mission and Organization of the Public Health Service (Washington: U.S. Government Printing Office, 1963), Chart 3.

57. California, Department of Public Health, Index of Advisory Committees and Consultants for the Calendar Year 1964. (Multilithed)

58. The selection of an accepted mechanism also fits in with the idea of search which will be mentioned later in this chapter under the section "Problemistic Search and Incrementalism."

59. Simon, Administrative Behavior, 148.

Barnard defines informal organization as "the aggregate of the personal contacts and interactions and the associated groupings of people [in a formal organization]."
C. I. Barnard, The Functions of an Executive (Cambridge: Harvard University Press, 1958; first published in 1938), 115.

60. Personal comment to author.

61. Sills in Etzioni (ed.), 147.

62. Selznick, TVA and the Grass Roots, 258-259.

63. Selznick, American Sociological Review, 13, 32.

64. For a discussion see Cyert and March, 32-34.

65. R. K. Merton, Social Theory and Social Structure (Rev. ed.; Glencoe, Ill.: The Free Press, 1957), 199.

66. P. M. Blau, The Dynamics of Bureaucracy, (Rev. ed.; Chicago: University of Chicago Press, 1962), 243-244. Also see Blau and Scott, 230.

67. Appendix IV deals with the change of goals by the National Foundation for Infantile Paralysis. Even in a clear cut case of goal fulfillment, several years passed between the time it was realized that the polio vaccine would work and the time when the actual change in goals was made by the National Foundation for Infantile Paralysis.

68. Selznick, Leadership in Administration, 108.

69. Merton, 198.

70. H. J. Leavitt, Managerial Psychology (Chicago: University of Chicago Press Phoenix Book, 1962; first published in 1958), 258.

71. M. I. Roemer, 113-115.

72. V. Thompson, Modern Organization (New York: Alfred A. Knopf, 1961).

73. Ibid., 6.

74. R. M. Cyert and J. G. March, A Behavioral Theory of the Firm Englewood Cliffs, N.J.: Prentice-Hall, 1963), 1.

75. Ibid., 2. On pages 285-286 the authors paraphrase the planning and decision making process Eckstein reported in his book, The English Health Service. They then go on to state, "It is hard to read Eckstein's study without feeling that the Health Service and the firms we have described in this book belong to the same decision-making species."

76. R. M. Cyert, E. A. Feigenbaum and J. G. March, "Models in a Behavioral Theory of the Firm," Behavioral Science, 4 (1959), 81-95.

77. Cyert and March, 36.

78. Ibid., 38.

March and Simon, 126.

79. Cyert and March, 78, 113, 119.

80. C. E. Lindblom, "The Science of 'Muddling Through,'" Public Administration Review, 19 (1959), 79-88.

C. E. Lindblom, "Decision Making in Taxation and Expenditures," in National Bureau of Economic Research, Public Finances: Needs, Sources, and Utilization (Princeton: Princeton University Press, 1961), 295-336.

C. E. Lindblom and D. Braybrooke, A Strategy of Decision (New York: The Free Press of Glencoe, 1963).

81. Cyert and March, 121.

82. Lindblom and Braybrooke, 84.

83. Another text classifies the problem of two good alternatives as one of "incomparability." The resolution of the problem depends on "attention cues and the order of presentation." The order of presentation is another way of saying that the first satisfactory alternative evoked is accepted. See March and Simon, 114-117.

84. Cyert and March, 120.

85. Ibid., 119.

86. Ibid.

87. An analogy in the field of economics would be the use of Keynesian concepts to analyze long-run problems in a capitalist economy. For a criticism of Keynes along these lines see J. A. Schumpeter,

Ten Great Economists (London: George Allen & Unwin, 1951), 282-284, and J. A. Schumpeter, Review of The General Theory of Employment, Interest and Money by J. M. Keynes, Journal of the American Statistical Association, 31 (1936), 794-795.

The first explanation of innovation using Cyert and March's concepts was made by them in "Organizational Factors in the Theory of Oligopoly," Quarterly Journal of Economics, 70 (1956), 44-64. Essentially the explanation was that dissatisfaction caused by an unsatisfactory showing in the firm's costs and profits would cause the firm to undertake search activity for innovations to increase sales. Though not giving up this explanation Cyert and March now say that "unfortunately the evidence does not support the prediction for major technological changes." (Cyert and March, 278.) They present another explanation of innovation based on organizational slack.

March and Simon state that another common hypothesis is "that innovation will be most rapid and vigorous when the 'stress' on the organization is neither too high nor too low." (March and Simon, 184.)

88. N. Wiener, Cybernetics: Control and Communication in the Animal and the Machine (New York: John Wiley & Sons, 1948).

89. K. E. Boulding, "The Present Position of the Theory of the Firm," in K. E. Boulding and W. A. Spivey (eds.), Linear Programming and the Theory of the Firm (New York: Macmillan Company, 1960), 12.

90. N. Wiener, The Human Use of Human Beings: Cybernetics and Society (Garden City, N.Y.: Doubleday & Company Anchor Books, 1956; first published in 1950), 61.

91. K. Bragg, G. Linden, and L. Breslow, "The California Tumor Registry," California Medicine, 87 (1957), 182.

California, Department of Public Health, California Tumor Registry, Cancer Registration and Survival in California (Berkeley: State Department of Public Health, 1963), 268.

92. Lindblom is aware of this. He states his method "may lead the decision-maker to overlook excellent policies for no other reason than that they are not suggested by the chain of successive policy steps leading up to the present." Lindblom, Public Administration Review, 19, 87-88.

93. H. A. Simon, The New Science of Management Decision (New York: Harper & Brothers, 1960), 13.

94. March and Simon, 185.

95. D. L. Sills, The Volunteers (Glencoe, Ill.: The Free Press, 1957), 73.

96. Clark and Dyar, 385.

97. The Report of the Legislative Analyst on the proposed 1964-65 budget for California suggested that research be done by the University rather than by the Department. However, no evidence was presented that the University had the staff or the desire to carry out the research currently done by the Department. See the Analysis of the Budget Bill of the State of California for the Fiscal Year July 1, 1964, to June 30, 1965: Report of the Legislative Analyst to the Joint Legislative Budget Committee (Sacramento: Office of State Printing, 1964), 436, 725.

"The Legislative Analyst . . . conducts a continuous research and fact-finding program on the operation of State Government. He and his staff give particular emphasis to critical analysis of the Governor's Budget, appropriation bills, and reorganization bills. The office of the Legislative Analyst grew out of the Legislature's desire for a source of factual information free from outside control or influence and responsible to the Legislature alone."
California, Department of Finance, A Guide, 9.

Chapter 6

1. Analysis of the Budget Bill of the State of California.

2. Fragmentation also occurs in programs not connected with chronic illness and aging. The Crippled Children Services program which is administered at the State level by the Department is sometimes administered at the local level by the county welfare department rather than the local health department. Approximately one-half of the twenty-two local mental health programs established under the State's Short-Doyle Act are carried out at the county level under the control of the local health officer, although the program is administered by the Department of Mental Hygiene at the State level. The two other methods of managing mental health programs at the local level are to put the program under the county hospital administrator or to set up a separate entity responsible to the county board of supervisors.

3. The Los Angeles City and Pasadena City Health Departments will merge with the Los Angeles County Health Department on July 1, 1964.

4. Just as the National Health Survey conducted by the Public Health Service does not contain a representative sample for California, the California Health Survey does not contain a representative sample for individual counties.

5. California, Budget for the Fiscal Year July 1, 1964 to June 30, 1965. Submitted by the Governor to the California Legislature, 1964 Budget Session. (Sacramento: Office of State Printing, 1963), 467.

6. California, Department of Public Health, Missions, Objectives, Functions, 1.

7. This way of looking at organizational goals is discussed by Simon in H. A. Simon, "On the Concept of Organizational Goal," Administrative Science Quarterly, 2 (1964), 1-22.

   Dorfman makes the point that constraints and objectives are so intimately intertwined that they are fundamentally indistinguishable. See R. Dorfman, "Operations Research," American Economic Review, 50 (1960), 609.

8. U.S., Public Health Service, Policy and Procedures for Use of Grant Funds for Services for the Chronically Ill and Aged. Undated document received by the Department in September, 1961.

9. See the section, "The Two 1943 Reports" in Chapter 2.

10. Minutes, Department Administrative Staff Meeting, June 27, 1958.

11. California, Department of Public Health, Mission, Objectives, Functions - Provisional Draft, April, 1963, 1. (Multilithed)

12. Bauer, Executive Memorandum, No. 3 of '62, 2.

13. One reason the local health officers wanted the additional federal funds was that the State subsidy to local health departments had remained at approximately $0.21 per capita since the beginning of the subsidy program in 1947. Of course, the purchasing power of a 1964 dollar is much less than that of a 1947 dollar.

14. California, Department of Public Health, Cancer Registration and Survival in California (Sacramento: State Printing Office, 1963).

15. Letter from the Director to the Public Health Service dated September 28, 1962.

16. Letter dated February 21, 1964, from the Director to members of the United States Senate and House of Representatives whose committees deal with health legislation.

17. The flexibility in accounting that overmatching allows is shown in the following quotation from a letter dated November 19, 1962, from the Deputy Director of the Department to the Regional Office of the Public Health Service. "We overmatch by many times all of the federal categorical grants. . . .[This permits] substantial flexibility in the identification of items of expenditure. For example, heart funds last year were used to support a portion of the Director's Office, Bureau of Business Management and Bureau of Personnel and Training -- all of which by your definitions are 'non-specialized.' Likewise a substantial amount of State funds were used to support the Bureau of Chronic Diseases where the expenditures were 'heart-specialized.' We could with a journal entry transfer State funds from the Bureau of Chronic Diseases. Our heart expenditures would then by 100% specialized and would present a different statistical picture although there would be no program change involved."

18. Another reason for the close attention given by the Department of Finance was that the Department of Public Health's budget had estimated the supplemental grant at $54,000. Because the amount received was almost twice this amount, the Department of Finance wanted to know how the additional money would be spent.

19. Hayes contrasts the logical needs of members of an organization with their psychological needs. "They [the members of an organization] may not need much information to be able to do their jobs properly . . . [but] they may need it to want to do their jobs properly, as a number of empirical researches have suggested. (Italics in original.)
S. P. Hayes, "Behavioral Management Science," Management Science, 1 (1955), 178.

20. The annual CI&A grant to California will remain about the same if the total sum voted by Congress remains the same. The adjustments due to changes in population and per capita income from one year to the next are small. California received $838,400 as its regular grant in 1963-64 compared to $829,800 in 1962-63. The supplemental grant depends upon CI&A funds not accepted by other states. In 1963-64 California received $98,522 compared to $81,588 the previous year.

21. California, Department of Public Health, Health in California (Sacramento: State Printing Office, 1957), 22.

Chapter 7

1. C. W. Churchman and R. L. Ackoff, "An Approximate Measure of Value," Operations Research, 2 (1954), 172-181.

   Churchman, Ackoff, and Arnoff, 138-153.

   R. L. Ackoff, S. K. Gupta, and J. S. Minas, Scientific Method: Optimizing Applied Research Decisions (New York: John Wiley & Sons, 1962), 87-91.

   C. W. Churchman, Prediction and Optimal Decision, 250-272.

2. It is easy to formulate more complex interactions among the values of the objectives than simple additivity. Operationally, it is difficult to go beyond the assumption of independence of objectives and the additivity of values. See Churchman, Prediction and Optimal Decision, 264, 270-272.

3. "The three founders of the utility theory treated the utility of a commodity as a function only of the quantity of that commodity. If x_1, x_2, x_3, . . ., are the commodities, the individual's total utility was written (explicitly by Jevons and Walras, implicitly by Menger), as: $f(x_1) + g(x_2) + h(x_3) + \ldots$."
   G. J. Stigler, "The Development of Utility Theory," Journal of Political Economy, 58 (1950), 322.

4. U. Hicks, "Epilogue: Choice, Efficiency and Control in the Public Services" in A. T. Peacock and D. J. Robertson (eds.), Public Expenditure (London: Oliver & Boyd, 1963), 151.

5. W. Edwards, "The Theory of Decision Making," in Rubenstein and Haberstroh, 385-430.

   _____, "Behavioral Decision Theory," Annual Review of Psychology, 12 (1961), 473-498.

6. D. Bernoulli, "Specimen theoriae novae de mensura sortis," Commentarii academiae scientiarum imperialis Petropolitanae, 5 (1738), trans. L. Sommers, "Exposition of a New Theory on the Measurement of Risk," Econometrica, 22 (1954), 22-36.

7. J. Bentham, "Of the Principle of Utility," in P. C. Newman, A. D. Gayer, and M. H. Spencer (eds.), Source Readings in Economic Thought (New York: W. W. Norton, 1954), 166, 167.

8. R. D. Luce and H. Raiffa, Games and Decisions (New York: John Wiley & Sons, 1957), 38.

9. J. von Neumann and O. Morgenstern, Theory of Games and Economic Behavior (Princeton: Princeton University Press, 1954).

10. Ibid., 17.

11. The different meanings of utility are discussed in several places. See:

L. J. Savage, The Foundations of Statistics (New York: John Wiley & Sons, 1954), 91-104.

W. J. Baumol, Economic Theory and Operations Analysis (Englewood Cliffs, N.J.: Prentice-Hall, 1961), 331-346.

Luce and Raiffa, 12-38.

12. F. Mosteller and P. Nogee, "An Experimental Measurement of Utility," Journal of Political Economy, 59 (1951), 371-404.

13. D. Davidson, P. Suppes, and S. Siegel, Decision Making: An Experimental Approach (Stanford: Stanford University Press, 1957).

14. Ibid., 86.

15. M. H. DeGroot, "Some Comments on the Experimental Measurement of Utility," Behavioral Science, 8 (1963), 146-149.

16. Davidson, Suppes, and Siegel, 85.

17. G. Suzuki, "Procurement and Allocation of Naval Electronic Equipment," Naval Research Logistics Quarterly, 4 (1957), 1-7.

18. P. Suppes and M. Winet, "An Axiomatization of Utility Based on the Notion of Utility Differences," Management Science, 1 (1955), 259-270.

19. C. H. Coombs and D. C. Beardslee, "Decision Making Under Uncertainty," in R. M. Thrall, C. H. Coombs, and R. L. Davis (eds.), Decision Processes (New York: John Wiley & Sons, 1954), 255-285.

20. C. H. Coombs and S. S. Komorita, "Measuring Utility of Money Through Decisions," American Journal of Psychology, 71 (1958), 383-389.

21. R. Bellman and S. Dreyfus, Applied Dynamic Programming (Princeton: Princeton University Press, 1962), 5-6.

22. C. J. Grayson, Jr., Decisions Under Uncertainty: Drilling Decisions by Oil and Gas Operators (Boston: Harvard Business School, 1960).

23. Ibid., 319.

24. P. E. Green, "Risk Attitudes and Chemical Investment Decisions," Chemical Engineering Progress, 59 (1963), 35-40.

25. Ibid., 40.

26. S. S. Stevens, "Measurement, Psychophysics, and Utility," in C. W. Churchman and P. Ratoosh (eds.), Measurement: Definitions and Theories (New York: John Wiley & Sons, 1959), 52-56.

27. A direct way to get the utilities of the seven objectives on an interval scale, after a subject has ranked the objectives in order of preference, would be to ask the subject to place the objectives on a numerical scale in such a way that the intervals between pairs of objectives reflected his beliefs. For example, if the subject believed that the difference in utility between objectives 1 and 2 was twice as great as the difference in utility between objectives 4 and 5 he should place the objectives on the scale so that this interval ordering is preserved. Pretesting by the author showed that the concept of comparing differences in values of objectives was difficult to explain and was not familiar to Departmental members.

28. von Neumann and Morgenstern, 17-20.

29. Discussion of how to obtain subjective probabilities of "benchmark events" is found in J. Marschak and R. Radner, "Decision Under Uncertainty (Chapter 1 of Economic Theory of Teams), "Working Paper No. 67 (Berkeley: Center for Research in Management Science, 1963), 19-34.

Chapter 8

1. Churchman and Ackoff, 172-181.

   Churchman, Ackoff, and Arnoff, 138-153.

   Churchman, Prediction and Optimal Decision, 250-272.

   Ackoff, Gupta, and Minas, 87-91.

2. Others have argued against this concept. Keynes stated his position this way.

   "If human nature felt no temptation to take a chance, no satisfaction (profit apart) in constructing a factory, a railway, a mine, or a farm, there might not be much investment merely as a result of cold calculation. . . . Most, probably, of our decisions to do something positive, the full consequences of which will be drawn out over many days to come, can only be taken as a result of animal spirits -- of a spontaneous urge to action rather than inaction, and not as the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities. . . . Thus if the animal spirits are dimmed and the spontaneous optimism falters, leaving us to depend on nothing but a mathematical expectation, enterprise will fade and die."
   J. M. Keynes, The General Theory of Employment, Interest, and Money (London: Macmillan and Company, 1951), 150, 160, 161.

3. Several writers have pointed out the importance of the choice of the particular form of the model, the need to consider the assumptions implicit in the model and the ends desired by the researcher. For examples see:

   I. D. J. Bross, "Is It Really Wrong?" American Statistician, 18 (1964), 21-22.

   L. Churchill, "Types of Formalization in Small Group Research," Sociometry, 26 (1963), 373-390.

   E. Galanter and G. A. Miller, "Some Comments on Stochastic Models and Psychological Theories," in K. J. Arrow, S. Karlin, and P. Suppes, Mathematical Methods in the Social Sciences, 1959 (Stanford: Stanford University Press, 1960), 277-297.

   S. Enke, "More on the Misuse of Mathematics in Economics: a Rejoinder," Review of Economics and Statistics, 37 (1955), 131-133.

   R. Bellman, Adaptive Control Processes: A Guided Tour (Princeton: Princeton University Press, 1961), 200-201.

4. Churchman, Ackoff, and Arnoff, 145-152.

   P. Stillson, "A Method for Defect Evaluation," Industrial Quality Control, 11 (1954), 9-12.

5. A general discussion which includes reports of other experiments and findings as well as an extensive bibliography is found in W. Edwards, "Behavioral Decision Theory," Annual Review of Psychology, 12 (1961), 473-498.

6. H. Gulliksen, "Measurement of Subjective Values," Psychometrika, 21 (1956), 244.

7. L. Guttman, "An Approach for Quantifying Paired Comparisons and Rank Order," Annals of Mathematical Statistics, 17 (1946), 144-163.

   U. S. Army Service Forces, Information and Education Division, "The Point Discharge Plan in Operation," in What the Soldier Thinks, No. 16, 1945, 8-12.

8. Suzuki, 6-7.

9. E. Adams and R. Fagot, "A Model of Riskless Choice," Behavioral Science, 4 (1959), 1-10.

10. E. E. Ghiselli and C. W. Brown, Personnel and Industrial Psychology (2d ed.; New York: McGraw-Hill, 1955), 180-184.

    E. A. Fleishman and J. Berniger, "Using the Application Blank to Reduce Office Turnover," in E. A. Fleishman, Studies in Personnel and Industrial Psychology (Homewood, Ill.: The Dorsey Press, 1961), 30-36.

11. E. B. Knaught, "Construction and Use of Weighted Check-List Rating Scales for Two Industrial Situations," Journal of Applied Psychology, 32 (1948), 63-70.

    G. Strauss and L. R. Sayles, Personnel: The Human Problems of Management (Englewood Cliffs, N.J.: Prentice-Hall, 1960), 529.

12. C. H. Lauske, Jr., and A. A. Maleski, "Studies in Job Evaluation. 3. An Analysis of Point Ratings for Salary Paid Jobs in an Industrial Plant," Journal of Applied Psychology, 30 (1947), 117-128.

13. O. G. Brim, Jr., et. al., Personality and Decision Processes (Stanford: Stanford University Press, 1962), 216.

14. J. Marschak, "Actual Versus Consistent Decision Behavior," Behavioral Science, 9 (1964), 105.

15. Luce and Raiffa. 276-277.

16. I am indebted to Professor C. B. McGuire for his discussion of this point.

17. In the CI&A problem if the probabilities of achieving objectives were independent of the acts chosen there would be no decision problem. All acts would have the same value.

18. The Assistant Chief of the Division of Administration was asked to participate in the experiment rather than the Chief. The Chief of the Division of Administration spends most of his time representing the Department of Public Health in its relations with other parts of the State government such as the State Legislature and the Department of Finance. The Assistant Chief of the Division of Administration spends most of his time working on budgetary and fiscal matters within the Department of Public Health. Because of the nature of his work the Assistant Chief of the Division of Administration had much more contact with and influence on the CI&A program within the Department of Public Health than the Chief of the Division of Administration.

19. Only one of the three medical officers in the CI&A Unit was interviewed. The Chief of the CI&A Unit had left the Department before the experiment was conducted. The third medical officer, who was in the CI&A Unit less than one year, had transferred to another division of the Department before the experiment was conducted. At the time the experiment took place the two medical officer vacancies in the CI&A Unit had not been filled. The medical officer interviewed has been promoted to the position of Chief of the CI&A Unit.

20. The two cases do not include the one subject who could not respond to the tasks. This qualification applies throughout the discussion of the four tasks.

21. J. A. Schumpeter, History of Economic Analysis (New York: Oxford University Press, 1954), 90.

22. The probability of a subject selecting by chance as his first and second choices from the eight alternatives the two alternatives the model ranked first and second is 1/56. Because np is a small number in this study (11 x 1/56 = .196) the Poisson approximation of the binomial distribution was used to calculate P (4 out of 11 "perfect choices" | p = 1/56). For λ = .20, the probability of four or more perfect choices is .0000568 and the probability of 5 or more is .0000023. The difference, .0000545, is the probability of getting four perfect choices out of eleven by chance.

23. J. Marschak, "Probability in the Social Sciences," in P. Lazarsfeld (ed.), Mathematical Thinking in the Social Sciences (Glencoe, Ill.: The Free Press, 1954), 188. Also see J. Marschak, "Rational Behavior, Uncertain Prospects, and Measurable Utility," Econometrica, 18 (1950), 111-141.

24. J. Marschak, "Efficient and Viable Organizational Forms," in Haire (ed.), Modern Organization Theory, 310.

25. Luce and Raiffa, 277.

26. Simon, "On the Concept of Organizational Goal," 7.

27. R. J. Aumann and J. B. Kruskal, "Assigning Quantitative Values to Qualitative Factors in the Naval Electronics Problem," Naval Research Logistics Quarterly, 6 (1959), 15.

28. G. C. Homans, The Human Group (New York: Harpers, 1950).

29. Simon, Models of Man, 102.

30. A start in this direction is found in A. H. Schainblatt and C. W. Churchman, The Researcher and the Manager: A Dialetic of Implementation (RAND publication P-2984) (Santa Monica, Calif.: The RAND Corporation, 1964).

Appendix III

1. Hanlon.

   Other well known works in the field of public health include:

   Confrey, E. A. (ed.), Administration of Community Health Servic (Chicago: The International City Managers' Association, 1961).

   Freeman, R. B., and Holmes, E. M., Administration of Public Health Services (Philadelphia: W. B. Saunders Company, 1960).

   Winslow, E.-E. A., The Cost of Sickness and the Price of Health (Geneva: World Health Organization, 1951)

2. C.-E. A. Winslow quoted in Hanlon, 23.

3. The official statement made in 1948 by the House of Delegates of the American Medical Association quoted in Hanlon, 24. This definition of public health was reaffirmed by the House of Delegates in 1962.

4. Hanlon, 26-27.

5. This statement was adopted by the House of Delegates in 1950. House of Delegates, American Medical Association, "Public Health in Relation to the Private Practice of Medicine," November, 1962, (mimeo).

6. In addition to Hanlon this section uses material from D. F. Smiley and A. G. Gould, Personal and Community Hygiene (3d ed.; New York: Macmillan Company, 1941).

7. O. W. Holmes quoted in Hanlon, 49.

8. E. Chadwick, Report on the Sanitary Condition of the Labouring Population of Great Britain (London: W. Clowes and Sons, 1843).

9. L. Shattuck, et. al., Report of the Sanitary Commission of Massachusetts (Boston: Dutton and Wentworth, State Printers, 1850; facsimile edition by Harvard University Press, 1948).

10. This section draws on the Public Health Service publication, Background Material Concerning the Mission and Organization of the Public Health Service as well as Hanlon.

11. Public Health Service, Background Material, 13.

12. U. S., Department of Health, Education and Welfare, Annual Report: 1962 (Washington: U.S. Government Printing Office, 1963), 1.

13. U.S., Constitution, Art. I, sec. 8.

14. U.S. Department of Health, Education and Welfare, Handbook on Programs, 1963 Edition (Washington: U.S. Government Printing Office, 1963), xii, xiii, 9, 205.

15. T. K. Callister, "Quo Vadis -- Public Health?" American Journal of Public Health, 50 (1960), 871, 872.

16. California, Department of Public Health, California Health Survey, Health in California (Berkeley: Department of Public Health, 1957), 23.

17. U.S., Department of Commerce, Statistical Abstract of the United States: 1964 (Washington: U.S. Government Printing Office, 1964), 4.

18. Quoted in Hanlon, 24.

19. J. A. Crabtree, "Plans for Tomorrow's Needs in Local Public Health Administration," American Journal of Public Health, 53 (1963), 1181.

20. W. J. Meyer, "Uses of the Behavioral Sciences," Public Health Reports, 78 (1963), 432.

21. American Journal of Public Health, Editorial, "Environmental Health Services — Yesterday, Today, and Tomorrow," 53 (1963), 1454.

22. J. W. R. Norton, "Our Continuing Chief Health Need: Frontiersmen," American Journal of Public Health, 54 (1964), 395.

23. American Journal of Public Health, Editorial, 1453.

24. Norton, 394.

25. A. Wolman, "Trends and Challenges in Public Health," Address given at Dedication Exercises, University of North Carolina School of Public Health, Chapel Hill, N.C., 1963, quoted in editorial "Public Health in Transition," American Journal of Public Health, 53 (1963), 799.

26. Norton, 395.

27. B. Chisholm, "The Expanding Concept of Public Health," Public Health Is One World, Supplement to the American Journal of Public Health, 50 (1960), 92.

28. K. E. Boulding, "Health as a Social System," in Social Policy in Health: Proceedings of a Workshop (Washington: Public Health Service, 1962), 29, 30, 31, 32.

29. American Journal of Public Health, Editorial, "Environmental Health Services -- Yesterday, Today, and Tomorrow," 1454.

30. Ibid.

31. M. E. Wegman, "The Changing Nature of Public Health," American Journal of Public Health, 53 (1963), 709.

32. Norton, 396.

33. M. E. Roemer, "The Responbility of Public Health for Medical Care of the Aged," Public Health Reports, 78 (1963), 857, 858, 860.

34. Crabtree, 1178.

35. Norton, 396.

36. E. A. Suchman, Sociology and the Field of Public Health (New York: Russell Sage Foundation, 1963), 175.

37. Ibid., 20.

38. L. Breslow, "Public Health Programs Today and Tomorrow," Public Health Reports, 79 (1964), 675.

Appendix IV

1. The name was changed to The National Foundation in 1958.

   For a version of the history that differs from the one contained in the Annual Reports of the National Foundation se J. R. Wilson, Margin of Safety (Garden City, New York: Doubleday & Company, 1963).

2. Annual Report National Foundation for Infantile Paralysis, 1940, 15.

3. B. O'Connor, "Forward," Annual Report, 1948, 1.

4. B. O'Connor, "'The Nation's Worst Polio Epidemic,'" Annual Report, 1949, 4.

5. B. O'Connor, "Report on Polio - 1951," Annual Report, 1951, 5.

6. B. O'Connor, "The Threat and The Promise," Annual Report, 1952, 7.

7. B. O'Connor, "The Promise," Annual Report, 1952, 27.

8. B. O'Connor, "Prelude to Victory," Annual Report, 1953, 4.

9. B. O'Connor, "Year of Trial," Annual Report, 1954, 4-5.

10. B. O'Connor, "Year of Maturity," Annual Report, 1955, 4.

11. B. O'Connor, "A Time for Decision," Annual Report, 1957, 5-6.

12. The New York Times, July 23, 1958, 29.

Appendix V

1. M. Bishop (trans.), Eight Plays by Molière (New York: Modern Library, Random House, 1957), 314.

2. J. Wood (trans.), The Misanthrope and Other Plays (Baltimore: Penguin Books, 1959), 257-258.

3. E. Le Gallienne (trans.), Six Plays by Henrik Ibsen (New York: Modern Library College Editions, Random House, 1951).

4. Ibid., 172.

5. The New York Times, March 26, 1963, 2.

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