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APOLLO 11 IMPACT
on the Occupational Medicine Program
NASA Manned Spacecraft Center

presented by

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Some time ago, when it was decided to quarantine the Apollo 11 crew members after their return from the lunar landing, it was realized that certain medical standards would have to be met for support personnel in the Lunar Receiving Laboratory (LRL), especially for those who would work within the biological barrier. Two things had to be considered. The medical people had to insure that the personnel could perform their functions properly, and some people would have to be excluded who might develop a serious illness within the quarantine area. Obviously, serious illnesses in quarantine would break the quarantine or cause some physician to have to enter for medical treatment of the patient, which would result in the physician being quarantined.

Dr. Wedum at Camp Detrick presented certain ideas, and a protocol was developed. The protocol for the occupational medicine support of the LRL consisted of examination procedures covering laboratory work, periodic examinations, immunizations, health maintenance, preventive practices, medical standards, and waiver authority. LRL personnel then were categorized: Category 1, people working within the biological barrier; Category 2, support personnel for the first group. Initially all were examined thoroughly, and two weeks before quarantine, Category 1 personnel returned for a premission examination. Immunizations were absolute requirements.

Meeting the requirements of LRL examinations within a time limit did have an understandable impact on the normal program of the MSC Dispensary. The services had to be changed, but the care of emergencies, some urgent job-related examinations, and attention to drop-ins continued as usual. Annual, voluntary screening examinations, offered every civil service employee, was the logical area for a change to meet these requirements. Generally, these examinations are given in the month of birth; however, since more birthdays fall in the July through October period, the patients were scheduled slightly ahead of their birth dates during the first of the year. Appointments were approximately one month ahead until March, when special examinations for the Lunar Receiving Laboratory were started. Last year every civil service employee, who volunteered, did receive a physical examination, but starting in May the schedule was reduced. As long as the LRL requirement exists, employees 30 years of age or younger will be examined every other year instead of annually.

The LRL examinees included MSC employees, contract employees, visiting scientists, related specialists, security, fire & safety, and maintenance men who could, for one reason or another, be required to enter the quarantine area or work within the biological barrier. The original estimate was that there would be a fairly limited number of examinations, which would have caused no great difficulty. However, the number of examinees grew and grew--like taxes and the cost of living. In all, more than 900 examinations were performed on over 600 individuals, so you can see, this disrupted the dispensary workload to a considerably degree.

Originally, difficulty was experienced with individuals making their scheduled appointments and in getting them back for follow-up examinations or additional immunizations, but later a successful system was developed with the cooperation of the Quarantine Control Officer (QCO).

Each medical chart, on LRL examinees, was reviewed by a dispensary physician, who determined whether or not that person was qualified physically to work in the area. Dr. Clarence Jernigan, Chief, Flight Medicine Branch, granted all waivers and notified the LRL QCO and the person involved.

Two procedures were added to the thorough examination. The laboratory did serum electrophoresis (immunologic pattern). Sixty days before the start of the mission, 50ml blood was drawn from each patient, and 25cc of serum was stored in the freezer for future reference. Additional electrophoretic patterns were accomplished after illness. It was also decided that LRL employees, working within the biological barrier and requiring corrective lenses, would be furnished safety glasses. So that no one would want to take them out of the area, Dr. Wedum suggested the ugliest possible frames be purchased. A lensometer was borrowed, and two physiological training technicians worked at the dispensary processing prescriptions for individuals who needed safety glasses. Even though the individuals were notified of this service, the response was slow, so the processing was reduced to one hour per day to avoid wasted manhours. This did present a few anxious moments. Because of the time necessary in processing and procuring glasses, there appeared a strong likelihood that a considerable number would not have their extra pairs of glasses in time for the scheduled quarantine for Apollo 11.

The initial examinations, premission examinations, immunizations, safety glasses, etc., generated a mound of paperwork. Lists were submitted daily of individuals who were either qualified, nonqualified, qualified with waiver, and incomplete examinations, which became an area of concern. This has been studied and will be simplified for Apollo 12. Computer printouts will be used as checklists for categorized LRL personnel to avoid the typing of list after list as the status of examinees changes from day to day.

