Overview and Results of ISS
Space Medicine Operations Team
(SMOT) Activities

H. M. Johnson
A. E. Sargsyan, M.D.
C. Armstrong
P. V. McDonald PhD
J. M. Duncan, M.D.
V.V. Bogomolov, M.D., Ph. D.
Educational Objectives

- The audience will receive an in-depth overview of the multilateral operational management of medically relevant issues that occur in the course of long-duration ISS missions.
  - Familiarization with the ISS International Space Medicine Operations Team (SMOT)
  - Understanding of SMOT scope and function based on the analysis of SMOT records
  - Understanding of the SMOT's role in the ISS mission medical status and mission medical readiness review process

SMOT Purpose

- ISS Medical Operations integration
- Equal awareness of all Partners
- Emergency response capability / management
- Operational input from all Partners for medically relevant concerns
- Source of medical input to the ISS Mission Management
Nominal SMOT

- A weekly international forum for unrestricted exchange of information among medical personnel on:
  - ISS crew health
  - Results of medical monitoring - objective data obtained by the ISS Integrated Medical Group (IMG)
  - Environmental monitoring data including Radiation
  - Status of the ISS Integrated Medical System (IMS) subsystems and components
  - Medically relevant aspects of ISS operations
  - Any concerns related to crew health and safety, and operational medical support

Integration of All Partners
SMOT Participation

MEETING#324
ISS-14
MISSION MEDICAL SUPPORT STATUS
March 1, 2007 (Thursday)
(07:00 AM Central Time, 08:00 AM Eastern Time, 16:00 Moscow Time)

Expected participants:

| JSC/ NASA | M. Duncan (Chair), P. Todd, J.D. Polk, P. Alexander (ISS-14 Crew Surgeon), H. Chamberlain (ISS-14 Deputy Crew Surgeon), S. Hart, V. Pukharev (IBMP), V. kobzev |
| IBMP/ FSA | V. Bogomolov |
| GCTC/ FSA | V. Pochmav, V. Matveev |
| MCC-M/ FSAC | I. Alfiava, E. Khorosheva |
| ESA | F. Castrucci, J. Straube, R. Kuyumjian, J. Phelan (at JSC) |
| CSA | E. Martelli, G. Gray |
| JAXA | K. Shinada (at JSC) |

Official Interpreter At JSC

SMOT Agenda

- Permanent Agenda Items:
  - 1. Results of in-flight medical evaluations
  - 2. ISS environmental parameters
     - Including radiation environment and accumulated radiation doses
  - 3. State of exercise hardware
  - 4. IMG reports
     - A. Crew health
     - B. Any new concerns
  - 5. Once per month - Look Ahead Readiness Review of upcoming medical activities and ISS events. The SMOT members also become aware of schedules and potential issues the medical community might be facing. There is also a retrospective component of the Look Ahead RR.
## SMOT Agenda – Sample

<table>
<thead>
<tr>
<th>#</th>
<th>Item</th>
<th>Presenter</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Greetings, introductions</td>
<td>Duncan / Bogomolov</td>
<td>5 min</td>
</tr>
<tr>
<td>2</td>
<td>ISS-14 Joint Medical Operation Report, crew health-related updates</td>
<td>Alexander (ISS-14 CS), Chamberlain (ISS-14 DCS), Kobzev (Russian FS), Hart</td>
<td>10 min</td>
</tr>
<tr>
<td></td>
<td>- IMG at MCC-H</td>
<td>(NASA FS)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>ISS-14 Joint Medical Operational Report – IMG at MCC-M</td>
<td>Allerova (GMO)</td>
<td>5 min</td>
</tr>
<tr>
<td>4</td>
<td>Poll for Continuation of the Mission</td>
<td>Duncan</td>
<td>5 min</td>
</tr>
<tr>
<td>5</td>
<td>Recent / Current Operational Issues and Updates</td>
<td>As appropriate</td>
<td>10 min</td>
</tr>
<tr>
<td>6</td>
<td>Closing comments and adjourn</td>
<td>Bogomolov / Duncan</td>
<td>5 min</td>
</tr>
<tr>
<td></td>
<td>Future meetings:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thursday, March 8 (nominal time)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thursday, March 15 (nominal time)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## SMOT Contents - Actual

<table>
<thead>
<tr>
<th>#</th>
<th>Item</th>
<th>Presenter</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Greetings, introductions</td>
<td>Duncan / Bogomolov</td>
<td>5 min</td>
</tr>
<tr>
<td>2</td>
<td>ISS-14 Joint Medical Operation Report, crew health-related updates</td>
<td>Alexander (ISS-14 CS), Chamberlain (ISS-14 DCS), Kobzev (Russian FS), Hart</td>
<td>10 min</td>
</tr>
<tr>
<td></td>
<td>- IMG at MCC-H</td>
<td>(NASA FS)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>ISS-14 Joint Medical Operational Report – IMG at MCC-M</td>
<td>Allerova (GMO)</td>
<td>5 min</td>
</tr>
<tr>
<td>4</td>
<td>Poll for Continuation of the Mission</td>
<td>Duncan</td>
<td>5 min</td>
</tr>
<tr>
<td>5</td>
<td>Recent / Current Operational Issues and Updates</td>
<td>As appropriate</td>
<td>10 min</td>
</tr>
<tr>
<td>6</td>
<td>Closing comments and adjourn</td>
<td>Bogomolov / Duncan</td>
<td>5 min</td>
</tr>
<tr>
<td></td>
<td>Future meetings:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thursday, March 8 (nominal time)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thursday, March 15 (nominal time)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SMOT Products

- Summary from each weekly meeting
- Input for the ISS Integrated Mission Management Team (IMMT) as necessary
- For serious concerns, other products, statements, or recommendations as appropriate

SMOT Statistics

- 332 meetings by teleconference
- Configuration
- Average interval between teleconferences; average duration
- Average number of attendees
- Number of Immediate concerns discussed
- Number of Environmental concerns discussed
- Number of countermeasures aspects discussed
SMOT in Off-nominal Situations

- ISS medical concerns
- ISS environmental concerns
- ISS medical capability concerns
- STS-107 accident
- Hurricanes (Texas Gulf Coast)

Place in the ISS Mission Medical Readiness Review Process

- Once per month – "Look-Ahead" Readiness Review of upcoming medical activities and important ISS events.
- Proactive approach to IMS maintenance
- Proactive approach to foreseeable health-related problems
To Recapitulate

- SMOT is a weekly private teleconference but can be called at any time if necessary
- Crew health and well-being status / issues are discussed in unrestricted (open) fashion
- Status / problems are stated for hardware, procedural matters, environmental status, crew work/rest schedule, data transfer, and any other issues
- SMOT includes medical management of all ISS partners
- SMOT generates operational medical input for the ISS Program (ISS Mission Management Team (MMT))