Development and Operation of a Modern Information Portal for the ISS Medical Groups

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Presentation Overview

- Presentation Goals
- Presentation Outline
  - The ISS Medical Management Structure
  - Data Exchange and Coordination Challenges
  - Solution: Secure Workspace for non-real-time collaboration
  - Implementation Challenges and Highlights
  - Post Implementation Use and Performance
  - Conclusions
ISS is a Major International Endeavor
ISS Medical Management Structure
Joint ISS Operations:

- Multilateral consideration of Partner-initiated input into ISS medical operations
- Development of multilateral consensus medical position on programmatic issues (e.g., on planning of missions > 180 days)
- Development of multilateral inputs into ISS medical or medically relevant documentation, and multilateral document control
- Provision of medical input into the ISS Program on a regular basis
International Program Challenges

- Expected to operate by consensus
- Expected to be efficient with only limited real-time interactions
- Different medical cultures and standards of care
- Diverse medical backgrounds, training, and experience
- Different expectations about the ISS medical system
- Different management structures
- Variable funding levels
ISS Medical Organizations

Mobile Users

- Time
- Language and Terminology
- Units of measure
- Operating schedules and timelines

07:00
06:00
21:00
13:00
15:00
Portal Purpose

To promote efficient collaboration in the area of ISS crew health and medical matters by enabling:

– information exchange
– document sharing, review, processing, electronic approval / signature
– event planning and preparation
– electronic archival
– electronic reference database
– other collaborative activities pertaining to the medical support of the ISS Program
Implementation

- Technical management and maintenance is done by the ESA and contractor personnel in Cologne, Germany.
- Content management is the responsibility of the international program support personnel in Houston, TX.
- Only MMOP members and administrative have capabilities to modify the website.
- MMOP working group sites are established by the server administrators but managed by the WG.
- Alert Functions are used increasingly to reduce email traffic and optimize distribution of information.
Document Library

- All MMOP relevant documentation (in progress)
- All Medical Operations documentation (in planning)
- All MedOps Training Documentation (in planning)
- Space Medicine Reference Documentation (in planning)
Alert Functions

- Email alerts can be sent when items have been modified or added to the website
  - Real-time alerts immediately following changes
  - Daily alert summary
  - Weekly alert summary

- Alerts must be set up by each individual and are not automatically set up by the administrator of the website
  - Each individual/user may choose which items generate alerts (i.e. MMOP agenda, MMOP action tracker, etc.)
  - Alerts can be changed at any time for any section of the website by the user
Accessibility

- All Participants
  - View posted material from the MMOP workspace
  - Browse through the MMOP portal

- MMOP Support Capabilities (+ above accessibility)
  - Add and edit postings
  - Add/edit information regarding personal information

- MMOP Administrative Capabilities (+ above accessibility)
  - Delete postings

- MMOP Member Capabilities (+ above accessibility)
  - Approve/reject postings
Collaborative Tools (1)

- **Document Work-Spaces**
  - Ground Rules & Constraints (operational)
  - MED, MORD, JMOIP (in preparation)
Collaborative Tools (2)

- Meeting Work-Spaces
  - MMOP Meetings and Telecons (operational)
  - WG sites (operational)
Collaborative Tools (3)

- Meeting Work-Spaces
- MMOP Action Tracker (operational)
- Archives, Document Libraries (in preparation)
Collaborative Tools (4)

- **Working Groups**
  - WG and MMOP members access and browse the workspace
  - Limited access to posting material on workspace
  - Contain agenda, minutes, splinter topics, presentations, calendar

- **SMOT**
  - Limited access to portal
  - Limited access to posting material
  - Will contain agenda, minutes, readiness review reminders, and presentations
Security Details

- **Physical Security of Servers**
  - all Servers are in restricted Mission Operations Area
  - restricted access control (electronic key-card)
- **Firewall of DLR (German Aerospace Research Facility)**
  - global port filtering
- **ISA Server (Microsoft Internet Security and Acceleration Server)**
  - more restricted port- and source- filtering
  - URL filtering
  - user authentication
  - disabled remote access
  - virus scan of all incoming and outgoing traffic
Security Details-2

- **User Authentication**
  - No Anonymous Login Allowed
  - Individual User IDs and Passwords
    - Centrally administrated
    - User-level access rights
- **Secure Internet Protocol**
  - https 128-bit SSL-encryption (with Root Certificate)
  - no unencrypted access possible (redirect to https)
- **SharePoint Security Features**
  - Site User Groups
  - Item-Level Permissions
  - Moderated Upload/Modifications
Current Capability

- Repository of all MMOP relevant information
- Limited Document Management System
- Approval/Disapproval of minutes via website
- Change Request (CR) processing via website
- Reduced email traffic
- Similar approach for MSMB, MMPB
Future Possibilities

- Enhanced scheduling via Exchange Server
- Full Document Management System
- Links/Embedding to/of external websites
- FTP capability (under evaluation)
Thank you!

E-mail your questions and suggestions to: