

## AsMA 2011

### **EVALUATING THE MEDICAL KIT SYSTEM FOR THE INTERNATIONAL SPACE STATION (ISS) – A PARADIGM REVISITED**

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#### **Introduction**

Medical capabilities aboard the International Space Station (ISS) have been packaged to help astronaut crew medical officers (CMO) mitigate both urgent and non-urgent medical issues during their 6-month expeditions. Two ISS crewmembers are designated as CMOs for each 3-crewmember mission and are typically not physicians. In addition, the ISS may have communication gaps of up to 45 minutes during each orbit, necessitating medical equipment that can be reliably operated autonomously during flight. The retirement of the space shuttle combined with ten years of manned ISS expeditions led the Space Medicine Division at the NASA Johnson Space Center to reassess the current ISS Medical Kit System. This reassessment led to the system being streamlined to meet future logistical considerations with current Russian space vehicles and future NASA/commercial space vehicle systems.

#### **Methods**

The JSC Space Medicine Division coordinated the development of requirements, fabrication of prototypes, and conducted usability testing for the new ISS Medical Kit System in concert with implementing updated versions of the ISS Medical Check List and associated in-flight software applications. The teams constructed a medical kit system with the flexibility for use on the ISS, and resupply on the Russian Progress space vehicle and future NASA/commercial space vehicles.

#### **Results**

Prototype systems were developed, reviewed, and tested for implementation. Completion of Preliminary and Critical Design Reviews resulted in a streamlined ISS Medical Kit System that is being used for training by ISS crews starting with Expedition 27 (June 2011).

#### **Conclusions**

The team will present the process for designing, developing, , implementing, and training with this new ISS Medical Kit System.