

Visual Impairment/Intracranial Pressure Risk Clinical Care Data Tools

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Background

Prior to 2010, several ISS crewmembers returned from spaceflight with changes to their vision, ranging from a mild hyperopic shift to frank disc edema. As a result, NASA expanded clinical vision testing to include more comprehensive medical imaging, including Optical Coherence Tomography and 3 Tesla Brain and Orbit MRIs. The Space and Clinical Operations (SCO) Division developed a clinical practice guideline that classified individuals based on their symptoms and diagnoses to facilitate clinical care. For the purposes of clinical surveillance, this classification was applied retrospectively to all crewmembers who had sufficient testing for classification. This classification is also a tool that has been leveraged for researchers to identify potential risk factors. In March 2014, driven in part by a more comprehensive understanding of the imaging data and increased imaging capability on orbit, the SCO Division revised their clinical care guidance to outline in-flight care and increase post-flight follow up. The new clinical guidance does not include a classification scheme.

Results/Discussion

To support clinical care post flight for each ISS crewmember, Lifetime Surveillance of Astronaut Health (LSAH) coordinates a meeting with JSC Clinic and NASA Flight Surgeons approximately 30 days prior to landing. A post-flight chart review is conducted to determine crewmember's VIIP status post-flight based on changes from preflight to in-flight test results and ensure a smooth transition from flight to ground for clinical care. We will describe the data tools that have been developed to facilitate these chart reviews that reflect the previous Clinical Practice Guidelines and the transition to the new clinical care guidance. This transition in the clinical care paradigm also highlights the need for LSAH and the research community to develop an independent stratification of the outcomes related to the Visual Impairment and Intracranial Pressure Risk.