EXPLORATION MEDICAL SYSTEM TECHNICAL DEVELOPMENT

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The Exploration Medical Capability (ExMC) Element systems engineering goals include defining the technical system needed to implement exploration medical capabilities for Mars. This past year, scenarios captured in the medical system concept of operations laid the foundation for systems engineering technical development work. The systems engineering team analyzed scenario content to identify interactions between the medical system, crewmembers, the exploration vehicle, and the ground system. This enabled the definition of functions the medical system must provide and interfaces to crewmembers and other systems. These analyses additionally lead to the development of a conceptual medical system architecture. The work supports the ExMC community-wide understanding of the functional exploration needs to be met by the medical system, the subsequent development of medical system requirements, and the system verification and validation approach utilizing terrestrial analogs and precursor exploration missions.