The approach for treating in-flight medical events during exploration-class missions must reflect the need for an autonomous crew, and cannot be compared to current space flight therapeutic protocols. An exploration mission exposes the crew to periods of galactic cosmic radiation, isolation, confinement, and microgravity deconditioning far exceeding the low-Earth orbital missions performed to date. In addition, exploration crews will not be able to return to Earth at the onset of a medical event and will need to control the situation in-flight. Medical consultations with Earth-based physicians will be delayed as much as 40 minutes, dictating the need for a highly-trained medical team on board. This presentation will address the mix of crew medical skills and the training required for crew health care providers for missions beyond low-Earth orbit. Both low- and high-risk options for medical skill mix and preflight training will be compared.