Chapter 4
The International Legal Regulation for the Development of Medicine in Outer Space

Isabella Myriam Cristiano
Sapienza University of Rome, Italy

ABSTRACT

The need for international cooperation to promote the development of space medicine represents one of the most interesting challenges of our century. Three key organizations have been established to oversee the multifaceted aspects of medical operations and policy on the ISS. The first organization, the Multilateral Medical Policy Board (MMPB),the second organization, the Multilateral Space Medicine Board (MSMB) and the third organization, the Multilateral Medical Operations Panel (MMOP).This paper reviews the establishment and evolution of this tripartite framework, highlighting the collaborative efforts and the integration of diverse expertise that have been instrumental in overcoming the unique challenges of providing medical care in space. The success of these organizations exemplifies the potential of international cooperation in advancing space exploration and ensuring the health and safety of astronauts on long-duration missions.

1. INTRODUCTION

The early 1990s marked a pivotal moment in the evolution of human space exploration, characterized by an unprecedented shift from geopolitical rivalry to collaborative partnership. This transformation was particularly evident in the engagement

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between the Union of Soviet Socialist Republics (USSR) and the United States of America (US), two former adversaries who became key collaborators in the quest to establish a permanent human outpost in space (Blount, 2011). During this era, the USSR had accumulated considerable expertise in the design, construction, and operation of space stations in low Earth orbit, exemplified by the successful deployment and management of the Mir space station. In parallel, the US had established a dominant position in the field of spaceflight with the development and operational success of the Space Shuttle program, renowned for its reusability and ability to deploy and maintain space assets. In the 1980s, NASA initiated the Space Station Freedom program, an ambitious project aimed at creating a modular space station intended to serve as a research facility and an international collaboration platform. This program envisioned contributions from multiple nations to build what would eventually become the International Space Station (ISS). However, the onset of the 1990s brought about significant geopolitical changes, including the dissolution of the USSR and the formation of the Commonwealth of Independent States (CIS). As Russia emerged as the leading spacefaring nation among the former Soviet states, there was a renewed opportunity for deepened cooperation between Russia and the US. This opportunity was formalized on June 17, 1992, when US President George H.W. Bush and Russian Federation President Boris Yeltsin signed the "Agreement between the United States of America and the Russian Federation Concerning Cooperation in the Exploration and Use of Outer Space for Peaceful Purposes." This landmark bilateral agreement laid the foundation for a comprehensive partnership in space exploration, encompassing full collaboration in the ISS project, crew exchanges between the US Space Shuttle and the Russian Mir Space Station, and further joint research initiatives. The agreement highlighted areas of cooperation such as microgravity sciences, engineering, biotechnology, space physics, space medicine, biology, and Earth observation, while also addressing spaceflight safety and future Mars exploration plans. The agreement was structured into three distinct phases:

- **Phase 1:** Involved cooperative flights and the exchange of astronauts and cosmonauts between the US Space Shuttle and the Mir Space Station, fostering operational synergy and mutual trust.
- **Phase 2:** Focused on the early construction of the redesigned International Space Station (ISS). This phase included NASA's launch and docking of the Zarya (Sunrise) Functional Cargo Block (FGB) from the Krunichev State Research and Production Center (KhSC) and the Unity node built by Boeing Aerospace for NASA, which served as a critical connecting module for the ISS.
- **Phase 3:** Encompasses the full deployment and operational integration of the ISS, including the incorporation of research laboratories contributed by all