

TELEMEDICINE IN THE U.S.A AND NASA'S SPACE PROGRAM
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Telemedicine first became a reality centuries ago in France with Laënnec's development of the stethoscope. Although the distance separating the doctor and patient was only a few centimeters, the leap was enormous. Today, informatics and telemedicine play a vital role in both U.S. health care and the success of the U.S. human space flight program. Over the decades, NASA and the health care industry have captured the innovations of today's "information age" and evolved U.S. telemedicine capabilities to garner additional benefits from the newer fields of telescience, telehealth, and teleducation. These advances, combined with the informatics of today and the nanotechnology of tomorrow, will ensure survivability by caring for human health in hostile or remote environments—from the distant jungles of Earth to the far reaches of the solar system.

Early medical monitoring activities were undertaken to prove that humans could survive and perform in microgravity. As the space program grew, medical monitoring took on a much larger role and became an active part of research, in addition to a medical safeguard. Physical monitoring of astronauts and their spacecraft environment, combined with regular communication between crews and ground flight surgeons, have become a critical part of individual experiments and our overall knowledge of the human body. This paper examines the past, present, and future roles of telemedicine and informatics in the United States and in NASA's explorations of space.