



MEDICAL ADVANCEMENTS: TECHNOLOGY IN THE HEALTHCARE SYSTEM

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RESEARCH QUESTION

How is Medical Health Technology in Cuba comparative to the United States?



ABSTRACT

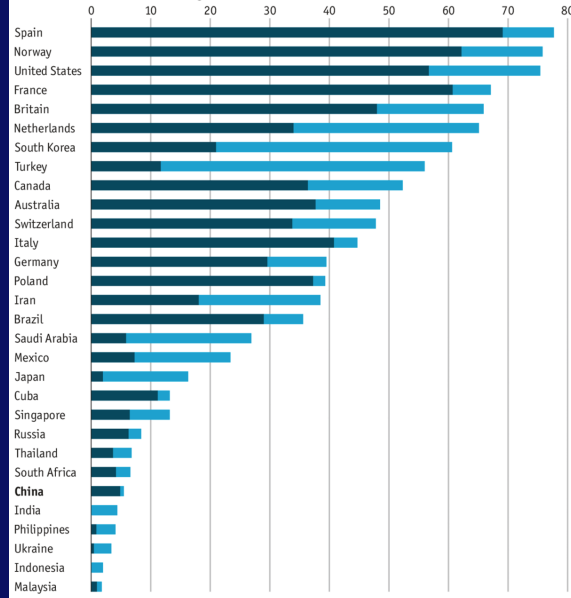


Medical technology by definition is the "application of organized knowledge and skills in the form of devices, medicines, vaccines, procedures, and systems developed to solve a health problem and improve quality of lives." Medical technology is the basis of the healthcare system, which is why investigating the concept is important. This topic is a crucial factor in making decisions to further improve technology for the future. It's no secret that the United States has one of the most stable healthcare systems as well as advanced technology compared to most countries, but what do we actually know about these other countries? How are these countries different in the aspect of the healthcare system and the advancement of medical technology? More importantly, how strong and advanced is medical technology in Latinx countries and is it comparative to the United States? In this research, my focus will be primarily on Cuba and the healthcare aspects relating to the concept of medical technology. This research is prominent in gaining an understanding of how a country works outside of the U.S. and studying these differences to understand how to make satisfactory enhancements for improving the quality of life.

Transplants* per million people

Selected countries, 2013 or latest

Deceased donors Living donors



*Kidney and liver transplants, which comprised almost 80% of all transplants in 2012

Sources: Global Observatory on Donation & Transplantation; WHO; ONT

RESULTS

- Cuba has developed a possible lung cancer vaccine that is currently being tested as a clinical trial in the United States (Rosewell Park Cancer Center)
- First country to eliminate the transmission of HIV and syphilis from mother to child
- Created the Meningitis B Vaccine
- One of the only countries to produce consist amount of "interferons" which are signaling proteins that are released in the presence of viruses to fight against them

Per 10,000 capita **67** are licensed physicians in Cuba, while only **25** are licensed physicians in the U.S.

- The U.S. accounts for **40%** of the global medical device market (\$156 billion in 2017)
- The market is projected to increase to \$208 billion by 2023
- Medical technologies are more easily and readily available to U.S. physicians
- According to the graph, the United States is within the **top three** countries (70+ million) for transplants as reported in 2013 from WHO, while Cuba falls far behind at only 10+ million transplants



Cuba and the U.S. have almost an identical life expectancy averaging at **79** years old



CONCLUSION

The countries with strong healthcare systems exceed in many different categories when it comes to comparing data. While Cuba has discovered many "firsts" when it applies to new technology such as vaccines for deadly viruses, the United States has always been a primary country in the advancements of medical technology monetarily. The United States is greatly populated and strives for the advancement and production of being equipped with the newest innovations that is constantly changing. Medical and health technology improve across all countries with the benefit of each other. The systems build off of one another in order to come up with a single vaccine to cure cancer, new approaches to surgeries, new computerized scans, and etc. While the U.S. and Cuba have their differences, they come together in the sense that their healthcare systems share a problematic situation in which they face "missed opportunities." These problematic situations are due to the international and domestic aspect of the countries. Cuba has a system that is "financed publicly" while the United States is run by "for-profit interests."

METHOD OF INQUIRY



Peer Reviewed Articles



World News



Educational Videos

1. nummond, Ruth. "The Profession of Medical Technology." *Bios*, vol. 18, no. 1, 1947, pp. 14-35. JSTOR. www.jstor.org/stable/4604994. Accessed 10 Mar. 2020.
2. Vidal, Manuel Limonta, et al. "The Development of High Technology and Its Medical Applications in Cuba." *Latin American Perspectives*, vol. 18, no. 2, 1991, pp. 101-113. JSTOR. www.jstor.org/stable/2633611. Accessed 10 Mar. 2020.
3. Casper, Monica J., and Daniel R. Morrison. "Medical Sociology and Technology: Critical Engagements." *Journal of Health and Social Behavior*, vol. 51, 2010, pp. S120-S132. JSTOR. www.jstor.org/stable/20798321. Accessed 10 Mar. 2020.
4. GOLDSCHMIDT, PETER G. "FUTURE OF MEDICAL CARE: TECHNOLOGY." *Journal of Health and Human Resources Administration*, vol. 1, no. 1, 1978, pp. 30-43. JSTOR. www.jstor.org/stable/2321081. Accessed 10 Mar. 2020.
5. Hulsh, Robert, and John M. Kirk. "Cuban Medical Internationalism and the Development of the Latin American School of Medicine." *Latin American Perspectives*, vol. 34, no. 6, 2007, pp. 77-92. JSTOR. www.jstor.org/stable/27648060. Accessed 10 Mar. 2020.
6. "Current Efforts to Implement Health IT in Chile." *Developing a Strategic Program for Chilean Health Information Technology: Environmental Scan and Key Informant Interviews*, by Erin Audrey Taylor et al. RAND Corporation, 2016, pp. 10-18. JSTOR. www.jstor.org/stable/10.7249/j.ctt16w73sp.10. Accessed 17 Mar. 2020.
7. "Bulletin of the World Health Organization." (2020, March 31). Retrieved from <https://www.who.int/bulletin/en/>

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Annotated Bibliography

Drummond, Ruth. "The Profession of Medical Technology." *Bios*, vol. 18, no. 1, 1947, pp. 14–35. *JSTOR*, www.jstor.org/stable/4604994. Accessed 10 Mar. 2020.

This article, written by Ruth Drummond is a volume from the journal article "BIOS." The volume "the profession of Medical Technology" aims to talk about the profession of medical technology, more importantly what it actually is and everything about it (salary, jobs, etc.)

Vidal, Manuel Limonta, et al. "The Development of High Technology and Its Medical Applications in Cuba." *Latin American Perspectives*, vol. 18, no. 2, 1991, pp. 101–113. *JSTOR*, www.jstor.org/stable/2633611. Accessed 10 Mar. 2020.

"The development of High Technology and Its Medical Applications in Cuba, written by Manual Vidal, Guillermo Padron, and Margaret Gilpin focuses of medical technology in Cuba. More specifically using collected data to explain the healthcare system in Cuba. The article focuses on technological development and what it has done to improve the healthcare system.

Casper, Monica J., and Daniel R. Morrison. "Medical Sociology and Technology: Critical Engagements." *Journal of Health and Social Behavior*, vol. 51, 2010, pp. S120–S132. *JSTOR*, www.jstor.org/stable/20798321. Accessed 10 Mar. 2020.

The article "Medical Sociology and Technology: Critical Engagements," written by Monica Casper and Daniel Morrison outlines the development of medicine and the advances of medical treatment. The article talks about current advances and the relationships with medical technology. The article also takes a standpoint of what medical technology means for the future.

GOLDSCHMIDT, PETER G. "FUTURE OF MEDICAL CARE: TECHNOLOGY." *Journal of Health and Human Resources Administration*, vol. 1, no. 1, 1978, pp. 30–43. *JSTOR*, www.jstor.org/stable/23211081. Accessed 10 Mar. 2020.

"Future of Medical Care: Technology," written by Peter Goldschmidt focuses on just the future of medical technology and how it'll improve in the next twenty years or so. This journal article discusses the misperceived conceptions on medical technology while reminding the audience of the improvements it has already made in human healthcare.

Huish, Robert, and John M. Kirk. "Cuban Medical Internationalism and the Development of the Latin American School of Medicine." *Latin American Perspectives*, vol. 34, no. 6, 2007, pp. 77–92. *JSTOR*, www.jstor.org/stable/27648060. Accessed 10 Mar. 2020.

The article "Cuban Medical Internationalism and the Development of the Latin American School of Medicine," written by Robert Huish and John Kirk is another article that focus of medical resources in Cuba, but instead focuses on medical "internationalism." The article explains the importance of the progressive movement in the medical community. The article also talks about the medical aid in Latin America as well as their medical education.

"Current Efforts to Implement Health IT in Chile." *Developing a Strategic Program for Chilean Health Information Technology: Environmental Scan and Key Informant Interviews*, by Erin Audrey Taylor et al., RAND Corporation, 2016, pp. 10–19. *JSTOR*, www.jstor.org/stable/10.7249/j.ctt19w739p.10. Accessed 17 Mar. 2020.

"Current Efforts to Implement Health IT in Chile" is a chapter from the book "Developing a Strategic Problem for Chilean Health Information Technology," written by Erin Audrey Taylor. This specific chapter provides information on multiple proposed strategies to improve the Chilean healthcare within technology. A chart is shown that shows the categories of the different areas of technology while providing the key benefits and current projects that are being implemented.

Bulletin of the World Health Organization. (2020, March 31). <https://www.who.int/bulletin/en/>

The World Health Organization provides factual information about any country. Since the focus of my research was Cuba, which is far more scarce than the United States. I found a majority of points from here. My visual arts aspect of my research board, "Transplants per million people," also came from the WHO. The chart provided a strong visualization to show key differences between all countries.

Health Care: Cuba vs. U.S. (2016, April 7). Retrieved April 28, 2020, from <https://videos.telesureenglish.net/video/530129/health-care-cuba-vs-us/>

The video, “Health Care: Cuba Vs. US is a strong video that provides many facts about similarities as well as differences between Cuba and the United States. The video points out many of the monetary and political differences.