Forum: World Health Organization (WHO)

Issue # 2: Measures to implement AI in healthcare and medical institutions regulated by humans

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Guiding Questions as you Read

How can your country benefit from implementing AI in healthcare?

What are strengths and challenges of implementing AI into medicine?

What risks might happen if we allow machines to make medical decisions without human supervision?

How can smart technology improve healthcare?

Key Terms
Development
Artificial
Intelligence
Innovation
Ethical
Moral
Dilemma
Regulation
Algorithm

Introduction

"It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change." — Charles Darwin. In these times of radical change and fast technological development, humans must adapt to technology to advance in numerous fields. Artificial intelligence (AI) is a new technology that is based on creating an artificial being able to answer questions and teach ways to incorporate technological advances into everyday situations. Innovating with it could expand the knowledge of medical professionals on a huge scale, providing solutions to existing problems, creating diagnostics, developing new treatments, or preventing diseases before they occur. Most countries have expressed their concerns on the use of AI in the medical field, fearing that AI could get out of control or make a fatal error that could take a human life, battling the ethical and moral dilemma of assigning life and death situations to a machine. The future of AI in health care not only depends on innovation but also on how societies and countries choose to regulate and balance the risks with the advantages of AI in modern medicine. To address all these concerns, strict regulation by humans will be needed. AI in healthcare must be regulated consistently with algorithms and qualified professionals to prevent fatal mistakes, lowering the risks while

maximizing its potential. By maintaining human control over artificial intelligence, medical institutions can take advantage of the huge potential that AI has in healthcare.

Comprehension Question(s):

Why is it important for humans to stay in control of technology used in healthcare?

What global organizations have created rules or guidelines for using technology in medicine?

What are some risks if hospitals use smart tools without proper rules or human supervision?

Definition of Key Terms

Development: "The process in which someone or something grows or changes and becomes more advanced" ("Cambridge English Dictionary: Meanings & Definitions").

Artificial Intelligence: Technology designed to simulate "human learning, comprehension, problem-solving, decision-making, creativity, and autonomy" (Stryker and Kavlakoglu).

Innovation: The creation and use of a new idea or method ("Cambridge English Dictionary: Meanings & Definitions").

Ethical: The belief of what if morally right or wrong ("Cambridge English Dictionary: Meanings & Definitions").

Moral: The standards by which each person, regardless of the law, defines whether a

behavior is good or bad. ("Cambridge English Dictionary: Meanings & Definitions").

Dilemma: Situation in which the decision between two things is difficult to make ("Cambridge English Dictionary: Meanings & Definitions").

Regulation: "The act of controlling something" ("Cambridge English Dictionary: Meanings & Definitions").

Algorithm: "A set of finite rules or instructions to be followed in calculations or other problem-solving operations," or "A procedure for solving a mathematical problem in a finite number of steps that frequently involves recursive operations" (Prabhu).

Revolutionizing/revolutionary: Something completely new with significant effect ("Cambridge English Dictionary: Meanings & Definitions").

Medical infrastructure: Physical facilities that ensure accessible care, including laboratories, training and support facilities, reliable supplies of pharmaceuticals and materials, a trained workforce supported by professional training systems, and mechanisms for distributing resources and expertise ("What Is Healthcare Infrastructure | IGI Global").

Telemedicine: "The use of electronic information and communications technologies to provide and support health care when distance separates the participants." (US) and Field).

Automating/automatization: "The process of making something operate automatically"

("Definition of Automatization").

Efficiency: The appropriate use of time and energy without wasting either ("Cambridge English Dictionary: Meanings & Definitions").

Optimizing/optimize: Things to be as good as they possibly can ("Cambridge English Dictionary: Meanings & Definitions")

Prompts: In the context of artificial intelligence, it refers to the inputs/instructions submitted to the AI system to generate a specific response (Dogan).

Integrating/integration: The action or process of successfully joining/combining two or more things effectively ("Cambridge English Dictionary: Meanings & Definitions").

Biased: Unreasonable preference that leads to unfair treatment/giving inaccurate results because of insufficient information ("Cambridge English Dictionary: Meanings & Definitions")

Adaptation: Changing to suit different conditions ("Cambridge English Dictionary: Meanings & Definitions")

Key Terms
Revolutionizing
Medical
infrastructure
Telemedicine
Automating
Efficiency
Optimizing
Prompts
Integrating
Biased
Adaptation

Current Situation

In health care, people want to envision medical practitioners working together with AI, rather than humans being replaced. With "cutting-edge trends" and "groundbreaking innovations", AI

is revolutionizing the world of medicine ("AI Healthcare Research 2025: Trends & Insights"). AI is opening the chance for "regions with limited medical infrastructure" to be able to access diagnostic tools and telemedicine opportunities never thought possible. Supporting the worldwide goal of equity in healthcare. AI's benefits regarding efficiency have occurred through automating procedures and freeing up physicians' schedules. Tasks and medical procedures that used to take hours can now be completed more efficiently. This reduces operating time, allowing doctors and nurses to focus on development, innovation, and creativity while leaving less complex tasks to AI, which can perform them much faster (HealthManagement.org).

Current Uses

The most common use of AI in medicine right now is to support clinical decision-making and the analysis of images (IBM). AI can analyze scans that produce images with more accuracy than humans, like MRIs, CT scans, X-rays, ultrasounds, and PET scans (Medical Scans Explained). Clinicians have been utilizing AI tools such as ChatGPT to facilitate complicated diagnoses that require hours of research through medical journals, books, and phone calls. Now, they type a prompt and have a diagnosis, prognosis, and possible treatment in seconds (Powell). According to the World Economic Forum, "urgent care doctors miss broken bones in up to 10% of cases", making AI an optimal tool for analyzing scans. Optimizing the process of identifying a broken bone, considering that when missed, the patient requires multiple scans and weeks of check-ups to identify it. By AI performing administrative tasks, doctors can dedicate more time to interactions with patients, subsequently improving overall care. Hospitals and patients at home have been utilizing AI virtual assistants to diagnose based on symptoms reported, and have been given possible treatments based on the diagnosis (Bajwa et al.). AI has accelerated the drug discovery process by analyzing complex

biological data, predicting drug efficacy, and identifying potential therapeutic targets (Bajwa et al.).

Emerging Trends

In the near future, AI is believed to be able to assist medical professionals in "consultations, receiving valuable insights and assistance in various aspects of patient care" (James). Harvard Medical School predicts prompts to look like "Provide advice on the diagnosis and treatment for these symptoms"; "Create a personalized treatment plan based on the patient's age and lifestyle"; "Analyze this X-ray to detect abnormalities"; "Identify risk factors from this patient's EHR"; and "Write a letter explaining the medical necessity of this treatment". Doctors and researchers have been starting to utilize AI for predictions. It accumulates large-scale health data for analysis, predicting the likelihood of disease development years before symptoms appear, enabling earlier interventions for conditions like Alzheimer's and chronic kidney disease (North). According to the Mayo Clinic, possibilities for ways AI will change healthcare include: "Selecting and matching patients with the most promising clinical trials" and "Developing and setting up remote health-monitoring devices" (Mayo Clinic).

Challenges and Limitations

"Challenges include, but are not limited to, data quality and access, technical infrastructure, organizational capacity, and ethical and responsible practices in addition to aspects related to safety and regulation" (Bajwa et al.). The biggest challenge with AI will come from the public's acceptance of integrating it. Both clinicians and patients will have to work to adjust to the changes (Bajwa et al.). Seeing as they might doubt, how will the technology adjust to the current situation? Can they trust it? What changes will it cause? AI's capabilities are based on its training and the

knowledge provided, but without proper adaptation to different environments and populations, there is no guarantee of unbiased results.

Major Parties Involved and Their Views

The United States

The United States is a global leader in using artificial intelligence in healthcare. They understand that AI tools could help doctors diagnose diseases, provide better treatments, and manage and interpret data more efficiently (U.S. Food and Drug Administration, FDA). The US supports innovation, but also focuses on making AI safe and ethical. They have begun integrating AI technologies in hospitals and clinics, aiming to improve the accuracy and efficiency in medical care. Government Agencies, such as the Food and Drug Administration (FDA), want to emphasize the need for humans to oversight in critical decisions.

Japan

Japan has become one of the first countries to integrate AI and robots in healthcare. Hospitals use AI for tasks that span from the detection of diseases at an early stage to robots that provide physical assistance to the elderly. (via The Japan Times). The Japanese government pushes technological development forward while taking tough steps to ensure safety in order to win the public's trust. Japan certainly values precision and quality as a cultural expression, and this dictates the way AI systems are tested and deployed. Even with all its technological might, Japan is doing so carefully, keeping human carers in central roles of oversight and responsibility rather than fully giving AI control in medical decision-making. (Strategic Innovation Promotion).

China

China is one of the top investors in artificial intelligence worldwide, and has aggressively expanded its use of AI in the medical field. AI is being used throughout Chinese hospitals to detect the early onset of disease, analyze medical imaging, and even to help process large health data on behalf of the public health response. With strong government support, China has woven AI through national strategies, including its "Healthy China 2030" initiative designed to upgrade healthcare by making it more widely available. (China's National Medical Products Administration (NMPA). But its rapid adoption has also sparked concerns around the world over the system's trustworthiness, data privacy, and the absence of well-defined regulatory standards. The Chinese government started drafting ethical guidelines in the use of AI, but critics say that more objective oversight is required. Still, China continues to see AI as the key to remaking its health care system and improving its global capabilities in medical innovation.

United Nations Involvement

ITU-WHO Focus Group on Artificial Intelligence for Health (FG-AI4H)

In 2018, the World Health Organization (WHO), in partnership with the International Telecommunication Union (ITU), created the Focus Group on Artificial Intelligence for Health, a platform allowing the public to have answers to pressing questions regarding the presence of AI in healthcare (United Nations). The focus group works in the intersection of various fields such as machine learning/AI, medicine, regulation, public health, statistics, and ethics. According to the UN, the focus group includes decision-makers who want a clear, regulated way to measure and perform (United Nations, "ITU-WHO Focus Group"). This allows experts from around the world to form a

standardized global framework. The initiative additionally aims to address challenges and opportunities in AI, enhancing health systems and improving global health outcomes. It includes meetings twice a month to share results between members, which address documents on a topic description; which "include guidelines on ethical considerations, regulatory considerations (best practices specification), requirements specifications, software lifecycle specifications, data specifications, AI training best practices specifications, evaluation specifications, scale-up/adoption, and FG-AI4H applications and platforms." (The ITU–WHO Focus Group on Artificial Intelligence for Health (FG-AI4H)

Global Initiative on AI for Health (GI-AI4H)

Launched in July 2023, under WHO, ITU, and the World Intellectual Property Organization (WIPO), the GI-AI4H stands as a resilient, long-term institutional structure, grounded in its mission to enable, facilitate, and implement AI in healthcare. (United Nations). The initiative aims to enable strong governance frameworks, policies, and technical guidelines that support evidence-based use of AI in healthcare, ensuring trust and ethical practices. Additionally, it proposes to facilitate the sharing of knowledge and collective action, speeding up healthcare processes through collaboration and combining investments to build a global community of experts and resources. Finally, another goal of this initiative is to implement AI programs internationally, ensuring that AI solutions are accessible and effective in different healthcare systems (United Nations).

Timeline of Events, Relevant Resolutions, Treaties, and Events

Date	Description of Event
2015	The World Health Organization and national agencies are beginning to discuss the potential for AI in diagnostics and treatments. Hospitals and research centers are also starting to explore AI for surgery assistance and personalized medicine.
2020	AI is used to track the spread of COVID-19 among countries and to predict outcomes, and helps with the research for the creation of the vaccine. (Canadian company BlueDot)
2021	The World Health Organization issued the first global AI guidelines, "(Ethics and Governance of Artificial Intelligence for Health)." These guidelines state that AI must not replace human decision-making.
2022	Chat-GPT bots and diagnostic tools have become popular among regular citizens, making it more accessible to medicine, recommend treatments, and even assist in mental health therapy. (Cognitive Behavioral Therapy)
2025	Countries begin to implement specific legal obligations to enforce human control over medical AI. AI is being used in surgical planning and support, predicting mental health crises, and Drug discovery. (Diagnostic and Interventional Radiology journal)

Evaluation of Previous Attempts to Solve the Issue

The past actions have seen national and international initiatives come into play for integrating the new health technology safely and equally. In 2021, the World Health Organization issued significant guidelines for safeguarding patients when hospitals and clinics introduce artificial intelligence into patient treatment. The guidelines mandated that final decision-making regarding an individual's health be done by an intelligent being and not an automatic system. (Ethics and Governance of Artificial Intelligence for Health) In 2021, UNESCO created a list of values for use across the globe so that implementation does not disempower human rights or discriminate against them. They are shaping policy decisions in several governments. The European Union, for instance, started working toward detailed policies for ensuring that the use of artificial intelligence in medical treatment is first strictly evaluated, tested, and proven safe for use in actual clinical practice in living organisms. These initiatives at a global scale confirm there is an effort toward prioritizing dependability, equity, and safety when utilizing technology in health care.

Possible Solutions

When addressing measures to implement AI in healthcare and medical institutions regulated by humans, legal frameworks regarding privacy policies are necessary. Ethical issues related to AI have been significant in recent years, making it essential to ensure that patient information is safeguarded, reassuring the public about data safety. Through legal frameworks set by the WHO and nationally regulated, the privacy of patient data can be protected to assure the public about data security and prevent misuse.

Additionally, there are concerns about the potential replacement of humans by machines through the implementation of AI. This fear can create skepticism among patients and staff, making it important to build trust to effectively apply AI systems in medicine. It is recommended that AI be used to support physicians, enhancing their abilities rather than substituting them entirely. This should be done through the adoption of regulated AI that makes suggestions, but the human has the final say. For example, the AI suggests a diagnosis, but the doctor has previous experience that tells them the AI is incorrect. Having a human with years of education and experience can help collaborate with AI without replacing humans or risking mistakes. This will aid in the integration of advanced technologies into healthcare while maintaining trust and confidence among patients and staff, leading to a more modern and accepted healthcare system.

Sustainable Development Goal (SDG)

Artificial Intelligence (AI) in healthcare and medical facilities can be a transformative tool for achieving multiple Sustainable Development Goals when controlled and directed with an implementation plan. Decisions made by AI, an early diagnosis of diseases, planning precision treatment programs, and predictions, will lead to advances in predictions and benefits for health care efficiency that are simply stunning. This makes a huge contribution to SDG 3, after 20 years of hard work, finally up to the level of the intergovernmental Indicative Model for Good Health and Well-being. In order to make the ethical incorporation of this type of technology into the wider system, oversight must be firm. Another SDG related to the issue is SDG 16: Peace, Justice, and Strong Institutions. It follows that institutions responsible should be transparent and

accountable so that new technologies are supervised ethically. Moreover, the technological infrastructure required for developing AI supports SDG 9 (Industry, Innovation, and Infrastructure) by stimulating investment in sustainable and resilient infrastructures, as well as innovation for health. In this manner, when applied in a responsible and non-malicious way, the applicability of AI in medical care will be greater than mere technical innovation. It is likewise a comprehensive tool for the realization of long-term "human dignity at the center" sustainable development goals through public health, geared to actions.

Useful Links for Research (Appendix)

The appendix is a list of useful links that can guide research. In the appendix, there are short descriptions of links/images that help understand their relevance to the issue. Additionally, each description of what the article is about and a possible use for it in the delegate's research. Common uses of the resources are related to giving perspective on each country's viewpoints, possible contribution to the debate, current events related to the issue, statistics that can be used in the debate, amongst other uses.

https://www.magazine.medicaltourism.com/article/best-countries-in-the-world-for-ai-driven-rare-disease-research

Source A: Medical Tourist's Magazine article on leading countries for AI-driven research on rare diseases. The article highlights advancements in medical technology and how the countries mentioned have collaborated to make it possible. Making it a great source to understand how countries are currently using AI and which countries are making the most advancements.

https://www.globenewswire.com/news-release/2025/04/02/3054390/0/en/Artificial-Intelligence-AI-in-Healthcare-Market-Size-to-Hit-USD-613-81-Bn-by-2034.html

Source B: Link includes the projected growth of AI in the healthcare market. Includes several statistics and budgeting predictions that help support the claim that implementing AI in healthcare, as a business, will "Hit USD 613.81 Bn by 2034", in terms of it's value in the market. Most importantly, the article highlights benefits and drawbacks that are currently being seen when involving AI in healthcare, and how it will most likely influence the numbers stated throughout.

https://www.magazine.medicaltourism.com/article/best-countries-for-ai-enhanced-personalized-medical-robotics

Source C: The article highlights the leading countries in "AI-Enhanced Personalized Medical Robotics". It includes a description of what "AI-Enhanced Personalized Medical Robotics" means, the benefits, and which countries are leading contributors. Most importantly, it highlights some ethical and regulatory considerations that can be useful when considering current issues and what should be taken into account when making possible solutions. Finally, the article mentions certain ways that AI will most likely be used in the future, making it an essential consideration for possible solutions.

https://ehtel.eu/activities/eu-funded-projects/ai2med.html

Source D: This is an information section of a website made for a current program related to AI in healthcare. The overall website can give insight into realistic ways programs are used to implement AI in healthcare. Clarifications, given on what the program does, can help EU members to better understand their point of view on the issue. Specifically, what has already been done and why.

https://scoop.market.us/ai-in-healthcare-statistics/

Source E: The article serves as a great starter for an overview of the issue. Providing ways to apply AI in healthcare, the importance of implementing it in relation to the future, statistics, and professional opinions. The article goes into a lot of detail on the United States' standpoint and current information. But, additionally mentions similar information about China, United Kingdom, and South Korea. Finally, it includes companies involved and recent events, such as investments.

https://www.dezyit.com/post/what-the-numbers-show-about-ai-adoption-in-global-healthcare-systems

Source F: The source specifies on statistics and other numbers related to adopting AI in global healthcare systems. It provides an overview of current uses and numbers that support the implementation of AI in healthcare as a positive and revolutionary change. Furthermore, the article states trends arising in regard to the topic in different regions. It is noteworthy that the article also considers ethical challenges/considerations and "The Future of AI in Healthcare", as described by the source.

https://www.thinkglobalhealth.org/article/health-latin-america-and-promise-artificial-intelligence

Source G: This article can be mostly utilized by delegates in the region of Latin America, since the article specifies the use of AI in healthcare in that region. Although it provides insights that can be applied globally since it touches on the effects that the COVID-19 pandemic had on AI in healthcare, being implemented. It also mentions ways in which countries rely on or collaborate with each other to make it possible. It is notable that the article analyzes the influence of the region's political background on the introduction of AI in medicine.

https://www.weforum.org/stories/2025/03/ai-healthcare-strategy-speed/

Source H: The article stresses worries regarding the speed in which AI is making its way into medicine, and how there has to be more thought put into it. Certain risks that come from "an AI gold rush" as stated in the article, are emphasized. Most importantly, the article suggests steps on implementing AI into healthcare. Making a useful tool for possible solutions.

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