World Health Organization (WHO)

Strategies to promote global access to innovative health technologies for COVID-19 and other priority diseases

The recent COVID-19 pandemic and other diseases of global priority (such as Crimean-Congo haemorrhagic fever, Ebola virus disease and Marburg virus disease, Lassa fever, Middle East respiratory syndrome coronavirus (MERS-CoV) and Severe Acute, Respiratory Syndrome (SARS), Nipah and henipaviral diseases, Rift Valley fever, Zika, "Disease X"[1]) have shown us the importance of access to innovative health technologies that can improve health outcomes with effective results despite the lack of organisation, resources and infrastructure.

However, many of the technologies provided globally are not effective for the diverse socio-economic realities around the globe, especially those in the developing world. Access to essential medicines and the lack of research to address neglected diseases have been a major concern for many years. But to formulate key solutions to health issues in a number of countries in great need of them, policies and a clear understanding of the innovation processes that lead to new forms of diffusion in health systems globally are needed.

For these reasons, the World Health Organization (WHO) has compiled a compendium of 24 innovative technologies, to ensure accessibility and benefit poor countries. One of the main objectives of the compendium is to select and examine technologies that can have an immediate impact, preparedness and response to the COVID-19 pandemic and to identify ways to improve the quality of population health and provide better outcomes for medical procedures that have not been covered, with 15 technologies already available in several countries and 9 others in the testing stage.

The technologies already in use have demonstrated their importance through testing. Example of this is the solar-powered oxygen concentrator, which has been highly effective in

[1] The possibility that a pathogen that presently causes no recognized diseases in humans and that could be the source of a significant global epidemic is represented by Disease X.

cases of pneumonia, responsible of 900,000 deaths annually, being that Pneumonia is the leading cause of childhood mortality worldwide.[2]

The WHO has reviewed a number of technologies that demonstrate innovative results over the past decade, and some of these products are currently supporting priority health issues in some poor settings. Many of these technologies which involve a health domain can be integrated into a smartphone. The compendium contains a comprehensive assessment of a wide range of applicable health technologies, this information obtained from international experts working at the WHO.

Equitable access to and affordability of medicines and different types of technologies in a health setting is one of the most important issues in achieving universal access to and coverage of the health sector. The different arrangements for the improvement of the health system need to be based on the national context and the context of health services, with recognition of the highest possible health rights for all.

To achieve a great improvement in the health sector with the implementation of technology the following measures need to be considered: the dissemination and updating of standards, policies, and strategies that improve opportunities for access to and informed use of safe, quality-assured, medically effective, and cost-effective health technologies, and the improvement of the sustainable capacity of health systems, which will enable us to ensure prevention, diagnosis, treatment and elimination of diseases and other medical conditions.

Accessibility to relevant medicines and biologicals is ensured through the development of an organized system that integrates the selection, financing, procurement, and distribution of products according to social and medical needs. Thus, the need to adopt strategies within national health costs that improve affordability and promote competition, such as strategies that address multisectoral and generic approaches.

Additionally, the majority of the data currently available and historical experiences in evaluating health innovation are from high-income nations and may not be immediately applicable to the context of diverse regions. But the importance remains in the fact that scientific and technical innovation is crucial for the guaranteed promotion of social and economic development.

---

[2] WHO. “Solar-powered oxygen concentrator” in *WHO compendium of innovative health technologies for low- resource settings*. 2021. P.20. https://www.who.int/publications/i/item/9789240032507

Otherwise, the lack of systematized training and information on new developments in public health has been pointed out as an impediment to the planning and development of policies and standards that lead to improved health technologies. And, each time a strategy is implemented, the lack of prior information with which to compare progress becomes an obstacle to the evaluation of the proper development of programs and technologies. This itself makes systems very complex, especially in the health sector.

Concepts and definitions:

- Compendium: a collection of a specifical information about a particular subject.
- Covid-19: an infectious disease caused by the SARS-CoV-2 virus.
- Disease: illness or sickness characterised by specific symptoms.
- Epidemic: increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area.
- Health technologies: application of organized knowledge and skills in the form of medical devices, medicines, vaccines, procedures, and systems developed to solve a health problem and improve quality of lives.[3]
- Health: according to WHO, the state of complete physical, mental, and social wellness and not only the absence of affections or illness.
- Multisectoral: the intentional cooperation between two or more sectors in order to achieve or accomplish goals in communities.
- Pandemic: an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people.
- Priority diseases: diseases that offer the greatest risk to public health due to their propensity for epidemic spread and/or the existence of any or insufficient protective measures. The priority diseases are: COVID-19, Crimean-Congo hemorrhagic fever, Ebola virus disease and Marburg virus disease, Lassa fever, Middle East respiratory syndrome coronavirus (MERS-CoV) and Severe Acute, Respiratory Syndrome (SARS), Nipah and henipaviral diseases, Rift Valley fever, Zika, "Disease X"[4].

Current situation:

[3] WHO. "Glossary of terms" in *WHO compendium of innovative health technologies for low- resource settings*. 2021. P. vii. https://www.who.int/publications/i/item/9789240032507

[4] The possibility that a pathogen that presently causes no recognized diseases in humans and that could be the source of a significant global epidemic is represented by Disease X.

WHO is compiling the most recent, multilingual, worldwide scientific research on COVID-19. The regular updates to the global literature mentioned in the WHO COVID-19 Research Database come from hand searches, database searches, and the insertion of additional expert-referred scientific articles. A comprehensive, multilingual repository of recent literature on the subject is represented by this database. Although it might not be exhaustive, fresh research is always being added.

The WHO evidence retrieval subgroup has started working with important partners to improve the citations and add additional content to the database, making it more complete. The Department of Evidence and Intelligence for Action in Health of the Regional Office, which is a Specialized Center of PAHO/AMRO, is responsible for creating the database.

WHO has set two strategic objectives to achieve the collective goal of ending the global public health emergency of COVID-19. The first objective is to reduce and control the incidence of SARS-CoV-2 infections. The second objective is to prevent, diagnose and treat COVID-19 to reduce mortality, morbidity, and long-term consequences.

Working with nations, WHO and partners have continued to enhance key COVID-19 pandemic preparedness, readiness, and response elements to accomplish these strategic objectives. To end the pandemic's acute phase, the WHO has assisted nations in strengthening their surveillance systems, ensuring more equitable access to diagnostics, treatments, and basic supplies globally, building the resilience of their health systems, and reducing disease exposure by empowering and enabling communities.

International initiatives:

Since May 2016 the World Health Assembly saw the development of a global strategy and readiness plan called the R&D Blueprint enables the quick activation of efforts in research and development in the occurrence of epidemics. Its aim is to expedite the release of efficient diagnostic tools, vaccines, and treatments that can be used to save lives and avoid major emergencies. The vast international coalition of specialists that contributed to the Blueprint have backgrounds in medicine, science, and regulation, with WHO serving as coordinator.

The WHO Director-General declared the outbreak of COVID-19 to be a Public Health Emergency of International Concern on January 30, 2020, in accordance with the

Emergency Committee's recommendations (PHEIC)[5]. On February 11 and 12, 2020,[6] international scientist gathered at the headquarters of the World Health Organization in Geneva to assess the current state of knowledge regarding the novel virus, come to consensus on urgently needed research questions, and discuss how to collaborate to expedite and fund essential research to stop this outbreak and prepare for future ones.

Two key objectives were agreed upon after the discussion. The first was to hasten cutting-edge research to assist in reducing the epidemic's spread and facilitating care for those impacted. In order to learn from the present pandemic response and better prepare for the next unanticipated outbreak, the second goal was to promote research objectives that contribute to global research platforms.

The R&D Blueprint has facilitated a coordinated and accelerated response to COVID-19, including an unprecedented program to develop a vaccine, research into potential pharmaceutical treatments, and strengthened channels for information sharing between countries, building on the response to recent outbreaks of Ebola virus disease, SARS-CoV, and MERS-CoV.

The WHO compendium of innovative health technologies for low-resource settings provides a general overview and rapid evaluation of innovative health technologies for low-resource settings conducted multiple evaluations to determine each innovation's suitability, acceptance, acceptability, affordability, and safety in low-resource environments. To provide subject expertise and evaluate the innovation's ability to meet requirements and realities on the ground, a wide network of reviewers was used. Throughout May, June, July, November, December, and January 2021, expert panels were gathered for several sessions to exercise their judgment and offer an opinion on whether the technology should be included in the Compendium.

The commercially available products stablished by the WHO and R&D Blueprint are deployable facility for emergencies/shipping container based; e-voucher/vaccination management; heart rate meter for newborn; infrared thermography camera; solar &wind-up powered MP3 radio; deployable oxygen generation plant; portable oxygen rebreathing; portable respiratory monitoring system; solar-powered oxygen concentrator;

---

[5] WHO. *WHO declares Public Health Emergency on novel coronavirus*. 2020. https://www.paho.org/en/news/30-1-2020-who-declares-public-health-emergency-novel-coronavirus

[6] *Ibid.*

tele-education for COVID-19; ventilator for low oxygen inlet pressure; mechanical pressure control ventilator; ventilator with extended battery time; portable dual energy X-ray detector.

And the prototype products are reusable polypropylene-based face mask; neonatal optical screeing jaundice device; pediatric automated ultrasound; personal protective biodegradable jute cellulose-based equipment; reusable personal protective equipment suit, ventilated; solar powered oxygen concentrator & compressor (SPOCC); ventilator resuscitator bag based; ICU ventilator with waveform display.

Guiding questions:

1. Which health technologies are available for your country?
2. What are the strategies for implementing health technologies during the Covid-19 pandemic in your country?
3. What agreements have been implemented in your delegation to achieve the facilitation of technologies that support the health of the population?
4. What are the public health rights in your delegation? How effective is your delegation's public health funding?
5. What have been the different needs of your delegation in the various priority disease situations?
6. How accessible are health technologies for your delegation?
7. Has your delegation had immediate and effective responses to priority diseases?
8. Does your delegation have future projects to develop or implement health technologies? How has technological development supported the health sector and its workers?
9. What are the differences between delegations that have developed health technologies and delegations that have not?

References:

Evaluación de tecnologías de salud. (s. f.). OPS/OMS | Organización Panamericana de la Salud. https://www.paho.org/es/temas/evaluacion-tecnologias-salud

Fagherazzi, G., Goetzinger, C., Rashid, M. A., Aguayo, G. A., & Huiart, L. (2020). Digital Health Strategies to Fight COVID-19 Worldwide: Challenges, Recommendations, and

a Call for Papers. *Journal of Medical Internet Research*, 22(6). https://doi.org/10.2196/19284

Health technologies. (s. f.). https://www.who.int/teams/digital-health-and-innovation/health-technologies

PAHO | Program Budget Web Portal. (s. f.). PAHO PB Portal. https://open.paho.org/2020-21/our-work/category/08

Promoting Access to Medical Technologies and Innovation: Intersections between public health, intellectual property and trade (second edition). (s. f.). https://www.wto.org/english/res_e/publications_e/who-wipo-wto_2020_e.htm

Publications detail. (s. f.). https://www.who.int/publications-detail-redirect/9789240008267

Recurses. (s. f.-b). https://www.wipo.int/reference/es/

Using Technologies for Data Collection and Management | Epidemic Intelligence Service | CDC. (s. f.). https://www.cdc.gov/eis/field-epi-manual/chapters/data-collection-management.html

WHO releases new compendium of innovative health technologies for COVID-19 and other priority diseases. (2021, 31 agosto). https://www.who.int/news/item/31-08-2021-who-releases-new-compendium-of-innovative-health-technologies-for-covid-19-and-other-priority-diseases

WHO. "Glossary of terms" in *WHO compendium of innovative health technologies for low-resource settings.* 2021. P. vii. https://www.who.int/publications/i/item/9789240032507

WHO. *WHO declares Public Health Emergency on novel coronavirus*. 2020. https://www.paho.org/en/news/30-1-2020-who-declares-public-health-emergency-novel-coronavirus

WHO. 2022 Mid-Year Report. WHO's RESPONSE TO COVID-19. Geneva; 2022. https://www.who.int/publications/m/item/who-s-response-to-covid-19-2022-mid-year-report