



Second Health Working Group Meeting

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CONCEPT NOTE

PRIORITY TWO – BUILDING TRANSFORMATIVE RESILIENCE

DEFINING PREPAREDNESS PLANS, STARTING FROM THE MOST VULNERABLE CONTEXTS AND THE LESS RESILIENT COUNTRIES, THROUGH THE *ONE HEALTH* APPROACH

PRIORITY THREE – COORDINATED AND COLLABORATIVE RESPONSE

PLANNING A GLOBALLY COORDINATED AND COLLABORATIVE RESPONSE TO HEALTH CRISES AND EMERGENCIES



DEFINING PREPAREDNESS PLANS, STARTING FROM THE MOST VULNERABLE CONTEXTS AND THE LESS RESILIENT COUNTRIES

ONE HEALTH APPROACH FOR EMERGING INFECTIOUS DISEASES WITH EPIDEMIC OR PANDEMIC POTENTIAL

Most of the epidemics and pandemics that have and continue to threaten the world are of animal origin. Recent examples range from SARS in 2003, the H1N1 pandemic in 2009, the 2014 Ebola outbreak in West Africa, Zika in 2016, to now the COVID-19 pandemic. Currently, it is estimated that at least 75% of all emerging infectious health hazards are zoonotic^{1,2}, that is to say transmitted between humans and animals. Loss of habitats and biodiversity, driven by climate change and by the growing encroaching of human activities on nature, is likely to accelerate zoonoses. Moving forward, ways to reduce the risk of epidemic and pandemic include (1) An understanding of what constitutes a threat as well as the factors that drive underlying risk, (2) Science-based risk mitigation strategies to reduce the (re)emergence of high-threat pathogens by targeting high risk activities at the human-animal-environment interface and providing safer alternatives, and (3) Effective early action when a known or unknown threat is detected.

Globally, the spatial distribution of Emerging Infectious Disease (EID) events is uneven as are the capacities to manage them. Many of the EIDs are localized in countries where biodiversity loss and ecosystems disruption are likely to drive the emergence of high-threat pathogens (hot spots of emergence). Such places, often low- and middle-income countries, also coincide with those where local capacities to detect, prevent, and respond to such risks are limited, and the One health approach insufficiently implemented. As a result, many outbreaks start with an unusual cluster of severe cases or deaths (e.g. Ebola in West Africa in 2014, Rift Valley fever in East Africa in 2019). In absence of strong healthcare, monitoring, and early warning systems, this signal may be unrecognized allowing the disease to proliferate. Thus, preventing the amplification of an outbreak into an epidemic or pandemic is intimately linked to the strengthening of local capacities in these hotspots to address the gaps of health emergency prevention, preparedness, detection, and response.

Outbreaks that remained localized in the past now tend to spread faster and further to become national, regional, or even global due to our increasingly interconnected and fast-paced world. For instance, in 2014, the Ebola outbreak which started in Guinea and quickly spread to some neighboring countries (Liberia and Sierra Leone) was eventually exported to Mali, Nigeria, Senegal, Europe and the United States. Demographic growth, migration movements of humans and animals, as well as the anthropization and urbanization of their ecosystems have all resulted in an environment more conducive to the spread of infectious diseases by exposing naïve human and animal populations to new biological threats and facilitating the spillover of diseases from one species to another.

¹ <https://www.oie.int/en/for-the-media/onehealth/>

² <https://unsdg.un.org/sites/default/files/2020-07/UNEP-Preventing-the-next-pandemic.pdf>



The developments brought by the last centuries have been a factor of progress but have also put significant stress on our ecosystems and societies. Changes in exploitation practices such as large-scale deforestation, extraction of oil, gas and mineral resources, the intensification of agriculture and livestock production, and the overuse and misuse of antimicrobials have highlighted the interconnectedness of human, animal and environmental health by making unlikely interaction scenarios possible. As an example, the development of roads within deep forests to reach mining sites or logging operations has put individuals in contact with new pathogens which, upon spillover, are brought to large cities that act as hubs for transmission. This scenario occurred in Angola when the 2016 Yellow fever outbreak reached the capital city of Luanda and a few cases were further exported to China. Epidemics of yellow fever have so far never been reported in Asia although both the vector and the potential animal reservoir are largely present. This disease which decimated entire populations in Africa, Europe and North America in the past could re-emerge and put the entire world at risk.

Additionally, climate change as well as the degradation and impoverishment of our ecosystems are exacerbating biological risks. Human encroachment into natural habitats is causing disruptions leading previously sylvatic diseases to now enter urban areas and have a detrimental impact on the health of populations as well as socioeconomic repercussions³. Combined with other social, economic and political factors, the risk of exposure to emerging zoonoses is now fairly spread across the globe as illustrated by the Chikungunya outbreak in Rome in 2018⁴ or the autochthonous transmission⁵ of dengue in the South of France in 2020⁶.

Intensified livestock production can also put human populations at risk by providing opportunities for zoonotic pathogens to emerge and adapt in domestic animals and spread to other species. The emergence of the bovine spongiform encephalopathy (BSE) – and its spread to human populations with the variant Creutzfeldt-Jakob disease (vCJD) – caused by inadequately processed livestock feed or the zoonotic avian influenza spillovers linked to the selling and slaughtering of poultry in wet markets are good illustrations. Likewise, the Severe Acute Respiratory Syndrome (SARS, 2002) was detected in masked palm civets sold in traditional markets, potentially playing the role of intermediate hosts between bats and humans.

Overall, health hazards can arise at many different points of the animal production. Coordinated efforts are thus essential to ensure safe food production and consumption practices. This requires the implementation of concrete measures – whether in formal or informal food production pathways – through a comprehensive approach built on the strengthening of infrastructure and services, the implementation of agricultural and environmental regulations, as well as training on good practices (e.g. agroecological approaches, animal feed, farm and market biosecurity, hygiene, drainage, and ventilation). However, adequate balance between risk mitigation of spillover and food security must

³ The Yellow fever epidemic in Brazil can be cited as an example as it was concomitant with the 2016 Rio Carnival. Rabies associated with stray dogs in sub-urban areas is another one

⁴ <https://www.who.int/csr/don/29-september-2017-chikungunya-italy/en/>

⁵ Autochthonous transmission of a disease occurs between two individuals in the same place and is not imported.

⁶ <https://www.santepubliquefrance.fr/maladies-et-traumatismes/maladies-a-transmission-vectorielle/chikungunya/articles/donnees-en-france-metropolitaine/chikungunya-dengue-et-zika-donnees-de-la-surveillance-renforcee-en-france-metropolitaine-en-2020>



be ensured. For instance, although backyard poultry flocks can expose humans to zoonotic flu, they are essential to guarantee access to food for low resource families.

The current technologic and digital revolution offers opportunities to modernize and accelerate the implementation of the One Health approach at global, regional and local levels by strengthening capacity building, leveraging the use of big data, and developing tools and guidelines. Innovations can facilitate the risk mapping, forecasting, early detection and warning, as well as the prevention of emerging zoonosis through the joint analysis of data on risk factors such as land use, deforestation, climate, biodiversity, presence or migration of species, pathogens and their vectors. In turn, this will enable the targeting of risk mitigation measures to those places most in need. To this aim, the real-time analysis of multisectoral and interoperable data is essential to enable countries to react to outbreaks in an appropriate and timely manner. Similarly, the development of new point of care diagnostics allows for the early detection of emerging diseases even in remote places, but efforts must be made to ensure their sustainable use. Additionally, the development of sound vaccination programs in animal populations – with adequate coverage and monitoring – may prevent the spillover of known, circulating pathogens to humans. More research is needed at the human-environment-animal interface to better understand the anthropological drivers of the risk, the vulnerability of communities and opportunities for behavior change, to find efficient, socially and culturally acceptable but also sustainable solutions for risk reduction.

The recent human health emergencies have highlighted key lessons to help us prevent and be better prepared for the next epidemic or pandemic. We must escape the cycle of panic and neglect⁷ and build a strong holistic One Health approach with (1) Political commitment for long-term investment to build and strengthen resilient healthcare and agri-food systems, (2) All-inclusive and operationalized cross-sectoral coordination and cooperation, and (3) Concrete projects with tangible and measurable outputs that reduce the health risks at the human-animal-environment interface following evidence-based guidelines. After each human health crisis, the world becomes aware of the necessity to act but without necessarily taking proper actions. We need long-term engagement in epidemic and pandemic preparedness to develop sustainable interventions driven by impact at the global, regional, national, and community levels.

Better epidemic prevention and preparedness calls for sustainable and appropriate funding to (1) Build the necessary monitoring and diagnostic capacities for appropriate detection and risk assessment, especially at the local level, (2) Strengthen community engagement and increase consideration of their contribution in long-term behavior, and (3) Foster cross-sectoral coordination and collaboration.

The COVID-19 crisis is a historical moment that we must seize to build transformative resilience. A balanced and co-managed natural environment for human, animal and environmental health is crucial to reduce the emergence or re-emergence of high threat pathogens, facilitate epidemic prevention, preparedness and readiness, and contribute overall to a sustainable and healthy planet.

⁷ South Korea can be cited as an example. Following the MERS outbreak in 2015, the country set up preparedness measures that were later use against SARS-CoV-2 and allow to limit sustained community transmission.



Only by working together in a comprehensive One Health approach across sectors and disciplines will we be able to prevent or mitigate future health crises.

The G20 countries may consider calling for action in three areas.

a. Global action: research and policy development

Existing research needs to be compiled and analyzed to better describe the links between human, animal (both domestic and wild) and ecosystem health and identify outstanding gaps. More studies are needed on the impacts of human actions (e.g. deforestation, environmental pollution, unplanned urbanization, mining, infrastructure building, agriculture, livestock farming, processing and distribution of food) on the ecological, sociological, anthropological and environmental domains that drive the emergence or re-emergence of zoonoses. This research may be used to foresight methodologies to examine emerging health threats and review existing regulatory mechanisms and policy approaches in countries. Overall, research gaps need to be identified, filled and translated into the science-policy interface for coordinated action.

G20 countries might support the One Health High Level Expert Council and its scientific initiatives and recommendations. G20 countries could also share their domestic scientific resources and make them available to the international community or support science and research for other countries.

b. Domestic action and data

G20 countries need to review their current policy approaches and data systems for compliance with the One Health approach and identify sustainable solutions. Examples include:

Policy

- Promoting multi-sectoral structures, governance and funding mechanisms
- Ensuring the management of potential One Health risks connected to trade of wild animals and captive wild animals through better enforced regulations and incentive/disincentives
- Better integrating wildlife⁸ and ecosystem health into One Health strategies
- Strengthening environmental conservation laws and practices that protect ecosystems and biodiversity
- Strengthening regulations and provide incentives/disincentives to improve farming practices, welfare and trade in domesticated animals
- Strengthening medical, environmental, food safety and veterinary services collaboration at field level as well as biosecurity along value chains
- Strengthening public and animal health policies to ensure accessible, responsive and alert health systems
- Promoting capacity building and guidelines on a holistic One Health approach at field level

Data systems:

- Improving systems for coordinated stratified surveillance of zoonotic pathogens and cross-sectoral data integration to conduct dynamic risk monitoring, linked to early detection, joint investigation and response
- Establishing early warning systems for early detection of signals for disease emergence or re-emergence (e.g. abnormal mortality and morbidity in livestock and/or wildlife)

⁸ Although wild animal populations are blamed as reservoirs of emerging diseases it should not be forgotten that they provide essential ecosystems services and strategies to reduce disease emergence.



populations, unusual cases of an illness in human populations, increased purchase of antibiotics or flu medicines, increased google searches on certain clinical signs and therapeutics, etc.)

- Developing systems to monitor the risks and track the different drivers to see if risks increase or decrease in selected geographic areas by leveraging on digital technologies to allow for real-time monitoring of risks and stratified surveillance that can inform risk reduction policy and decision-making.
- Implementing the foresight approach as additional early warning mechanism
- Promoting socio-economic studies to identify and assess the practices that influence disease (re)emergence and spillover risks and the level of ownership of risk mitigation interventions, also with a view of scaling solutions up for use in Low- and Middle-Income Countries (LMICs)
- Strengthening local capacities to detect, diagnose, monitor, and report disease events in animals and humans and to take joint corrective action
- Strengthening laboratory policy frameworks increasing regional diagnostic capacity and international collaboration

c. Overseas action: aid and foreign policy

G20 countries need to align their foreign policy to their domestic One Health approaches, raise awareness and incentivize countries to implement One Health interventions to reduce the risks related to zoonotic disease (re)emergence, spillover and spread, support One Health global governance, and support the strengthening of capacities in LMICs including:

- Support the establishment of inclusive and sustainable One Health institutional mechanisms
- Strengthen country capacities in all relevant sectors to operationalize One Health
- Support coordinated stratified surveillance and data capture systems with real-time field data collection, cross-sectoral data integration mechanisms and timely international reporting in LMICs
- Support international policy and governance agreements to promote comprehensive One Health approaches inclusive of ecosystems and wildlife
- Support national and regional approaches to mitigate risks and strengthen networks and platforms for exchange of information between countries, scientists, civil society and decision makers
- Support national, regional, and global early warning systems
- Support south-south and triangular cooperation in One Health.
- Support the work of the FAO/OIE/UNEP/WHO (Tripartite+) collaboration on One Health

G20 countries might consider the establishment of a One Health Fund (accordingly to the World Bank an investment of 3.4bn \$ yearly globally has at least an 88% rate of return) to support regions and countries to set up One Health governance, coordination, and operational mechanisms. This Fund would support research and action to collect, analyze and share data but also design, implement and evaluate mitigation interventions based on best practices. The aim would be to demonstrate the inclusiveness of the One Health approach at local, country, regional, and global levels and thereof progress in a timely and efficient manner to jointly prevent, address the drivers of, and respond to (re)emergent diseases.



QUESTIONS FOR DISCUSSION

Policies:

What can G20 as a group do to promote One Health? What kind of structure and funding mechanisms can bring quick wins?

How to further incentivize countries to operationalize the One Health approach for zoonotic (re)emerging disease prevention and control?

What One Health initiatives and socio-economic models are successful in G20 countries and could be scaled up to LMICs?

Data systems:

How to enable and incentivize real-time intersectoral data sharing systems to conduct dynamic risk monitoring and preventive actions at national and subnational levels?

How to better link this information to regional and global efforts and foster joint response as appropriate?

How can G20 countries contribute to building more efficient global systems?

How to build better global, regional and national early warning mechanisms (e.g. by going one step further and including foresight approaches)?



PLANNING A GLOBALLY COORDINATED AND COLLABORATIVE RESPONSE TO HEALTH CRISES AND EMERGENCIES

In due course there will be many in-depth reviews looking to learn lessons from the Covid-19 pandemic and make recommendations as to how the world can be better prepared to respond to future health crises and emergencies. Already some initial lessons have been drawn. Amongst these lessons is the need to prioritise investment in national and international rapid detection and verification capacity, in health risk assessment, management and communication, as well as in research and development for the identification of new and potentially threatening pathogens, particularly of zoonotic origin. This note does not cover the need to address the development and distribution of vaccines as this will be covered in a subsequent concept note.

This pandemic has highlighted the importance of preparedness, especially regarding the implementation of the International Health Regulations (2005). Implementation of the International Health Regulations (2005) was strengthened in the light of experience of pandemic influenza (H1N1) in 2009 and Ebola in West Africa in 2014-15, but no country has fully implemented IHR core capacities or fully funded national action plans for health security. The IHR as a tool to measure pandemic preparedness are being strengthened by the addition of measures of response time and prevention. *Political commitment is needed to fill the gaps in available national rapid operational response capacity for health emergencies and international coordination capacities, which are both critical to preventing international spread of an outbreak. Acute health emergencies can only be rapidly responded to, if relevant national and international capacities are leveraged.* In the context of preparedness, the One Health approach is a new tool to reinforce the alert, detection and prevention of health emergencies. In addition, national governments need access to both national and international personnel who are qualified, trained and prepared to work in health emergency preparedness and response and to have the capacity to surge personnel during extraordinary events such as the current pandemic. Furthermore, some health systems which have focused more on primary health care (PHC) have demonstrated resilience, being more able to quickly adapt and maintain essential services. The importance of investing in universal health coverage (UHC) as it sets a strong foundation for health emergency response. Ensuring the capacity of health systems to address health emergencies and continue to provide services is a critical element of resilience. Investing in preparedness helps prevent, detect, and respond to health emergencies quickly, minimizing their impact on health and other sectors, such as the economy.

Covid-19 has shown the importance of addressing factors connected with the vulnerability of marginalised populations, including access to water and sanitation and preservation of safe environmental conditions (air quality, optimisation of ecosystem services, avoidance of congestion, preservation of natural features with potential impact on mental health, etc.). These should be assessed and flagged as horizontal priorities in the design of broader socioeconomic policies. Many countries are demonstrating that effective primary health care, a strong health workforce, and investments towards universal health care are among the most powerful way to bring health services closer to communities and protect everyone, especially the most vulnerable, from all health threats.



There are clear lessons which show the need to make health systems more resilient to unexpected shocks leading to a rapid surge in demand for care, as in the case of COVID-19, or reduction in supply of care.

Three main areas deserve consideration both because international coordination can make a strong difference to the ability of health system to handle crisis and because of the significant return on investment.

- **First**, the crisis has highlighted the importance of reinforcing the foundations of health systems, notably by investing in data systems and a stronger focus on the opportunities presented by digital technologies. The pandemic has emphasized the importance to invest more on a digital transformation of health systems by scaling up digital health solutions, including their integration into and the management of emergencies. Digitalization can change scenarios by supporting the entire health system. The digital technologies foster continuous adaptation to the health needs of the population, with timely allocation of resources. Digital access and technologies are essential in the real-time training of frontline health personnel. In these uncertain times, it is essential to share the use of digital health tools to support countries' response to the pandemic and be prepared for the post-pandemic phase and future emergencies.
- **Second**, the crisis has shown the importance of investing in an adequate health workforce, addressing a global shortage as well as insufficient human resource capacity at national and local levels. G20 Countries should promote mechanisms to strengthen the supply and equitable distribution of a global health workforce. G20 countries should also create a pool of multi-disciplinary teams, rapidly deployable nationally, regionally and internationally.
- **Third**, there is a need to strengthen and improve the reliability of supply of essential health goods. A pandemic supply chain network to prioritise critical supplies of essential medicines and equipment needs to be organised with due consideration of accountability and governance mechanisms and following the recommendations of the IHR Review Committee.

INVESTING IN DIGITAL HEALTH

The Covid-19 pandemic has brought into sharp focus the need for digital data and tools. It has illuminated the importance of coherent, comparable and timely data across borders, within and between countries. It has also laid bare the health and economic costs of relying on old models of health care delivery that fail to make use of digital tools.

Decision makers have been quick to react, and policies that took decades to be negotiated were fast-tracked because there was both clinical need and an economic rationale. The use of telemedicine, for example, has increased markedly during the pandemic. Early reports suggest there have been marked increases in the use of telemedicine in France, Germany, Australia, Brazil, China, India, Indonesia and South Africa, after these countries lifted restrictions (e.g. telemedicine only allowed after a first face-to-face appointment), introduced new payment mechanisms (e.g. as in India and Brazil) and actively encouraged use of telemedicine by publishing lists of certified providers (as in Indonesia).



As the world tests different ways to live with COVID-19, and as lessons for the future are drawn, this is the moment to formalise the economic case for a digital transformation in health, and draw a global roadmap for digital health.

First and foremost, countries need to tackle age-old barriers. Undoubtedly, there are technological challenges, but for the most part, the barriers are structural, organisational and institutional. Bringing down these barriers requires political leadership and sustained targeted investment. OECD countries typically invest only under 5% of health budgets on managing information. In other sectors investment is four times higher. Spending on intangible products such as software and databases, and the purchases of ICT services is comparatively modest in the health sector. Besides investment, the most critical needs include influencing professional attitudes and adapting their skills, updating ethical frameworks, engaging health system users, opening data availability and facilitating their integration, and establishing an environment that creates incentives and promotes behaviours for a transformation to take hold.

The Covid-19 pandemic has accelerated the adoption of digital technologies in the delivery of health care in many countries, although the health sector still lags far behind other sectors. There is work already underway looking at issues such as infrastructure and interoperability and countries are already investing in new technologies. However, there is limited fiscal space and thus an urgent need for an economic analysis framework to ensure countries get a positive return on their investment. In addition, concerns regarding data safety and security need to be addressed.

There is also a need to advance the development of public health intelligence platforms, enhanced predictive modelling and epidemic forecasting, surveillance and early warning technologies. Combining AI with large datasets has considerable potential to detect emerging diseases for example. However, this potential is still largely disconnected from policy and decision-making on the ground.

Digital technologies play a vital role in the continuous education and learning of personnel who work in health emergency preparedness and response, within and outside the health system (public health workers, volunteers, community responders, etc.). Health literacy of affected populations is dramatically dependent on digital technologies and training on how to use their digital devices for learning, and not just for communication and social media.

Discussions under the Saudi G20 Presidency highlighted the importance of improving health system governance, where digital technologies have much potential. The Presidency of Italy could build on this legacy. For example, the OECD recommendation on health data governance, which is relevant to countries beyond OECD countries, could be adapted to a G20 recommendation as was done successfully with the G20 AI principals in 2019 under the Presidency of Japan.



ADDRESSING GLOBAL HEALTH WORKFORCE SHORTAGES

The COVID-19 pandemic has emphasised the shortages of health workers in many countries, and the need for mechanisms to mobilise human resources quickly in times of crisis. The projected global shortage of 18 million health workers identified by the UN Commission on Health Employment and Economic Growth⁹, particularly in low- and middle-income countries (LMICs) affects the ability of countries to cope with a large surge in demand and deliver continuity of care to both those directly affected by covid-19, and those living with other conditions.

As countries seek to strengthen their own health workforce, many will see international recruitment as the quickest way to increase capacity, but such recruitment should respect the WHO Global Code of Practice on the International Recruitment of Health Personnel. Expanding and strengthening national training programmes, including through initiatives such as the Italian public health officers training platform '*Laboratorium*' - proposed by the National Institute of Health, which has already trained over 450,000 professionals on Covid-19 and other topics - represents a more sustainable long term approach to securing an adequate supply of health workers.

Previous global health emergencies, such as the 2014 Ebola outbreak in West Africa, demonstrated the value in being able to mobilise an international pool of health workers to bolster the national workforce in affected countries. However, as yet there is no international mechanism for the coordinated deployment of a global workforce comprising multidisciplinary teams rapidly deployable nationally, regionally and internationally.

As health systems seek to embrace the opportunities of digital technologies, there is an urgent need to ensure the health workforce is equipped with the skills necessary to make the most of the new digital technologies. This will require further effort and investment to ensure that both current and future health workers acquire the required digital skills and can update them regularly.

REINFORCING SUPPLY CHAINS

The rapid spread of SARS-CoV-2 in early 2020 and the high proportion of cases requiring medical care led to an unparalleled surge in demand for certain medicines, medical devices and medical consumables. From the point of view of medicine and device markets, the COVID-19 crisis can be seen principally as a demand-side shock. At the same time, physical distancing measures, changes in consumer behaviour and the wider economic effects of the crisis have reduced the demand for many manufactured goods and services, trade has become more difficult, and the composition of demand for food has shifted. These factors put global supply chains under strain.

⁹ <https://apps.who.int/iris/bitstream/handle/10665/250047/9789241511308-eng.pdf;jsessionid=E1D04C5998402AA560F47B736B1F0B5A?sequence=1>



A wide range of products are needed for effective and sustainable health system responses to infectious disease outbreaks, such as COVID-19. Many countries now recognise reducing the risk exposure of supply chains for essential medical goods, including medicines and medical devices to be an integral part of strengthening their preparedness to respond to future health emergencies and of enhancing the resilience of their health systems more broadly.

No individual country produces all the health care products it needs in sufficient quantities, and there is a high degree of interdependence in international trade. It is therefore important to address this issue through international co-operation, ensuring, at a multilateral level, sufficient collective knowledge and understanding of the structure, and of the nature and sources of vulnerabilities of supply chains, from which to identify and mitigate future risks. This is key for building more resilient health systems and economies. In this regard, it is also important that trade and procurement policies are coordinated in order to facilitate the smooth flow of goods to where they are needed. At the present time, production and exports of items essential in the response to the COVID-19 pandemic are concentrated, with over 80% of global exports coming from only 20 countries, most of which are G20 and/or OECD countries. The G20 could therefore play a pivotal role, both in highlighting the importance of addressing the issue of supply chain security and in supporting and pressing for coordinated action by G20 members to contribute to the collective knowledge base.

QUESTIONS FOR DISCUSSION

1. What do you see as the role of the HWG in promoting the development of a pandemic supply chain network?
2. The pandemic has shown that the availability of health workers, with the necessary skills has often been the limiting factor in responding to cases of Covid-19. What can G20 countries do collectively to address the global shortage of health workers?
3. How can G20 build on its existing work on digital health to accelerate the digital transformation of health systems?



SAFETY AND QUALITY OF CARE, RISK MANAGEMENT AND HUMAN FACTOR IN HEALTH EMERGENCIES: THE CONTRIBUTION TO PREPAREDNESS, READINESS AND RESPONSE

During the COVID-19 emergency emerged very clearly that several of the key organizational issues that health services had to face were related to safety culture, risk management, human factor and ergonomics (HFEa). Several of the key issues related to the capacity of our health systems to be prepared, to be resilient, to manage and to respond to the crises could be addresses indeed by applying principles of **patient safety and quality of care**, by using methods of analyse of risk management and by applying HFE principles.

Patient safety and quality improvement approach, centered on building a system able to support professionals and support capacity building, along with the application of risk management and HFE principles have shown, indeed, to be fundamental to support the top managers as well as the front lines workers to cope with the emergency. They support: health systems for the quick redesign of most clinical pathways and the usual working methods; the continuous updating of procedures for quality and safety systems; the monitoring of the correct application of infection prevention practices; they promote the need for psychological support to citizens and to healthcare workers. Moreover, Human Factor and Ergonomics (HFE) principles are paramount for improving resilience of healthcare systems and thus strengthening safety for patients and health workers. COVID-19 emergency has shown very well how HFE principles can contribute to support health systems in improving resilience and respond to very high level of system stress.

Several studies underline that at the beginning of the outbreak HFE can effectively contribute to and improve the effectiveness of a pandemic response working on several key areas: just-in-time training development, adapting workflows and processes, restructuring teams and tasks, developing effective mechanisms and tools for communication, engaging patient and families to follow the recommended practices, identifying and mitigating barriers to the implementation of improvement plans, and learning from failures and successes to improve both the current and future pandemic responses¹⁰. HFE experts can indeed play a fundamental role in facilitating the harmonization of instances rising from stakeholders at micro, meso and macro level (hospital, trusts, region, national and international level) as well as facilitating the adaptation to the context of the information before arriving at the front line. HFE experts support the deep understanding of stakeholders acting in any socio-technical context: system actors, system experts, system decision makers, system influencers, that play strategic roles in facing complex and uncertain situation¹¹.

¹⁰ Gurses A. P., Tschudy M.M., McGrath-Morrow S., Husain A., Solomon B. S., Gerohristodoulos K.A., Kim J.M., Overcoming COVID-19: What can human factors and ergonomics offer? Journal of Patient Safety and Risk Management, <https://doi.org/10.1177/2516043520917764>, 2020

¹¹ General Framework Model, International Ergonomic Association, <https://www.iea.cc/>



VALUE-BASED APPROACH

COVID-19 has exposed a legacy of under-investment in pandemic preparedness and the robust health and social protection systems that underpin it. Pandemic preparedness is not only about having the capacities to respond to pandemics, it is how countries use these capacities when a threat arises. Beyond strengthening pandemic preparedness, there remains much to do in terms of strengthening health system resilience, including the adoption of a **value-based approach** to all actions, both preventive and curative.

Value-based health services cannot be achieved without reorienting existing fragmented models of care towards one which rests on a strong primary health care foundation with an integrated community care component and underpinned by the principle of people co-producing health. This may encompass a shift from inpatient to outpatient and ambulatory care, where appropriate. It requires investment in holistic and comprehensive care, including health promotion and prevention strategies that support people's health and well-being. It further requires effective referral systems, flexible & multi-disciplinary provider networks, and participatory monitoring & evaluation strategies¹².

ANTIMICROBIAL RESISTANCE

The Covid-19 pandemic, among its impact, is also affecting **Antimicrobial Resistance (AMR)** and all the global efforts in preventing and controlling its spread. It is fundamental to consider AMR and all the initiatives in place in the frame of the overall preparedness agenda, by preserving its existing and well-defined narrative.

In accordance with sustainable development goal 3 (SDG), there is a need for continue actions on the AMR in line with commitments made by the past G20 presidencies. Antibiotics are not just 'another medicine', they form a foundational building block of strong and resilient health systems. Effective new technologies addressing AMR, including treatments, will be a central component in securing a resilient future, for our people, health systems and economies¹³.

¹² From Value for Money to Value Based Health Services: a 21st century shift Geneva: World Health Organization; 2020.

¹³ From G20 AMR R&D Hub