



Risk-Informed Governance and Innovative Technologies for Disaster Risk Reduction and Resilience

Module 1.4: Risk-Informed Governance and Innovative Technology for Public Health Emergencies

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6. Innovative Practices in Governance Innovation for COVID-19 Response
7. Managing Public Health Emergencies
8. Policy Recommendations and Key Takeaways

Learning Outcomes

At the end of this Session, Participants will be able to:

- Increase their understanding on the role of Risk-Informed Governance and Innovative Technologies for Public Health Emergencies.
- Understand the contribution of Science, Technology and Innovation to DRR in the context of COVID-19.
- Strengthen their capacities in the entire process of preparedness, prevention, response and post-recovery to respond to public health emergencies including COVID-19 pandemic.

1. Public Governance Innovation for Public Health Emergencies

Public Governance refers to “the exercise of economic, political and administrative authority to manage a country’s affairs at all levels.”

- World Public Sector Report, 2015

- **Public Governance Innovation** refers:

- *the use of new approaches & technologies to create public value such as digital government*
- *novel rules, and regulations that seek to effectively address a public problem*
- *finding new ways to impact the lives of people, and activating them as partners*
- *engaging with people is one of the most critical steps to innovating government*

1. Public Governance Innovation for Public Health Emergencies

Risk-informed Governance *by extension requires:*

- Risk-based decision-making process
- Understanding disaster risk and threats
- Development should be a vehicle to reduce risk
- Building resilient communities esp. in times of public health emergencies

Emergency Preparedness is addressed by Several Global Frameworks and Initiatives:

The **2030 Agenda** for Sustainable Development

The **Sendai Framework** for DRR (2015-2030)

The **Paris Agreement** on Climate Change

The International Health Regulations (IHR 2005)

The Pandemic Influenza Preparedness (PIP) Framework

The Global Health Security Agenda (GHSA)

Universal Health Coverage (UHC) 2030.

2. Principles for Public Health Emergency Preparedness

■ Key Principles of Emergency Preparedness

1. **Safeguarding, maintaining and restoring** health and wellbeing
2. **Communities are critical** to effective emergency management
3. **Requires sustained *political commitment, partnerships, and funding***
4. **Sustained funding should be aligned** with cost, prioritized preparedness based on risk and capacity assessments.
5. **Health systems and emergency preparedness reinforce one another.**
6. Emergency preparedness should be addressed with an **all-hazards approach**.
7. **Emphasize prevention measures** to avoid hazards and reduce vulnerability.
8. **A whole-of-society approach** is critical for emergency preparedness.

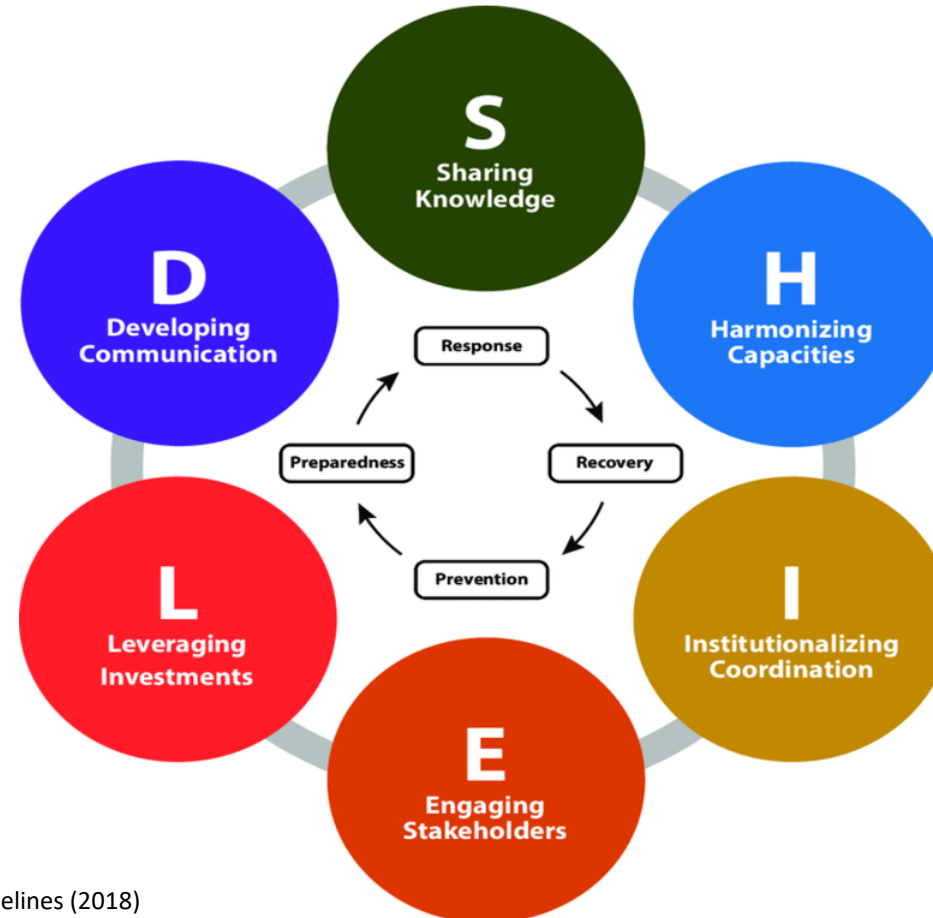
2. Principles for Public Health Emergency Preparedness

Governance Elements of Preparedness at all Levels

Governance	National/Sub-national/Local Levels
<p>Policies and Legislation that Integrate Emergency Preparedness</p>	<ul style="list-style-type: none"> Integration of emergency preparedness in national health strategies and plans and financing Multi-sectoral emergency risk management policies and legislation include health Legislation for management of emergency situations (emergency powers)
<p>Plans for Emergency Preparedness, Response & Recovery</p>	<ul style="list-style-type: none"> Intersectoral plans for emergency preparedness, response and recovery include health (e.g., national disaster management organizations, One Health) National health emergency plans for preparedness, response and recovery Multi-hazard, multisectoral exercise management programmes
<p>Coordination Mechanisms</p>	<ul style="list-style-type: none"> Health coordination mechanisms and plans include relevant sectors, public, private and civil organizations, and other stakeholders across and between all levels Emergency preparedness of public, private and civil society organizations in public health, animal health, environment, tourism, transport, water, emergency services, migration and other sectors Public health emergency operations centers (PHEOCs) and incident management systems are established and integrated with multisectoral emergency operations centers (EOCs) and coordination mechanisms across all levels.

3. Strengthening Governance Capacity for Public Health Emergencies

The SHIELD Model Revolves around the Four Disaster Risk Management (DRM) Phases



Source: ESPRESSO Enhancing Risk Management Capabilities Guidelines (2018)

3. Strengthening Governance Capacity for Public Health Emergencies

Sharing Knowledge

1. Map the field of relevant actors
2. Bridge knowledge gaps between science and policy
3. Build diverse networks for knowledge sharing
4. Create frameworks and platforms
5. Provide incentives for sharing
6. Balance national and local scales

SHIELD MODEL



3. Strengthening Governance Capacity for Public Health Emergencies

Harmonizing Capacities

SHIELD MODEL

1. Map existing capacities
2. Assess and balance capacities
3. Match capacities to risks
4. Evaluate and learn
5. Create local partnerships
6. Create continuity for capacities

H
Harmonizing Capacities

3. Strengthening Governance Capacity for Public Health Emergencies

▪ Institutionalizing Coordination

Effective Institutional Coordination Mechanism is Critical

1. Clarify mandates for coordination
2. Acknowledge the need for balance & flexibility
3. Practice and exercise roles
4. Set up coordination forums
5. Align and streamline priorities
6. Build partnerships for transboundary crisis management

SHIELD MODEL



3. Strengthening Governance Capacity for Public Health Emergencies

Engaging Stakeholders

1. Clarify the roles of stakeholders
2. Create incentives for stakeholder participation
3. Create web-based online platforms
4. Locate mediator and experiment with roles
5. Utilize local stakeholder knowledge for health crisis reduction actions
6. Ensure sustained commitment

SHIELD MODEL



3. Strengthening Governance Capacity for Public Health Emergencies

Leveraging Investments

1. Make the value of investments visible
2. Connect politicians and affected communities
3. Innovate existing disaster risk financing structures
4. Create partnerships for investments with the private sector
5. Make long-term political agreements

SHIELD MODEL



3. Strengthening Governance Capacity for Public Health Emergencies

Developing Communication

1. Create multi-media platforms for risk awareness
2. Cooperate with media partners
3. Strengthen and streamline early warning platforms
4. Innovate disaster risk awareness campaigns
5. Bring health/disaster risk management into the classroom

SHIELD MODEL



3. Strengthening Governance Capacity for Public Health Emergencies

The Role of Effective Communication is Indispensable

Communication to Discharge Accurate Information

1. Producing and disseminating facts and accurate information
2. Partnering with businesses
3. Working with media and journalists
4. Mobilizing civil society
5. Digital platforms or apps to keep citizens informed



<https://www.hamiltoncountyhealth.org/emergency-preparedness/public-health-emergencies/>

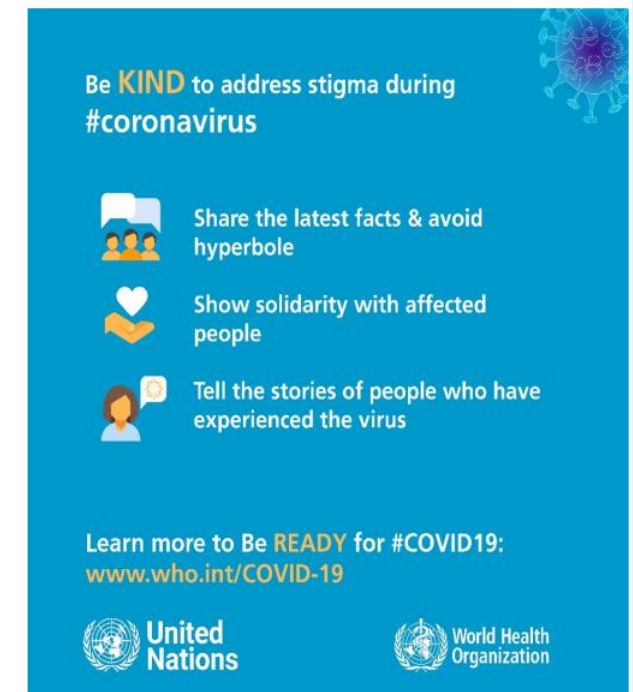
3. Strengthening Governance Capacity for Public Health Emergencies

The Role of Effective Communication is Indispensable

Implementing a Social Media-based Crisis Communications Strategy

1. Identify a consistent hashtag
2. Be the voice of authority
3. Establish a rumor control website
4. Use several people to manage the flow of requests
5. Avoid social media scams
6. Implement a social media archiving solution
7. Choose a precise communications strategy in advance

Social media poster



https://www.un.org/sites/un2.un.org/files/be_kind_to_address_stigma.jpg/

3. Strengthening Governance Capacity for Public Health Emergencies

■ Priority Actions for Public Health Emergencies

1. **Emergency risk management** for health as a national and local priority
2. **Health risk assessment** and **early warning**
3. **Education and information** to build a culture of health, safety and resilience at all levels
4. **Reduction of underlying risk factors** to health and health systems
5. **Emergency preparedness** for effective health response and recovery at all levels.



<https://images.app.goo.gl/agoyzTxcWigFdg5s5>

4. Data-driven Decision Making for Public Health Emergencies

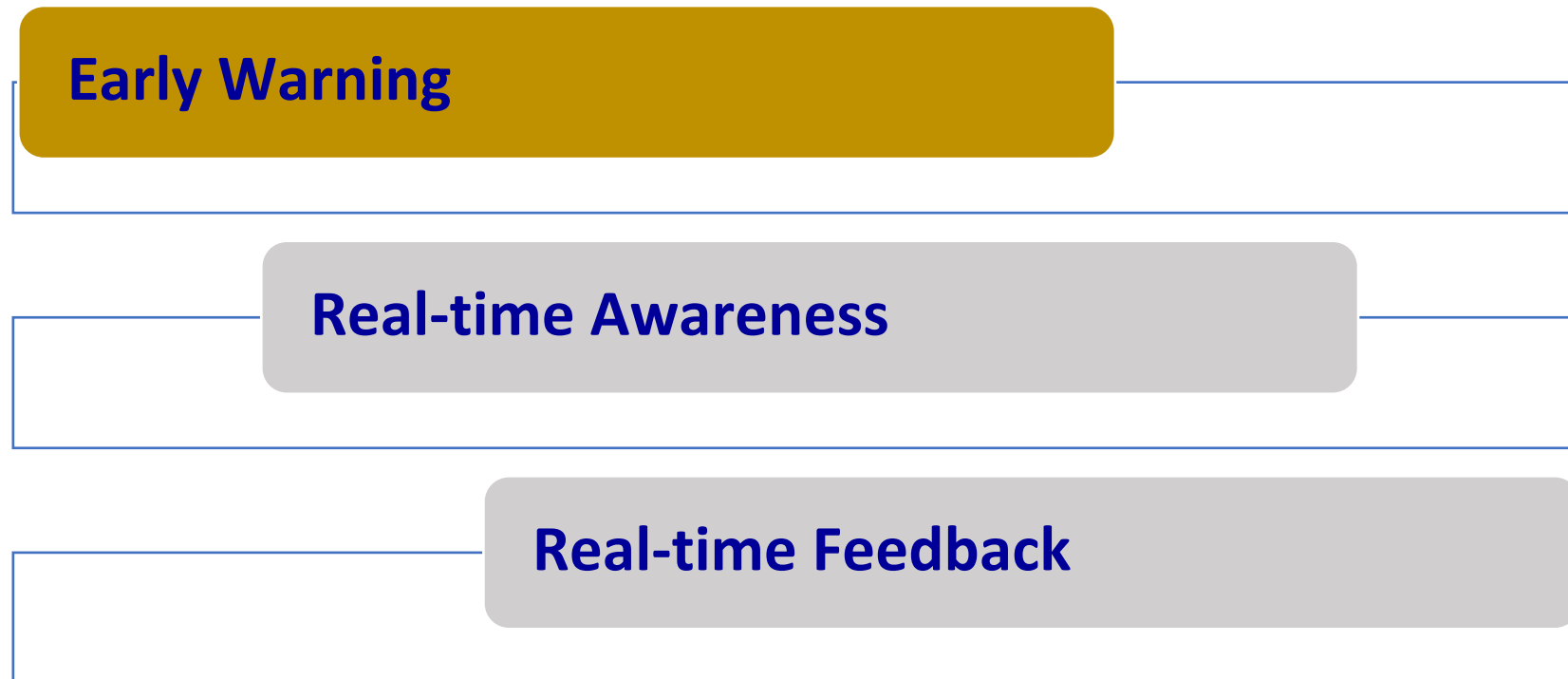
- **Without high-quality data** providing the right information ... at the right time; designing, monitoring and evaluating effective policies becomes almost impossible.

- (IEAG, 2014)

- Tackling pandemics requires **data** and **information** to ensure policies, resources and technology are deployed in **the right place** and **time to make the biggest possible impact**.
- **Data is the lifeblood of decision-making** and the raw material for accountability.

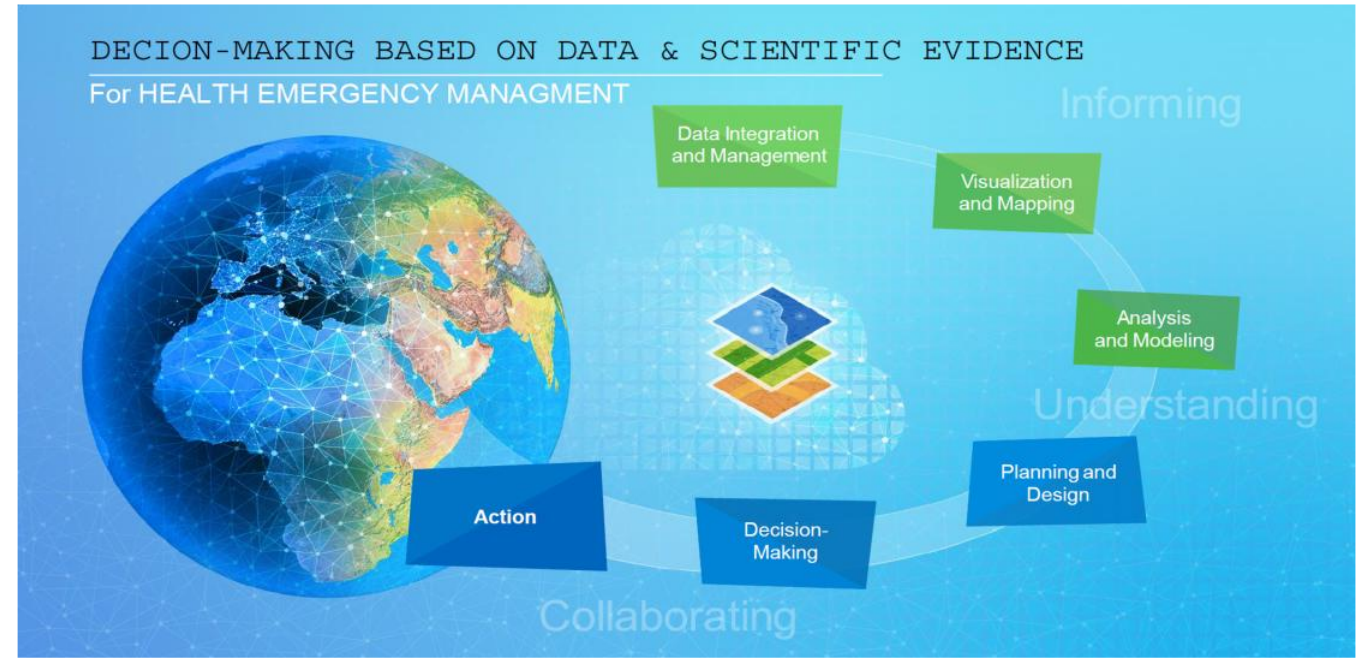
4. Data-driven Decision Making for Public Health Emergencies

- Robust, timely, accurate, disaggregated, people-centred and accessible **data & information** is key to decision-making for disasters.
- **Data offers decision making support for global development in three main ways:**



4. Data-driven Decision Making for Public Health Emergencies

- **Better data and statistics** helps governments to track progress and ensure **decisions are evidence-based**.



<https://data-innovation.unsystem.org/files/05%20-%20Technology%20Tools%20&%20Techniques%20-%20ESRI.pdf>

■ Science and Technology for DRR in the context of COVID-19

The COVID-19 pandemic requires the global governance system. The UN Secretary - General António Guterres has called upon the international community to focus on three key areas for action:

1. Tackling the health emergency;
2. Addressing the social impact and economic response and recovery; and
3. Building back better.

This crisis highlights how critical an effective Disaster Risk Reduction (DRR) is.

5. Digital Government for Public Health Emergencies

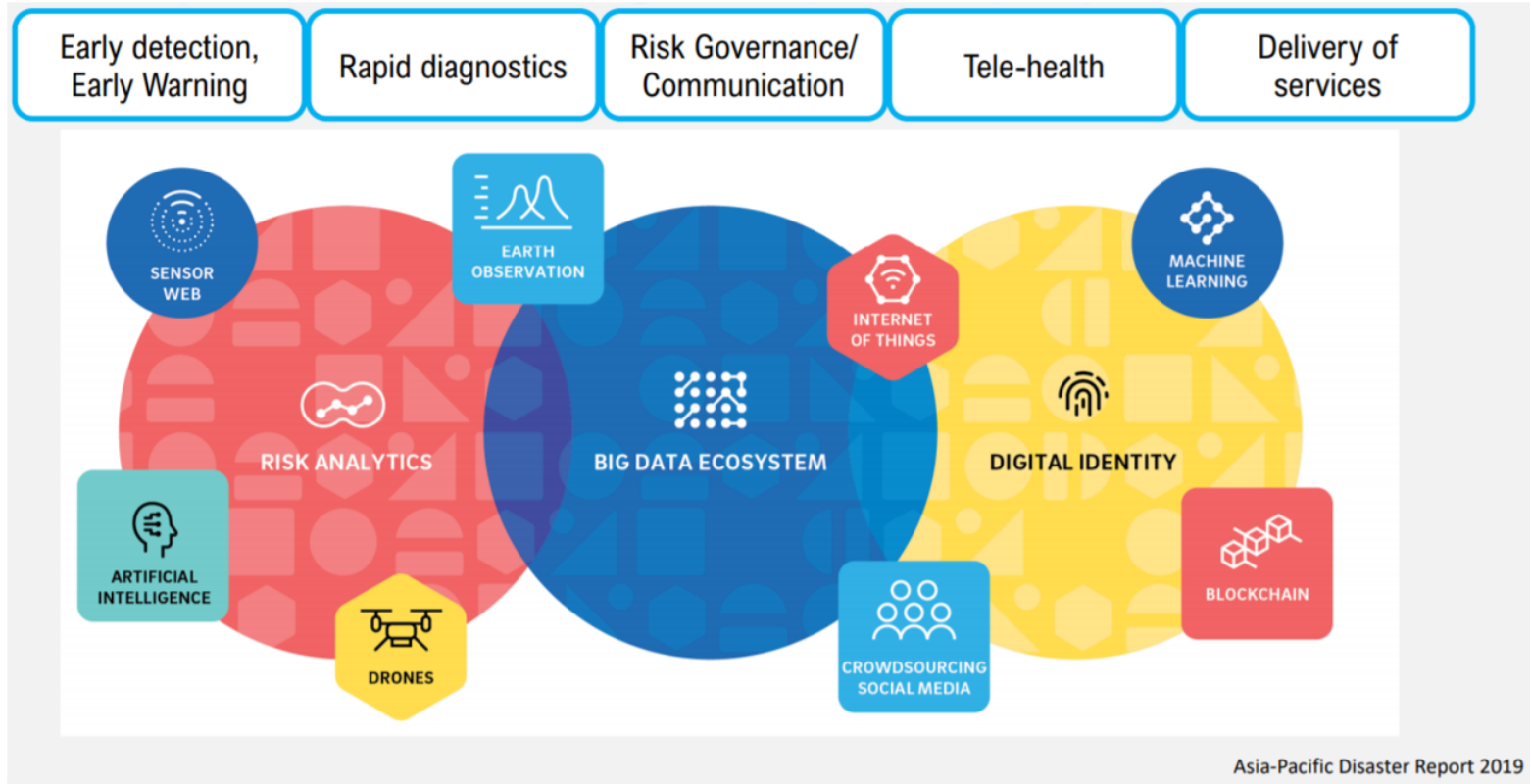
Digital Government Policy Response

Time Horizon	Policy Action	Digital Government Response
Short-term	React	<ul style="list-style-type: none"> Use digital platforms (i.e., online portals, social media) for accurate and timely information-sharing Lead two-way communication with people and foster e-participation (i.e., hackathons, brainstorming events) Protect people’s privacy and sensitive data and take into consideration unintended consequences of technologies
Mid-term	Recover & Resolve	<ul style="list-style-type: none"> Form effective multi-stakeholder partnerships (i.e., private sector, international organizations, academia) on regional, national and local levels Leverage lessons learned and policy ideas from the ongoing crisis
Long-term	Reinvent	<ul style="list-style-type: none"> Invest in innovative technologies (i.e., AI, blockchain, robots, drones) to increase resilience of healthcare, the national economy and public services delivery Revisit data protection and privacy legislation along with lessons learned Invest in innovative technologies (i.e., AI, blockchain, robots, drones) to increase resilience of healthcare, the national economy and public services delivery

Source: UN DESA

5. Digital Government for Public Health Emergencies

- Digital Government and Frontier technologies are helping to protect people in times of health emergencies:**



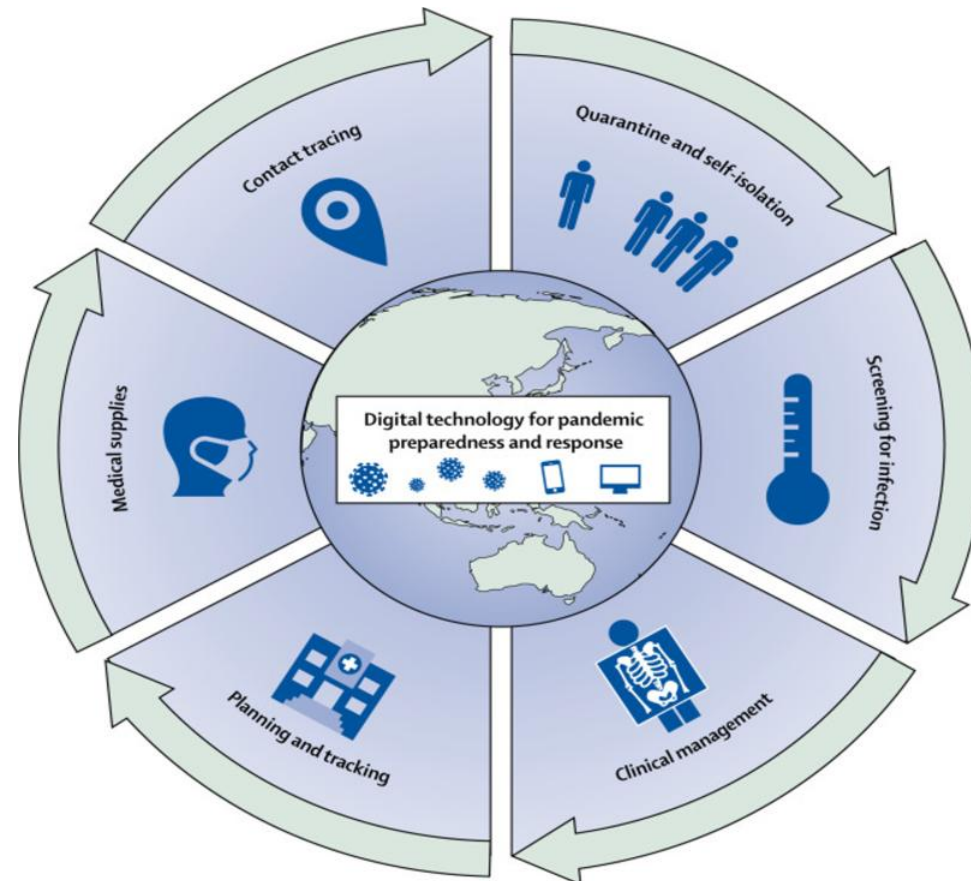
▪ **Innovative Digital Technologies for Health Emergency Management**

- **Emergency broadcasting** service (cellular broadcasting service)
- **Smart Working**
 - A special website providing information of solution companies for remote working
 - Smart working and social distancing (Holding virtual video conferences)
 - Cyber Security Guidelines for Staff Working Remotely
- **Remote Education:** Providing educational contents by the central government
- **Remote Medicare**
 - Remote medicine targeting confirmed coronavirus patients
 - Telemedicine using apps(private sector)
- **Predictive Research**
- **Creating apps**

- **Digital Technologies Critical in COVID-19 Response – *Governments should:***
 - Make **full use of digital technologies** to address a wide range of pandemic-related issues.
 - Adopt **an open government approach** and to use digital communication channels to provide reliable information COVID-19.
 - **Develop digital tools that can support people** during a crisis situation.
 - **Build partnerships with private technology companies, social entrepreneurs or other national and international organizations** to make use of existing technologies.
 - Seize the COVID-19 crisis **as an opportunity to establish tailor-made digital government tools, strategies and collaborations for the future.**

5. Digital Government for Public Health Emergencies

Digital Technology as a Tool for Pandemic Preparedness and Response



<https://www.thelancet.com/action/showPdf?pii=S2589-7500%2820%2930142-4>

Digital Technology Initiatives used in Pandemic Preparedness and Response

▪ Tracking

- **Function:** Tracks disease activity in real time
- **Digital Technology:** Data dashboards; migration maps; machine learning; real-time data from smartphones and wearable technology
- **Countries:** China; Singapore; Sweden; USA
- **Advantages:** Allows visual depiction of spread; directs border restrictions; guides resource allocation; informs forecasts
- **Disadvantages:** Could breach privacy; involves high costs; requires management and regulation

Digital Technology Initiatives used in Pandemic Preparedness and Response

- **Screening for Infection**
 - **Function:** Screens individuals and populations for disease
 - **Digital Technology:** Artificial intelligence; digital thermometers; mobile phone applications; thermal cameras; web-based toolkits
 - **Countries:** China; Iceland; Singapore
 - **Advantages:** Provides information on disease prevalence and pathology; identifies individuals for testing, contact tracing, and isolation.
 - **Disadvantages:** Could breach privacy; fails to detect asymptomatic individuals if based on self-reported symptoms or monitoring of vital signs; involves high costs; requires management and regulation; requires validation of screening tools

Digital Technology Initiatives used in Pandemic Preparedness and Response

▪ Contact Tracing

- **Function:** Identifies and tracks individuals who might have come into contact with an infected person
- **Digital Technology:** Global positioning systems; mobile phone applications; real-time monitoring of mobile devices; wearable technology
- **Countries:** Germany; Singapore; South Korea
- **Advantages:** Identifies exposed individuals for testing and quarantine; tracks viral spread
- **Disadvantages:** Could breach privacy; might detect individuals who have not been exposed but have had contact; could fail to detect individuals who are exposed if the application is deactivated, the mobile device is absent, or Wi-Fi or cell connectivity is inadequate

Digital Technology Initiatives used in Pandemic Preparedness and Response

▪ Quarantine and Self-isolation

- **Function:** Identifies and tracks infected individuals, and implements quarantine
- **Digital Technology:** Artificial intelligence; cameras and digital recorders; global positioning systems; mobile phone applications; quick response codes
- **Countries:** Australia; China; Iceland; South Korea
- **Advantages:** Isolates infections; restricts travel
- **Disadvantages:** Violates civil liberties; could restrict access to food and essential services; fails to detect individuals who leave quarantine without devices





Digital Technology Initiatives used in Pandemic Preparedness and Response

▪ Clinical Management

- **Function:** Diagnoses infected individuals; monitors clinical status; predicts clinical outcomes; provides capacity for telemedicine services and virtual care
- **Digital Technology:** Artificial intelligence for diagnostics; machine learning; virtual care or telemedicine platforms
- **Countries:** Australia; Canada; China; Ireland; USA
- **Advantages:** Assists with clinical decision-making, diagnostics, and risk prediction; enables efficient service delivery; facilitates patient-centred, remote care; facilitates infection control.
- **Disadvantages:** Could breach privacy; fails to accurately diagnose patients; involves high costs; equipment may malfunction

5. Digital Government for Public Health Emergencies


Sample of Popular Digital Government Applications used during COVID-19

 <p>CONTACT-TRACING APPS</p> <p>Bluetooth-based mobile phone apps for tracking the spread of the virus, sometimes with text notifications or heatmap extensions</p>	 <p>AI CHATBOTS</p> <p>AI chatbots as "Virtual Doctors" on government portals for self-diagnosis, reducing pressure on healthcare systems</p>	 <p>ONLINE PERMITS</p> <p>Online movement permits during curfews, ensuring people follow shelter-in-place orders</p>	 <p>E-LEARNING PORTALS</p> <p>Digital platforms supporting teachers and students with online resources and providing high quality teaching and learning from home</p>
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[https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20\(Full%20Report\).pdf](https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20(Full%20Report).pdf)

Examples of Local Digital Government Applications in Response to COVID-19

SOME EXAMPLES OF LOCAL E-GOVERNMENT APPLICATIONS IN RESPONSE TO COVID-19 PANDEMIC



<p>1 DASHBOARDS</p> <p>Vancouver, Canada introduced an online dashboard to enable citizens to track the city's emergency response to curb the spread of Covid-19.</p>	<p>8 MOBILE APPS</p> <p>Jarvar Vald in Estonia developed a community engagement app to share COVID-19 information, post social events and encourage people to provide feedback to local government officers.</p>
<p>2 CHATBOTS</p> <p>Sichuan, China launched a triage Chatbot to assess patients' risk of being infected and to provide information related to Covid-19.</p>	<p>7 SMART CITIES</p> <p>London, United Kingdom used cameras, sensors and AI algorithms, normally intended to control traffic, to measure distance between pedestrians and control social distance.</p>
<p>3 ONLINE SERVICES</p> <p>The City of Buenos Aires, Argentina provided online access to films, operas, recitals, and museums virtual tours as strategy to ease effects of quarantine.</p>	<p>6</p> <p>Pimpri-Chinchwad, India used the Integrated Command and Control Centers (ICCS) as Covid Control center, using monitors and drones to geolocate Covid cases, identify open pharmacies and control hospitals' capacity.</p>

4 The Western Cape Government, South Africa established an online platform to strengthen remote teaching and learning practices.
 5 New South Wales State, Australia developed a dashboard that offers information of confirmed cases by postcode and recommendations to slow spread of Covid-19.

1 Vancouver Canada, 2 New South Wales Australia, 3 Sichuan China, 4 Buenos Aires Argentina, 5 Western Cape South Africa, 6 Jarvar Vald Estonia, 7 London United Kingdom, 8 Pimpri-Chinchwad India

Source: UN DESA. This graph represents a sample of e-government initiatives at the local level. Additional initiatives from United Nations Member States can be found in the UN DESA, COVID-19 & Digital Government Compendium (2020), Available at https://bit.ly/EGOV_COVID19_APPS.

[https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20\(Full%20Report\).pdf](https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20(Full%20Report).pdf)

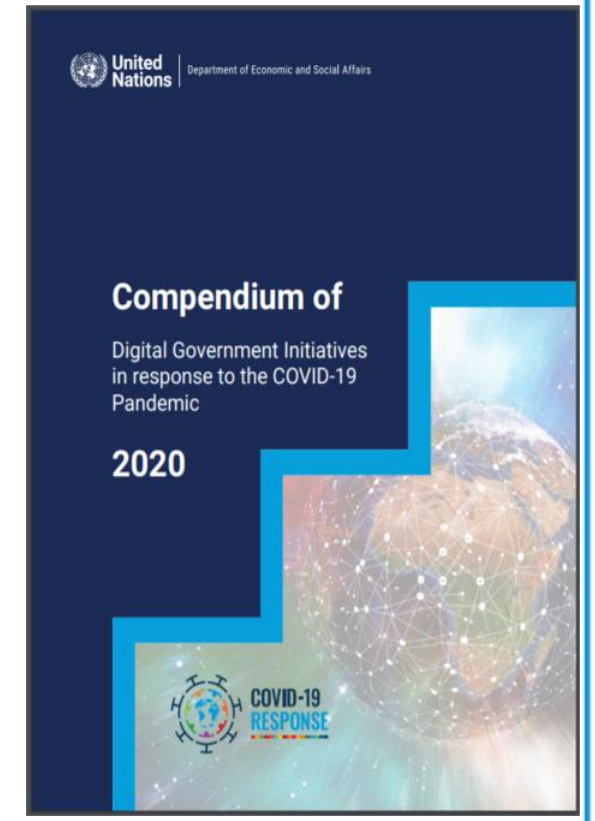
6. Innovative Practices in Governance Innovation for COVID-19 Response

Information sharing

- **Function:** Vital for governments to provide accurate, useful and up-to-date information to people, particularly in times of crisis as COVID-19 pandemic
- **Digital Technology:** SMS, WhatsApp, Website, App, Chatbot, Social Media, Drone, Multiple Channels
- **Countries:** Brazil, China, Colombia, France, Kuwait, Mauritius, Singapore, Oman, *Republic of Korea* etc.

E-Participation

- **Function:** E-participation initiatives have helped foster a sense of community and shared responsibility in times of COVID-19
- **Digital Technology:** Website, App, Social Media,
- **Countries:** Colombia, France, North Macedonia, Saudi Arabia, Serbia, Singapore, Switzerland etc.



6. Innovative Practices in Governance Innovation for COVID-19 Response

E-Health

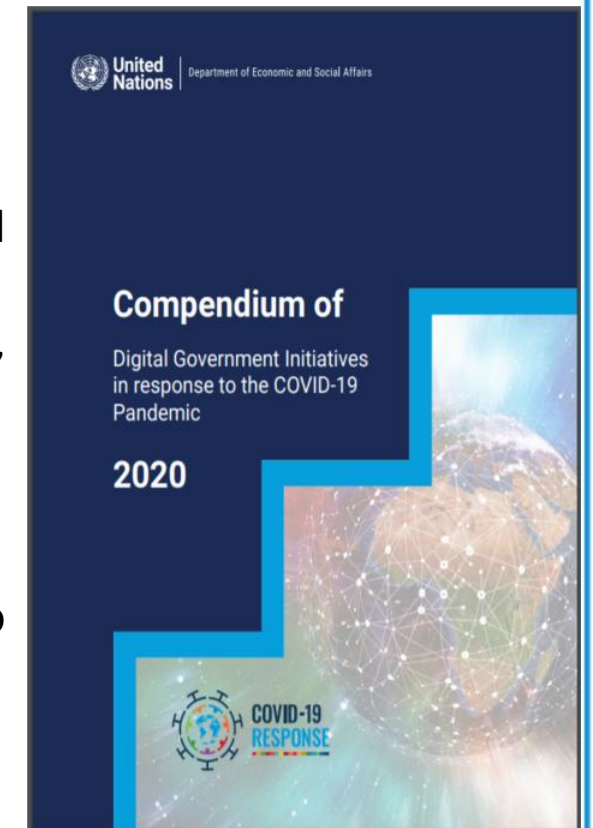
- **Function:** The COVID-19 pandemic has accelerated the deployment of innovative e-health solutions by governments
- **Digital Technology:** Artificial intelligence, Chatbot, Website, App, : Virtual doctor, SMS
- **Countries:** Croatia, Denmark, Estonia, Kyrgyzstan, Malaysia, Malta, Republic of Korea .

Contact tracing

- **Function:** Digital technologies have helped governments and citizens to be informed about infected cases and trace contacts of infected people to test for the virus.
- **Digital Technology:** App (QR-based), Chatbot, AI, Call center, database, Online survey, Portal, mobile devices,
- **Countries:** Austria, Bhutan, Brazil, Denmark, India, Singapore, Republic of Korea etc.

Partnerships

- **Function:** Partnerships with multi-stakeholders have been crucial for governments to effectively manage the COVID-19 crisis.
- **Digital Technology:** Website, 3D printing, Social Media, Database, App, Job portal
- **Countries:** Austria, Colombia, Estonia, Japan, Mauritius, Singapore, Philippines etc.



6. Innovative Practices in Governance Innovation for COVID-19 Response

Social Distancing and Virus Tracking

- **Function:** Tracks disease activity in real time
- **Digital Technology:** Data dashboards; App, Robots, Website, AI, thermal scanner, Drones, migration maps; machine learning; real-time data from smartphones and wearable technology,
- **Countries:** China; Fiji, Singapore; Sweden; USA, Cuba, Indonesia, Qatar, Republic of Korea etc.
- **Usefulness:** Allows visual depiction of spread; directs border restrictions; guides resource allocation; informs forecasts

Screening for Infections

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6. Innovative Practices in Governance Innovation for COVID-19 Response

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6. Innovative Practices in Governance

Innovation for COVID-19 Response

Selected Innovative Country Cases

Korea's response to the pandemic using ICT - Flattening the curve on COVID-19

- **Institution(s) in charge:** Ministry of Health and Welfare, Ministry of Economy and Finance
- **Focus:** Digital Policy
- **Technology:** Not Applicable
- **Description:** The Korean government's response to COVID-19 includes tools and strategies such as
 - 1) social distancing,
 - 2) high tech-based disease prevention and treatment,
 - 3) data sharing, such as through apps showing drugstore mask inventory.
- ICTs played a vital role in fighting COVID-19. Mobile devices used to support early testing & contact tracing.

Fiji's Outbreak Management and Analysis system

- **Institution(s) in charge:** Ministry of Health & Medical Services (MOHMS)
- **Focus:** Virus Tracking
- **Technology:** eHealth System
- **Description:** The Fijian Government implemented the Surveillance Outbreak Response Management and Analysis System (SORMAS).
- It is an eHealth System that processes outbreak data which enables early detection through real-time digital surveillance.

6. Innovative Practices in Governance

Innovation for COVID-19 Response

Selected Innovative Country Cases

Singapore's efforts against COVID-19

- **Institution(s) in charge:** Government Technology Agency Ministry of Culture, Community and Youth
- **Focus:** Information sharing
- **Technology:** Website, Chatbots, Social Media
- **Description:** Singapore has expanded its use of social media for policy announcements amid Government's effort to combat COVID-19. Chatbots are deployed at various places to help with frequently asked questions.
- Citizens are also able to access the chatbots via Facebook Messenger and Telegram.

Mexico's (#StayAtHome)

#QuédateEnCasa

- **Institution(s) in charge:** Mexican Government, Ministry of Health
- **Focus:** COVID-19 portal
- **Technology:** Website
- **Description:** On the microsite people can gather information on specific COVID-19 policies, government programs, suggestions, open data and on other topics of interest.

6. Innovative Practices in Governance Innovation for COVID-19 Response

Selected Innovative Country Cases

Spain's Digital solutions against COVID-19

- **Institution(s) in charge:** Secretary of State for Digitization and Artificial Intelligence
- **Focus:** : Monitoring
- **Technology:** : Database
- **Description:** Database on COVID-19, crossing data from mobile companies, aggregated/anonymized way. Data processors will be operators, ridership: Statistics Institute i.e. study on mobility of Spanish citizens during crisis.

Côte d'Ivoire's COVID-19 information portal

- **Institution(s) in charge:** The Prime Minister office, Ministry of Public Health, Ministry of Security, Ministry of Communication, Government General Secretariat (SGG)
- **Focus:** : COVID-19 portal
- **Technology:** : Website
- **Description:** The portal provides an SMS channel for sending mass information and raise awareness for the spread of COVID-19. It has also an integrated COVID-19 call centre for people to easily stay informed.

7. Managing Public Health Emergencies

Short-term measures: managing the emergency and the public health crisis

- Taking emergency measures to face the health crisis
- Activating vertical and horizontal multi-level coordination mechanisms for crisis management
- Adapting subnational public services to containment
- Adapting sub-national government public finance
- Adapting sub-national government organization

Medium-term policy implications: managing the economic, social and public finance crisis

- Coping with the economic and social crisis at territorial level
- Coping with the subnational public finance crisis
- Reviewing sub-national government administrative and operational organization for the delivery of public services
- Reviewing multi-level coordination mechanisms for crisis management

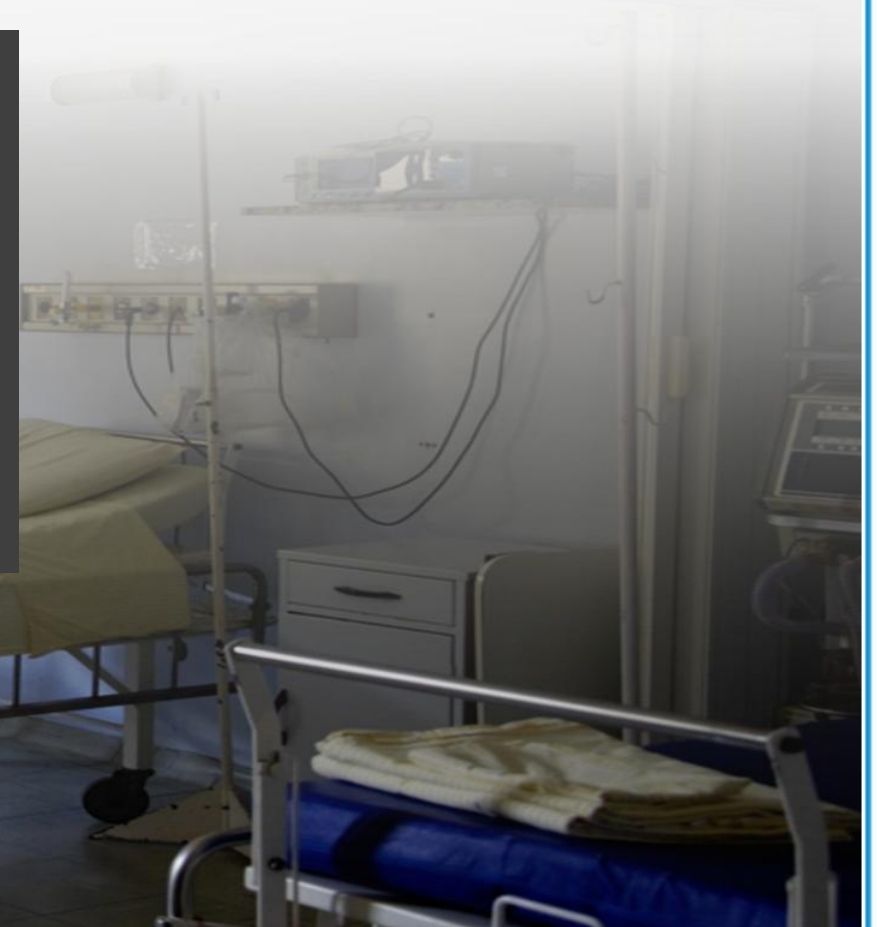
Longer term challenges: seizing opportunities for more resilient society

- Reviewing and enhancing multi-level governance practices
- Ensuring affordable and accessible quality basic services, including health, for all territories and people
- Establishing new regional/local development models, and rebalancing urban/rural areas
- Establishing new regional/local development models, and rebalancing urban/rural areas
- Supporting the transition to a low carbon economy

7. Managing Public Health Emergencies

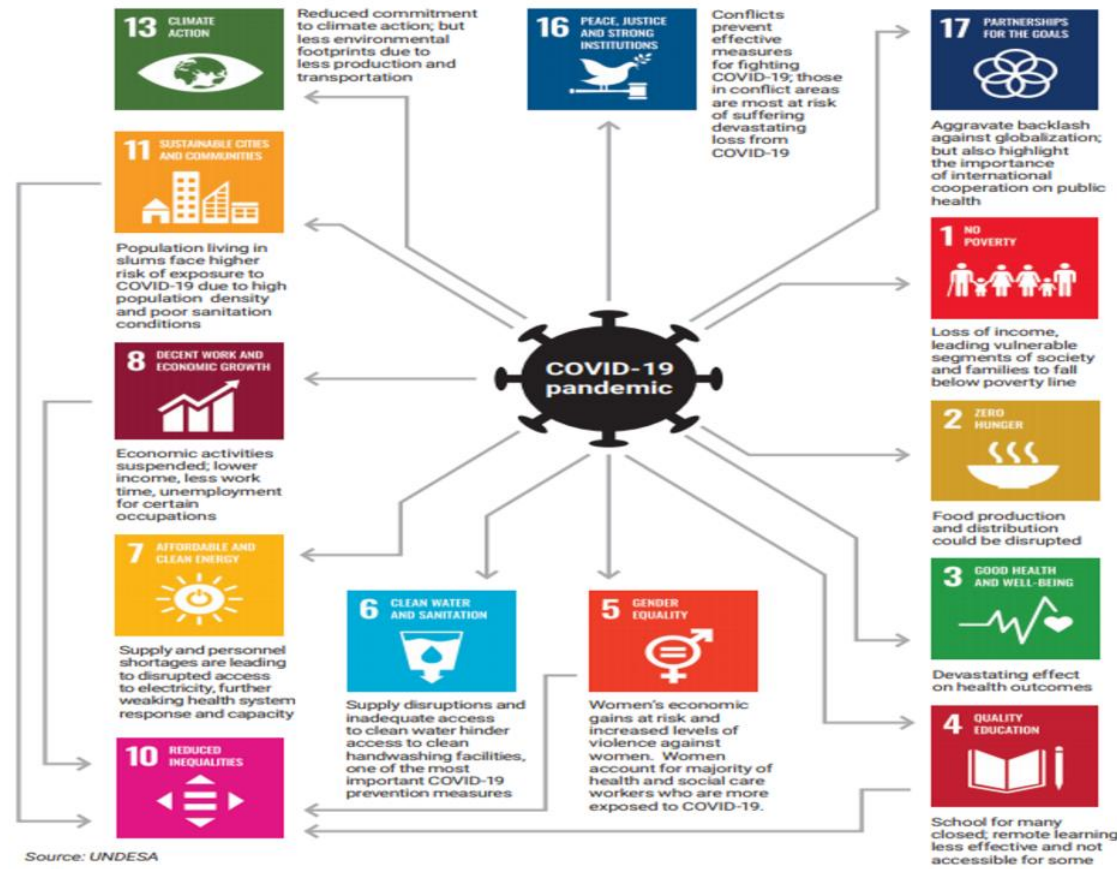
- **Key areas of focus for local preparedness for an effective response to health emergency such as COVID-19**

1. Coordinated local plans in preparation for effective responses to health risks and impacts
2. Risk and crisis communication and community engagement that encourage compliance with measures
3. Contextually appropriate approaches to public health measures, especially physical distancing, hand hygiene and respiratory etiquette
4. Access to healthcare services for COVID-19 and the continuation of essential services



7. Managing Public Health Emergencies

The Effect of COVID-19 on the SDGs



<https://unsdg.un.org/sites/default/files/2020-03/SG-Report-Socio-Economic-Impact-of-Covid19.pdf>

7. Managing Public Health Emergencies

■ Preparing for Future Emergencies



1. Countries need **to start preparing without delay** for the next disaster.
2. Governments and international institutions should **emphasize disaster education programs**.
3. Governments should be **transparent and take responsibility** for their actions.
4. Governments should **implement substantial targeted financial market measures**.
5. The UN and WHO should **reestablish guidelines** on how to approach future disasters.
6. Nations should **improve funding mechanisms** for global public health.
7. The WHO should **strengthen monitoring, warning, and joint responses** to global health threats.
8. Countries should **optimize their public health resource reserves and allocation systems** to build a worldwide medical product stockpile and resilient supply chain.

https://alzheimer.ca/en/help-support/im-caring-person-living-dementia/ensuring-safety-security/disaster-emergency#How_to_respond_during_a_disaster

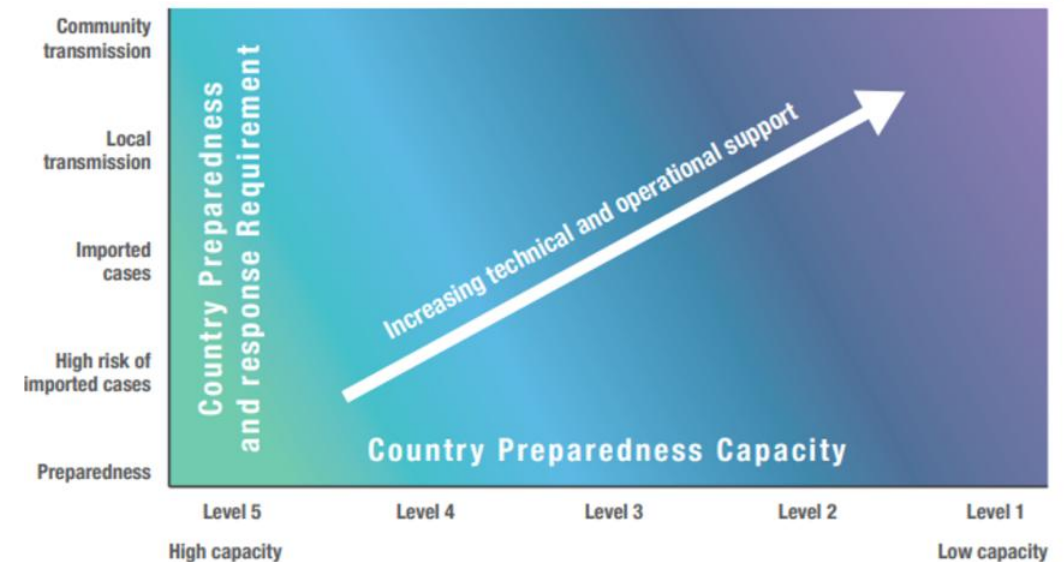
7. Managing Public Health Emergencies

■ Preparing for Future Emergencies

Beyond international coordination and operational support, it is crucial to:

- **scale up country preparedness and response** operations, including the rapid identification, diagnosis and management of cases,
- **identification and follow up of contacts** when feasible
- **infection prevention and control** in healthcare settings,
- **implementation of health measures** for travelers, and
- **awareness raising** through risk communication and community engagement

Country risk and vulnerability mapping



<https://www.who.int/docs/default-source/coronaviruse/srp-04022020.pdf>

7. Managing Public Health Emergencies

■ Preparing for Future Emergencies



1. Urgent actions taken by local governments for COVID-19 must set the stage for sustainable capacity development for concurrent or future health emergencies
1. Local government should document, learn, share and adapt during their COVID-19 experience, including taking proactive steps to collect evidence and advocate for the financing of sustainable capacities



7. Managing Public Health Emergencies

■ Supporting Vulnerable Groups

1. **Health crisis affects vulnerable groups** more than others in the short- and long-term.
2. **Government should support the vulnerable** and support the economic situation.
3. Ensure government and other stakeholders **prioritize information and communication needs**
4. **Ensure active outreach to collect feedback** from persons with disabilities
5. **Involve organizations of persons with disabilities** in consultation and decision making
6. **Ensure community engagement teams are gender balanced** and **promote women's leadership**
7. **Translate the materials/information into local languages** and **adapt to local context.**
8. **Disseminate information through efficient channels** including NGOs, refugee or migrant
9. **Engage the elderly to address their specific feedback**

8. Policy Recommendations and Key Takeaways

Risk-informed Governance, Partnerships, Institutional Coordination, Capacity Building

- **Risk-informed governance**, risk assessment, and risk communication are at the core of preparing for future pandemics including COVID-19.
- Promote a comprehensive, all-hazards and transboundary approach to country risk governance.
- **Establish effective partnerships** to achieve responsiveness and shared responsibilities.
- **Build institutional capacities** to anticipate and manage threats of pandemics.
- **Eliminate institutional overlaps**, encourage emergency preparedness, and empower citizens through building resilient societies.
- **Prioritize the information and communication needs** of vulnerable groups in times of emergencies through reliable and efficient channels.

8. Policy Recommendations and Key Takeaways

Multi-stakeholder Engagement, Whole-of-Society & Whole-of-Government Approaches, Finance, Effective Leadership

- **Whole-of-society approach** to risk communication and facilitating transboundary co-operation is important.
- **Engaging government actors through a whole-of-government approach** for inclusive policy making and implementation processes is key.
- **Enhanced government capacity** to make the most of resources dedicated to public safety, national security, preparedness and resilience is important.
- **Share knowledge, including lessons learned** from previous events, research and science through post-event reviews.
- **Ensure adequate financial allocations** and arrangements for emergency care.
- Establish **strategic crisis management capacities** to prepare for unknown and unexpected crises.
- **Strengthen effective leadership** for early detection of crisis and conduct exercises to support inter-agency and international co-operation.

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Thank you