Learnings from COVID-19 for public health on the need for data policy

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Member of Integrated Research on Disaster Risk (IRDR) Scientific Committee
Co-Chair of IRDR Disaster Loss Data (DATA)
Member of the WHO Collaborating Centre on Global Health Security
UNESCO Recommendation on Open Science

Open science increases scientific collaborations and sharing of information for the benefits of science and society.

Makes multilingual scientific knowledge openly available, accessible and reusable for everyone.

Opens the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community.
Home / Newsroom / Spotlight / A year without precedent: WHO’s COVID-19 response
Globally, as of 6:19pm CET, 15 November 2022, there have been 632,533,408 confirmed cases of COVID-19, including 6,592,320 deaths, reported to WHO. As of 9 November 2022, a total of 12,885,748,541 vaccine doses have been administered.

https://covid19.who.int/
While disease outbreaks and other acute public health risks are often unpredictable and require a range of responses, the International Health Regulations (2005) (IHR) provide an overarching legal framework that defines countries’ rights and obligations in handling public health events and emergencies that have the potential to cross borders.
Timeline: WHO's COVID-19 response

Click on the action circles below the chart to find out more.

Cases key: [Western Pacific] [South-East Asia] [Americas] [Europe] [Eastern Mediterranean] [Africa]

- **200 000 daily cases**
  - **ADVICE**
    - 10-12 Jan 2020
      - WHO published a comprehensive package of guidance documents for countries, covering topics related to the management of an outbreak of a new disease:
        - Infection prevention and control
        - Laboratory testing
        - National capacities...
    - Continue reading

- **150 000**
  - **LEADERSHIP**
    - 30 Jan 2020
      - The Director-General declared the novel coronavirus outbreak a public health emergency of international concern (PHEIC), WHO's highest level of alarm.
      - The WHO Director-General reconvened the IHR...
    - Continue reading

- **100 000**
  - [Science]
    - 11-12 Feb 2020
      - WHO convened a Global Research and Innovation Forum on the novel coronavirus, attended in person by more than 300 experts and funders from 48 countries, with a further 150 joining online. Participants came together to assess the level...
    - Continue reading

- **50 000**
  - [All technical guidance]

A COORDINATED GLOBAL RESEARCH ROADMAP: 2019 NOVEL CORONAVIRUS

MARCH 2020

There is broad consensus on the need for research to focus on actions that can save lives now, facilitate actions so that those affected are promptly diagnosed and receive optimal care; and catalyze the full integration of all innovations within each research area.

Moreover, there is an imperative to support research priorities in a way that leads to the development of scalable global research platforms prepared for the next disease epidemic. This will allow for accelerated research, innovative solutions and R&D of diagnostics, therapeutics, and vaccines, as well as the timely and equitable access to these life-saving tools for those at highest risk.

Figure 1. Principles to guide the implementation of the Global Research Roadmap

- **Powering research**
  - An understanding that science and research stay at the heart of the response
  - A global research and innovation roadmap; facilitated by WHO; to enable the implementation of priority research

- **Coordinating research**
  - A series of critical research efforts so that those affected are promptly diagnosed and receive optimal care
  - A commitment to develop frameworks that would accelerate development, production, and access to medical countermeasures

- **Committing to fair and equitable access**
  - An unambiguous commitment to global solidarity and equitable access to advances made
  - A global effort to enable the scaling-up of any successful intervention
  - A coordinated effort to facilitate effective, fair and equitable access based on public health needs

- **Facilitating future research actions**
  - A coordinated effort to maintain repositories of products pipelines, protocols, procedures, and tools.
  - A series of efforts enabling critical support for regulatory and ethics, and use of platforms for developing vaccines and therapeutics that can be useful beyond COVID-19.

https://www.who.int/blueprint/priority-diseases/key-action/Coronavirus_Roadmap_V9.pdf?ua=1
## COVID-19 RESEARCH AND INNOVATION ACHIEVEMENTS

**APRIL 2021**

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### Global picture of research funding aligned to WHO Research Roadmap

<table>
<thead>
<tr>
<th>WHO priority sub-area</th>
<th>Roadmap research thematic area</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
<th>N/A</th>
<th>Total funding amount ($)</th>
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<tr>
<td>1. Virus: natural history, transmission</td>
<td>1. Virus: natural history, transmission</td>
<td>823</td>
<td>605</td>
<td>170</td>
<td>598</td>
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<td>2. Animal and environmental research</td>
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<td>3. Epidemiological studies</td>
<td>3. Epidemiological studies</td>
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<td>259</td>
<td>72</td>
<td>258</td>
<td>132</td>
<td>370.5M</td>
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<tr>
<td>4. Clinical characterization and management</td>
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<td>11</td>
<td>651</td>
<td>27</td>
<td>7</td>
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<td>5. Infection prevention and control</td>
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<td>6. Candidate therapeutics R&amp;D</td>
<td>6. Candidate therapeutics R&amp;D</td>
<td>796</td>
<td>93</td>
<td>17</td>
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<td>7. Candidate vaccines R&amp;D</td>
<td>7. Candidate vaccines R&amp;D</td>
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<td>8. Ethics considerations for research</td>
<td>8. Ethics considerations for research</td>
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Credit: UKCDR and GloPID-R. COVID-19 Research Project Tracker, 2020

COVID Circle, a joint initiative between UKCDR and GloPID-R, is seeking to align and strengthen the global efforts on COVID-19 in resource-limited settings. GloPID-R is also currently in the process of growing its membership, especially in LMICs in Latin America, Asia and Africa.
1989
International Decade for Natural Disaster Reduction (IDNDR)

1992
United Nations Framework Convention on Climate Change

1994
ISDR
International Strategy for Disaster Reduction

1999
Yokohama Strategy and Plans of Action

2005

2015
Sendai Framework for Disaster Risk Reduction 2015-2030

2000
End Poverty 2015

2015
Sustainable Development Goals
Sendai Framework for Disaster Risk Reduction 2015-2030

1 Global Outcome
13 Guiding Principles
4 Priorities for Action at all levels
7 Global Targets

Reduce
- Mortality/ global population
  2020-2030 Average << 2005-2015 Average

- Affected people/ global population
  2020-2030 Average << 2005-2015 Average

- Economic loss/ global GDP
  2030 Ratio << 2015 Ratio

- Damage to critical infrastructure & disruption of basic services
  2030 Values << 2015 Values

Increase
- Countries with national & local DRR strategies
  2020 Value >> 2015 Value

- International cooperation to developing countries
  2030 Value >> 2015 Value

- Availability and access to multi-hazard early warning systems & disaster risk information and assessments
  2030 Values >> 2015 Values
MEASURING IMPLEMENTATION OF THE SENDAI FRAMEWORK

ANNOUNCEMENT

The Sendai Framework Monitor system is now live!

After the adoption of Sendai Framework in 2015, 38 indicators were defined to measure progress in achieving its 7 Global targets. This system is the official tool to report these indicators to both the Sendai Framework and SDG’s reporting processes.
To strengthen technical and scientific **capacity** to capitalize on and consolidate existing knowledge and to develop and apply methodologies and models **to assess disaster risks, vulnerabilities and exposure to all hazards**; (paragraph 24 j)

Sendai Framework for Disaster Risk Reduction 2015-2030
UNDRR
UN agency and organisations including WMO, WHO, FAO and others

ISC partners including Integrated Research on Disaster Risk, CODATA, GEO, GEM and others

International Humanitarian Organisation IFRC

Industrial Science Partners
Insurance Development Forum

UN Office for Disaster Risk Reduction
International Science Council
<table>
<thead>
<tr>
<th>Number</th>
<th>HAZARD</th>
</tr>
</thead>
</table>

**Primary definition**
Brief Definition of hazard: no more than 3 lines/2 sentences. Sourced from the highest possible authority and be applicable to all parties and preferably a simple UN definition but also recognised as the highest level that UN member states can use and apply.
REFERENCE/ hyperlink/Web site

**Scientific definition**
Expanded scientific definition that is preferably measurable, modellable and statistically relevant
REFERENCE/ hyperlink/Web site

**Metrics, numerical limits or defined guidelines**
Any globally agreed metrics, numerical limits or guidelines defined. Should be globally agreed as a recognised standard, if it is only at a regional level than state this as a reference.
REFERENCE/ hyperlink/Web site

**Key relevant UN Conventions and regional conventions / multilateral treaty**
REFERENCE/ hyperlink/Web site

**Any essential annotations**
Such as drivers, outcomes and risk management
REFERENCE/ hyperlink/Web site

**Ownership of Definition(s)**
UN or Scientific Agency or Organisation who holds the updating responsibility for the Primary Definition
REFERENCE/ hyperlink/Web site
### Drought

**Definition**
A drought is a prolonged duration of time at a location or region where rainfall is insufficient to satisfy water demands of human activities, including drinking, irrigation, and industrial water usage.

**Reference**

### Near-Earth Tsunami

**Definition**
A tsunami is a series of waves or trains of waves produced by a surface disturbance or an earthquake in the ocean, caused by a sudden increase in water level or displacement of the ocean floor.

**Reference**
UN OOS, no date. United Nations Office for Disaster Risk Reduction, pp. 22-23.

### Oil Palm

**Definition**
Oil palm is a tropical crop that produces palm oil, a versatile vegetable oil used in various industries.

**Reference**

### Monkeypox

**Definition**
Monkeypox is a viral disease caused by the monkeypox virus, which is transmitted from animals to humans, causing symptoms similar to smallpox.

**Reference**

### Dam Failure

**Definition**
Dam failure is the sudden or gradual collapse of a dam, which can release large volumes of water, causing flooding and destruction.

**Reference**

###Stampede or Crushing (Human)

**Definition**
Stampede or crushing is the surge of individuals in a crowd, in response to a perceived danger or loss of physical space. It often disrupts the orderly movement of crowds, resulting in irrational and dangerous movement for self-protection leading to injuries and fatalities.

**Reference**

### Additional Scientific Information

- **Synonyms**: Crush, crush injury, crush syndrome.

- **Additional scientific description**: Crush is a type of injury caused by the application of external forces to the body, resulting in damage to tissues and organs.

- **Examples of causes**: Occupational accidents, transportation accidents, and natural disasters.

- **Mitigations and prevention**: Planning and training to prevent crush injuries, and prompt medical assistance to manage crush syndrome.

- **Additional scientific information**: Crush syndrome is a complication of crush injury, characterized by renal failure, myoglobinuria, rhabdomyolysis, and coagulopathy.

- **Additional scientific information**: Crush injuries are common in accidents involving heavy machinery, and sports. Survival tactics and treatment protocols are crucial in preventing long-term complications.
Recommendations

- Regular review and update
- Use this hazard list to actively engage policymakers and scientists in evidence-based national risk assessment processes for actions aimed at managing risks of emergencies and disasters
- Address cascading and complex hazards and risks
UN unveils ambitious target to adapt to climate change and more extreme weather

Within the next five years, everyone on Earth should be protected by early warning systems against increasingly extreme weather and climate change, according to an ambitious new United Nations target announced today.
Data policy for Open Science in crisis situations
Data-enabled Society for Health: Challenges and Opportunities