

WS207

## Immediate Health Response to COVID-19- A Test of Health Systems Resilience

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### SPEAKERS



# COVID-19

Advancing Towards

an Equitable and Healthy World 

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#### Panelists



# Outline

## 1. Overview of Health Systems Resilience:

- Conceptual frameworks
- Measurement instruments

## 2. Case Studies/Lessons Learnt:

- How do we understand health system resilience **across developed and developing countries?**
- What role has **leadership, governance, and global health architecture** played in a 'successful response' and impact health systems resilience?
- What are the lessons learnt to **tackle future catastrophic health events?**

## 3. Discussions, Q&A



## **Literature: What exactly do we mean by "Health Systems Resilience"?**

# Health Systems Resilience

Linkage to  
Systems Science  
Literature  
= “Systems Shocks”  
= “Learning Abilities”

*Health Policy and Planning*, 33, 2018, 355–367  
doi: 10.1093/heapol/czx183  
Advance Access Publication Date: 9 January 2018  
Original Article

OXFORD

## Towards an understanding of resilience: responding to health systems shocks

**Johanna Hanefeld<sup>1,\*</sup>, Susannah Mayhew<sup>1</sup>, Helena Legido-Quigley<sup>1,2</sup>,  
Frederick Martineau<sup>1</sup>, Marina Karanikolos<sup>3</sup>, Karl Blanchet<sup>1,4</sup>,  
Marco Liverani<sup>1</sup>, Esther Yei Mokuwa<sup>5</sup>, Gillian McKay<sup>1,4</sup> and  
Dina Balabanova<sup>1</sup>**

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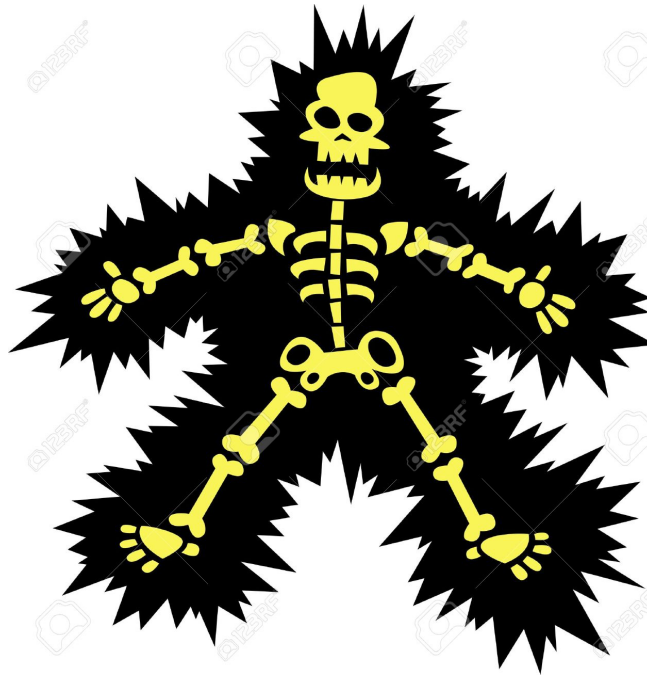
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Accepted on 1 December 2017

### Abstract

The recent outbreak of Ebola Virus Disease (EVD) in West Africa has drawn attention to the role and responsiveness of health systems in the face of shock. It brought into sharp focus the idea that health systems need not only to be stronger but also more ‘resilient’. In this article, we argue that responding to shocks is an important aspect of resilience, examining the health system behaviour in the face of four types of contemporary shocks: the financial crisis in Europe from 2008 onwards; climate change disasters; the EVD outbreak in West Africa 2013–16; and the recent refugee and

# Health Systems Resilience

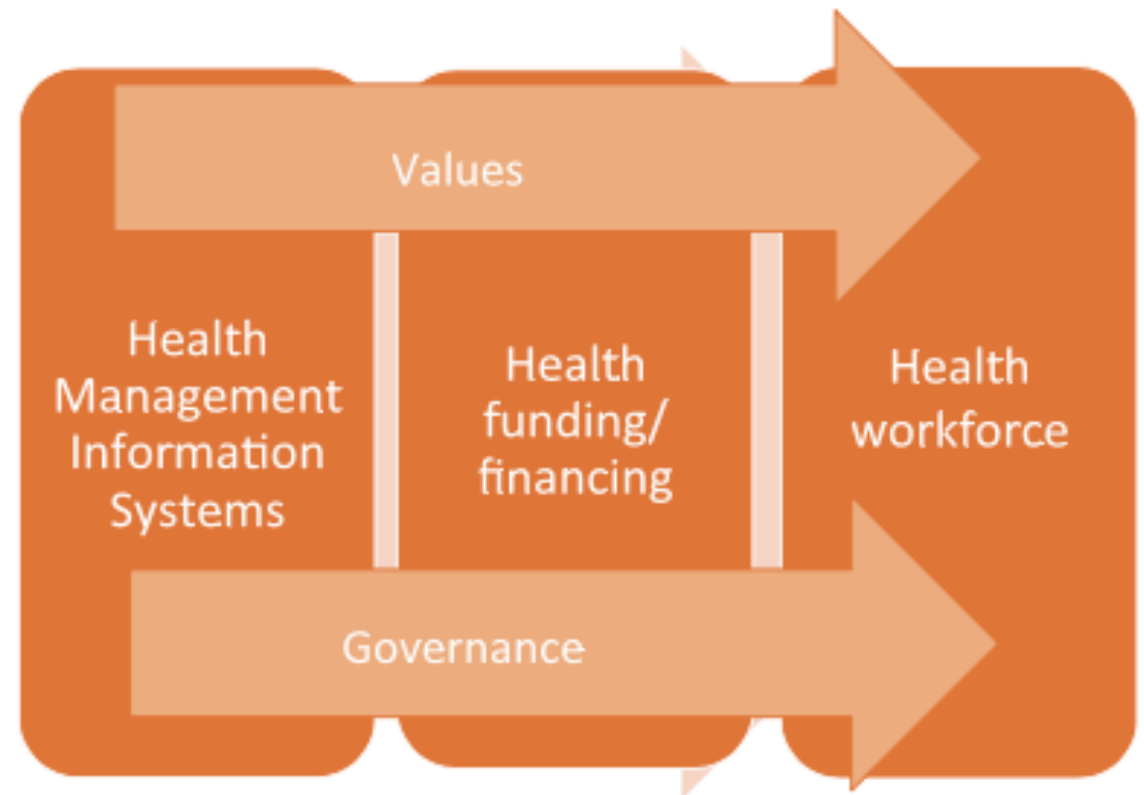


Linkage to Systems Science Literature:  
= “Systems Shocks”  
= “Learning Abilities”



# Health Systems Resilience

Linkage to Health Systems  
Research Literature:  
= Focus on Governance



**Figure 1.** Learning from shocks: a new approach to health systems resilience.



# Health Systems Resilience

- = Health system “software”  
(not system hardware)
- = Planned resilience  
(future crisis)
- = Adaptive resilience  
(acute shock & chronic stress)
- = Everyday resilience  
(routine & chronic stress)

<http://ijhpm.com>  
Int J Health Policy Manag 2018, 7(6), 491–503

**IJHPM**  
International Journal of Health Policy and Management

doi: 10.15171/ijhpm.2018.06

Systematic Review



## What Is Resilience and How Can It Be Nurtured? A Systematic Review of Empirical Literature on Organizational Resilience

Edwine Barasa<sup>1,2\*</sup>, Rahab Mbau<sup>1</sup>, Lucy Gilson<sup>3,4</sup>

### Abstract

**Background:** Recent health system shocks such as the Ebola outbreak of 2014–2016 and the global financial crisis of 2008 have generated global health interest in the concept of resilience. The concept is however not new, and has been applied to other sectors for a longer period of time. We conducted a review of empirical literature from both the health and other sectors to synthesize evidence on organizational resilience.

**Methods:** We systematically searched for literature in PubMed, Econlit, EBSCOHOST databases, google, and Google Scholar and manually searched the reference lists of selected papers. We identified 34 papers that met our inclusion criteria. We analysed data from the selected papers by thematic review.

**Results:** Resilience was generally taken to mean a system's ability to continue to meet its objectives in the face of challenges. The concepts of resilience that were used in the selected papers emphasized not just a system's capacity to withstand shocks, but also to adapt and transform. The resilience of organizations was influenced by the following factors: Material resources, preparedness and planning, information management, collateral pathways and redundancy, governance processes, leadership practices, organizational culture, human capital, social networks and collaboration.

**Conclusion:** A common theme across the selected papers is the recognition of resilience as an emergent property of complex adaptive systems. Resilience is both a function of planning for and preparing for future crisis (planned resilience), and adapting to chronic stresses and acute shocks (adaptive resilience). Beyond resilience to acute shocks, the resilience of health systems to routine and chronic stress (everyday resilience) is also key. Health system software is as, if not more important, as its hardware in nurturing health system resilience.

**Keywords:** Health System Resilience, Complex Adaptive Systems, Everyday Resilience, Health System Shocks

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**Citation:** Barasa E, Mbau R, Gilson L. What is resilience and how can it be nurtured? A systematic review of empirical literature on organizational resilience. *Int J Health Policy Manag.* 2018;7(6):491–503. doi:10.15171/ijhpm.2018.06

### Article History:

Received: 22 July 2017

Accepted: 20 January 2018

ePublished: 6 February 2018

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# Health Systems Resilience

**Tolerance & Change:**  
1. Absorption  
2. Adaption  
3. Transformation

<http://ijhpm.com>  
Int J Health Policy Manag 2017, 6(8), 431–435

**IJHPM**  
International Journal of Health Policy and Management

doi 10.15171/ijhpm.2017.36

Perspective



## Governance and Capacity to Manage Resilience of Health Systems: Towards a New Conceptual Framework



Karl Blanchet<sup>1\*</sup>, Sara L. Nam<sup>2</sup>, Ben Ramalingam<sup>3</sup>, Francisco Pozo-Martin<sup>1</sup>

### Abstract

The term resilience has dominated the discourse among health systems researchers since 2014 and the onset of the Ebola outbreak in West Africa. There is wide consensus that the global community has to help build more resilient health systems. But do we really know what resilience means, and do we all have the same vision of resilience? The present paper presents a new conceptual framework on governance of resilience based on systems thinking and complexity theories. In this paper, we see resilience of a health system as its capacity to absorb, adapt and transform when exposed to a shock such as a pandemic, natural disaster or armed conflict and still retain the same control over its structure and functions.

**Keywords:** Resilience, Health Systems, Governance, Management, Complexity

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**Citation:** Blanchet K, Nam SL, Ramalingam B, Pozo-Martin F. Governance and capacity to manage resilience of health systems: towards a new conceptual framework. *Int J Health Policy Manag.* 2017;6(8):431–435. doi:10.15171/ijhpm.2017.36

### Article History:

Received: 4 October 2016  
Accepted: 13 March 2017  
ePublished: 4 April 2017

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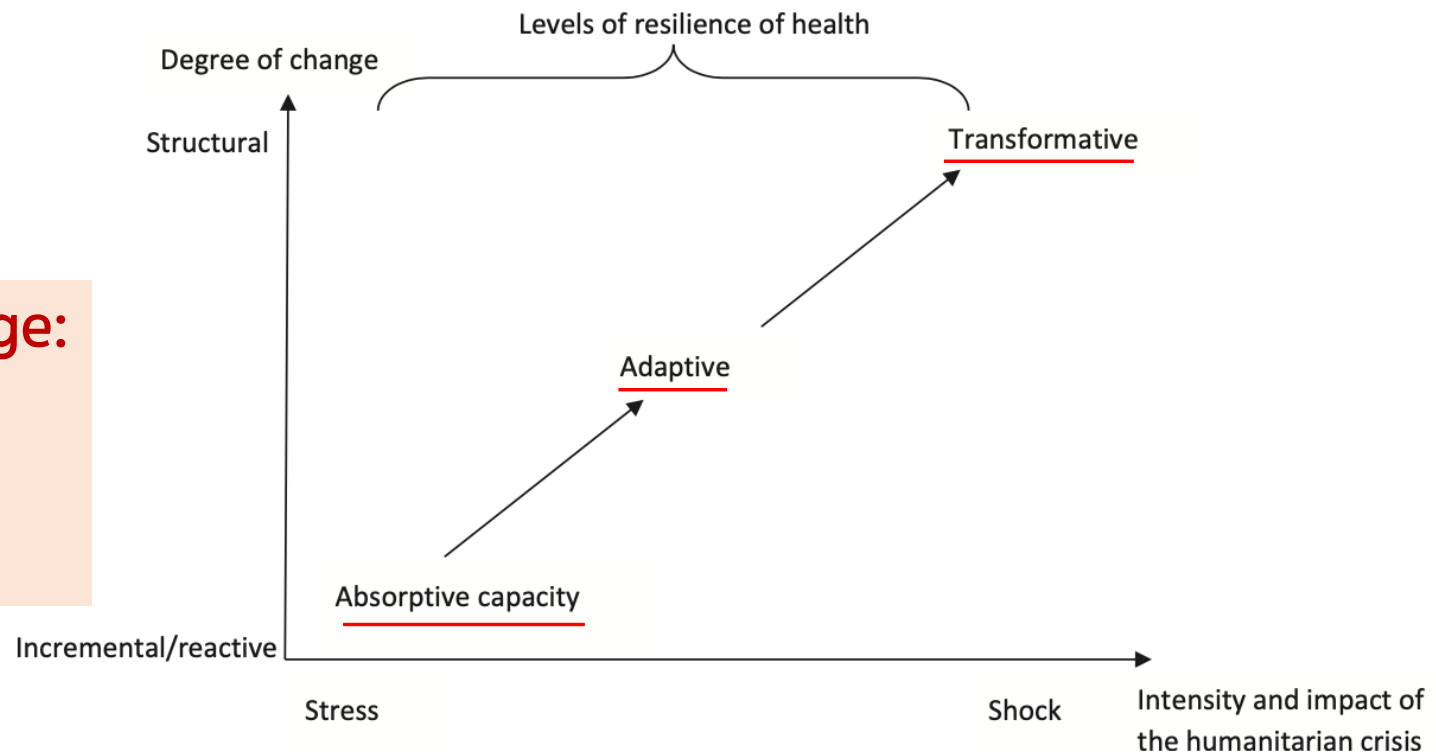
# Health Systems Resilience

= Intensity of crisis/systems shock

= Degree of changes

## Tolerance & Change:

1. Absorption
2. Adaption
3. Transformation



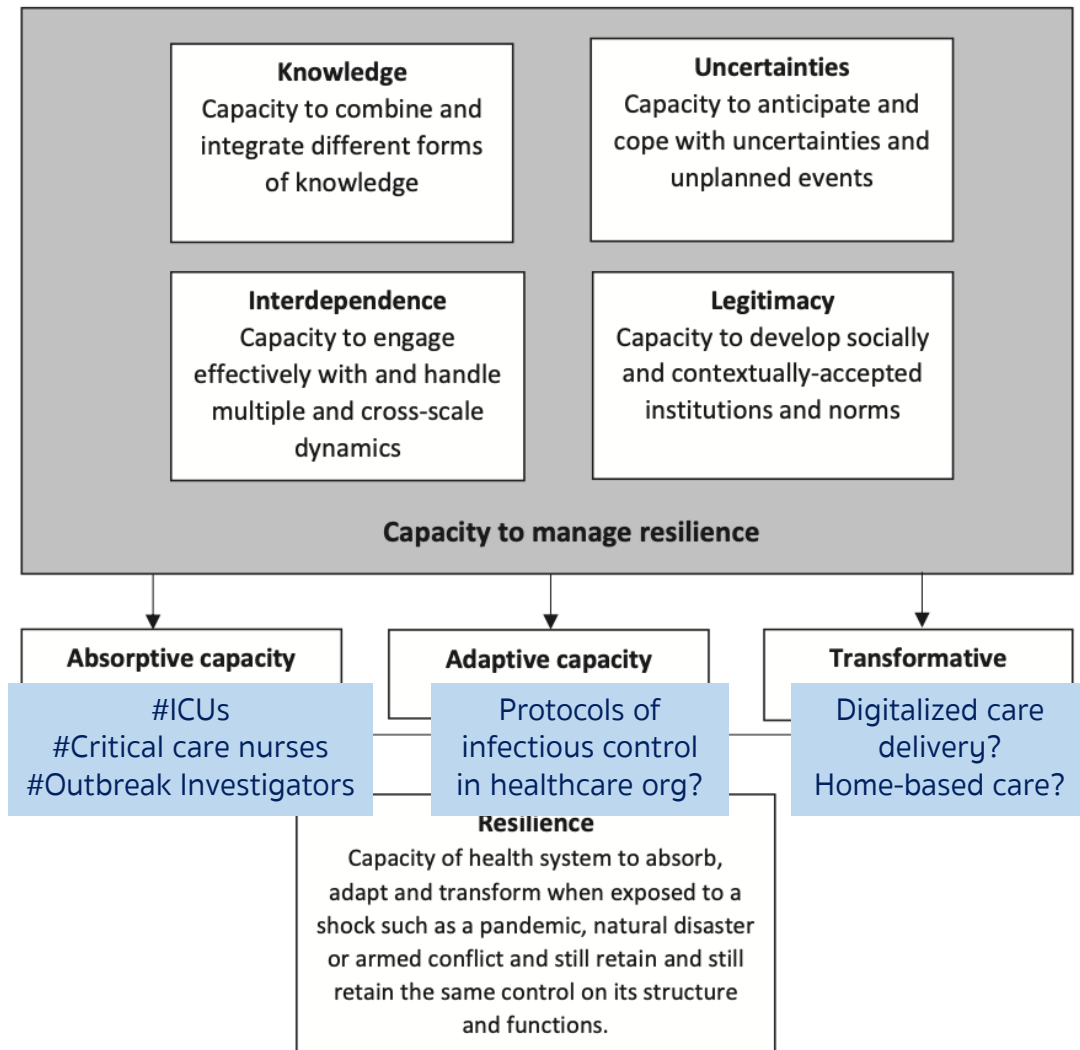
**Figure 1.** The Levels of Resilience of Health Systems by Intensity of the Humanitarian Crisis and Degree of Change (adapted from OCHA<sup>24</sup>).

Source: Blanchet et al. (2017)

# Health Systems Resilience

## Tolerance & Change:

1. Absorption
2. Adaptation
3. Transformation



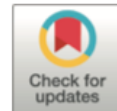
**Figure 2.** A Conceptual Framework: The Dimensions of Resilience Governance (adapted from Lebel et al<sup>11</sup>).

# Measuring Health Systems Resilience



BMJ 2017;357:j2323 doi: 10.1136/bmj.j2323 (Published 2017 May 23)

Page 1 of 8



## ANALYSIS

### Building resilient health systems: a proposal for a resilience index

Health system resilience begins with measurement of critical capacities ahead of crisis say **Margaret E Kruk and colleagues**

Margaret E Kruk *associate professor of global health*<sup>1</sup>, Emilia J Ling *researcher*<sup>1</sup>, Asaf Bitton *assistant professor of healthcare policy*<sup>2</sup>, Melani Cammett *professor of government*<sup>3</sup>, Karen Cavanaugh *director*<sup>4</sup>, Mickey Chopra *global solutions lead for service delivery*<sup>5</sup>, Fadi el-Jardali *professor of health policy and systems*<sup>6</sup>, Rose Jallah Macauley *country representative*<sup>7</sup>, Mwihaki Kimura Muraguri *independent consultant*, Shiro Konuma *minister*<sup>8</sup>, Robert Marten *health systems strengthening coordinator*<sup>9</sup>, Frederick Martineau *research fellow*<sup>10</sup>, Michael Myers *managing director*<sup>11</sup>, Kumanan Rasanathan *senior health specialist*<sup>12</sup>, Enrique Ruelas *senior fellow*<sup>13</sup>, Agnès Soucat *director of health systems*<sup>14</sup>, Anung Sugihantono *director-general of public health*<sup>15</sup>, Heiko Warnken *head of the development for health, social security, and population policy*<sup>16</sup>

# Measuring Health Systems Resilience

= Awareness  
= Diversity  
= Self-regulation

**Table 1 | Resilience index**

Characteristics*	Aims	Measures	Rationale
Aware	Know health system capacity	1 Distribution of health system assets and weaknesses <sup>a</sup>	Real time geo-registry of HWs, supplies, and facilities (including NGOs and private operations) can realistically gauge available national capacities
		2 Health service utilisation trends	Routine health monitoring helps system detect service fluctuations and accurate assessments of crisis impact, and rate of return to baseline after a shock
	Know risks and population	3 Presence of active epidemiologic surveillance system <sup>a,b</sup>	Routine surveillance is necessary to detect disease threats and trigger mitigation mechanisms
		4 Functioning civil registration and vital statistics system	Basic knowledge of population demographics is important for estimating health threats and trends, and understand crisis impact
	Communicate	5 List of decision makers in key sectors <sup>a</sup>	Point persons across sectors must be immediately accessible for communication, decision making, and sounding alarms
		6 Breadth of functioning communication channels <sup>a</sup>	Communities must be able to notify and sound alarms—this requires an environment of free speech and freedom of press, and functioning, open platforms for timely communication (hotlines, community committees, social media)
Diverse	Effectively respond to range of health needs	7 Scope of health services available in primary care <sup>c</sup>	Including services that respond to population health needs and expectations in basic primary care package will promote routine health system utilisation and confidence in the health system
		8 Quality of care for sentinel conditions in basic package <sup>c</sup>	Health outcomes, healthcare utilisation during crisis, and trust in health authorities require competent and respectful care
	Adequately finance health systems; prevent financial harm	9 Financing of healthcare: adequacy of government health expenditure and financial protection <sup>c</sup>	Total health system funding must be sufficient to support functioning services; financing systems should aim to reduce catastrophic and impoverishing health spending <sup>63, 66</sup>
Self regulating	Isolate threat and maintain core function	10 Memorandums of understanding with non-state providers	Establishing agreement about roles for private providers—not for profit and for profit—in crisis expands service provision in emergencies and may promote collaboration in times of calm
		11 Database of service delivery alternatives for affected and unaffected populations <sup>a</sup>	A routinely updated global, open access library of service delivery models tested and deemed effective in past crises promotes inter-country learning and lowers redundant reinvention and perpetuation of failed ideas
	Leverage outside capacity	12 Collaboration agreements with regional and global actors	Agreements on nature of collaboration (timing, type of support, roles or responsibilities) during emergencies is a form of smart dependency and contributes to a faster, more effective response <sup>29</sup>

Source: Kruk et al. (2017)

# Measuring Health Systems Resilience

= Integration  
= Adaptability

Integrated	Coordinate with non-health actors (education, transport, police, media, private enterprise)	13 Existence of a national emergency coordination system and leaders <sup>a</sup>	Ready coordination systems encourages fast decision making and implementation, curbing potential effects of emergencies
		14 Frequency of joint planning sessions and drills <sup>a</sup>	Rehearsal of preparedness plans and regular collaboration establishes norms of intersectoral teamwork
		15 Process for development of a One Health strategy <sup>b</sup>	Acknowledging human ties to the environment and other species encourages an inclusive understanding of public health vulnerabilities
	Engage citizens and communities to build trust	16 Index of Ministry of Health and government responsiveness to community need	Quick action in responding to community needs can foster trust and promote containment of health shock
		17 Population trust in health system	Trust in government and the health system is essential to effective service delivery and for acceptance of government messages in crises—this is true in government run and mixed provider health systems <sup>67 68</sup>
		18 Platforms for dialogue with community leaders	Regular input about health system functioning from citizens will improve emergency planning and establish communication channels for routine and emergency needs
		19 In-country social scientists with experience working with health departments	Tapping experts in sociology, anthropology, and related disciplines strengthens understanding of key social structures in crisis response, local health determinants and the local appropriateness and acceptability of interventions
	Link healthcare provision to public health	20 Availability of district health staff with public health training <sup>b</sup>	Public health staff serve to promote public health practices and act as sentinels for potential outbreaks connecting local clinics to surveillance and monitoring system
	Coordinate primary and referral care	21 Agreement on roles and referral protocols for facilities	Defined agreements on the role of primary and referral facilities reduces confusion and service delay, and streamlines service delivery for patients
Adaptive	Shift resources to meet need	22 Formal provisions to reallocate funds in emergency	Flexible spending of funds—national and international—speeds up and better targets emergency response in fast changing situations
		23 Management capacity of district or local health teams <sup>c</sup>	For decentralised responses, local health teams must be able to interpret local data and local leaders must be able to make quick and sound operational decisions
	Evaluate to improve	24 Agreements on delegation of authority and funding in crises	Pre-crisis agreements permitting local decision making in crisis with sufficient support hasten response time to evolving challenges
		25 Mechanisms for, and capacity to, track progress and evaluate health system performance in crisis and in times of calm <sup>b</sup>	Rigorous monitoring during crisis and independent evaluation post-crisis permits course correction and points to needed reforms. National capacity for data use and, more broadly, a culture of open inquiry and evaluation needs to be built in times of calm to deliver during a crisis.

\*Characteristics are interrelated and interdependent. Decision making and coordination should occur across these characteristics

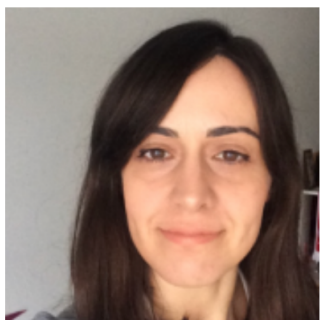
a, b, c indicate concepts similar to proposed International Health Regulation, Global Health Security Agenda, and sustainable development goals, respectively

Source: Kruk et al. (2017)

WS207

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### Catherine Arsenault

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Catherine Arsenault, MSc, PhD is a Research Associate at the Harvard T.H. Chan School of Public Health. She worked as Research Lead for the Lancet Global Health Commission on High Quality Health Systems. Dr. Arsenault's work focuses on health care quality, health equity and on monitoring and evaluation to improve health system performance in LMICs. She obtained a PhD in Epidemiology from McGill University and has conducted research on health system performance in various countries including most recently in Ethiopia, where she works closely with the Ministry of Health. Dr. Arsenault is currently leading a 15-country project on the indirect effects of Covid-19 on health system performance using routine HMIS data.



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**Sundararaman Thiagarajan**

Global Coordinator  
PHM  
India

Professor T. Sundararaman, is currently global coordinator of Peoples Health Movement, and has been an activist of people's science movements and peoples health movements since the eighties. After acquiring his MD in Internal Medicine in 1984, he worked for 18 years in the faculty of Internal Medicine, JIPMER in Puducherry. From 2002, he shifted to working on strengthening public health systems first as Director of State Health Resource Center Chhattisgarh and then as executive director of National Health Systems Resource Center. From 2015 to 2019 he was Professor and Dean of the school of health systems studies in Tata Institute of Social Sciences. Mumbai. Major contributions have been to developing community health worker programs in India and different aspects of strengthening public health systems as part of the National Health Mission.

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### Edwine Barasa

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Edwine is the director of the KEMRI-Wellcome Trust Nairobi programme in Kenya and also heads the Health Economics Research Unit (HERU) of the programme. He is a health economist and health financing specialist with 14 years of research, advisory, and practice experience in Kenya and in the broader Sub-Saharan African region. He has a PhD in health economics (University of Cape Town), a masters degree in health economics (University of Cape Town), and a bachelors degree in Pharmacy (University of Nairobi). Edwine's interests and current research work focuses on analysing health financing reforms, priority setting in healthcare, equity and efficiency analysis in healthcare, economics of non-communicable diseases, economic evaluation of healthcare interventions, measuring health systems performance, and health system governance.

He has a keen interest in evidence informed policy making and the nurturing of synergistic relationships between policy makers and researchers. Besides doing research, Edwine advises the Kenya Ministry of Health as well as several international development organizations including the World Bank and the World Health Organization (WHO) on health financing, focusing on the Sub-Saharan African region. Edwine is also Adjunct faculty at Strathmore University where he teaches health financing. Before joining the KEMRI-Wellcome Trust Research Programme, Edwine worked as a clinical pharmacist for 2 years in both the public and private sectors.

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### Ren Minghui

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Dr. Ren Minghui serves as Assistant Director-General for Universal Health Coverage/Communicable and Noncommunicable Diseases at WHO headquarters. In this role, he oversees a complex portfolio of technical programmes covering HIV, viral hepatitis, tuberculosis, malaria, neglected tropical diseases, sexually transmitted infections, noncommunicable diseases, mental health and substance use. He currently represents WHO on the boards of the Global Fund to Fight AIDS, TB and Malaria, UNAIDS, and UNITAID. Prior to his appointment as Assistant Director-General, he spent nearly 30 years working in public health, including as Director General for International Cooperation in the National Health and Family Planning Commission of the People's Republic of China. In China, his work initially focused on health policy and health reform, and later on international health cooperation and global health governance. Dr. Ren is a medical doctor and holds a Master of Public Health and a PhD in Social Medicine and Health.

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### Nikki Gurley

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Nikki Gurley, MPH, MSW is a Monitoring, Evaluation, and Learning Officer at PATH, a global health NGO. She is an evaluator with over 7 years of experience in mixed methods research and evaluation. Her current work focuses on immunization, malaria, and health systems strengthening in low- and middle-income countries. Most recently, she co-led a project to catalog and synthesize the policies that governments are developing to maintain and adapt essential health services in response to COVID-19. Prior to PATH, her work included research on higher education, workforce development, and community engagement and advocacy. Ms. Gurley holds a Master of Public Health and a Master of Social Work from the University of Washington.

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# **Q & A Discussions**



# Food-for-Thought

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**“Do not judge me by my success,  
judge me by how many times I fell down  
and got back up again.”**

—Nelson Mandela

