

# Immediate Health Response to COVID19: Understanding Health Systems Resilience in the South Asian context.

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# Definitions:


- “Health systems resilience is about the system being able to adapt its functioning to absorb a shock and transform if necessary, to recover from disasters esp. Epidemics and natural disasters (Blanchet 2015, Johanna Hanefeld, HPP, 2018)
- **Health system resilience can be defined as the capacity of health actors, institutions, and populations to prepare for and effectively respond to crises; maintain core functions when a crisis hits; and, informed by lessons learned during the crisis, reorganize if conditions require it.**
- Needs robust public health response+ and proactive adaptive health-care delivery working in concert: “resilience is an emergent property of the health system as a whole rather than a single dimension”. (Margaret Kruk, Lancet, 2015, 385:1910-12)



# Resilience: conceptual and analytic frameworks

- Johanna Hanefeld, 2018, HPP vol. 33 no.3
  1. 3 core dimensions:
    1. Health Management Information Systems;
    2. Funding/financing,
    3. Health workforce-
  2. Two critical ones-
    1. Governance:
    2. Values and Beliefs
- Margaret Kruk, 2015, *Lancet* 2015; 385:
  - **Pre-conditions:**
    - HS as Global public goods
    - Legal and policy foundation:
    - strong workforce with trust
  - **5 features**
    - **Aware**, -( information)
    - **Diverse**- (comprehensive)
    - **Integrated** (within /across sectors)
    - **Adaptive**- self-learning
    - **Self Regulating**-
      - Data based allocation
      - Minimize disruption:
      - Inbuilt surge capacity.





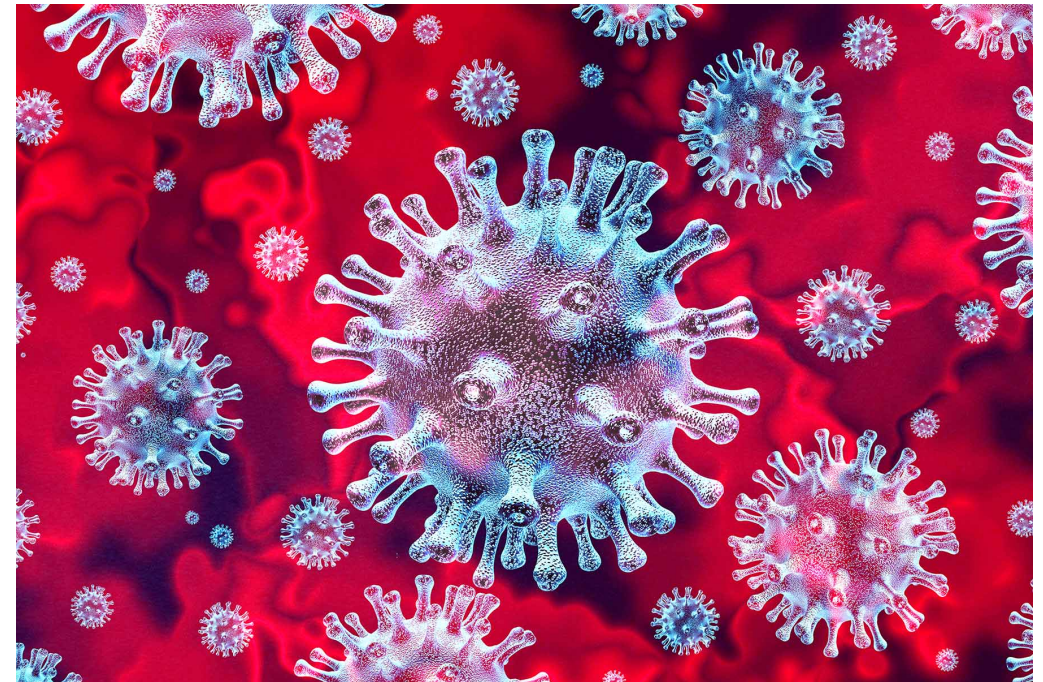
# Our Resilience framework: Indicators, pre- conditions and design features of resilience.....

1. Indicators:
  1. Less disruption of social and economic life.
  2. Less disruption of essential health services.
  3. Less case incidence and case fatality
  4. Learn and Adapt to new situations better.
  5. Equity in the response and in consequences
2. Pre-conditions :
  1. Adequate financial resources
  2. Adequate human resources- numbers and policy policy
3. Key Design Characteristics: for each of building blocks:




# Covid 19 control (as of Oct.5<sup>th</sup>, 2020) incidence, deaths, and stringency of lock-down

	Cases per million	Deaths per million	Stringency Q1	Stringency Q2	Stringency Q3
India	4897	75.9	91	77	77
Nepal	3091	19.0	89	86	78
Bangladesh	2285	33.0	73	68	72
Pakistan	1483	30.7	73	62	57
Indonesia	1134	41.7	42	44	52
Malaysia	393	4.3	61	62	67
Myanmar	331	7.7	49	65	65
Sri Lanka	157	0.6	80	58	39
Thailand	52	0.8	54	67	56
Vietnam	11.5	0.4	71	55	70
Australia	1086	36	67	63	79
Japan	678	12.6	42	37	42







## Resilient systems respond with limited disruption of Social and Economic Life

- More resilient the health care system- the less the need to disrupt social and economic life- the less the duration and the intensity of social restrictions:
- Stringency of lock-downs measurement: Oxford Government response Index
- (source: chapter 2, Health at a glance, Asia/Pacific 2020, Making progress towards UHC, [oecd-ilibrary.org](https://oecd-ilibrary.org/))



# The pre-conditions of resilience- Financing and Human Resources



	Hlth Exp USD/pc	% OOPE	Hlth Prof/ 1000	Beds/1000	ICU beds/100,000
India	253	63	2.6	0.7	2.2
Nepal	150	58	3.8	1.2	2.1
Bangladesh	94	74	1.0	0.8	0.5
Pakistan	161	60	1.6	0.6	1.5
Indonesia	368	34	1.9	1.0	2.6
Malaysia	1139	38	5.0	3.9	3.4
Myanmar	288	76	1.4	1.0	0.6
Sri Lanka	504	50	2.7	3.9	2.5
Thailand	671	11	3.6	2.1	10.2
Vietnam	375	45	1.9	2.6	--
Australia	4816	18	15.4	3.8	12.0
Japan	4563	13	14.6	13.8	9.3



# Pre-conditions of Resilience

Nations that spend more on health do better.

Nations that have more financial protection-universal coverage do better.

Nations that have higher densities of human resources do better.

Nations that have more investment at all levels of care- including ICU beds do better.

Within sub-groups by financing and HR deployment the variation from this norm could depend on design characteristics:



# Top 5 vs Bottom 5: Inverse relationship between Pandemic intensity and health systems performances.

(nov 15, data)

The 5	States	Cases/M	Deaths/M	IMR-2018	MMR16-18
1	Kerala	19034	75	7	43
2	Andhra	16681	134	29	65
3	Maharashtra	15275	391	19	46
4	Karnataka	13604	180	23	92
5	Tamil Nadu	10520	157	15	60
	<b>INDIA</b>	<b>7355</b>	<b>107</b>	<b>32</b>	<b>113</b>
6	Rajasthan	3737	33	37	164
5	Gujarat	3323	61	28	75
4	Jharkhand	2945	26	30	71
3	Madhya P	2694	41	48	173
2	Uttar P	2486	35	31	197
1	Bihar	2009	11	32	149



# Resilience in low capacity (far from UHC ) health systems-

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- Covid 19 statistics :misleading in nations/ states with low health systems capacity/maturity: low universal access and financial protection- UHC is a distant goal.
- Measure design characteristics that lead to
  - *Less disruption of essential health services*
  - *Affirmative action to reach poorest sections for all healthcare*
  - *Overcoming barriers faced in public health measures against covid 19 healthcare*
  - *Overcoming barriers faced and access to covid 19 health care*
- This can be elucidated by case studies across nations/states and learning on organizational principles- both from best practices as well as from failures.





# Design characteristics of resilient systems...

## Organizations of Health Care Services-

1	Wider packages of primary care services	Nations where primary care is limited to small range of RCH and disease control would do worse, :Thailand, Sri Lanka- have more comprehensive package
2	Continuity of care between levels & at same level	Use of telemedicine; mobile vans ; online consultations, more medicine stocks, home delivery, task shifting to primary levels: all more prominent in Sri Lanka
3	Closer to community, more community engagement	All nations with robust CHW programs and decentralization could reach essential supplies to those in need-Thailand, Sri Lanka, Nepal, Kerala- CHWs
4	Adequate surge capacity	Reflected in public sector hospital beds and ICU beds ratio: : <b>India</b> 76: 0.7: 2.2 <b>SL</b> :0.6: 3.5: 2.5 <b>Thailand</b> 0.8: 2.3:10.2
5	Less privatized- more public administered service delivery	Pvt sector services, ceased more, longer and more selectively in most states- In SL, Thailand, public provider more and OOPE less: easier to sustain essential services



# Design characteristics of resilient systems...

## *Health Information Systems*

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- In many countries disease surveillance and HMIS was seriously compromised—repurposing of staff + security take over of surveillance
- Where routine HMIS remains functional- serves to identify gaps in service delivery and fix it.
- Case studies: malaria control in S. Odisha, DHIS 2 in Nepal, Bangladesh, Sri Lanka
- More likely with more decentralized use of information for action – DHIS 2 systems & specific program MIS
- Integration of HMIS with disease surveillance- able to track suspected/fever cases from flu surveillance.
- Security/Administration driven surveillance tends to rely only on covid testing reports from parallel system.





# Design characteristics of resilient health systems: *Access to technologies....*

- Good Public Health Logistics: Reduces
  - Test-kits, reagents, medicines, oxygen, equipment, PPE and vaccines,
  - Both procurement of new products from few vendors and old products under demand.
  - Distribution/ allocation of all essential medicines- covid and non-covid
- In India- some states like Tamil Nadu, Kerala, Rajasthan robust systems that managed supply chains better. Across nations too- eg Sri Lanka, Bangladesh
- Scaling up domestic production amidst disrupted global supply chains:
  - Sensitive to existing domestic policies and capacity on both manufacture and trade- lessor dependence on corporates
  - Sensitive to global IPR and trade regimes



# Design characteristics of resilient health systems: *Human Resources for Health....*

- Minimum density of human resources- doctors, nurses, support staff deployed t is a pre-condition

## ***Design features are:***


- **How System Supports the Health Worker:**

- Provision of PPE,
- Revised guidelines for essential care in covid 19 times
- Organization of training – both for covid and non-covid workers.
- The terms of service- precarious or secure

- **How System Cares for the Health Worker:**

- The provision for sick leave and breaks.
- Protection for family and against stigma
- The sense of the team and of public service
- Mental Health Support for the health workers





# Design characteristics of resilient health systems... *Governance*>

- Decentralization- examples from Nepal, Kerala,
- Learning/ Adaptive Systems:
  - Many countries have faced epidemics in recent past. – SARS, MERS, Avian and Swine flu (SL), Nipah ( Kerala)
  - Some have institutionalized these learnings much better.
- Affirmative action to reach vulnerable sections- for all essential health services and for Covid 19 services
  - Demand is latent, unmet needs are high with greater vulnerability
  - need to persist and intensify public information: Nepal (Biratnagar); SL:
  - Need different forms of intervention for most vulnerable sections: Migrants : SL
  - Integrated approaches- covid 19 care integrates with- does not substitute essential services
- Values- How much is role of government in provision of healthcare seen as a right- *The ethics and legality of re-purposing essential public services for dealing with the pandemic*



# Based on Recent studies and Commentaries :

1. Sundararaman T. **Health Systems preparedness for COVID 19 pandemic.** Indian J Public Health 2020;64:S91-3. , June 2020
2. Sundararaman, T., and Ranjan, Alok (2020), "Challenges to India's Rural Healthcare System in the Context of Covid-19," Review of Agrarian Studies, vol. 10, no. 1, - July 2020
3. Sundararaman T, Is India's Public Health System Ready to Face the COVID-19 Pandemic? In India in Transition, Center for the Advanced Study of India ; U.Penn. April 9, 2020
4. Sundararaman T , V R Muraleedharan , Alok Ranjan : **Pandemic resilience and Health Systems Preparedness: Lessons from COVID 19 in the 21st century, Journal.of Social and Economic Dev., (accepted)**
5. **Adithyan G.S and Sundararaman T : Good Public Health Logistics: An important element of Resilient Health Systems: Lessons from Tamil Nadu in context of COVID-19 Pandemic. (Dec, under review)**
6. **Sundararaman T, Promising Emerging Practices in South East Asian Regional Countries on Maintaining Essential Health Services during COVID 19, Final Report- Nov 30<sup>th</sup>, 2020 - WHO SEARO Region**



# Recent studies:

*Healthcare as  
Public Goods :*

*Learning/  
Adaptive Health  
Systems*

- VR Muraleedharan, Girija Vaidyanathan, Sundararaman T et al  
Invest More in Public Healthcare Facilities- What Do NSSO  
71st and 75th Rounds Say? Econ.& Poli. Wkly Sept 2020 vol IV  
no 37
- **Sundararaman T., Daksha Parmar , S. Krithi: Public Health  
and Health Services as Global Public Goods:** book chapter in  
India Exclusion Report(IXR) 2019-20. (in print)
- **Sundararaman T., Rakhal Ghaitonde How Learnings from the  
Nipah Virus Outbreak helped Kerala respond to the COVID 19  
pandemic ( APHSR, WHO Geneva, Sept, 2020)**
- Soumya Swaminathan, Kabir Sheikh, Robert Marten, Martin  
Taylor.. T. Sundararaman... Embedded research to advance  
Primary Health Care" BMJ Global Health; (accepted, Dec.  
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Thank You