GOARN
Global Outbreak Alert and Response Network

Call for small proposals towards building resilience in health procurement and supply chains in South East Asia countries, by the Global Outbreak Alert and Response Network (GOARN)

Background

The COVID-19 crisis has surfaced many hidden vulnerabilities in health systems and has exposed the complex, and in many cases unknown dependences that support the operation of such systems. In many occasions these systems operate at maximum capacity with no built-in redundancy. A major perturbation of the system, i.e. the pandemic, has uncovered widespread limited resilience. Procurement and supply chain (PSM) systems are amongst those most severely affected by the ongoing crisis.

Resilience enhancement does not occur in a vacuum but as part of a strategic decision by an organization (or group of organizations and stakeholders) to improve a system of interest. It follows that decisions on resilience must be integrated into the organization's decision-making framework, so resilience contributes to the maximization of the system's value. In health systems, value is a complex construct that requires comprehensive elicitation across the different agents in the supply chain, who might have distinct objectives and priorities. These objectives might encompass profit maximisation, and resilience; other aspects too might require consideration such as supplying to local needs and political concerns, as well as averseness to low levels of stock and/or readily available resource.

Most health systems are not designed with resilience in mind. Furthermore, supply chain design for health systems, and the enhancements that may follow, do not necessarily pursue increased system's resilience per-se. Silo-specific and project-specific improvements may not enhance resilience and, in fact, may lead to the contrary by increasing overall complexity or focusing merely on piecewise cost reductions.

The Global Outbreak Alert and Response Network (GOARN)

The Global Outbreak Alert and Response Network (GOARN) is a global technical partnership, established by the World Health Organization (WHO) as a key mechanism to engage the resources of technical agencies beyond the United Nations (UN) for the rapid identification and confirmation of, and response to, public health emergencies of international importance. The main objective of the network is to provide technical support to WHO Member States experiencing a human health emergency due to various threats, including outbreaks of disease, lack of food safety, chemical toxins, zoonoses, and natural and manmade disasters.

GOARN's partners include medical and surveillance initiatives, regional technical networks, networks of laboratories, UN agencies (such as the United Nations Children's Fund, United Nations High Commissioner for Refugees, United Nations Population Fund), the Red Cross and Red Crescent Societies (International Committee of the Red Cross and International Federation of Red Cross and Red Crescent Societies), international humanitarian nongovernmental organizations (such as the

International Rescue Committee), national public health institutions and academia. In 20 years, GOARN has conducted over 160 operations and deployed over 3300 experts to assist more than 90 countries across the globe through its 270-strong partnership.

As part of its Plan of Work for 2021 in the South East Asia Region of the World Health Organization (WHO/SEAR), GOARN aims to increase the quality of outbreak response.

The call

We seek proposals aimed at enhancing resilience or deploying resilient designs for health procurement and supply chain systems contributing to outbreak response (either COVID-19 related or not). Proposals must clearly state how such resilience enhancements will be monitored and quantified, and how they contribute to the overall value of the organization/system. Given the limited time to implement the project and suggested improvements, characterisation of enhanced resilience may be simulated into the future, with illustration of the system behaviour in the face of shocks.

For the purposes of this call, resilience can be informed by a collection of metrics, e.g. redundancy, robustness or reliability, and time to restoration (which may include time to respond to perturbation (e.g. COVID-19 increased demands), and time to restore if failure occurs). Projects must map and characterise the configuration of the major sub-systems, components and relevant stakeholders (and their contribution) of the target PSM system. The proposal must clearly state the availability of data to inform the performance of the system, at the baseline state and after the implementation of the project. The project must assess time-dependent resilience by modelling the chosen metrics (e.g. robustness, redundancies) of the system.

Proposals may suggest activities towards:

1. Assessment of resilience
2. Design adaptations to enhanced resilience
3. Monitoring and evaluation mechanisms for resilience
4. Capacity building activities
5. Communication and dissemination

The scale or scope of the project is not defined. Proposals may target local, national or regional (South East Asia Region) systems. Only proposals led/contributed by organizations from South East Asia Region (SEAR) countries will be considered (Maldives, Sri Lanka, India, Nepal, Bhutan, Bangladesh, Myanmar, Thailand, Indonesia, Timor-Leste, Democratic People's Republic of Korea).

The proposals must contain the following:

1. The PSM challenge and its impact (actual and/or potential) in its specific setting/s.
2. The suggested solution with details of approaches and methods towards quantifiable enhancements of resilience, and contribution to value.
3. A suggested plan for implementation of suggested enhancements
4. A monitoring and evaluation framework to track current or future deployment of enhancements
5. A detailed budget
6. CVs of the PIs and other researchers involved in the project
7. A letter of your institution senior leadership supporting the research
8. Approval by a relevant local ethics review panel

Proposals by consortia or partnerships of several individuals/institutions are encouraged. Whilst the project must be implemented in one of the SEAR countries, proposals may seek partnership with institutions outside SEAR. Note that successful teams will be required to engage with the Call's advisory team for possible refinement of the proposal and possible partnership. Moreover, successful teams may benefit from analytical support, including data management, statistical analyses and interpretation by a dedicated statistician provided by the Call.

The advisory team for this Call includes:

1. Prof Paul Lalvani, Empower School of Health, India
2. Prof Andy Barraclough, Empower School of Health, India
3. Dr Sachin Jagtap, Empower School of Health, India
4. Prof Gilberto Montibeller, Loughborough University, UK
5. Prof Christopher Zobel, Virginia Tech, USA
6. Dr Cameron MacKenzie, Iowa State University, USA.

The Call will select 2 or 3 proposals. The maximum amount awarded will not exceed 49,999 USD/proposal. Proposals showing financial and/or in-kind contribution by the research team towards the delivery of the project will be given priority.

Application steps

Proposals must be submitted by the Lead Principal Investigator via email to Dr Sachin Jagtap from Empower School of Health (Sachin.jagtap@empowershcoolofhealth.org), and Victor Del Rio from WHO/SEARO (delriov@who.int)

Applications must be submitted in English

Selection

- Proposals will be reviewed by the advisory team.
- The selection of the projects by the panel is final.
- Time permitting, the panel will provide feedback to unsuccessful proposals.
- Selected projects are expected to start the work immediately
- Questions on this call may be directed to Dr Sachin Jagtap from Empower School of Health (Sachin.jagtap@empowershcoolofhealth.org) and Dr Victor Del Rio from WHO/SEARO (delriov@who.int)

Important dates

Publication of call	01 July 2021
Deadline for submission of proposals	**30 August 2021 @ 11.59 pm India Standard Time**
Notice of decision	15 September 2021
Expected project start date	1 November 2021
Project end date	30 April 2022

A selection of references of possible interest

1. Carland, C., Goentzel, J., Montibeller, G., 2018. Modeling the values of private sector agents in multi-echelon humanitarian supply chains. European Journal of Operational Research 269, 532–543. https://doi.org/10.1016/j.ejor.2018.02.010
2. Giahi, R., MacKenzie, C.A., Hu, C., 2020. Design optimization for resilience for risk-averse firms. Computers & Industrial Engineering 139, 106122. https://doi.org/10.1016/j.cie.2019.106122
3. Ivanov, D., Das, A., 2020. Coronavirus (COVID-19/SARS-CoV-2) and supply chain resilience: a research note. International Journal of Integrated Supply Management 13, 90. https://doi.org/10.1504/IJISM.2020.107780
4. MacKenzie, C.A., Hu, C., 2019. Decision making under uncertainty for design of resilient engineered systems. Reliability Engineering & System Safety, Complex Systems RAMS Optimization: Methods and Applications 192, 106171. https://doi.org/10.1016/j.ress.2018.05.020
5. Meara J.G., Leather A.J.M., Hagander L., et al., 2015. Global Surgery 2030: evidence and solutions for achieving health, welfare, and economic development. Lancet, 386: 569–624.DOI: 10.1016/S0140-6736(15)60160-X.
6. Montibeller, G., 2018. Behavioral Challenges in Policy Analysis with Conflicting Objectives, in: Recent Advances in Optimization and Modeling of Contemporary Problems, INFORMS TutORials in Operations Research. INFORMS, pp. 85–108. https://doi.org/10.1287/educ.2018.0182
7. Queiroz, M.M., Ivanov, D., Dolgui, A., Fosso Wamba, S., 2020. Impacts of epidemic outbreaks on supply chains: mapping a research agenda amid the COVID-19 pandemic through a structured literature review. Ann Oper Res. https://doi.org/10.1007/s10479-020-03685-7