## POH 114: SYSTEMS THINKING IN PANDEMIC PREPAREDNESS AND RESPONSE

**Module Overview**

In this topic, learners should be introduced to Systems Thinking, Why Use Systems Thinking, Health Systems Applications: Health Systems Frameworks and the Problem of Implementation, Pathways: The Problem of Scaling Up, Where Systems Thinking Helps: Understanding the Types of Problems, Theories, Methods, and Tool, Systems Thinking in Practice - Understanding and Engaging with Stakeholders, Network Analysis, Participatory Impact Pathways Analysis, and Summary. [System Conceptualization and Mapping](https://www.coursera.org/lecture/systems-thinking/video-system-conceptualization-and-mapping-Zu69s), Basic Components, Causal Loop Diagrams: Sources of Data, Strengths, and Weaknesses. Using Stock and Flow Principles for Simulation, Advancing the application of systems thinking with the One Health Approach

**Mode of Delivery**

This includes lectures: problem-based learning using interactive tutorials, small group discussions and written assignments, plenary presentations; case studies, experiential learning through independent/reflective study and field visits and placements; and online peer discussions using video clips and conferencing

**Instructional Materials and/or Equipment**

*Materials:* Lecture notes and slides, video clips, Handouts, case studies, Reference materials (textbooks, journals, policy document-guidelines), institutional placements and field visits

*Equipment:* LCD projectors, laptops, white board, Markers and flipcharts, LCD, printers, internet access for e-resources

**Core Reference Materials**

1. Bradley, D. T., Mansouria, M. A., Kee, F., & Garcia, L. M. T. (2020). A systems approach to preventing and responding to COVID-19. EClinicalMedicine.
2. Brown, G., Reeders, D., Cogle, A., Madden, A., Kim, J., & O'Donnell, D. (2018). A systems thinking approach to understanding and demonstrating the role of peer-led programs and leadership in the response to HIV and hepatitis C: Findings from the W3 project. *Frontiers in Public Health*, *6*, 231.
3. Chakraborty I, Maity P. COVID-19 outbreak: Migration, effects on society, global environment and prevention. Sci Total Environ. 2020 Aug 1;728:138882. doi: 10.1016/j.scitotenv.2020.138882. Epub 2020 Apr 22. PMID: 32335410; PMCID: PMC7175860.

**Recommended Reference Materials**

1. Maani, K. E., & Cavana, R. Y. (2000). *Systems thinking and modelling: Understanding change and complexity*. Prentice hall.
2. Dickey, C., Holzman, E., Bedford, J., Manoncourt, E., Shirky, C., Petit, V., ... & Obregon, R. (2021). Behavioral communication strategies for global epidemics: An Innovative model for public health education and humanitarian response. *Health promotion practice*, *22*(4), 448-452.
3. World Health Organization. (2020). *Global surveillance for COVID-19 disease caused by human infection with novel coronavirus (COVID-19): interim guidance, 27 February 2020* (No. WHO/2019-nCoV/SurveillanceGuidance/2020.4). World Health Organization.
4. Patiño-Lugo, D. F., Vélez, M., Velásquez Salazar, P., Vera-Giraldo, C. Y., Vélez, V., Marín, I. C., ... & Henandez, G. (2020). Non-pharmaceutical interventions for containment, mitigation and suppression of COVID-19 infection. *Colombia Medica*, *51*(2). (<https://colombiamedica.univalle.edu.co/index.php/comedica/article/view/426/4771>)
5. Meadows, D. H. (2008). *Thinking in systems: A primer*. chelsea green publishing.