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## CONFERENCE ABSTRACT

# The DYNAMO Initiative – Improving health system resilience through dynamic modelling of integrated health and care pathways in response to systemic shocks.

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**Background:** Unexpected systemic shocks such as pandemics or natural disasters challenge the absorptive capacity of health and care systems to maintain adequate service levels.[1] Strategies have focused on better coordination between services, with multi-disciplinary care pathways being one instrument to achieve coordinated responses.[2] But the co-design process for this type of pathways tends to be too long and involved for fast response required by crises.

**Targeted community and stakeholder engagement:** Health and care service planners and providers, service payers, public health and civil protection agencies as well as regional and municipal governments are affected by this problem. They need methods and tools to support ad-hoc design and instantiation of cross-sectoral pathways to address different types of crises. The DYNAMO initiative has brought together an initial group of stakeholders from five countries to start a multi-staged co-design programme that will also include further stakeholders.

**Explanation of the initiative:** DYNAMO will develop an innovative software tool enabling stakeholders to jointly adapt existing service delivery processes to systemic shocks and structural changes. This includes sharing and integrating cross-sectoral data to accurately forecast possible outcomes and impacts of alternative pathway configurations. By means of a public tendering process, the participating care providers are developing the software package together with commercial technology providers. Up to now, local pathway modelling groups have been set up at each site. These have identified several "high pressure" service scenarios (e.g. future pandemics widespread internet/power outages, recurrent heat waves). For each scenario, alternative pressure points were identified that could have a notable impact on the performance of current health and care systems (e.g. resource or staff shortages). In the next project phase, several technology providers will be selected to co-develop prototype solutions that meet the requirements of the "high-pressure" service scenarios.

**Achieved and expected impacts:** The definition of the high pressure scenarios and associated pressure points are a first outcome and showed that priorities for disaster readiness vary considerably between regions. With the software tools and methodologies to be developed, DYNAMO expects to significantly improve the response time and quality of health care ecosystems to a wide variety of systemic threats.

**Learnings for an international audience:** DYNAMO is in its early stages and there are as yet no formalized learnings. Experiences and observations shared between projects participants however highlighted two key issues: 1) Responses to universal threats still happen in a haphazard and uncoordinated manner and awareness of the precise issue of multi-disciplinary pathways to respond to such threats is still too low. 2) While DYNAMO focusses on the development of a software tool, there is agreement among participating regions that this needs to be embedded into a regional cooperation culture and structure (a kind of “readiness community”) in order to achieve its intended impacts.

[1] Adger WN, Brown K, Fairbrass J. et al. Governance for sustainability: towards a ‘thick’ analysis of environmental decision making. *Environ Plan A*. 2003;35(6):1095–1110. doi: 10.1068/A35289.

[2] Lewis, L. and N. Ehrenberg (2020). Realising the true value of integrated care: Beyond COVID-19. <https://integratedcarefoundation.org/publications/realising-the-true-value-of-integrated-care-beyond-covid-19-2#report>