

RESEARCH TOPIC PRIMES
**Innovative tools for Future Health Systems within Personalized Care and Precision
Medicine Scenario**

Thematic field of the project

General and Applied Hygiene -MEDS 24/B – Public health – Hospital design

Research Supervisor

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Main facility

Politecnico di Milano
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Main field of interest

Patient-centric Innovation for Sustainable and Equitable Healthcare.

Abstract

In a scenario of personalised care, precision medicine, innovative diagnostic tools, data analysis and cutting-edge technology, health systems and settings are undergoing a process of disruptive transformation. A new generation of healthcare leaders and innovator must tackle these challenges for rethinking the physical settings that host it.

Starting from clinical, organisational, management processes and volumes of healthcare activity, the research will focus on the identification, analysis and testing of quantitative drivers and qualitative KPIs to support the dimensioning of hospital settings within a new era of personalized care, precision medicine paths and innovation in medicine and engineering. The study of clinical processes and applied medical science interventions will contribute to the development of new tools to support health physical models, technologies, devices and/or systems innovation.

The research is characterized by multidisciplinary and international vocation.

Main technical approaches

Systematic Literature Review

Best Practices Analysis

Survey and/or interviews developments

Scientific references

- Capolongo S, Gola M, Brambilla A, Morganti A, Mosca EI, Barach P. COVID-19 and Healthcare Facilities: a Decalogue of Design Strategies for Resilient Hospitals. *Acta Bio Medica Atenei Parmensis*. 2020;91(9-S): 50–60. <https://doi.org/10.23750/abm.v91i9-S.10117>
- Azzopardi-Muscat N, Brambilla A, Caracci F, Capolongo S. Synergies in Design and Health. The role of architects and urban health planners in tackling key contemporary public health challenges. *Acta Bio Medica Atenei Parmensis*. 2020;91(3-S): 9–20. <https://doi.org/10.23750/abm.v91i3-S.9414>.
- Gola M, Brambilla A, Barach P, Signorelli C, Capolongo S. Educational Challenges in Healthcare Design: Training Multidisciplinary Professionals for Future Hospitals and Healthcare. *Annali Di Igiene: Medicina Preventiva E Di Comunita*. 2020;32(5): 549–566. <https://doi.org/10.7416/ai.2020.2375>.
- Brambilla A, Sun T, Elshazly W, Ghazy A, Barach P, Lindahl G. Flexibility during the COVID-19 Pandemic Response: Healthcare Facility Assessment Tools for Resilient Evaluation. *Int. J. Environ. Res. Public Health*. 2021;18(11478). <https://doi.org/10.3390/ijerph182111478>
- World Health Organization. Hospitals of the future: a technical brief on re-thinking the architecture of hospitals. Copenhagen: WHO Regional Office for Europe; 2023. Licence: CC BY-NC-SA 3.0 IGO. Available online at <https://www.who.int/europe/publications/i/item/WHO-EURO-2023-7525-47292-69380>

Type of contract

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