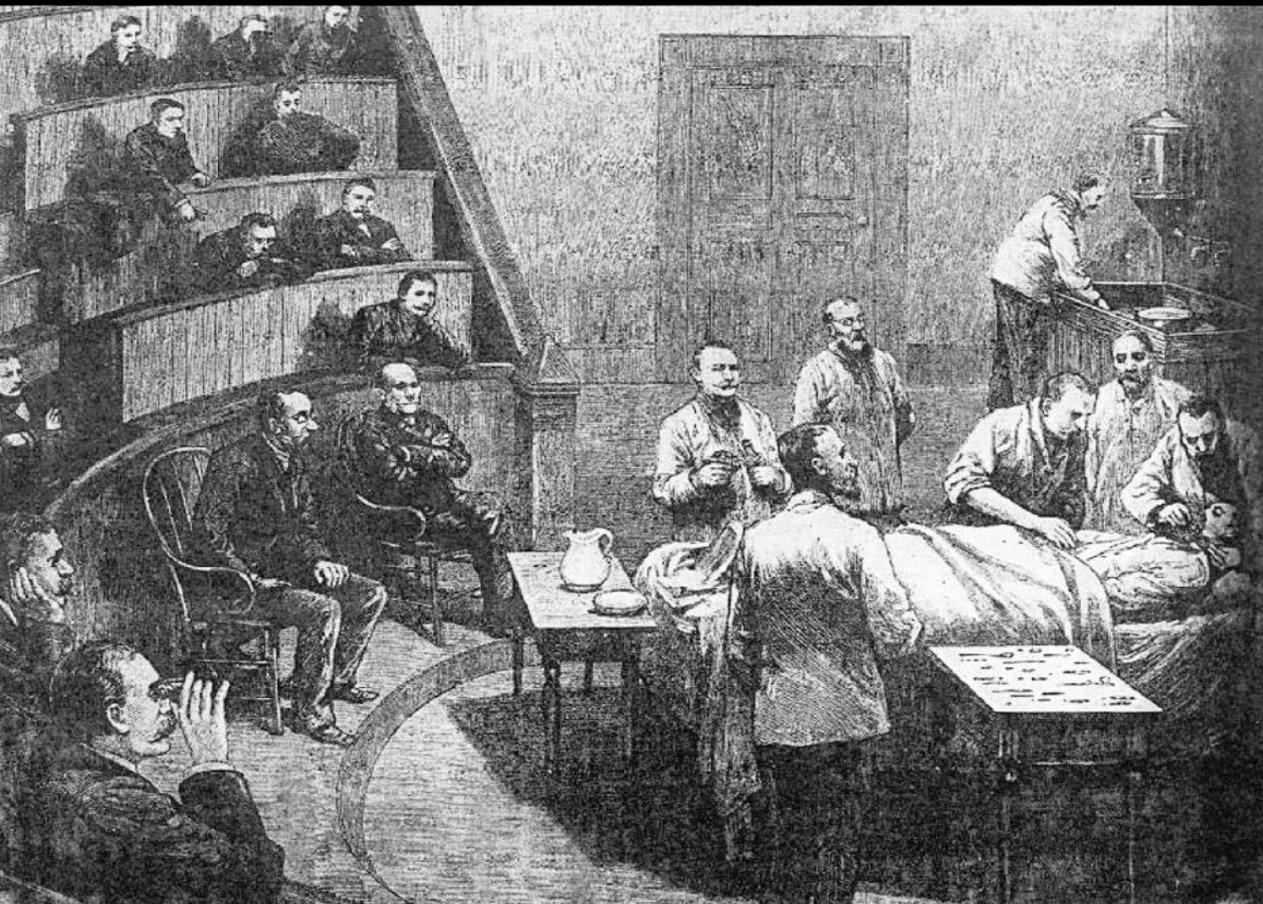


# Planning for Change in an Era of Digital Transformation

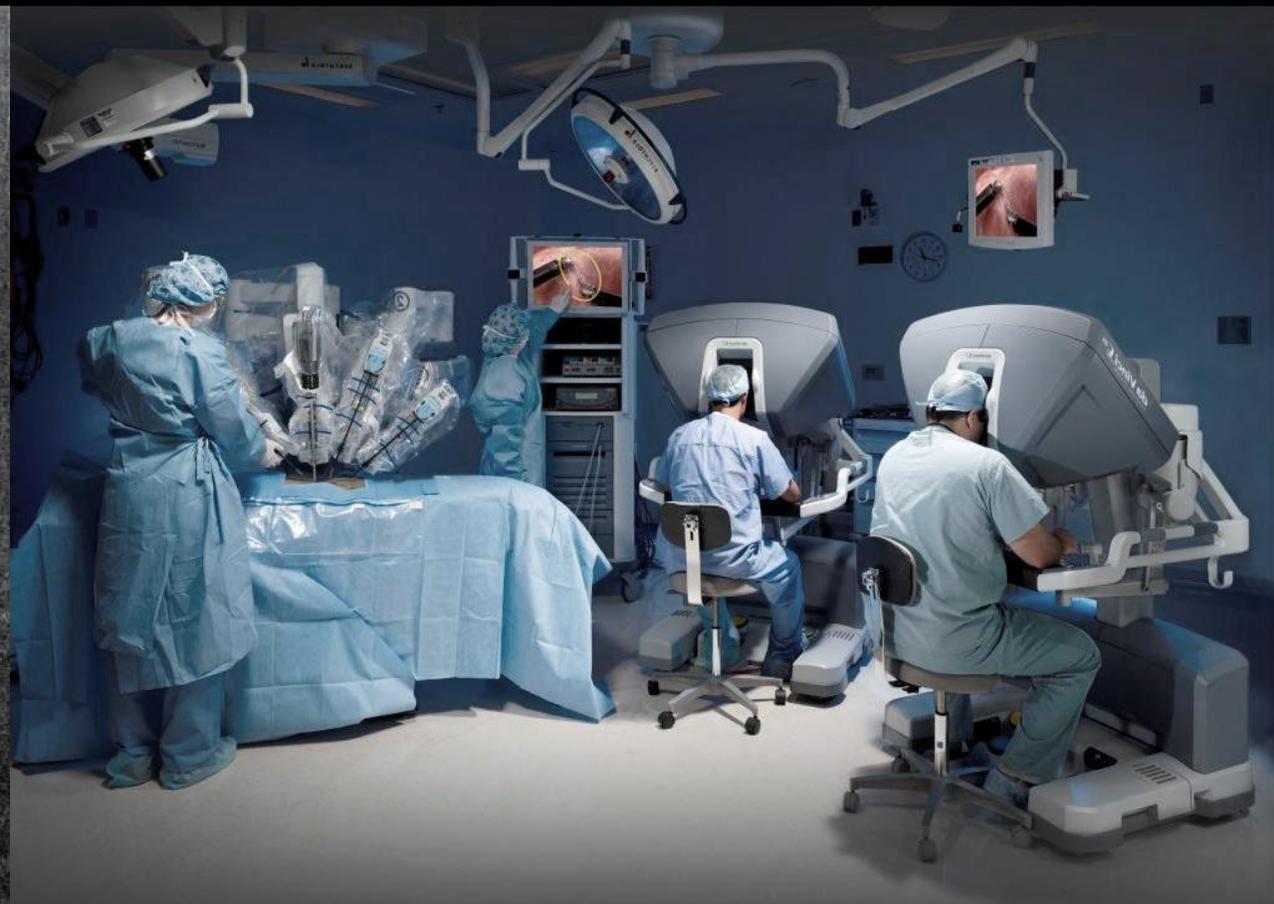
**Dr. Nirit Pilosof**

Associate of Cambridge Judge Business School (CJBS), University of Cambridge, UK  
Head of Research in Innovation & Transformation, Sheba Medical Centre, Israel  
Faculty member of Collier School of Management, Tel Aviv University, Israel

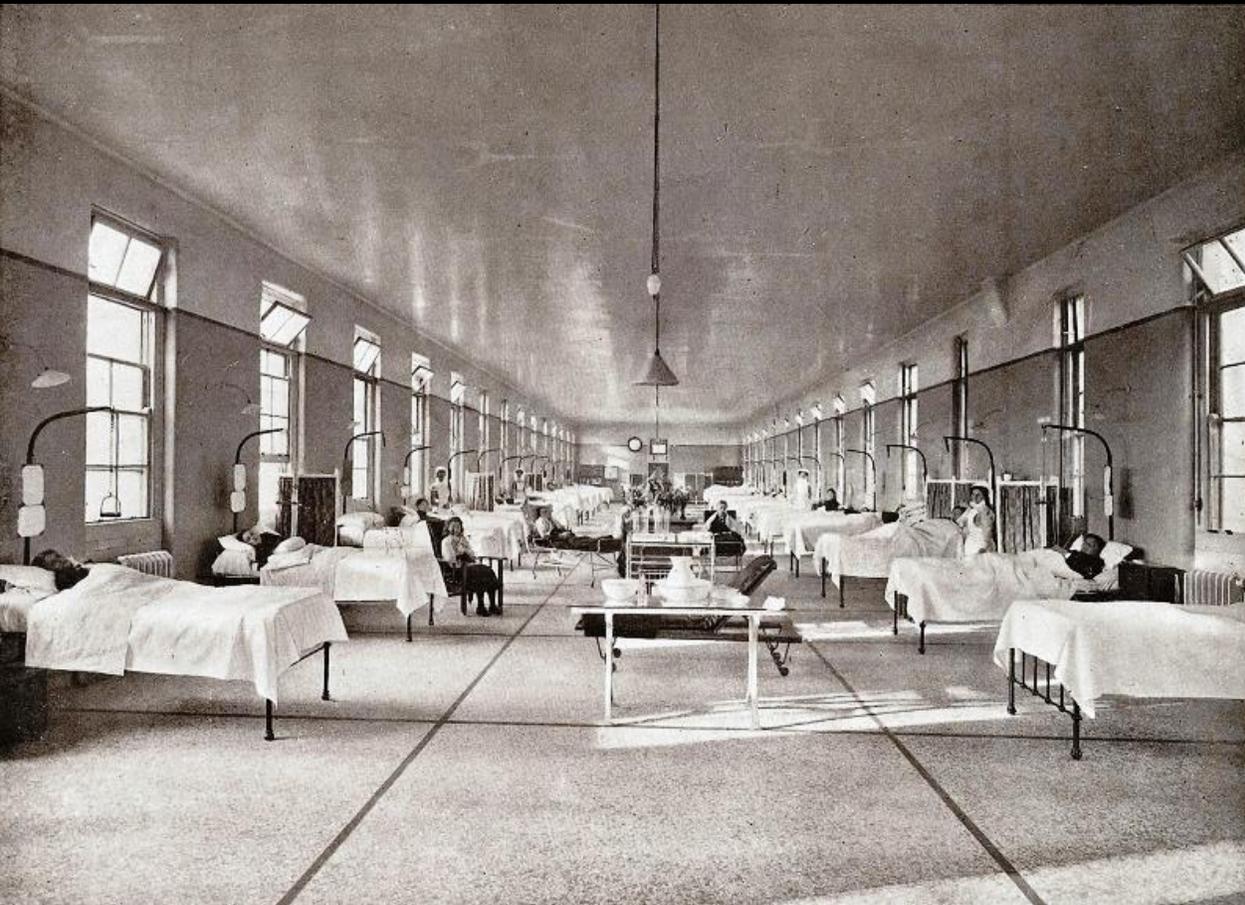
# Planning for Change



Surgical Amphitheater, 1890



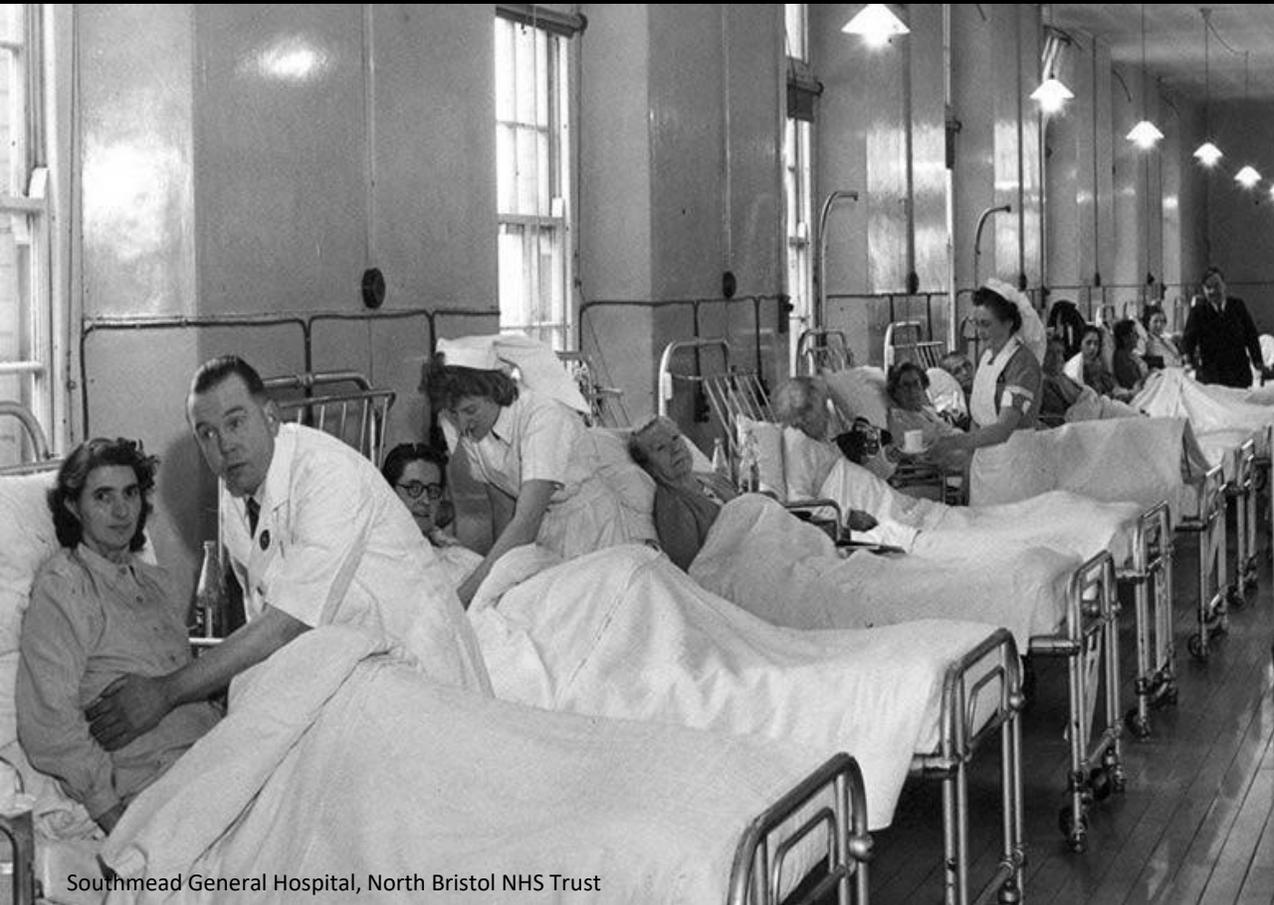
De Vinci Robotic Surgical System, 2010



Nightingale Ward, 1940



Private Patient Room, 2000



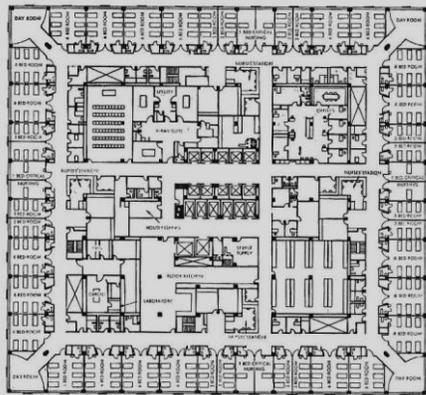
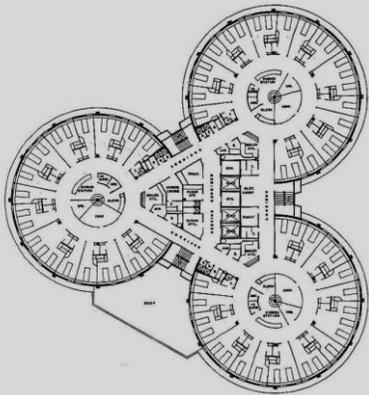
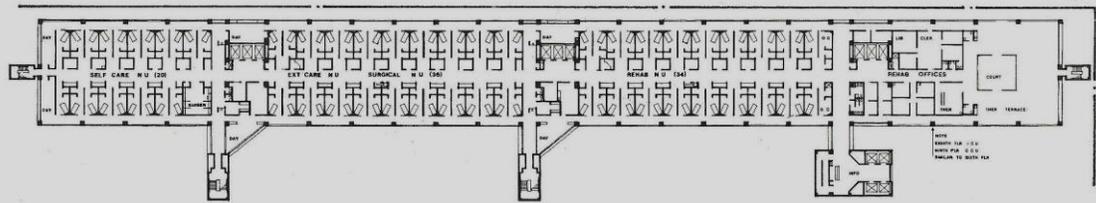
Southmead General Hospital, North Bristol NHS Trust

Process Centered Care, 1950



Nickl & Partner Competition Proposal For Hauner's Children's Hospital in Munich

Human Centered Care, 2010



Typical modern hospital layouts

Disease Treatment, 1960



NØRR office and cultural center for health and well-being in Paris' Saint-Denis, Henning Larsen Architects

Health Promotion, 2020



McMaster Health Sciences Centre, Hamilton, Ontario, Canada, Zeidler Architects

Central Mega Hospitals, 1970

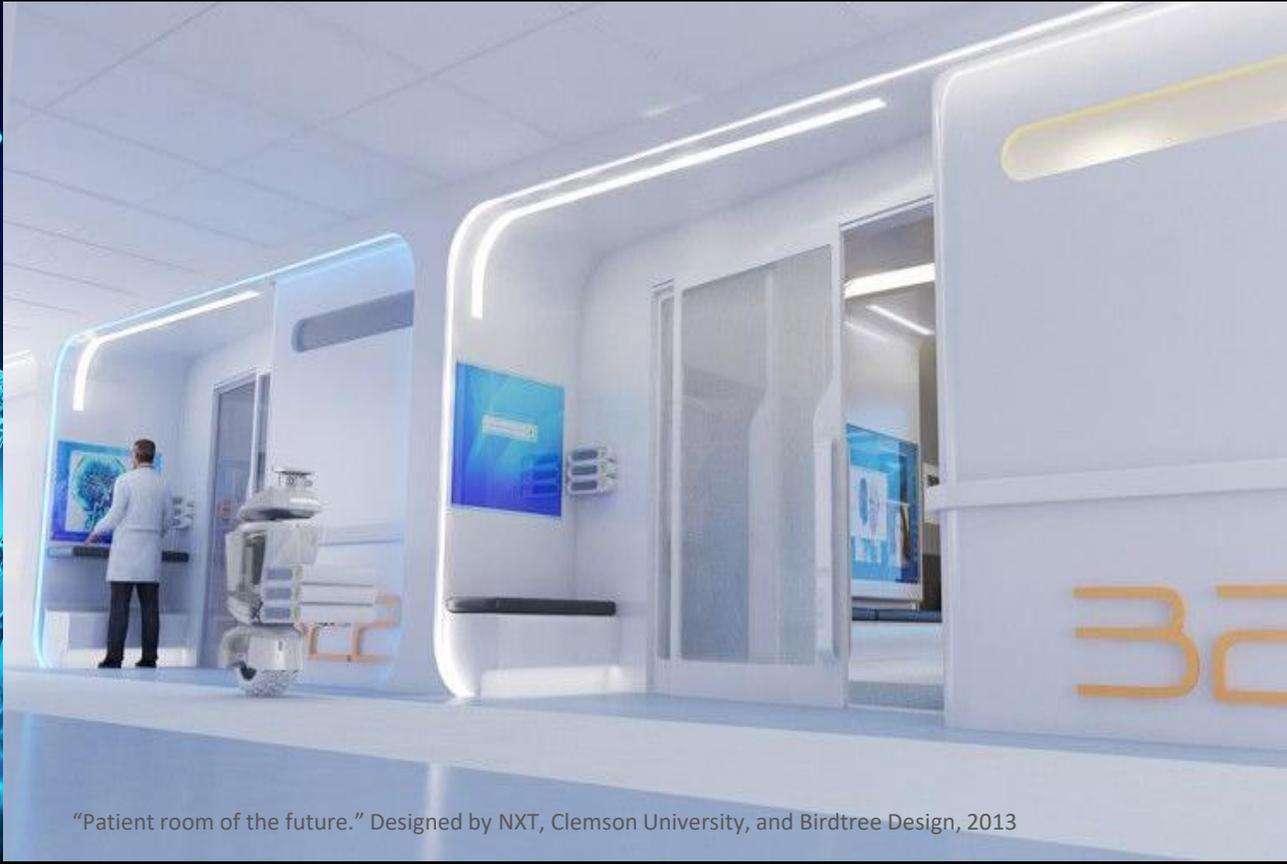


Center for Cancer and Health in Copenhagen, NORD Architects

Community Healthcare Centers, 2010



Predictive and Personalized Medicine, 2000



Smart Hospital Design, 2010

"Topol is one of medicine's most innovative thinkers about the digital future. . . . A valuable contribution to a fascinating subject."  
—*New York Times Book Review*

Eric Topol

# THE PATIENT WILL SEE YOU NOW

The **FUTURE** of **MEDICINE**  
IS in **YOUR HANDS**

WITH A NEW EPILOGUE

The patient as consumer, 2015

Copyrighted Material

## HEALTH CARE WITHOUT WALLS

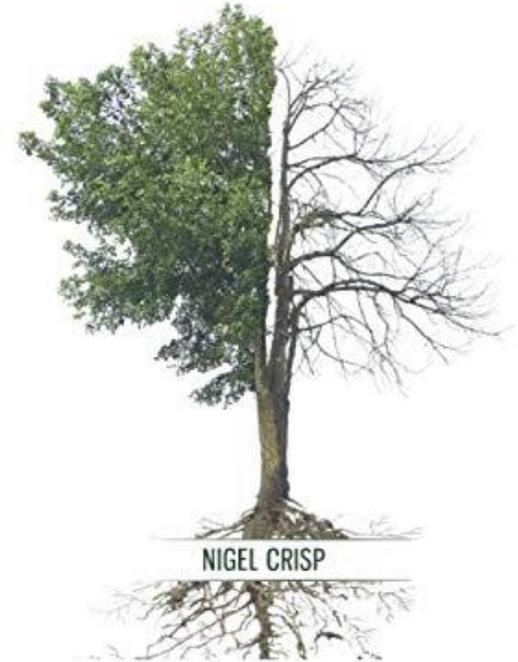
A Roadmap for Reinventing  
U.S. Health Care



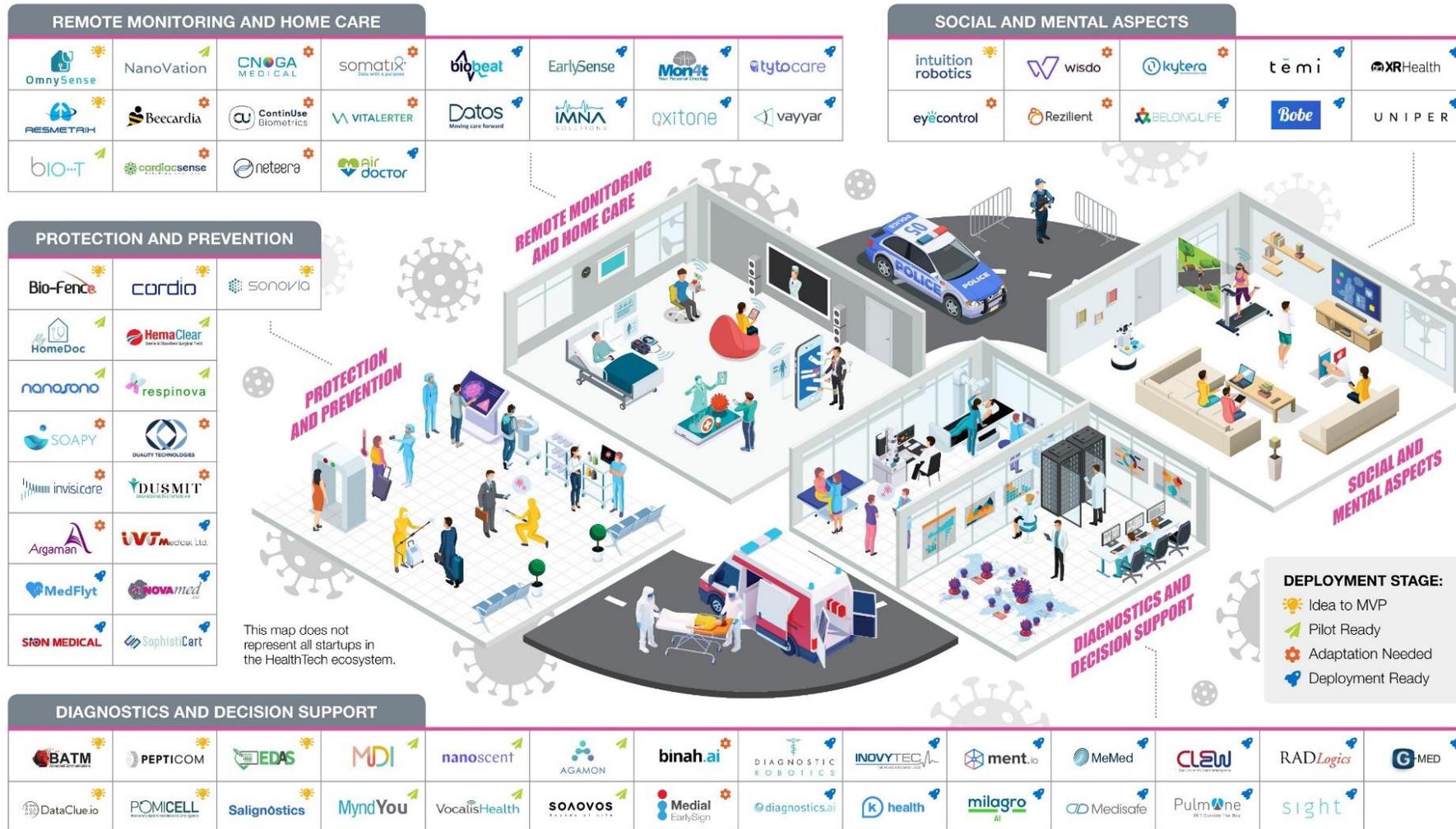
NEHI Network for Excellence  
in Health Innovation

Digital Health and Remote Care, 2020

**HEALTH IS MADE AT HOME** | **HOSPITALS ARE FOR REPAIRS**  
BUILDING A HEALTHY AND HEALTH-CREATING SOCIETY



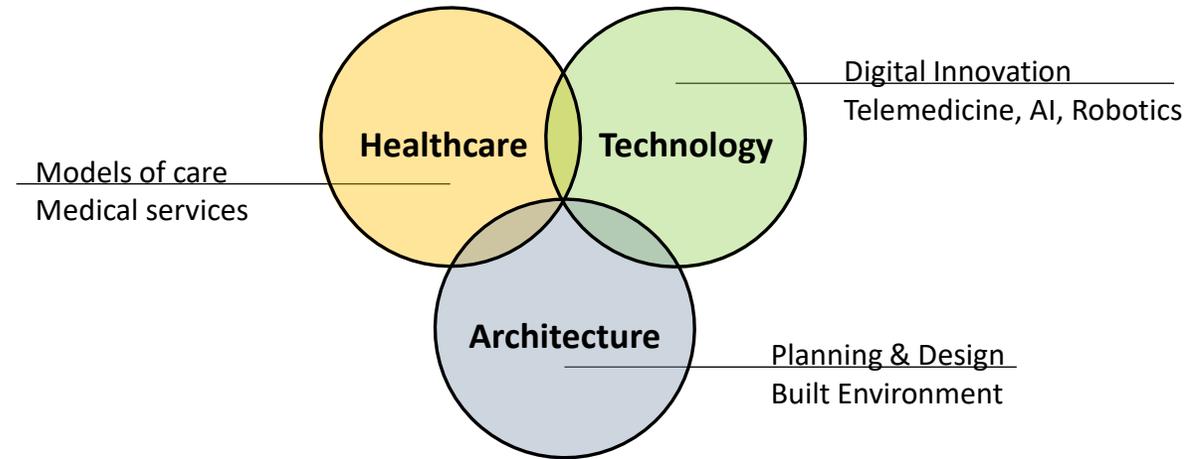
NIGEL CRISP



Healthcare innovation in Israel: HealthTech countering COVID-19, Start-Up National Central and HealthIL, 2020

# Smart Hospital of the Future

Digital Technologies, Service Innovation, and Hospital Design



# Study of Sheba MC in Collaboration with the University of Cambridge

Newsweek Declares:

**For the 4th Consecutive Year!**

**Sheba is a Top 10  
World's Best Hospital**

 SHEBA  
Tel HaShomer  
City of Health

 **WORLD'S  
BEST  
HOSPITALS** 2019-2022  
Newsweek  
STATISTA

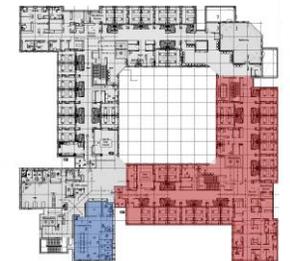


- Sheba MC 200-acre campus
- 1900 beds (+500 for COVID-19)
- 160 medical departments and clinics
- 75 laboratories

# New Model of Inpatient Telemedicine in the COVID-19 units



COVID-19 Intensive Care Unit



COVID-19 Internal Medicine Unit

-  Clean control room
-  Contaminated zone

# Remote Care by Telemedicine Technologies and Robots

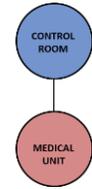
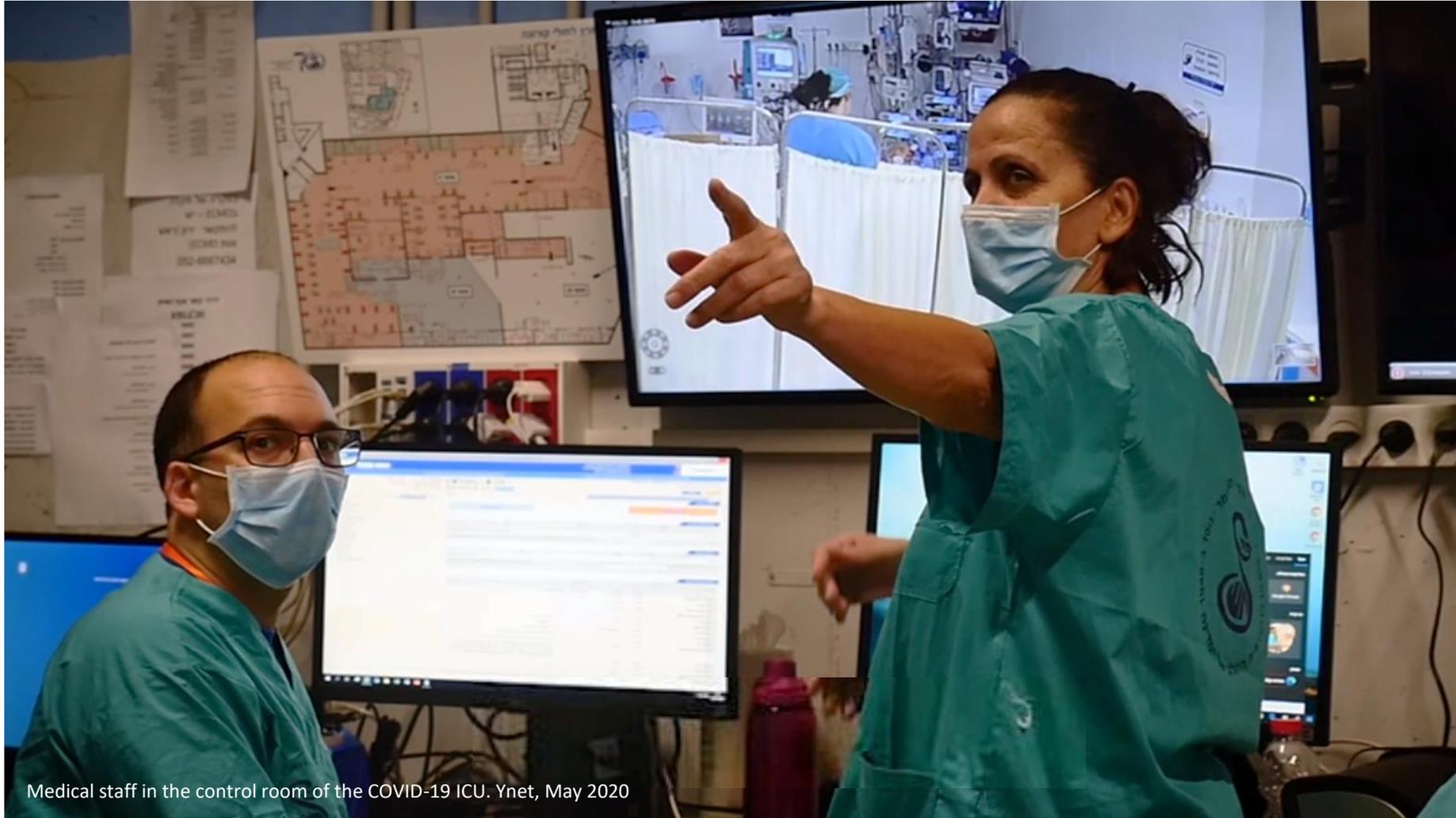


The director of COVID ICU communicating with the staff from the control room. Dan Balilty for The New York Times, May 2020

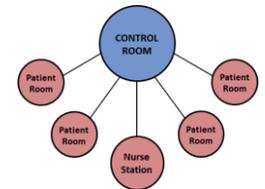


Intouch Telepresence Robot

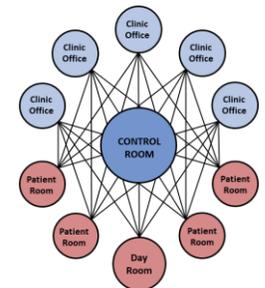
# Managing Operational and Spatial Complexity



COVID-19 Intensive Care Unit



COVID-19 Internal Medicine Unit



COVID-19 Mental Health Unit

-  Clean control room
-  Contaminated zone

# Development of a Virtual Hospital



*Delivery of Healthcare BEYOND the boundaries of Space and Time*



Home Hospitalization



Rehabilitation



Online Consultation



Online Clinics



Medication Consultation



Courses and instructions

## Hybrid Models of Hospitalization

Managing 'Physical beds' alongside

'Virtual beds' for continuity of care

Collaboration of physicians in the hospital  
with nursing services in the community

- *Internal Medicine @ Home*
- *COVID-19 care @ Home*
- *Psychiatric care @ Home*
- *Pediatric care @ Home*
- *Chronic Care @ Home*

# New Hybrid Models of Care

## Modes of Delivery

		PHYSICAL	VIRTUAL
Location	HOSPITAL	1 Inpatient Hospitalization	2 Inpatient Telemedicine
	HOME	3 Home Hospitalization	4 Tele-Home Hospitalization

1



2



3



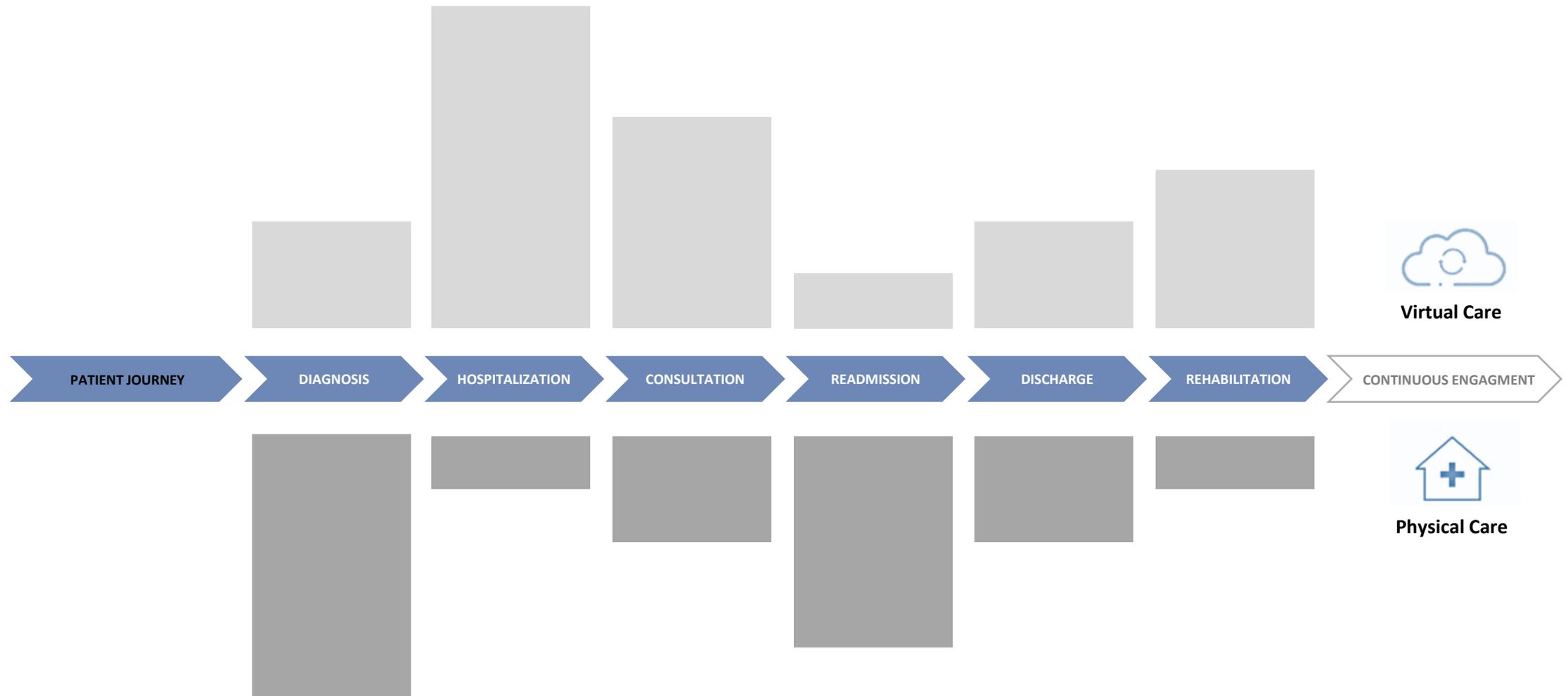
4



# The Patient Journey



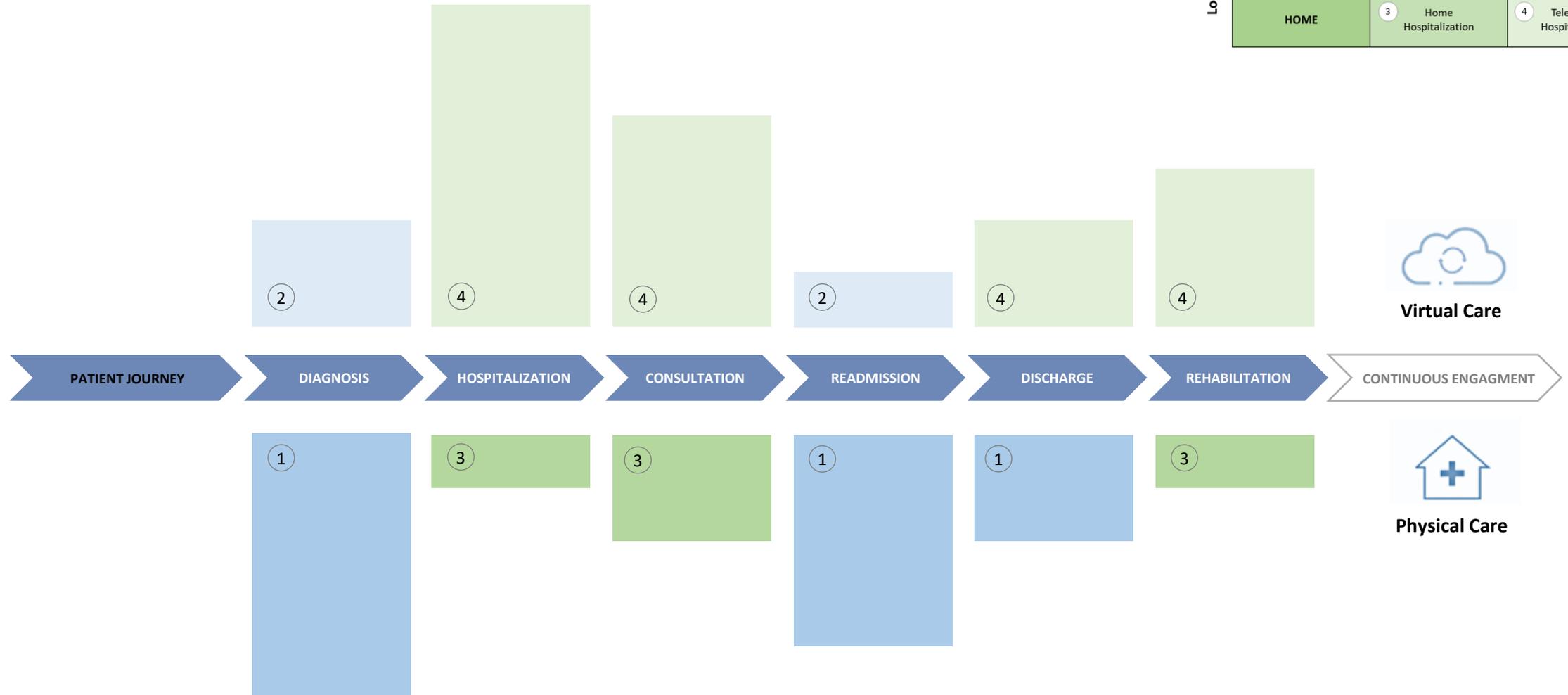
# The Patient Journey across Physical and Virtual Care



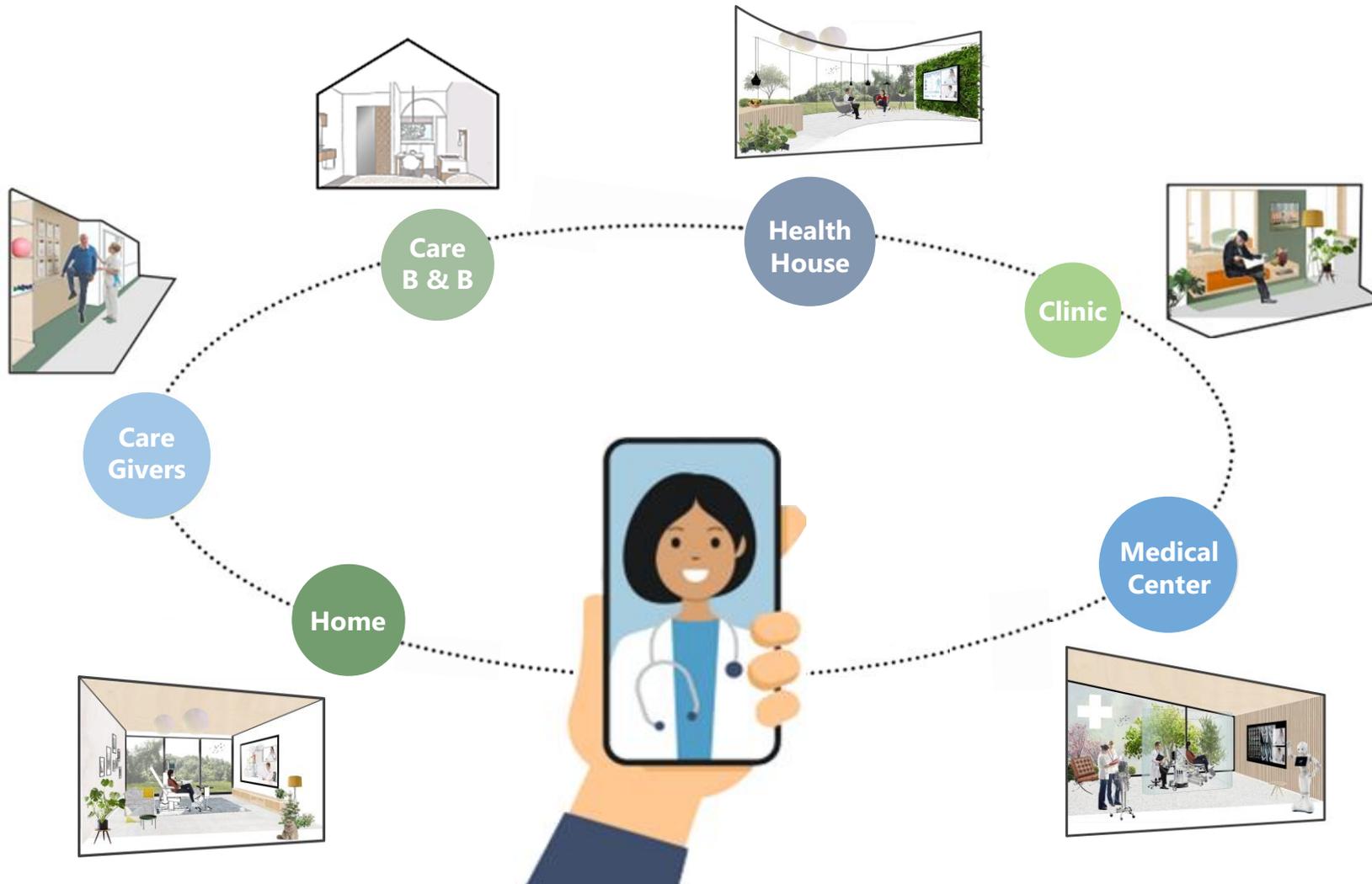
# The Patient Journey across Hybrid Models of Care

Modes of Delivery

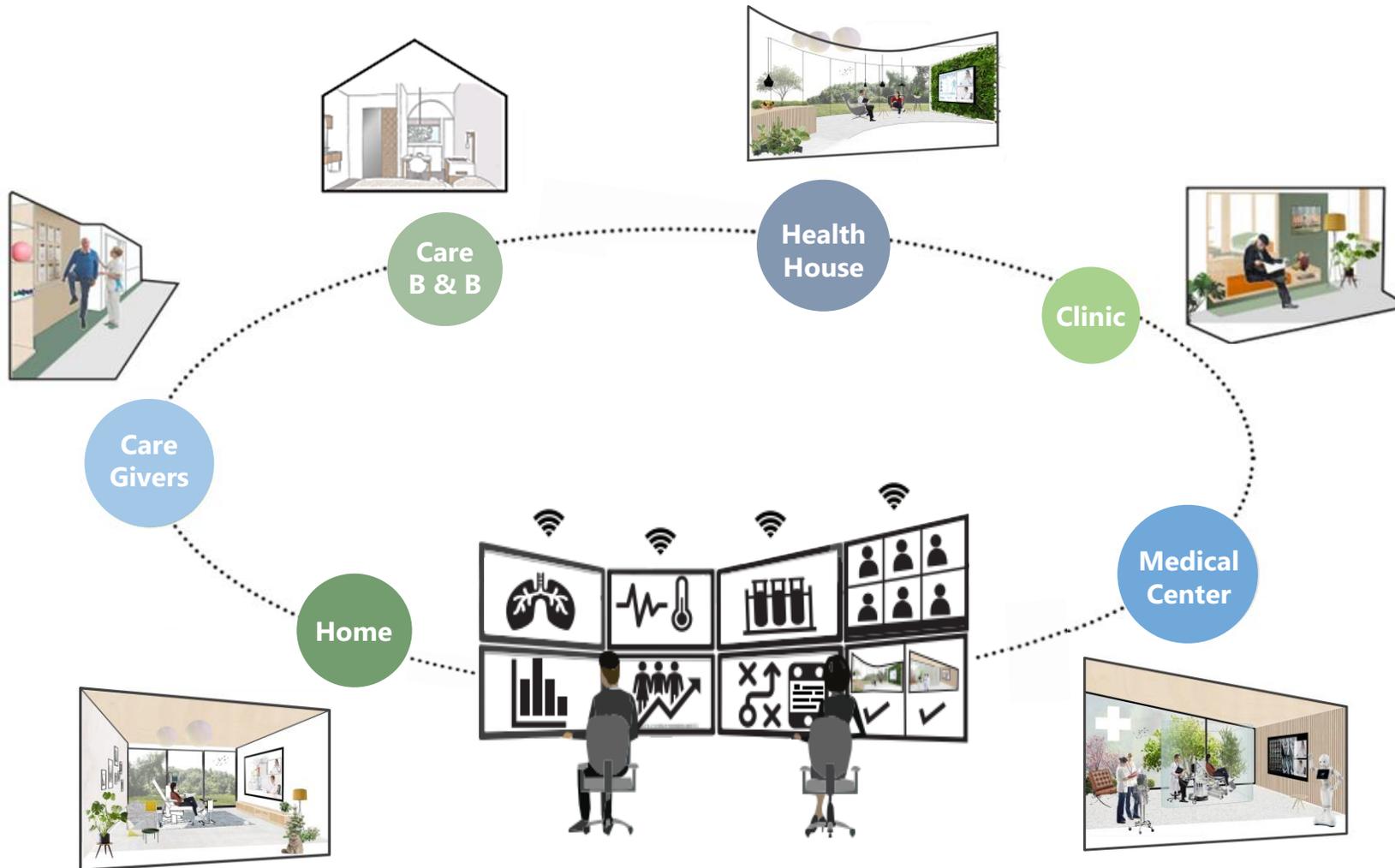
	PHYSICAL	VIRTUAL
HOSPITAL	1 Inpatient Hospitalization	2 Inpatient Telemedicine
HOME	3 Home Hospitalization	4 Tele-Home Hospitalization



# Patient-centered Design: navigating physical and virtual environments



# System-centered Design: optimizing healthcare services



*Care @ Home*

*Care @ Community*

*Care @ Medical Center*

*Health  
Promotion,  
Rehabilitation*



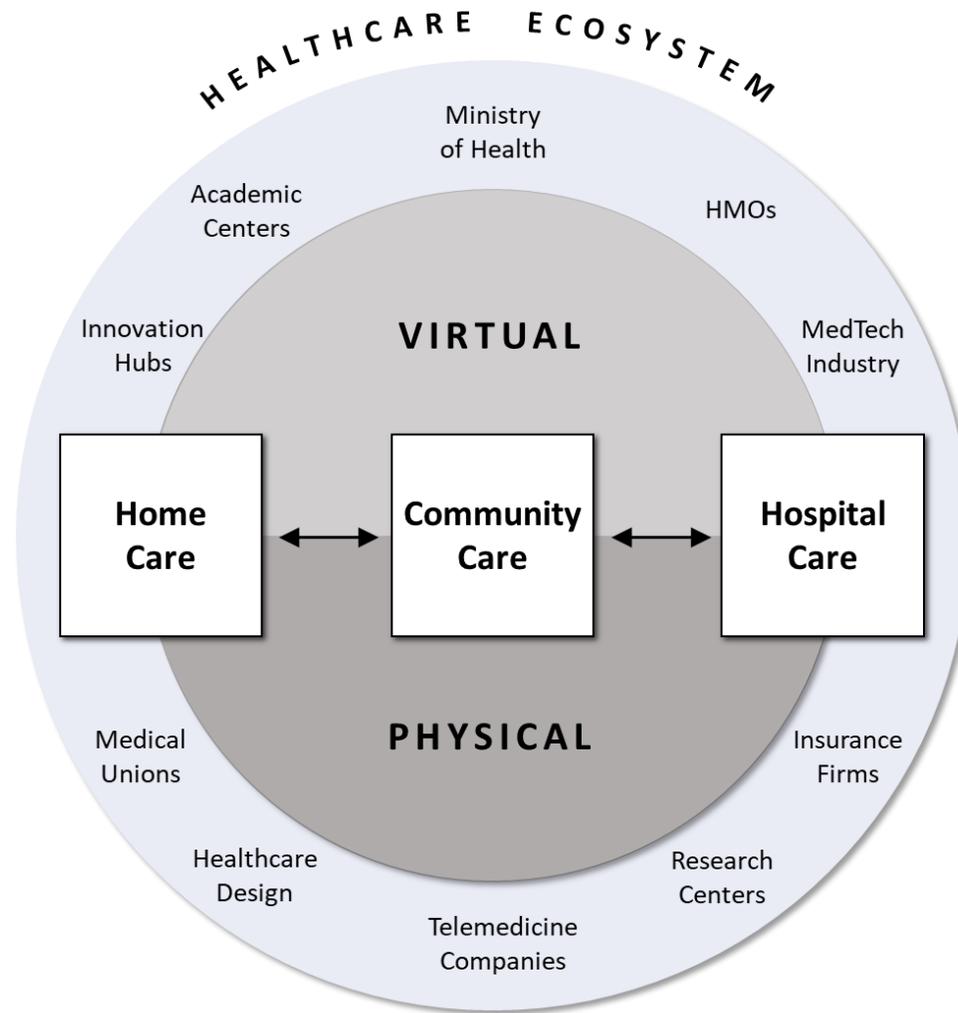
*Consultation,  
Monitoring,  
Diagnostics*



*Medical  
and Nursing  
Treatment*



# Collaboration across the Healthcare Ecosystem



# Planning for Change in an Era of Digital Transformation

- Design for flexibility on multiple levels
- Resilience was enhanced by digital technologies
- Inpatient telemedicine holds value beyond COVID-19
- Potential to develop hybrid models of virtual and physical care
- Opportunity to transform hospitals as part of the healthcare ecosystem

# Publications

Pilosof N. P., Oborn, E., Barrett, M. (2022). Future Cities Healthcare Ecosystems: Building Resilience through Hybrid Care Models across Physical and Virtual Environments. *Future Cities – City Futures: Emerging Voices for the [(Post-)Pandemic] City*.

Pilosof N. P., Barrett, M., Oborn, E., Barkai, G., Zimlichman, E., Caspi, A. (2022). Telemedicine for Inpatient Psychiatric Care: Remote Care in a COVID-19 Mental Health Unit. ARCH22 'Enabling health, care and well-being through design research' 2022.  
<https://doi.org/10.24404/622fc1031994d67c6891933d>

Pilosof, N. P., Barrett, M., Oborn, E., Barkai, G., Pessach, I. M., & Zimlichman, E. (2021). Inpatient Telemedicine and New Models of Care during COVID-19: Hospital Design Strategies to Enhance Patient and Staff Safety. *International Journal of Environmental Research and Public Health* 2021, Vol. 18, Page 8391, 18(16), 8391. <https://doi.org/10.3390/IJERPH18168391>

Pilosof, N. P., Barrett, M., Oborn, E., Barkai, G., Pessach, I. M., & Zimlichman, E. (2021). Telemedicine Implementation in COVID-19 ICU: Balancing Physical and Virtual Forms of Visibility. *Health Environments Research and Design Journal*, 14(3), 34–48. <https://doi.org/10.1177/19375867211009225>

Pilosof, N. P., & Grobman, Y. J. (2021). Evidence-Based Design in Architectural Education: Designing the First Maggie's Centre in Israel. *Health Environments Research and Design Journal*. <https://doi.org/10.1177/19375867211007945>

Pilosof, N. P. (2021). Building for Change: Comparative Case Study of Hospital Architecture. *HERD: Health Environments Research & Design Journal*, 14(1), 47–60. <https://doi.org/10.1177/1937586720927026>

Pilosof, N. P. (2018). The Evolution of a Hospital Planned for Change. *Healthcare Architecture as Built Infrastructure: Stability and Change*. Kendall, S. H. Editor. Routledge, New York. <http://doi.org/10.4324/9781351256407-6>

Pilosof, N. P. (2005). Planning for Change: Hospital Design Theories in Practice. *The AIA Academy of Architecture for Health (AAH) Journal*, 8, 13-20.  
<https://www.researchgate.net/publication/298353217> Planning for Change Hospital Design Theories in Practice



Thank You



PUBLIC HEALTH GROUP



2022 UIA YEAR OF DESIGN FOR HEALTH