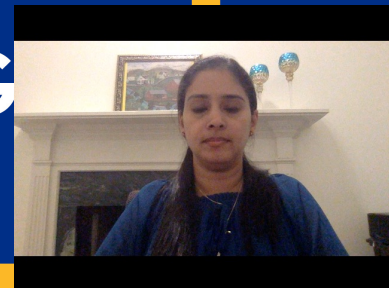




informatics ANNUAL MEETING

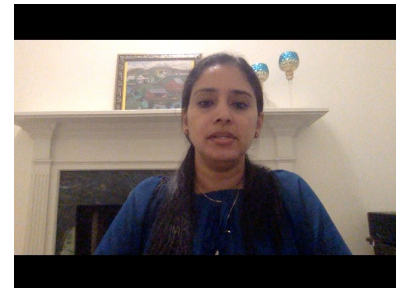
2021 ANAHEIM, CALIFORNIA





An Overview Of Synergistic Organizational Resources In Algorithm- enabled Virtual Patient Care

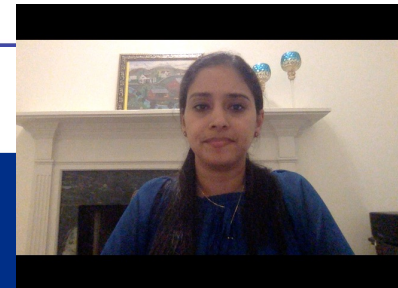
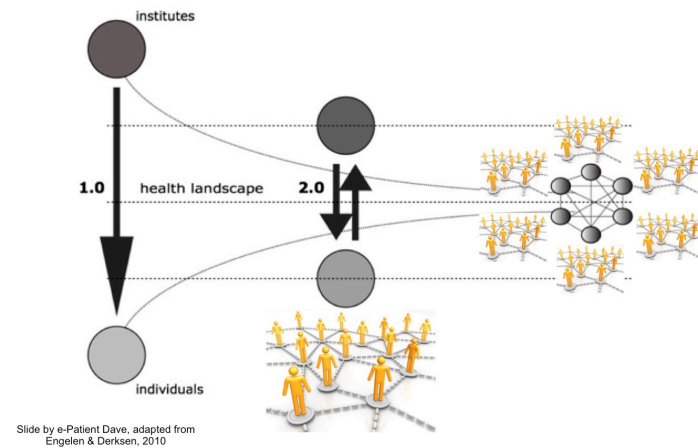
Dr. Amrita George, Dr. Lilly Campbell, Dr. Shion Guha.



Healthcare 1.0, 2.0, 3.0

- Health 1.0
 - Closed system
 - One-way flow of knowledge and skills from institution to individuals
- Health 2.0
 - Smarter patient
 - Individuals receive and contribute
- Health 3.0
 - Interconnected patient
 - Join forces with institutions to enrich what is possible for each
- Health 4.0
 - Participatory machine learning framework
 - Patient centric workflow

REshape Center
Radboudumc



Role of AI in Healthcare

Early detection
of ailments



Help in
treatment



Associated Care



Checking health
through Wearable

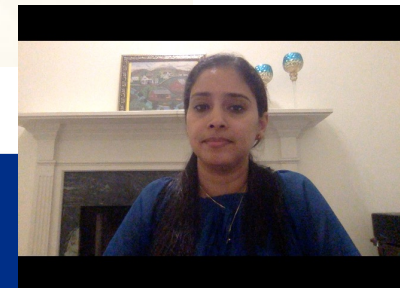


Improve
decision making

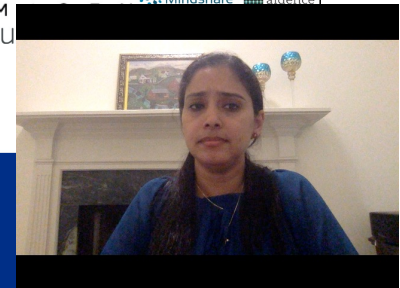
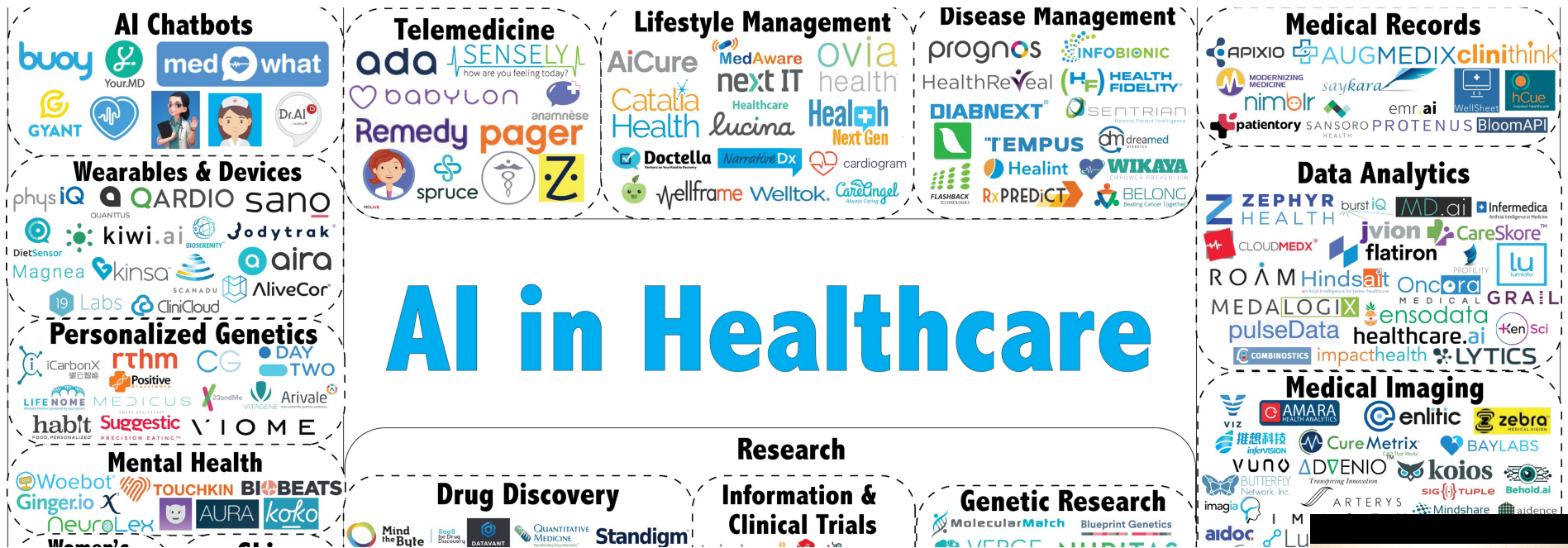
Expanded access to
Medical Services

Giving a
superior experience

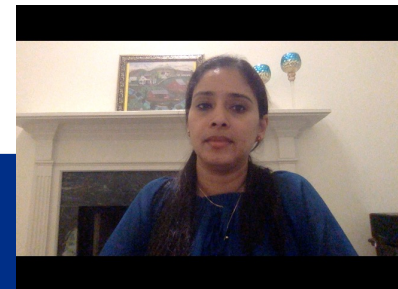
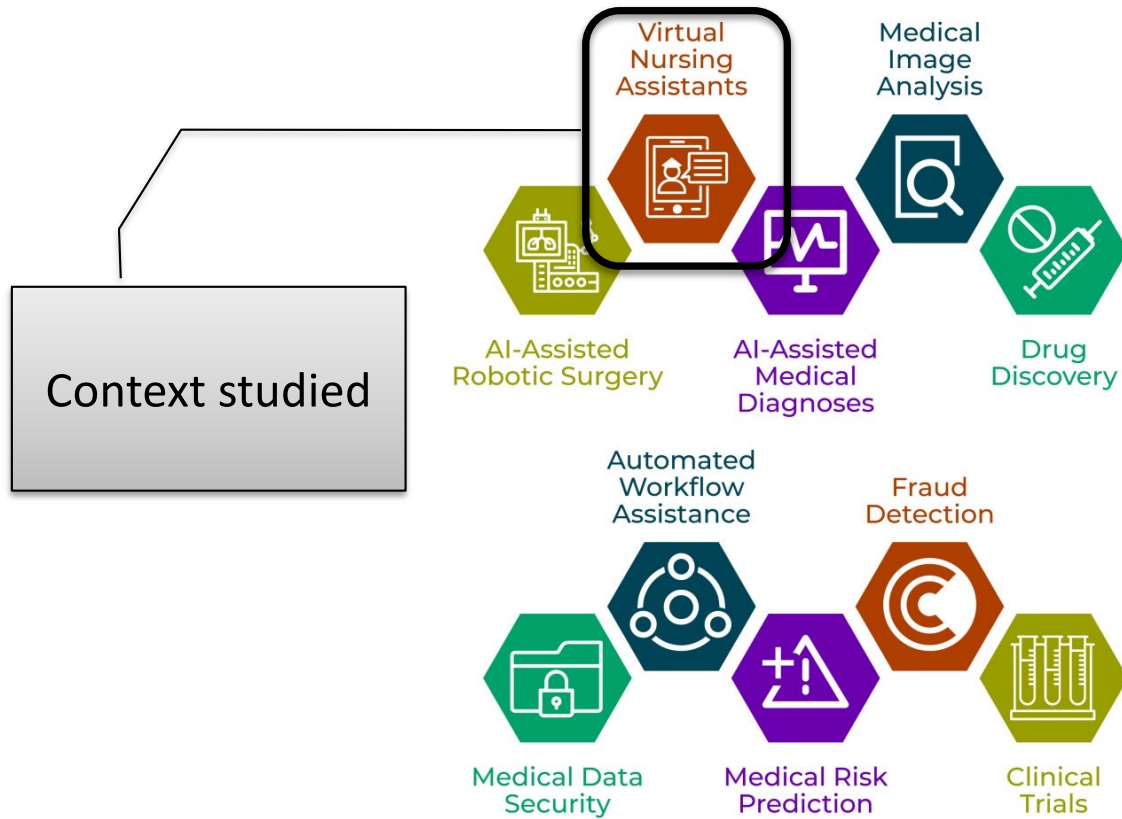
End of
Life Care



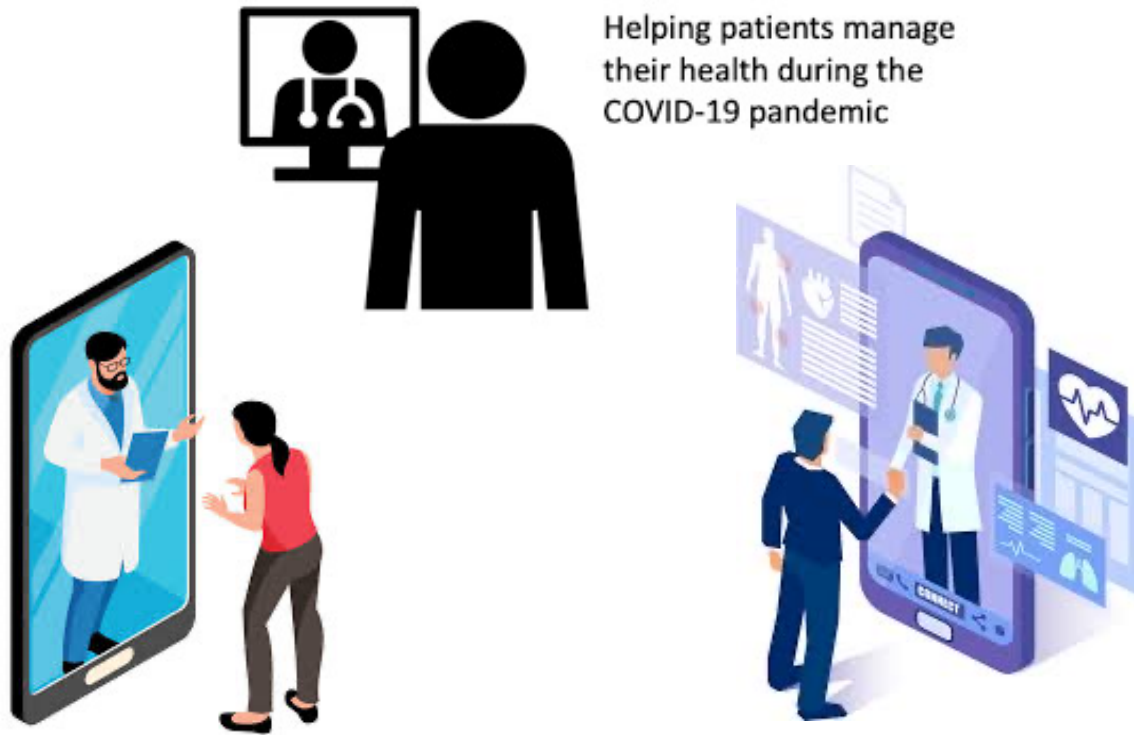
AI use cases



10 Applications of AI in Healthcare

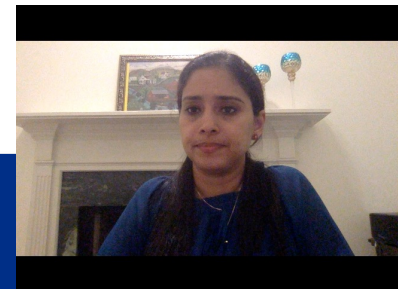


Virtual Patient Care



Helping patients manage
their health during the
COVID-19 pandemic

*Virtual care is a broad term that encompasses **all the ways healthcare providers remotely interact with their patients**. In addition to treating patients via telemedicine, providers may use live video, audio, and instant messaging to communicate with their patients remotely.*



The problem

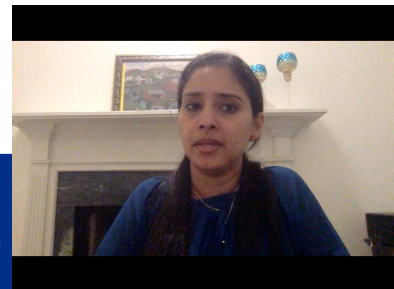
Virtual Care Nurses currently mediate between the platform and health practitioners on the floor, making algorithmic decisions.

What we know

1. Fatigue due to false alarms influences the use of AI systems.
2. Temporal factors influence the use of AI systems.
3. Sociodemographic factors influence the use of AI systems.

However, a lack of physical attributes during virtual patient care can influence decision-making.

What are the implications of using AI systems on organizational resources and capabilities during virtual patient care?

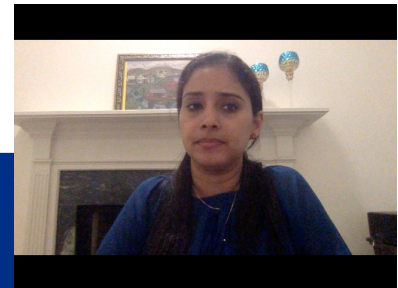


NSF Study

In collaboration with the Medical College of Wisconsin and Froedtert Hospital, we study the implementation of the Rothman Index—a proprietary early warning algorithmic platform designed to reduce patient mortality—in hospital work environments.

The objectives of the one-year planning grant from NSF include:

- (1) building relationships with relevant stakeholders at the Medical College of Wisconsin and Froedtert Hospital to support exploration into the Rothman Index;
- (2) collecting and analyzing preliminary data about experiences with the Rothman Index in the Virtual Intensive Care Unit work environment, including observations and interviews with virtual nursing staff and quantitative usage data anonymously extracted from the Rothman Index; and
- (3) engaging in participatory design with Froedtert Hospital stakeholders to improve workplace protocols and practices



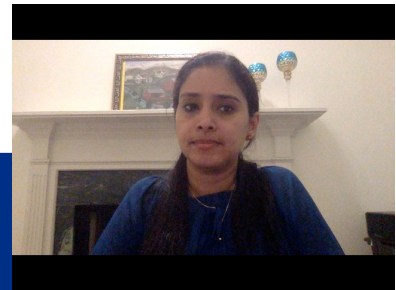
Methodology

This study employs a participatory and worker-centered design process for implementing algorithmic patient care through close collaborations with healthcare workers to advance the technical design of the Rothman Index.

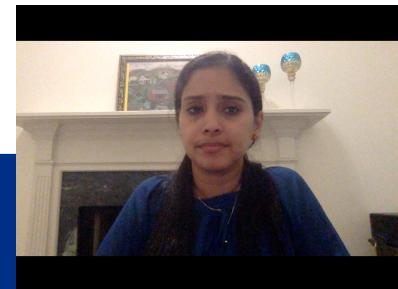
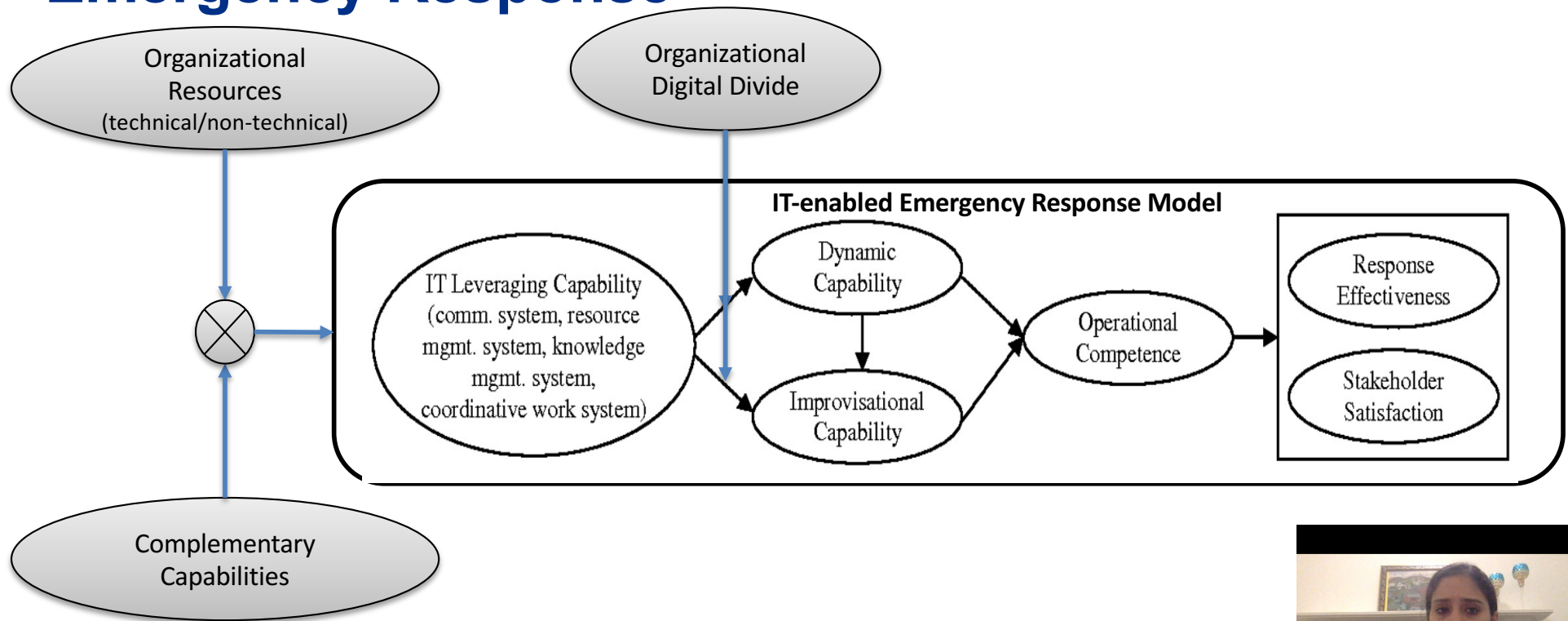
Data collection:

Eight interviews with providers who use AI-enabled system

Eighteen hours of field observation of emergency care at Froedtert Hospital



Improvised Organizational Capabilities Model for Emergency Response

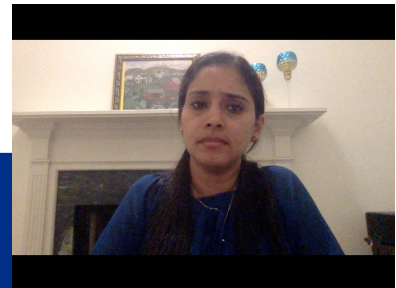


Findings



Organizational digital divide

1. Impede efficacy of AI-enabled systems for improvisational capabilities
2. AI-enabled systems enhance sensing opportunities while hindering seizing and transforming aspects of dynamic capabilities



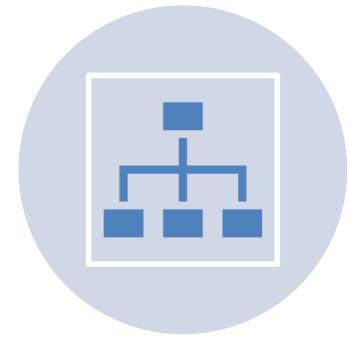
Limitations and future research



ENVIRONMENTAL
TURBULENCE



EMPLOYEE
TRAINING



ORGANIZATIONAL
STRUCTURE





Thank you

