

**Medtronic**

Engineering the extraordinary



In cooperation with  Irish Medtech Association

# Digital Twin in Medical Devices

May 31, 2023



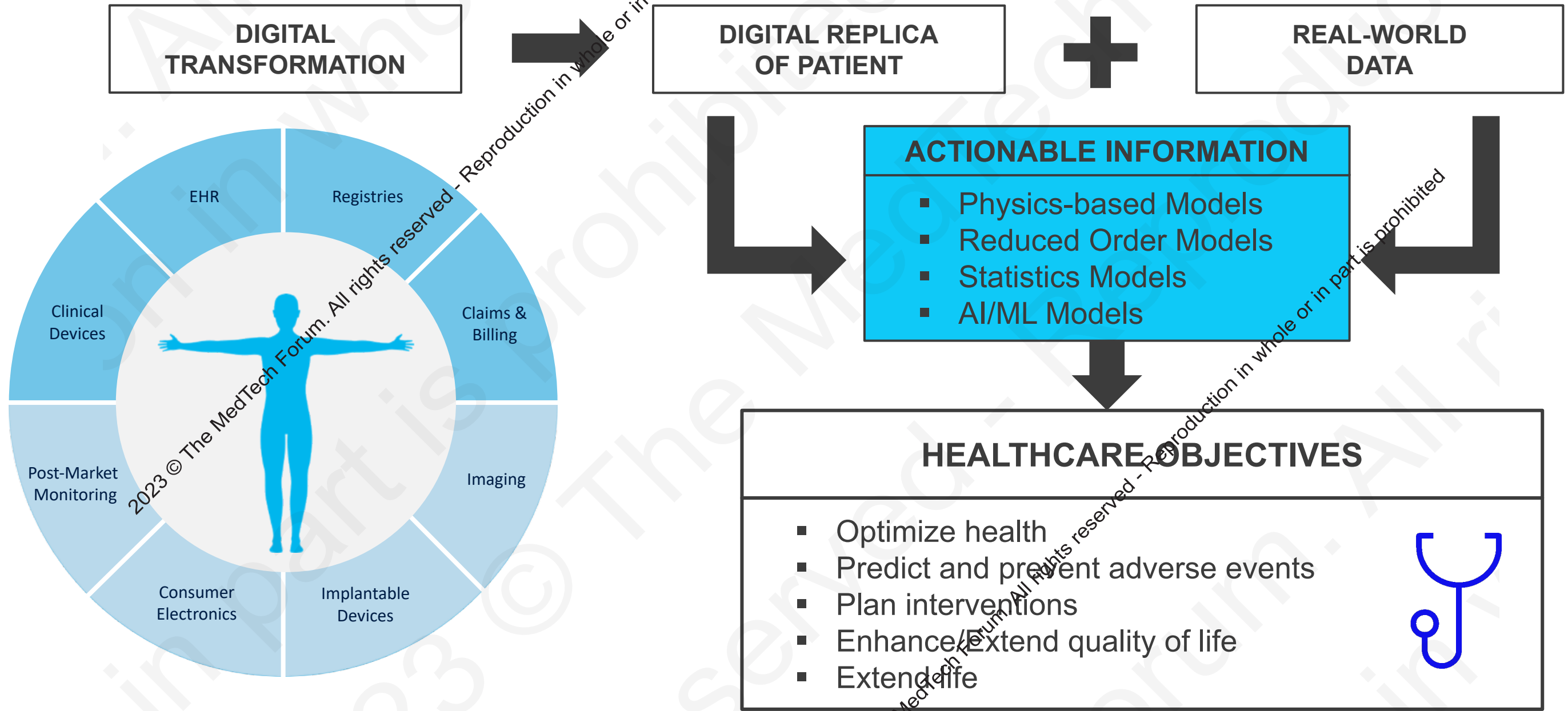
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Distinguished Scientist

MEDTRONIC CORPORATE TECHNOLOGY & INNOVATION

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# Digital Transformation in Healthcare: Create Actionable Information/Prediction



# Strong Parallels between the goals of Digital Twin and Personalized Medicine: Improve Personal Health, Prevention, and Disease Management



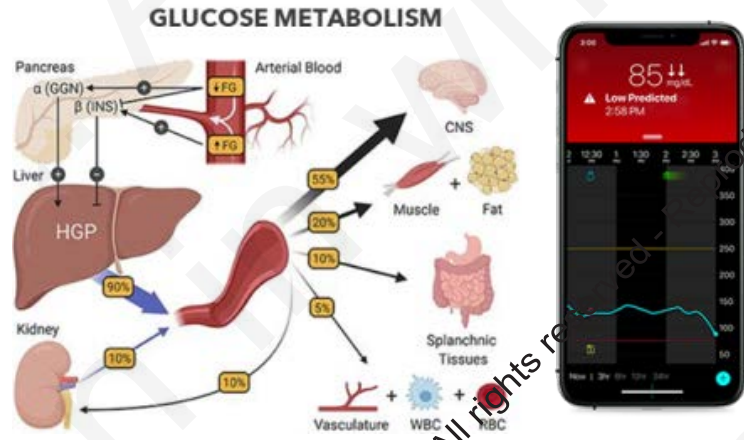
“While digital twins have been a mainstay in manufacturing and other industries, the healthcare industry has only begun to benefit from their power.”

Rod Fonticella (What can digital twin do for healthcare, 2022)

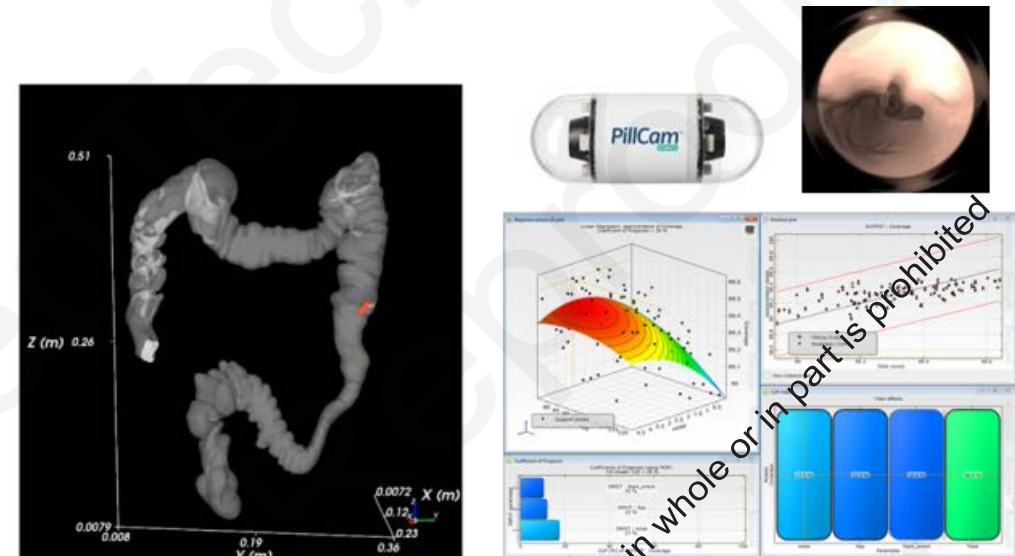
- MODIFIABLE FACTORS**
- Diet
  - Exercise
  - Sleep
  - Environment
  - Social
  - Behavioral
  - Medication
  - Therapy
  - Surgery
  - Implantables

# Partnerships across the Technology Ecosystems and Healthcare Stakeholders

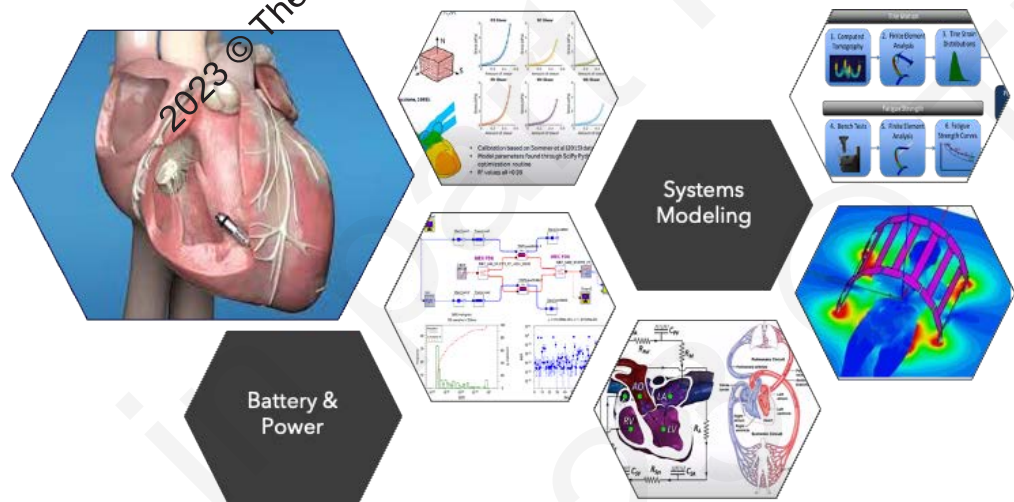
## Personalized Treatments



## Diagnostics & Outcome Prediction



## R&D and Clinical Trials



Optimize healthcare

Reduce cost

Increase patient satisfaction