

Health Digital Twin to predict risks, prevent and trigger actions

The role of a Health Public Data Space in a pandemic DIGITALEUROPE Webinar

April 28 2020 Dr. Nazar Rasul Head of Technology & Innovation Strategy Siemens Healthineers



COVID-19 patient pathway¹ Emphasizing the challenge of data integration and interpretation



1) This pathway is for illustration purposes only.

Dr. Rasul | Technology & Innovation 2 Unrestricted © Siemens Healthineers, 2020

SIEMENS

Precise predictions and evidence-based decisions



Priority in a pandemic to detect and get right treatment at right time



Dr. Rasul | Technology & Innovation ³ Unrestricted © Siemens Healthineers, 2020

Empowered by digital representation - Digital Twin Al-powered personalized bio-physiological model of the patient





Aggregate large amount of curated data

Train multiple deep neural networks to build individual parts of a model

Together they form a holistic Al-powered digital twin of a human

Dr. Rasul | Technology & Innovation 4 Unrestricted © Siemens Healthineers, 2020

This feature is based on research, and is not commercially available. Due to regulatory reasons its future availability cannot be guaranteed.

The vision of "Health Digital Twin" to serve as agent to predict Healthinee risks, prevent sickness and trigger actions



Dr. Rasul | Technology & Innovation 5 Unrestricted © Siemens Healthineers, 2020



Use case- and stakeholder-specific

Dr. Rasul | Technology & Innovation **6** Unrestricted © Siemens Healthineers, 2020



What we need to establish **The new structure**.

- Data ownership patients apps, HDT, owned and controlled by each individual citizen
- New forms of collaboration between various stakeholders (research between HC providers and industry (Medtech, digital, biotech,...)
- Decentralized data handling and storing with clear rules and guidance
- Federated learning for use of AI in health and clinical decision making



Infrastructure

- Privacy-By-Design solutionsGDPR conformity & data usage transparency
- Technology base of data platforms to interact and to interface for data access and sharing

Thank you for your attention!



Dr. Nazar Rasul, MBA Siemens Healthineers Technology & Innovation Management Karlheinz-Kaske-Str. 5 91052 Erlangen, Germany Tel.: +49 9131 84-5020 Fax: +49 9131 84-5135 Mobile: +49 173 7068554 mailto:nazar.rasul@siemens-healthineers.com

Dr. Rasul | Technology & Innovation 8 Unrestricted © Siemens Healthineers, 2020