

Artificial intelligence in health – managing precision, practice and propriety

The challenges of adoption

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Oracle's Mission

*To help people see data in new ways,
discover insights, unlock endless possibilities.*

Scope of AI

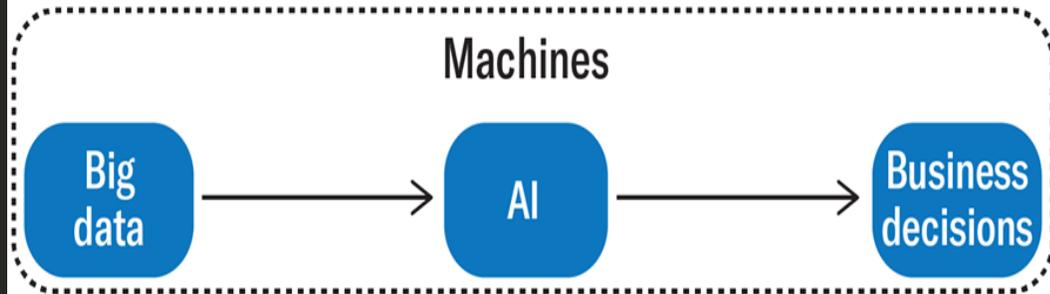
- Define by technology
 - Machine Learning, Neural Network, NLP , Image Processing...
- Define by purpose
 - Deterministic, Non-deterministic
- Define by focus of application
 - Clinical decision support
 - Patient self-management
 - Precision Medicine
 - Clinical trials

Precision challenges

- Data training volumes
- Data management and data quality
- Population heterogeneity
- Investigator bias
- Uncurated sources
 - personal IOT devices
 - social indicators
 - environmental factors

Process (AI v “Augmented Intelligence”)

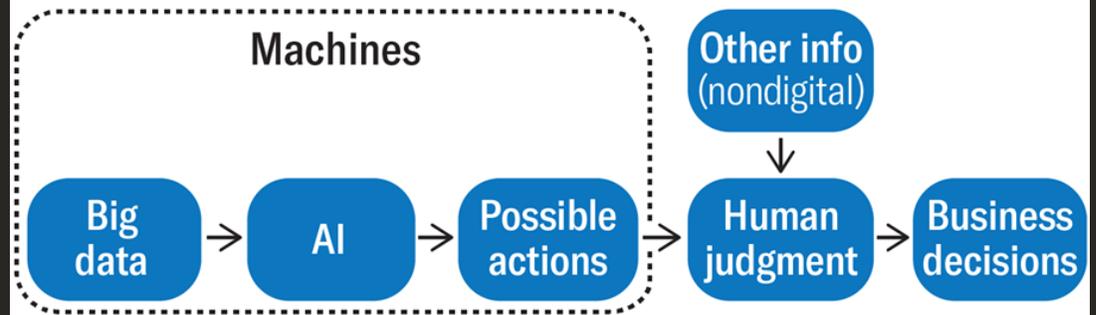
A Decision-Making Model That Utilizes AI



Source: Eric Colson



A Decision-Making Model That Combines the Power of AI and Human Judgment



Source: Eric Colson



Process challenges

- Clinical competency to manage AI
- Impact on clinical workflow (lessons from EMR)
- Interaction between AI and human behaviour
- Impact on doctor-patient relationship
 - the “interactive patient”
 - perceived reliance on AI
 - more time for human processes
 - more opportunity for self-generated care

Propriety challenges

- Measuring clinical efficacy – correlation v causation
- The ‘black box’ problem
- Lack of consensus on standards
- Software as a Medical Device
- Data access, privacy and trust

The “inconvenient truth” (1)

- Algorithms in research literature are, for the most part, not executable in clinical practice for two reasons
 - AI innovations don't re-engineer the incentives that support existing ways of working
 - Most healthcare organisations lack the data infrastructure to assemble data and train the algorithm to meet local population and practice needs
- Their suggested resolution is to follow the experience of the “rest of the economy” and implement high performance cloud computing infrastructure supported by government action to resolve issues of data access and governance

The Oracle logo is centered on a dark grey background. It consists of the word "ORACLE" in a white, bold, sans-serif typeface. The letters are closely spaced, and the font has a modern, clean appearance. The top of the image features a decorative border with orange, black, and yellow wavy patterns.

ORACLE