Reimagining Global Health through Artificial Intelligence: A Roadmap to AI Maturity

Global challenges
AI is today’s defining technology, and greatest opportunity to address growing challenges:

- **US$ 10 trillion**
  - **2020**
  - Global healthcare spending
  - Projected to double over the next 20 years

- **US$ 20 trillion**

- **Health worker shortage**
  - 50% of countries have <1 doctor for 1,000 people

- **90% premature deaths**
  - Emerging threats
  - COVID-19, climate change, pollution and antimicrobial resistance

- **70%**
  - **Dual disease burden**
  - Noncommunicable diseases now cause 70% of deaths, while infectious diseases remain prevalent

- **734 m lack access**
  - Under served populations
  - >734 million people lack access to essential health services

- **70% by 2050**
  - **Rapid urbanization**
  - 70% of people will live in cities by 2050, increasing exposure to unhealthy lifestyles

- **Misinformation and disinformation**
  - Incorrect health information is putting millions of lives at risk

Potential of AI

- **84%**
  - C-suite executives believe they must leverage AI to achieve growth.

- **93%**
  - Agree that AI helps achieve previously hidden or unobtainable value.

- **86%**
  - Agree that AI is finding solutions to previously unsolved business problems.

Top 5 use cases for AI in health
A new report from the Broadband Commission Working Group on Digital and AI in Health identifies five use cases for how AI is addressing global and public health priorities, strengthening health systems, and improving outcomes for patients.

1. **Population health**
   - Targeting public health interventions through predictive analytics.

2. **Preclinical research & clinical trials**
   - Optimizing drug discovery and design, personalized therapy, and trial design and execution.

3. **Clinical care pathways**
   - Integrating into new and existing clinical workflows.

4. **Patient-facing solutions**
   - Interacting directly with patients, providing non-clinical therapies, information and advice.

5. **Optimization of health operations**
   - Optimizing back-end processes in healthcare.
About the working group

Digital and AI technology offer an unprecedented opportunity to transform health systems from being reactive to preventative and even predictive. The Working Group on Digital and AI in Health is tasked with generating knowledge about how these technologies can advance health and care globally. The working group’s comprehensive landscape review identified actionable recommendations for how governments and other stakeholders can create the ecosystem necessary to achieve mature integration of AI in health.

The maturity roadmap for AI in health

The report presents actionable recommendations tailored to individual stakeholder groups, enabling governments, health organizations, civil society, the private sector and others to capture the game-changing capabilities of AI for health.

An accompanying roadmap charts three stages on the progressive path towards AI maturity in health.

Six areas for AI maturity in health

- **People & workforce**: education, training, agile workforces, talent, human-centric, change management
- **Data & technology**: data, infrastructure, business intelligence, privacy & trust, interoperability, algorithms & models, explainability
- **Governance & regulatory**: strategy & budget, validation, privacy & rights, data governance, workforce, institutions
- **Design & processes**: humans at the center, integration, model KPIs, needs-driven, localization, behavior
- **Partnerships & stakeholders**: government leadership, needs-driven partnerships, structured prototyping, localization
- **Business models**: funding, incentives, public-private partnerships, monetization

The recommendations are grouped into six interdependent areas that must all be prioritized to enable mature integration of AI in health.

The maturity roadmap for AI in health

Stepwise progression for AI maturity in health

1. Exploring
2. Emerging/activating
3. Integrated ecosystem

**People & workforce**
- education
- training
- agile workforces
- talent
- human-centric
- change management

**Data & technology**
- data
- infrastructure
- business intelligence
- privacy & trust
- interoperability
- algorithms & models
- explainability

**Governance & regulatory**
- strategy & budget
- validation
- privacy & rights
- data governance
- workforce
- institutions

**Design & processes**
- humans at the center
- integration
- model KPIs
- needs-driven
- localization
- behavior

**Partnerships & stakeholders**
- government leadership
- needs-driven partnerships
- structured prototyping
- localization

**Business models**
- funding
- incentives
- public-private partnerships
- monetization

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