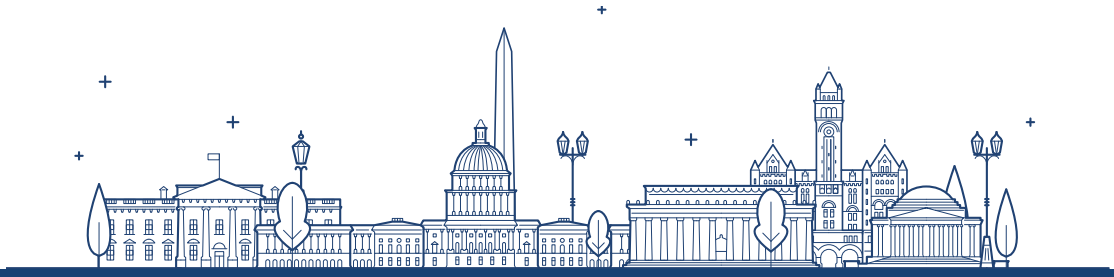
ConnectedHealth

Why Does Healthcare Need AI?



Connected Health is an initiative of ACT | The App Association

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Why Does Healthcare Need AI?

One of the most helpful ways to see the value of AI in healthcare is to view the question through the lens of the "quadruple aim" framework. Built on the Institute for Healthcare Improvement's "triple aim,"[i] a widely accepted compass to optimize health system performance,[ii] the quadruple aim focuses on four key areas where health systems need to be improved and acknowledges concerns of key stakeholders. The four areas are:

- Enhancing population health.
- Improving patient experience, satisfaction, and health outcomes.
- Better clinician and healthcare team experience and satisfaction.
- Lowered overall costs of healthcare.

These are areas where we are already seeing the potential AI systems have to positively impact the current healthcare system.

Improving Population Health Management

AI-enabled tools offer great promise in overcoming the challenges faced by clinicians, health systems, health plans, and public health officials working to advance population health management and public health. AI-enabled tools, for example, are able to process massive and disparate data sources to provide public health officials, health care systems, and providers essential and actionable data rapidly related to assist with more timely and accurate population level disease surveillance and assessments of disparities and health care resource distribution.

Population health[iii] management has long been viewed as the essential ingredient to improve overall health outcomes and arrest rising heath care costs. Population health management involves aggregation and analysis of huge amounts of data from divergent sources, something that can be potentially streamlined through robust and powerful AI systems.

As more systems are created and deployed, the opportunity for AI to help improve healthcare outcomes is significant, with estimates suggesting outcomes could be improved by 30-40 percent. [iv]

Improving Patient Experience, Satisfaction, and Outcomes

One of the more significant critiques of healthcare systems around the world is that they fail in many respects to meet patients' expectations around access to care, ease of use, and care continuity and coordination.

All too often, patients are forced to make multiple visits, shuffling between a general practitioner and a specialist. With the ability to replicate specialist-level expertise at the frontlines of care, AI-enabled tools will reduce paperwork burdens, center care around where the patient is located, and enhance the ability to manage and understand how to sustain health or manage a disease. Services that increasingly can be enhanced and improved with AI systems will provide patients and their health care teams with timely, essential information, and ongoing support that is not currently available.

With people over the age of 65 representing an increasing percentage of the population, AI systems will be essential for human caregivers and clinicians to extend their reach and coverage of an ever-growing population of patients.

Improving Clinician and Healthcare Team Experience and Satisfaction

Among clinicians and the extended health care team, the growing administrative and paperwork demands coupled with compounding rates of new medical knowledge and data generation are driving records levels of burn-out and dissatisfaction. AI-enabled tools can and should be deployed to drastically improve clinician and healthcare team satisfaction using tools that help clinicians and the health care team to more quickly screen, diagnose, treat, and monitor effectively patients and remove time-consuming and often mundane tasks.

Reducing Healthcare Costs

Countries around the world struggle with both rising costs and absolute costs of providing healthcare to their citizens. Nations spend between roughly 6 percent and 18 percent of their gross domestic product (GDP) and many have seen the share of GDP devoted to healthcare costs sharply rise over the last three decades.[v] The situation is unsustainable, and, in many countries, the problem will only get more acute as populations age and average life expectancy continues to rise. A huge amount of data is available today for collection and utilization in timely prevention and treatment decisions that would result in massive cost savings, but that data currently usable, but can be found in electronic health record (EHR) systems.

Healthcare experts see enormous promise in AI to more accurately capture and leverage the range of health data available, with estimates suggesting AI applications can create $150 billion in annual savings for the United States healthcare economy by 2026.[vi] This savings estimate includes only the top 10 AI scenarios, such as assisted surgery, virtual nursing assistants, and administrative workflow assistance, etc.

On a worldwide basis, healthcare administrative costs (e.g., billing) are a continuing challenge. The administrative costs of the U. S. health care system are estimated to be 31 percent of total healthcare expenditures.[vii] AI's potential to help us address spiraling costs in healthcare is very real, and it is already showing returns today.

[i] http://www.ihi.org/engage/initiatives/tripleaim/pages/default.aspx

[ii]Thomas Bodenheimer, MD and Christine Sinsky, MDFrom Triple to Quadruple Aim: Care of the Patient Requires Care of the Provider, Ann Fam Med November/December 2014 vol. 12 no. 6 573-576.

[iii] Defined as "an approach [that] focuses on interrelated conditions and factors that influence the health of populations over the life course, identifies systematic variations in their patterns of occurrence, and applies the resulting knowledge to develop and implement policies and actions to improve the health and well-being of those populations." Kindig, D. and Stoddart, G. What Is Population Health? American Journal of Public Health, 93, 380-383 (2003).

[iv] Nicole Lewis, Artificial Intelligence to play key role in population health, Medical Economics (2017) (available at http://www.medicaleconomics.com/medical-economics-blog/artificial-intelligence-play-key-role-population-health)

[v] Henry J Kaiser Family Foundation, Snapshots: Health Care Spending in the United States & Selected OECD Countries (2011); Bradley Sayer and Cynthia Cox, How does health spending in the U.S. compare to other countries?, Kaiswer Family Foundation (2018).

[vi] Accenture, Artificial Intelligence: Healthcare's New Nervous System (2017)

[vii] http://www.pnhp.org/publications/nejmadmin.pdf