How Research-based Innovation can Reduce Healthcare Costs in an Aging Population

One of the greatest benefits of AI and technology-based innovation is the ability to generate real-time data. This means the resulting solutions and optimizations are embedded in research. When it comes to healthcare's most pressing problems, AI and technology-based innovation is an approach that promises accurate leaps forward rather than oftentimes slow, incremental missteps.

Never has the need been so great as in tackling the rising healthcare costs associated with an aging global population. According to a United Nations report, people aged 65 years or over will hit 1.5 billion by 2050.[1] And countries spend an average of 1.5% of their gross domestic product (GDP) on long-term care services such as medical, nursing, personal and assistance care. It's a challenge that's compounded by the fact aging populations are defined by chronic conditions.[2] According to the National Council on Aging (NCOA), 95% percent of patients 65+ have a minimum of one chronic condition, and 80% have two or more. This adds to the financial toll. For example, Alzheimer's and dementia cost around $49,000 per person per year in treatment and lost wages, compared to $20,000 for diabetes.[3]

Many of the most game-changing ways to overcome these challenges lie in the realm of digital technology, because they are grounded in research. Three areas of high potential are:

Monitoring-based patient care: In Japan, the Tsukuba Wellness Research Initiative is exploring the concept of a Smart Wellness City, which uses digital technology to support patients by monitoring data like steps taken, blood pressure and fat ratios. Initial results suggest that the benefits of their efforts could reduce average expenses by $500 per person annually and by as much as $2,000 for people in their 70s.[4] Closer to home, the evolution of the Personal Emergency Response System (PERS) into remote assistants like the Amazon Alexa Care Hub, LifePod or ElliQ app take prophylactic and preventative measures, minimizing the cost of emergency care and delayed diagnosis.[5, 6] These services provide voice-activated urgent response for hands-free emergency service calls, connect to a remote caregiver's phone, whether they are concerned relatives or a medical professional like a part-time nurse, provide personalized routines and ensure care plan adherence with medication, behavioral therapies and appointment reminders.

Using AI to take on administrative costs: Artificial intelligence and advanced algorithm technologies have multiple applications in this space. Natural language processing (NLP) programs such as Acusis medical transcription service support full speech recognition and interaction, helping to process large amounts of socioeconomic, behavioral and environmental data for health providers, thereby enabling actionable analytics about their patients. These kinds of programs can be used to automate processes that support Electronic Health Records (EHR) digitalization and deliver the same results as human processing at a lower cost. KenSci is a machine learning technology that was built by doctors and data scientists to help providers and payers intervene earlier by identifying future patterns of clinical and cost outcomes. KenSci's Risk Protection Platform for Healthcare identifies what drives healthcare costs by modeling the complex interplay of disease progression and utilization to anticipate chronic and critical illness.[7] Reducing health care administrative costs is particularly beneficial for the older population because of their large share of utilization of the health care system.

Health organizations empowering with tech: Recent AARP research on consumer technology adoption shows that 9 in 10 adults over age 50 own a computer, while 8 out of 10 own a smartphone.[8] It also identifies five barriers to tech-adoption by seniors in an effort to reduce barriers to the systems they believe improve outcomes and quality of life for seniors associated with better access to medical information and resources. Mauritius' Cyber Caravans computer-equipped and Internet-connected buses and Lebanon's University for Seniors offer technology training courses specifically created for the older population.[9] In the U.S., the Center for Disease Control (CDC) engaged an expert panel, produced a report and continues to build out a state-by-state action plan to improve health literacy among seniors, engaging both educators and local services.[10, 11] In the long term, increased access to health information, HCPs and greater health literacy improve utilization of e-health and the associated cost-savings.

Leveraging research-based technology: As the aging global population puts an increasing financial burden on healthcare systems, AI and digital technology provide the opportunity to track, learn and prototype quickly. Insights derived from data can result in rapid improvements across a range of applications from budget allocation to patient outcomes. Because AI and tech solutions are derived from insight about how older adults actually live and what they need, they are not only exciting but hold the promise of closing the gap on healthcare costs as those needs expand.

Sources:

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