The Promise & Potential of AI in Virtual Care

Kristi Henderson, DNP, NP-C, FAAN, FAEN
SVP, Center for Digital Health & Innovation
Optum Health

OPTUM Labs®

Disclosures

Financial Disclosures:

- MedtoMarket, Inc., advisor with stock options

Promise of AI in Healthcare/Virtual Care

Improving the experience, efficiency and effectiveness

Patient-oriented AI

- More choice and convenience
- Faster, easier appointment scheduling
- Convenient bill paying
- Less time filling out forms

Clinician-oriented AI

- Reduce costs
- Reduce wait times
- Reduce errors
- Easier payment options
- Increase patient satisfaction

Administrative- and operational-oriented AI

- AI-enabled tools can extract relevant information from large amounts of data and generate actionable insights that could be applied to many applications.
- Claims processing, clinical documentation, revenue cycle management and medical records management

AI Application Across the *Virtual* Care Continuum

Discovery

- Dynamic personalization
- Early detection
- Improve decision making
- Identify Need, Customized education
- Evaluate Options & Compare Prices

Selection of Care Site

- Preferences, Precision Navigation,
- Decide best next action (level of care)
- Online Scheduling
- Clinical Trial Patient Identifier

Entry into System

- Facial recognition- identity, registration efficiencies
- Automated and dynamic personalization
- Eligibility & authentication

Care Delivery – Expand Access

- Synchronous & Asynchronous Doctor visits
- AI-powered Chat bots
- Virtual Assistants & NLP
- Emotion detection
- Early diagnosis, detecting cancer, anomaly ID
- Image diagnosis using AI/ML, Pathology
- Robot-assisted surgery
- Quality, error detection/prevention

Pay

- Automated revenue cycle
- Efficient claims processing
- AI driven PBM's to target Fraud, Waste & Abuse

Care Follow Up- Home Services

- Patient tracking
- Ambient monitoring with AI/ML for data management and next best action
- Personal Health Companions
- Robots for explaining lab results
- Follow orders for next steps: testing, procedures, referrals, future appts

Ongoing Care Management

- Mobile Coaching
- Pain Assessment & Medication Use
- Health monitoring with AI and wearables
- Ambient clinical learning loop
- AI driven personal health companions
- Monitor general wellness/healthy living for preventive care
- Monitor chronic conditions to predict needs

Issue Resolution

- AI assisted call centers
- Voice analytics
- Conversational AI

Security, Fraud, Waste & Abuse
Smart Workforce

AI Application well-suited for a virtual care delivery system

Smart Sensing	Intelligent Sound	Contextual Intelligence	Facial Recognition Technology	NLP & Conversational AI
• Tiny AI enables smarter sensing of individual activities and changing health status in their home environment on mobile devices • Ambient clinical monitoring, integrated wearables, alert management	• Novel sensing techniques, which include the combination of sound with tiny AI models • Vocalytics AI uses tiny AI technologies to turn “dumb noise” into “intelligent sound”	• Causal machine learning pushes algorithms closer to what clinicians do in practice and improves medical diagnosis efficacy. • Disentangles correlation from causation for patient symptoms by bringing more applicable disease identification	• Matching facial characteristics to rare genetic disorders • Emotion detection • Behavioral health • Earlier diagnosis- Dementia, Alzheimer's • Vitals and lab • Detecting quiet pain	• Open AI is driving better language models which achieve human-like performance • Generates coherent paragraphs of text , reading comprehension, question answering, and summarization, all without task-specific training