Safeguarding Human Rights in the Use of Digital Technologies: Insights & Perspectives from the U.S. Government

Vijeth Iyengar, PhD
Brain Health Lead & Technical Advisor to the U.S. Deputy Assistant Secretary on Aging
Administration for Community Living/U.S. Department of Health and Human Services

Ageing in the Digital Era: UNECE Policy Seminar on Ageing
November 24, 2021
Today’s agenda

- The U.S. Administration for Community Living (ACL)
  - Overview + Mission/Vision
  - Beneficiaries of ACL Programs, Services, and Supports

- Supporting older adults & their families
  - Fostering innovation for older adult populations
    - *Emerging Technologies to Support an Aging Population* Roadmap
    - Increasing access and utilization of emerging technologies

- Closing Thoughts
Administration for Community Living (ACL)

ACL – an operating division of the U.S. Department of Health and Human Services – was initially established in April 2012 by bringing together the Administration on Aging, the Office on Disability and the Administration on Developmental Disabilities. ACL is responsible for increasing access to community supports, while focusing attention and resources on the unique needs of older Americans and people with disabilities across the lifespan.

Mission

Maximize the independence, well-being, and health of older adults, people with disabilities across the lifespan, and their families and caregivers.

Vision

For all people, regardless of age and disability, to live with dignity, make their own choices, and participate fully in society.
Who We Serve

- ** Poor and Near Poor *(below 150% Poverty)*

- ** Frail and Vulnerable  
  - Lives Alone; Diabetes; Heart Condition; Minority; Rural

- ** At Risk for ER visits & Hospitalization  
  - Over 92% of OAA Clients have Multiple Chronic Conditions  
    - Compared to 73% of general older adult population *(age = 65+)*
  - 69% of Case Management Clients take 5 or more medications daily.

- ** At Risk for Nursing Home Admission  
  - 40% of Home-Delivered Nutrition Clients have 3+ Activities of Daily Living (ADL) Impairments.
  - 72% of Home-Delivered Nutrition Clients have 3+ Instrumental Activities of Daily Living (IADL) Impairments.
Today’s agenda

- The U.S. Administration for Community Living (ACL)
  - Overview + Mission/Vision
  - Beneficiaries of ACL Programs, Services, and Supports

- Supporting older adults & their families
  - Fostering innovation for older adult populations
    - *Emerging Technologies to Support an Aging Population* Roadmap
    - Increasing access and utilization of emerging technologies

- Closing Thoughts
Trends in older adult use of internet, social media, and electronic devices

How do Older Adults Engage with Digital Health Tools?

Source: https://rockhealth.com/aging-in-place/
A demographic imperative yields an opportunity...

- One of two reports dedicated to exploring ways in which technology can support functional needs of older adults.

- 2016 report covered areas of hearing loss, loss of social engagement and connectivity, cognitive change and physical change.

- One cross-cutting recommendation broadly called for “coordinated action” at the federal level.

Source: https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_independence_tech_aging_report_final_0.pdf.
Task Force on R&D for Technology to Support Aging Adults

Factors Driving Content and Direction of Report

- **Improve** the quality of life
- **Enhance** individual choice
- **Reduce the financial and emotional burden** of care to individuals and their families
- **Reduce the cost** of the provision of care on the U.S. Government healthcare infrastructure
Primary Functional Capabilities Featured

1. Key Activities of Independent Living
2. Cognition
3. Communication and Social Connectivity
4. Personal Mobility
5. Transportation
6. Access to Healthcare
Cross-cutting Themes from the Report

**Technical Factors**

- **System Needs**: Data storage, transfer management & integrity
- **Data and Algorithms**: Appropriate validation of sensor-derived data
- **Safety & Perform. Needs**: Battery life limitations; power and communications interruptions
- **Privacy & Security**: HIPAA-compliant encryption & secure transmission of patient health information

**User Experience**

- **Functionality**: Boost performance characteristics to scale (e.g., financial management)
- **System Evaluation**: Gauging efficacy & reliability of intervention
- **Family Caregiver Needs**: Tools to address education, training, and service provision needs
- **User Adoption**: Conduct usability analysis studies, application of universal design concepts
Today’s agenda

- The U.S. Administration for Community Living (ACL)
  - Overview + Mission/Vision
  - Beneficiaries of ACL Programs, Services, and Supports

- Supporting older adults & their families
  - Fostering innovation for older adult populations
    - Emerging Technologies to Support an Aging Population Roadmap
    - Increasing access and utilization of emerging technologies

- Closing Thoughts
Older Adults Represent a Medically Vulnerable Population amid the COVID-19 Pandemic

Key Datapoints:

▪ Ages >65 at greatest risk from COVID-19 hospitalization and mortality

▪ Inequities exacerbated in rural compared to urban areas

▪ Rapid adoption of tech in health care delivery during COVID-19 response presents opportunities to develop/operationalize solutions

Laboratory-confirmed coronavirus disease 2019 (COVID-19)—associated hospitalization rates,* by age group — March 1–28, 2020

RFI Development: A Collaboration of Many U.S. Federal Agency Partners

Emerging Themes from RFI Respondents

I. Care Plan Models
Combining technology with home care support tailored to the individual
Can help drive patient performance outcomes through real-time data capture, analysis, and monitoring.

II. Digital Health Literacy
Digital education for falls prevention, health management, and social connectedness.
46% reduction in healthcare resource utilization provided with a digital patient education tool

III. Remote Health Delivery
Combining biometric monitoring with AI-driven real-time feedback and proactive delivery of telemedicine services.
Caregivers looking for more digital health solutions to improve care management.

IV. Remote Health Monitoring
Behavioral (Vocal and facial patterns)
Medication reminders (poly-pharmacy monitoring)
Wearables (sleep; respiratory health; cardiovascular health)
Design Principles
- Managing Bias
- Cultivating Trust
- Safeguarding Privacy and Data Security

Rollout Considerations
- Community Inclusion
- Meeting Data Needs
- Technology Infrastructure and Literacy
- Collaboration/Partnerships

Source: https://jamanetwork.com/journals/jama-health-forum/fullarticle/2778875.
Today’s agenda

- The U.S. Administration for Community Living (ACL)
  - Overview + Mission/Vision
  - Beneficiaries of ACL Programs, Services, and Supports

- Supporting older adults & their families
  - Fostering innovation for older adult populations
    - Emerging Technologies to Support an Aging Population Roadmap
    - Increasing access and utilization of emerging technologies

- Closing Thoughts
Closing Thoughts

- Older adults in the U.S. represent an increasingly diverse and growing share of the population.

- Convergent data reveals that older adults indeed rely on and have positive perceptions of digital health tools.

- Technology-enabled solutions have potential in improving health outcomes but must be designed, developed, and deployed in an inclusive, intentional, and human-centered manner.

- We should ensure innovative solutions are accessible and affordable to all members of society across the socioeconomic spectrum.
Thank you + Feel free to get in touch!

vijeth.iyengar@acl.hhs.gov