

TRANSFORMING DEMENTIA CARE WITH DIGITAL HEALTH: REDEFINING ACCESS, EQUITY, AND CONTINUITY

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AAIC 2026
July 12–15, 2026
London, England

1. BACKGROUND & RATIONALE

- >55 million people worldwide live with dementia projected to reach 139 million by 2050 (WHO, 2023).
- Delays in diagnosis, workforce shortages, and geographic barriers limit access to quality dementia care.
- Caregiver burden is high (psychological, physical, financial) with inadequate support.
- Significant health inequities affect underserved and rural populations.
- Digital health offers an unprecedented opportunity to reimagine dementia care systems.

2. PROBLEM STATEMENT

Traditional dementia care remains:

- Clinic Dependent
- Fragmented
- Inequitable
- Difficult to Access
- Reactive (not proactive)

3. OBJECTIVE

To synthesize contemporary evidence examining how digital and mobile health technologies transform dementia care by improving access, continuity, equity, and caregiver support.

4. METHODS

Design	Structured integrative review
Databases	PubMed, Scopus, PsycINFO, CINAHL
Years	2020 – 2026
Inclusion	Peer-reviewed studies on digital health, telemedicine, mobile health, AI, remote monitoring, and digital caregiver support in dementia care
Focus Areas	Access, continuity, equity, caregiver outcomes, health system impact, emerging technologies
Approach	Thematic synthesis of qualitative and quantitative evidence

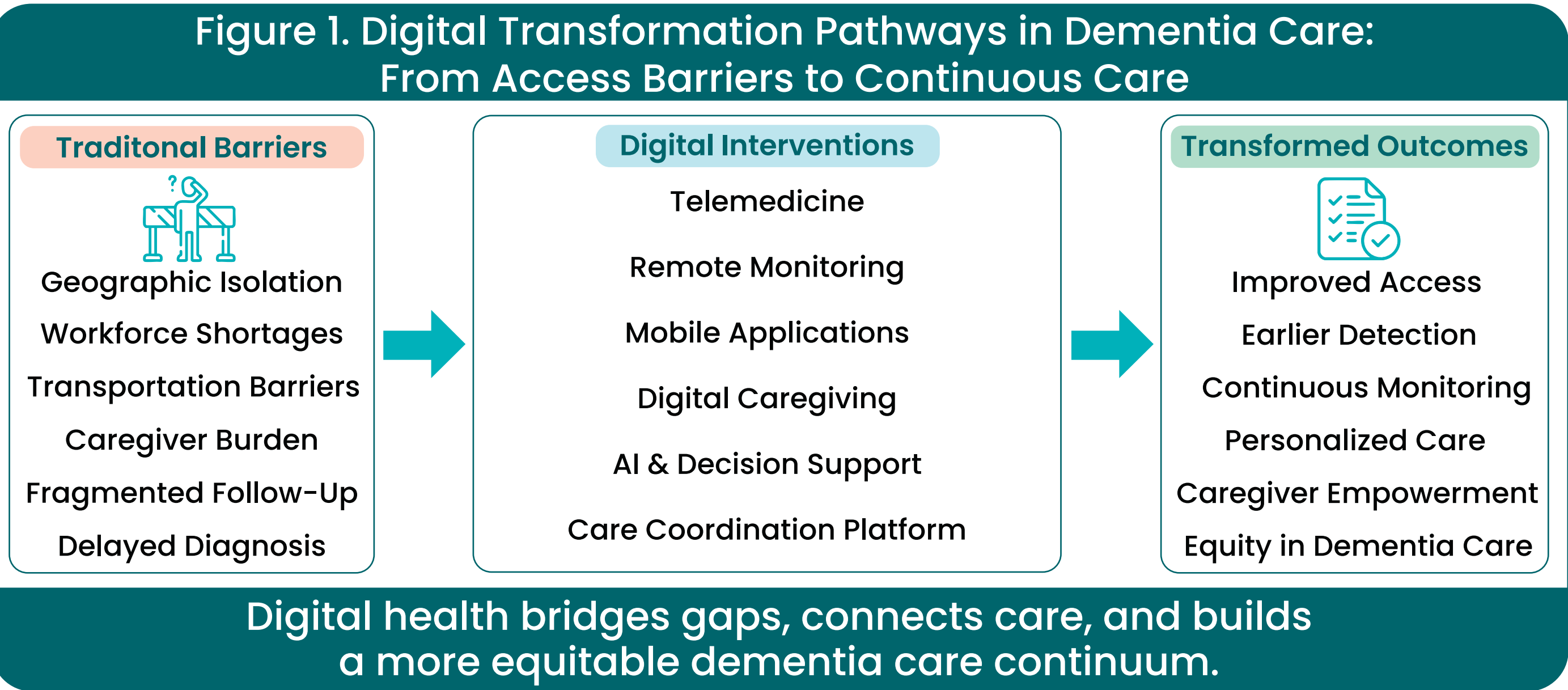
5. WHY THIS MATTERS

Digital transformation has the potential to create dementia care systems that are more accessible, continuous, equitable, and person-centered-- improving outcomes for individuals and caregivers while strengthening health systems.

6. RESULTS/KEY FINDINGS

- ACCESS TRANSFORMATION**
 - Telemedicine expands specialist reach, especially in rural areas.
 - Reduced missed appointments and travel burden.
 - Shorter wait times and improved access to subspecialty care.
- CARE CONTINUITY & CLINICAL OUTCOMES**
 - Remote monitoring enables earlier detection of cognitive and behavioral changes.
 - Improved neuropsychiatric symptom surveillance.
 - Better medication adherence and follow-up continuity.
- CAREGIVER SUPPORT & OUTCOMES**
 - Digital tools reduce caregiver burden and stress.
 - Improved access to education, coaching, and psychosocial support.
 - Greater confidence in managing crises and day-to-day care.
- HEALTH EQUITY**
 - Opportunities:** Expanded reach to underserved populations, reduced mobility barriers, scalable support.
 - Risks:** Digital divide, literacy gaps, broadband inequities, language exclusion, and access disparities

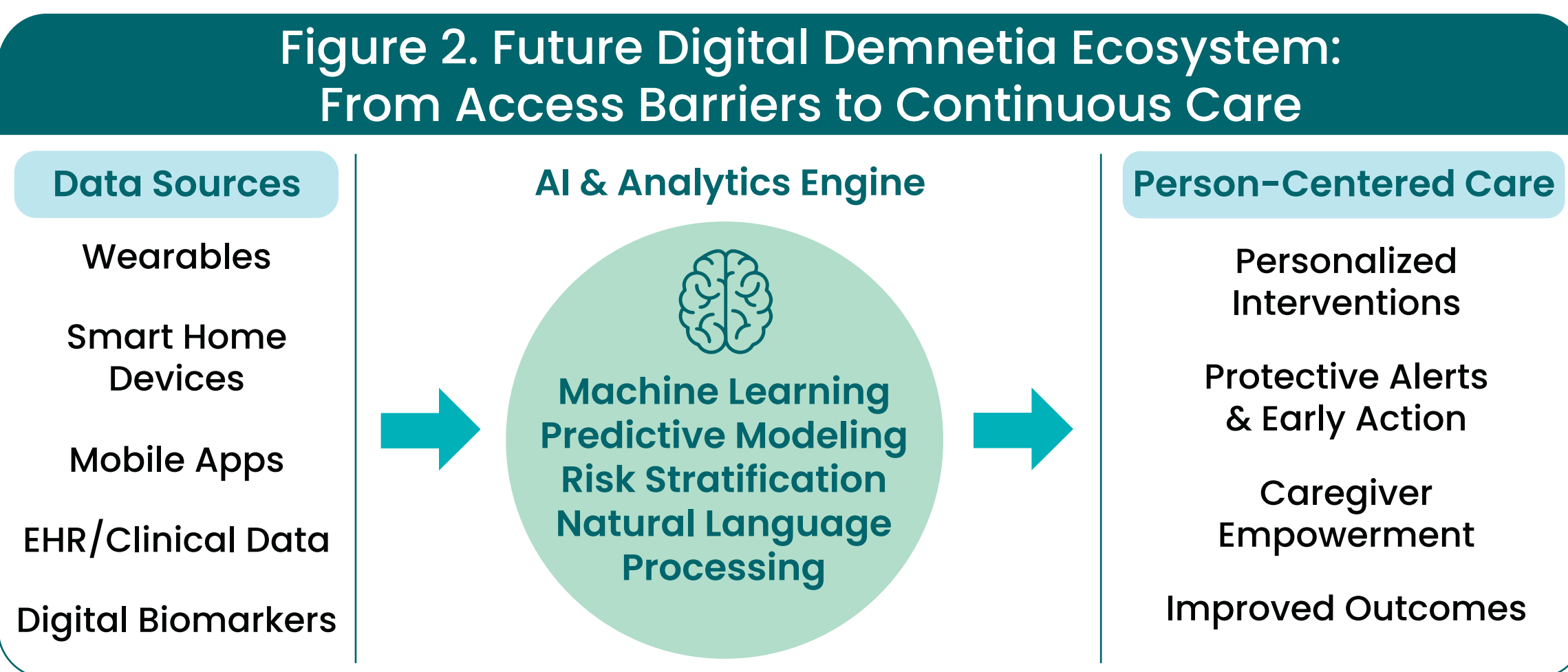
Intervention Category	Examples / Modalities	Primary Applications in Dementia Care	Key Benefits	Implementation Challenges	Evidence maturity
Telemedicine & Virtual Care	Video visits, virtual clinics, e-consultation	Diagnosis, follow-up, care coordination, medication management	Improved access, convenience, reduced travel burden	Reimbursement, workflow integration, digital literacy	High
Remote Monitoring & Wearables	Activity trackers, smartwatches, sleep monitors	Activity/sleep tracking, behavior monitoring, fall detection	Early detection, continuous data, timely alerts	Data accuracy, patient adherence, privacy	Moderate to High
Mobile Health Applications	Cognitive training, medication reminder, behavior apps	Cognitive-stimulation, adherence support, symptom tracking	Early access, scalable, promotes self-management	Engagement, evidence quality, visibility	Moderate
Caregiver Digital Support	Caregiver portals, education modules, peer support apps	Education, coaching, resources, crisis management	Reduced burden, increased knowledge, psychological support	Engagement, sustained use, digital skills	Moderate to High
AI & Decision Support Tools	AI screening, risk prediction, NLP analytics	Early detection, prognosis, risk stratification	Improved accuracy, efficiency, personalized care	Bias, transparency, validation, ethical concerns	Emerging



7. FUTURE DIRECTIONS & IMPLICATIONS

- EMERGING TECHNOLOGIES**
 - AI-assisted cognitive screening and longitudinal prediction
 - Digital biomarkers (speech, movement, sleep, gait)
 - Smart home & passive monitoring technologies
 - Predictive analytics for behavioral changes
 - Precision dementia care and personalized interventions
- ETHICAL & SYSTEM CHALLENGES**
 - Privacy, consen, and data security
 - Algorithmic bias and transparency
 - Digital divide nad low digital literacy
 - Surveillance concerns and autonomy
 - Reimbursement, policy, and sustainability
 - Integration into existing care workflows

Outcome Domains	Key Outcomes	Impact of Digital Health Interventions	Evidence Strength
Clinical Outcomes	Cognition, NPS, Functional status, medication management	Earlier detection, better symptom monitoring, improved medication adherence	Moderate to High
Outcome Domains	Burden, stress, knowledge, confidence	Reduced burden, increased knowledge and support, improved well-being	High
Health Systems Utilization	Hospitalizations, ED visits, length of stay, costs	Reduced avoidable visitation, improved efficiency, potential cost savings	Moderate
Equity Impact	Access for rural, underserved, minority populations	Expanded reach, reduced barriers, but digital divide remains a risk	Emerging



DIGITAL TRANSFORMATION IN DEMENTIA CARE IS NOT SIMPLY MODERNIZATION -- IT IS A PUBLIC HEALTH IMPERATIVE.

REFERENCES

Selected key references available upon request

ACKNOWLEDGEMENTS

The author thanks individuals living with dementia, caregivers, clinicians, and researchers whose work continues to advance dementia care.

CONTACT

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