



SUPPORTING OLDER ADULTS THROUGH TECHNOLOGY

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Introduction

- The U.S. older adult population will grow from 58 million to 82 million by 2050; 28% of community-dwelling adults aged 65+ already live alone
- 53 million unpaid family caregivers provide an average of 24 hours of care per week — 61% while simultaneously employed
- Care coordination difficulty has risen from 19% to 26% since 2015; over 350,000 health apps exist, yet no integrated solution
- 74% of adults 50+ report little to no trust in AI-generated health information

- GQ1: What needs and challenges do older adults and caregivers face with routines and care coordination?
- GQ2: What features and design considerations are found in the literature?
- GQ3: What ethical factors should guide design to protect autonomy and dignity?
- GQ4: How can GQ1–3 findings be synthesized into actionable design principles?

Aim

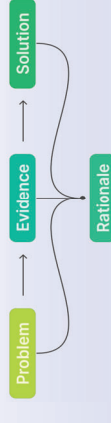
To develop a functional prototype of an integrated system that supports community-dwelling older adults aging in place and their family caregivers through 10 evidence-based design principles within the Routine and Medication Adherence Support (RMAS) Framework, Version 1.0

Methods

- Literature-based design science methodology using the Problem–Evidence–Solution–Rationale (PESR) method to construct each design principle.

Methods

- Stage 1:** Synthesized four guiding questions across the literature → identified 7 recurring problem conditions → derived 10 RMAS principles across 3 domains

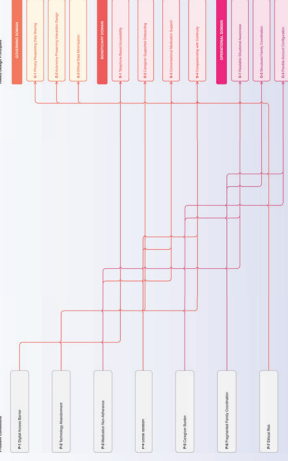


- Stage 2:** Mapped principles onto a unified system concept
- Stage 3:** Built working prototype: TbCC (KMAP + KDCP conversational frameworks) and the FCCP (6-page web platform)



Results

- RMAS Framework v1.0: 10 principles across 3 domains: Governing (G-1–G-3), Beneficiary (B-1–B-4), Operational (O-1–O-3); Governing Domain holds structural precedence over all other design decisions
- Kinse TbCC (Cora): Outbound calls via standard telephone; no smartphone, broadband, or technical skill required; reaches 94% of older adults
- Kinse FCCP: Six-page caregiver web platform (Dashboard, Medication, Timeline, Team, Schedule, Insight) translating Cora’s call data into adherence trends, well-being summaries, and coordination tools
- 7 Problem Conditions addressed: Digital Access Barrier, Medication Non-Adherence, Technology Abandonment, Social Isolation, Caregiver Burden, Fragmented Family Coordination, Ethical Risk



Discussion

- The #1 reason older adults abandon technology is not complexity — it is failure to respect privacy, autonomy, and dignity; RMAS makes ethics a structural precondition, not a feature
- Fragmentation is the central failure of the gerontechnology landscape; RMAS treats older adult access, medication adherence, companionship, coordination, and ethical safeguards as interdependent design problems



- KMAP and KDCP treat every interaction as a warm companion exchange, not a clinical transaction — because relationship quality, not just task completion, determines whether older adults stay engaged
- Caregiver burden is worsened by too much raw data, not too little; RMAS principles G-3 and O-1 require caregiver outputs to be summarized and actionable — reducing cognitive load, not expanding surveillance.

Conclusions

- The most important finding of this project is not the prototype — it is the structural argument: older adults’ needs, caregivers’ needs, and ethical constraints cannot be resolved through fragmented tools; they require a shared design foundation.
- Ethically grounded, telephone-accessible, family-integrated systems are not aspirational — Kinse demonstrates they are viable, buildable, and traceable to real evidence.
- Accessibility for older adults and usability for caregivers are not competing goals; when designed from a shared framework, they become mutually reinforcing — the older adult answers the phone, the caregiver has what they need.



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To my daughter Naomi, my parents, my brothers, and Dominique, my accomplishments are built on the foundation you provided.

For more information

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