

Forum on Harnessing Artificial Intelligence for HeAlth Equity
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AI-Enabled Health and Care System for Healthy Ageing: Evidence and Lessons from Korea

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AI Beyond Hospitals

AI in Community and Preventive Care

* In this talk, “care” refers to preventive, community, and long-term care systems that support functional ability in ageing populations.

When we talk about AI in health systems, we often begin with hospitals — clinical diagnosis, drug discovery, and hospital efficiency.

These are important advances.

But in ageing societies, a large part of **health and preventive care** takes place **outside hospitals** — in the community, at home, and in daily functioning.

This is where preventive interventions can help preserve **intrinsic capacity** and functional ability.

In ageing societies, the continuum of care extends from prevention in the community to long-term care support when needed.

Korea: A Rapidly Ageing Society and a Policy Testbed

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40.1%

Projected 65+ Population by 2050

From 19.2% today — **world's fastest ageing society**. Demand for care will reshape every public system.

2.14M

Older Adults Living Alone

68.5% are women. Care burden is structurally gendered — vulnerability is not evenly distributed.

3,500+

Community Welfare Centers

Backed by national LTCI, health data systems, and **Integrated Medical & LTC Act** — effective March 2026.

Example: Community Prevention Program (HWePS)

Community-Based Prevention Program

A community-based prevention program showed improvements in **self-rated health, walking practice, and stress levels** among low-income older adults. Community-based prevention systems already work — even without AI.

The key question is not whether the system works. *The key question is how AI can strengthen and scale these preventive systems.*

Korea provides a policy testbed for how AI can strengthen preventive care systems.

Preventive AI Use Cases in Community and Public Health Systems #heAlthforAll

● **High-impact:** acts upstream, before functional decline becomes irreversible ● **Low-risk:** supports human judgment — does not replace it

These examples illustrate how AI can support preventive and community-based care within existing public health systems.




AI Social Robot

12,000+ households · government-funded · FDA-approved (2025)

24/7 emotional and health monitoring for older adults living alone. LLM-powered companion with health sensors.

▲ **High-impact: early isolation & decline detection**

✓ **Low-risk: non-invasive, complements care workers**




AI CareCall

Piloting across ~70% of regions through public health and welfare centers

Automated wellness calls for vulnerable community-dwelling older adults. Overall call success rate 75% in a study of ~1,000 recipients — significant variation by gender and SES.

▲ **High-impact: national-scale safety net**

✓ **Low-risk: flags for human follow-up only**



AI-IoT Health Monitoring

Public Health Center-based · frail & chronically ill older adults

Smart devices + AI platform for remote health management. Smart band, BP monitor, glucose meter — embedded in existing PHC infrastructure.

▲ **High-impact: early intervention before crisis**

✓ **Low-risk: professional linkage at every step**

Same technology. **Unequal impact.**

Women, rural communities, and low-income older adults — those who need preventive AI care most — are least reached.

Early evidence suggests that **women and economically vulnerable older adults are less reached** — despite comprising the majority of those living alone.

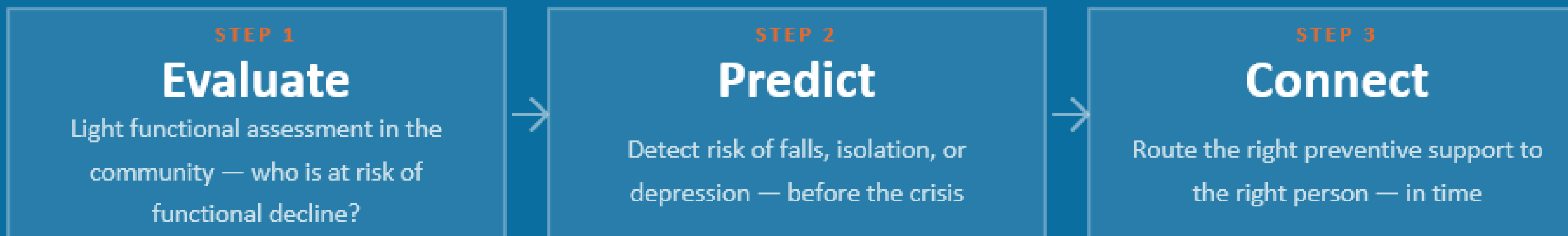
In our national survey, only 38% of community social care agencies have adopted AI, with sharp regional disparities driven by local budgets and infrastructure.

This is not primarily a technology issue. It is a governance and system design issue.

Technology impact depends on how systems are designed and governed.

The Missing Layer: AI-Enabled Care Infrastructure

Inspired by the WHO Healthy Ageing framework, the key challenge is not simply expanding services, but building infrastructure that supports functional ability and enables preventive intervention before decline.



SIMULATION EVIDENCE suggests precision digital care can allocation improves outcomes (Kim et al., in press)

+84%

Call success rate
vs. systematic allocation

-32%

PHQ-2 depression scores
vs. systematic allocation

Reinforcement learning–
based
simulation study.
Grounded in Korean
population data.

*This infrastructure does not require building a new system.
It can be embedded within existing community and public health systems.*

Early intervention can delay or reduce the need for intensive long-term care.

OUTCOME GOAL

**Days alive and living
independently at
home.**

This creates a preventive care flow across communities.

Implications for Regional AI Initiatives

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“ If we are building regional AI initiatives for health, **ageing and care, grounded in Healthy Ageing, must be a core domain — not simply an afterthought.** ”

Healthy ageing systems require preventive and community-based care infrastructure that supports functional ability across the community.

Korea provides one policy testbed where relevant data systems, community care networks, and policy frameworks already exist.

What the region needs now is the **system architecture that connects these elements.**

AI for healthy ageing is not about gadgets — it is about infrastructure.