

Responding to Longevity in Long-Term Care: the role of technology

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Navigating the future: Challenges and opportunities of longevity in Europe, Brussels,

27 June 2024



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Determinants of future LTC expenditure:

- Demographic changes
- Trends in physical & mental health. **DEMENTIA**
- Availability (and propensity to provide) **unpaid (family) care**
- **Coverage, characteristics and quality** of formal LTC services
- Financing system
- **Relative price of LTC** and other goods and services
- **Economic growth, inflation** and other macroeconomic factors affecting **wages**
- **Values** and **expectations** about quality, range & level of care
- Other factors: Quality/adaptability of **housing, pensions...**

An important reminder

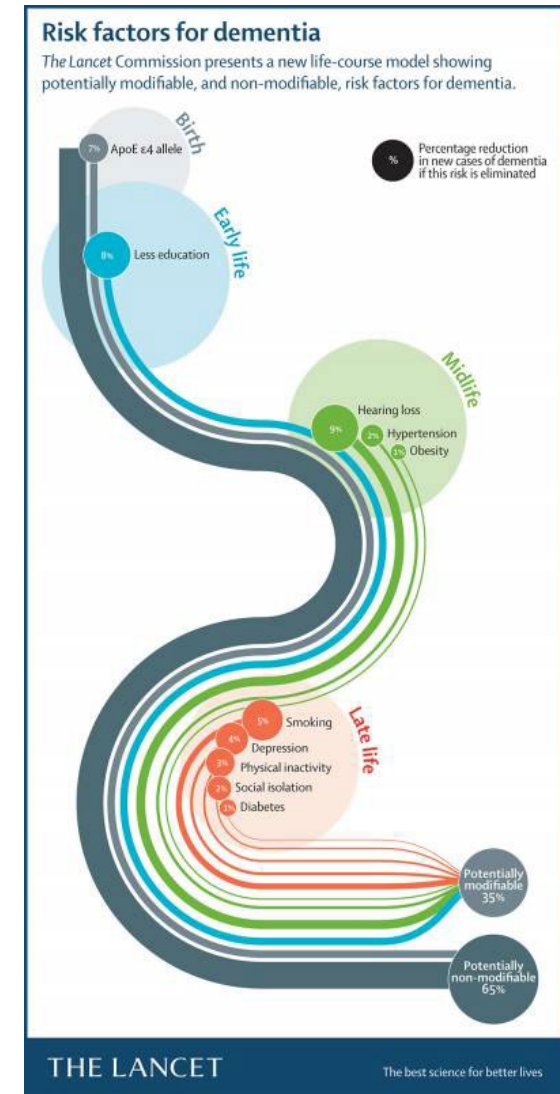
Prevention, prevention, prevention (and rehabilitation)

There is an enormous potential to reduce dependency through prevention and rehabilitation

We know how to age well:

- Reducing the risk of disabling chronic conditions: exercise, healthy diet, smoking cessation, reducing alcohol intake, social interaction, cognitively stimulating activities...
- Detecting early and treating chronic conditions to prevent future disabling consequences
- Rehabilitation and reablement

But there are huge inequalities and missed opportunities, and more traditional LTC approaches can promote dependency



And, other than prevention, is technology the answer to moderating the costs of LTC?

Brief overview of the role of technology in LTC



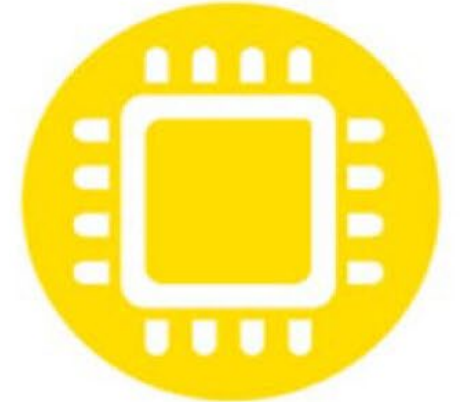
Robots



Wearables



Virtual Reality



Sensors

Online Portal



Mobile App



Artificial Intelligence



Machine Learning





Remote Monitoring



Workforce Education



**Home-to-Health Team
Communication**



Alarms & Alert Systems



Socialization & Games

**Workforce Recruitment
& Retention**



**Facility Staff
Management**



Care Coordination



**Online Care
Management**



**Behavioral Health
Management**




What is the evidence on Technology for LTC?

Findings are not always what policymakers want to hear

Article Navigation

JOURNAL ARTICLE

The effectiveness and cost-effectiveness of assistive technology and telecare for independent living in dementia: a randomised controlled trial

Robert Howard , Rebecca Gathercole, Rosie Bradley, Emma Harper, Lucy Davis, Lynn Pank, Natalie Lam, Emma Talbot, Emma Hooper, Rachel Winson ... [Show more](#)

Age and Ageing, Volume 50, Issue 3, May 2021, Pages 882–890, <https://doi.org/10.1093/ageing/afaa284>

Published: 23 January 2021

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Abstract

Objectives

The use of assistive technology and telecare (ATT) has been promoted to manage risks associated with independent living in people

 academic.oup.com

- Assistive technology and telecare for independent living (ATTILA)
- RCT, 495 participants, powered to detect moderate benefits
- Not effective
- Not cost-effective (in terms of days lived in the community and in terms of quality of life)
- Potential explanation: Participants using the ATT were more aware of safety risks, experienced technology as a disruption to their lives

<https://doi.org/10.1093/ageing/afaa284>

A bit positive, but a comparison between two technologies: FindMyApps

- Easy-to-use apps that meet personal needs and interests (low cost digital eHealth intervention)
- Aims:
 - Support self-management and social participation for people with MCI or mild dementia
 - Support carers sense of competence
- RCT (105)
- FindMyApps cost-effective compared to digital care as usual with respect to carers sense of competence

Research Article

Cost-effectiveness of the FindMyApps eHealth intervention vs. digital care as usual: results from a randomised controlled trial

David P. Neal, Matej Kucera, Barbara C. van Munster, Teake P. Ettema, Karin Dijkstra, Majon Muller, ...show all

Received 04 Oct 2023, Accepted 12 Apr 2024, Published online: 06 May 2024

“ Cite this article

🔗 <https://doi.org/10.1080/13607863.2024.2345128>



Another potentially cost-saving intervention: urinary continence assessment system

- Found savings on pads, better time use, increased quality of life
- But VERY small study and not a proper economic evaluation

https://journals.lww.com/jwocnonline/fulltext/2023/01000/effectiveness_of_a_smart_urinary_continence_care.9.aspx

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0295846#sec018>

Why do we have so little economic evidence despite such large investments?

- Most studies are focused on technologies at early state, focus on acceptability, etc, not on effectiveness
- VERY few economic evaluations
- Investment decisions (particularly public sector) may be more driven by expectations of positive externalities from technological progress

Source: Knapp et al 2022 <https://documents.manchester.ac.uk/display.aspx?DocID=60761>

Can technology replace humans in care?

“technology is not currently positioned to replace the LTC workforce but may facilitate work and support worker recruitment and retention. More rigorous evaluation of technologies in LTC and financing mechanisms are needed to support widespread adoption.”

Chapman SA, Miller JR, Spetz J. Emerging Health Technologies in Long-Term Care and Suppliers' Views on Their Potential to Assist and Support the Workforce. *Medical Care Research and Review*. 2023;80(6):619-630.
doi:[10.1177/10775587231190127](https://doi.org/10.1177/10775587231190127)

Technology and LTC so far:

- Technology is not able to replace workers, but can assist them, make their work more attractive
- Technology will often detect unmet needs and increase awareness of risk, leading to increased use of services
- The evidence base on the (cost) effectiveness/outcomes of using technology in LTC is still in its infancy, with very few rigorous studies

Looking to the future...



- The future of LTC is more demand, more spending, more workers and **more complex needs**
- Analysis of care needs, service use and **outcomes** will help us develop more efficient and adequate care approaches that work for increasing numbers of people with complex care needs
- The division between *healthcare* and *social care* will become increasingly **obsolete**. Both need to change, together.
- Professionalisation of care will result in better quality, of care, realizing potential for rehabilitation/prevention, better jobs [in a sector not affected by automation]
- Consider that not spending enough on social care may become politically **unsustainable**.

Thank you!