Aged Care Research & Industry Innovation Australia

Types of Technology in Aged Care:

Sensors and Monitoring Technology

Aged care services are increasingly embracing innovative digital technologies to improve the care experiences of older people and to enable care workers to do more, even with fewer resources (e.g., staff, financial). This information sheet on sensors and monitoring technology is part of a series covering types of technology currently used in aged care. These information sheets are available on the ARIIA website.

What are sensors and monitoring technology?

Aged care monitoring technologies can include cameras, wearable devices, sensor mats, smartphone apps, and Artificial Intelligence (AI) enabled sensors. These technologies may help in detecting falls, measuring vital signs, GPS tracking and monitoring movement, and behaviour patterns of older people. For example, movement sensors can detect if a fridge or home blinds have been opened or when someone last walked through a door. Pressure sensors might be used to detect a person's presence or their absence over a period of time.

How are sensors and monitoring technology used in aged care?

These technologies can be non-intrusive, embedded in the environment, and reliant on infrared or movement detection. They can also be wearable devices tailored to individual's needs and preferences. The data collected by these technologies can provide real-time information for early intervention and prevention as well as ongoing care and support. The use of sensors and AI technology is increasing in the field of telehealth and telecare.

It is important to recognise that wearable alarms or electronic bracelets that are overly obtrusive can negatively impact a person's dignity, as they may symbolize vulnerability and dependence. [1] This can detract from the individual's sense of self-worth and independence, leading to a decline in their overall wellbeing. Sensors or monitors should enhance, not replace, human care provision.

How can sensors and monitoring technology benefit the aged care sector?

Sensors and monitoring technology may:

- Increase safety
- Improve medication management
- Allow for 24-hour health monitoring
- Improve communication
- Enhance the quality of care. [1]

Examples of sensors and monitoring technology in aged care

- Care@Home Bed sensor: A sensor that can fit any bed, be used to monitor movements and detect a fall out of bed.
- REMi: A monitoring system that includes sensors fitted into a mattress cover and can be used to monitor movement and vital signs such as heart rate.
- Smarter Safer Homes: A sensor developed by the CSIRO to support older people to live independently in their own homes. The sensors can be accessed remotely by family members and care workers to support independence.

References

1. NDIS Quality and Safeguards Commission. Surveillance technology practice guide. 2022 [cited 2023 Feb 24]. Available from: https://www.ndiscommission.gov.au/sites/default/files/2022-08/Surveillance%20Technology%20Guide%20August%202022.DOCX

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ARIIA was established as an independent, not-for-profit organisation, set up to lead the advancement of the aged care workforce capability by promoting and facilitating innovation and research to improve the quality of aged care for all Australians.

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