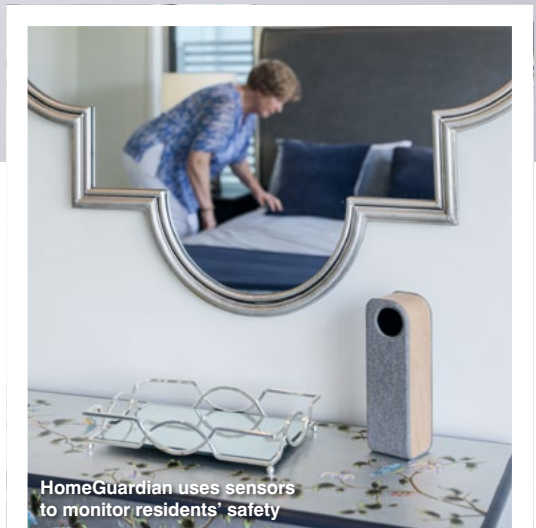


Using AI to improve falls detection

A new solution is using artificial intelligence to help aged care staff respond more quickly, writes SANDY CHEU.



Chris Stride



Bill Summers



Kane Sajdak

A new device that aims to reduce falls can help monitor aged care residents unobtrusively at all hours of the day. It can also provide real-time alerts to staff and family members when an incident occurs and increase staff efficiency.

However, this is not just any monitoring device. HomeGuardian.ai is an artificially-driven behavioural analysis device similar in size to a small portable speaker.

It uses sensors to monitor residents' movements and interactions. It is aware of what is a normal, such as sitting in a chair or lying on a bed. Conversely it knows it is not normal to interact with the ground by laying on it. HomeGuardian.ai also tracks trends and sends an alert when it detects abnormal behaviour.

Infinite Care, which has aged care facilities in South Australia and Queensland, is rolling out the device facility-wide at Infinite Care Cornubia in south-east Queensland following a successful trial there.

Chris Stride, managing director of Infinite Care, says the device allows residents to be monitored without compromising their privacy.

"One of the downfalls of having a security camera is the concerns around privacy and who can view the video. The ability of the device to monitor falls and other changes in behaviours but without video streaming is one of the biggest benefits," Stride tells *Australian Ageing Agenda*.

"It's akin to having a staff member monitoring each room

24 hours a day, seven days a week in some respects, without the requirement for additional manpower," says Stride.

Kane Sajdak, CEO and co-founder of HomeGuardian.ai, says not using cameras or recording video is a key point of difference to other monitoring devices on the market.

"We use an optical sensor, which is basically a camera lens but it's not a camera," Sajdak tells AAA. "It uses an optical sensor as an eye to see the room and what the objects are, but it doesn't store or record any footage."

When a fall occurs, the system can send an alert to the facility manager dashboard or through the facility's nurse call system. Families can also be notified, Sajdak says.

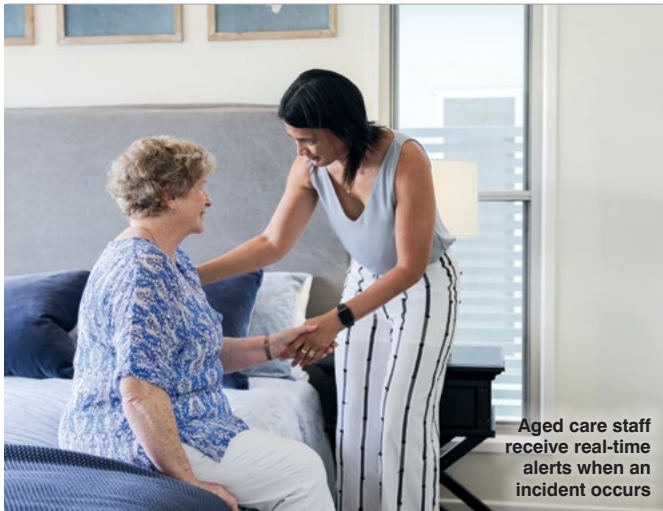
The absence of a wearable device is another benefit, says Stride.

"One of the issues with necklaces and bracelets is that some residents will remove them at different times and may have a fall at the time when they're not wearing them," he says. "With other devices that require pressing buttons, if they can't reach the device then it's of limited benefit."

Infinite Care plans to roll out the devices to all 11 of its aged care facilities, Stride says. Their goal is to improve staff response times and resident safety, he says.

Working towards a common goal

Similarly, Rockpool Residential Aged Care shares the goal of wanting to improve staff response times and achieve better care outcomes for residents. The provider, which operates one



Aged care staff receive real-time alerts when an incident occurs

residential aged care facility in Morayfield in Queensland, is currently trialling HomeGuardian.ai.

Rockpool executive chairman Bill Summers says the care staff provide to residents will not change, but how quickly they respond when needed will.

“The sooner a fall is detected, the sooner the assessment of any injury can be affected. As with any trauma, the sooner the interventions are made, the adverse outcomes are minimised. Faster response times also minimise the psychological impact of shock and distress,” Summers tells AAA.

The device provides residents and families with confidence and security, staff have peace of mind when they are not with residents, and a set of eyes on residents when they are alone in their rooms, he says. The system can also help plug gaps in the aged care workforce, says Summers.

“Most importantly, we believe that HomeGuardian.ai provides another element; to help the chronic shortage of available staff in the aged services sector.”

Rockpool has partnered with Southern Cross University to conduct research on the reliability and efficiency of the devices after they have them embedded in the facility. That is expected to be done by June, says Summers.

Reassurance for families during COVID

With the current visitor restrictions due to the COVID-19 pandemic, HomeGuardian.ai offers an opportunity for families to know how their loved ones are doing.

Residents’ families get alerted if there is a problem from facilities currently using HomeGuardian.ai, says Sajdak.

“It’s not something they have to call up to check in and see if there is a problem. They can respond straight away by contacting the facility.”

“It allows for an increased level of care but at the same time, that social distancing can still take place to reduce the spread of coronavirus particularly amongst the elderly who are at most risk of this,” he says.

Where it all started

The idea to develop the device first came about from a conversation between HomeGuardian.ai’s chief technology officer and co-founder Adam Carroll and his wife, who works in residential aged care.

Mrs Carroll suggested a need for a nurse in every resident’s room to ensure they are never left for prolonged periods after a fall.

Sajdak says the conversation aligned with his concerns for his wife who has multiple chronic health conditions.

“We looked at how the problems were currently being solved in the industry, which is with pressure mats, wearables, pendants with a button you need to push and watches, and found they all lend themselves to fail,” Sajdak says.

“Our solution is the best of CCTV, in room sensors and all the technology that you want, without any of their negative features,” he says. ■

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