

THE GREAT COMMISSION

Then He said to his disciples, "The harvest is plentiful but the workers are few. Ask the Lord of the harvest, therefore, to send out workers into His harvest field."
Matthew 9 : 37-38

Senior

Family/caregiver(s)

Volunteers

Daily check-in

Organization Carer System

- Volunteer Assignment
- Scheduling
- Volunteer photo
- Scan Senior QR
- Case Notes

Solution for Congregation (care groups)

to community outreach agedcare

Volunteer Ministry

Family / volunteer locate person with dementia

Why are S'pore's elderly still dying alone, undiscovered for weeks? *Straits Times* 28 Apr 2023

HomeSafe kit

exerGames – active aging / rehab

Community engagement

Community points

exerGames

Device camera machine learning detection model (laptop / tablet / handphone)

CareHubs

Cybersecurity compliance Nov 2024 – Nov 2026

Auto-record and transmit

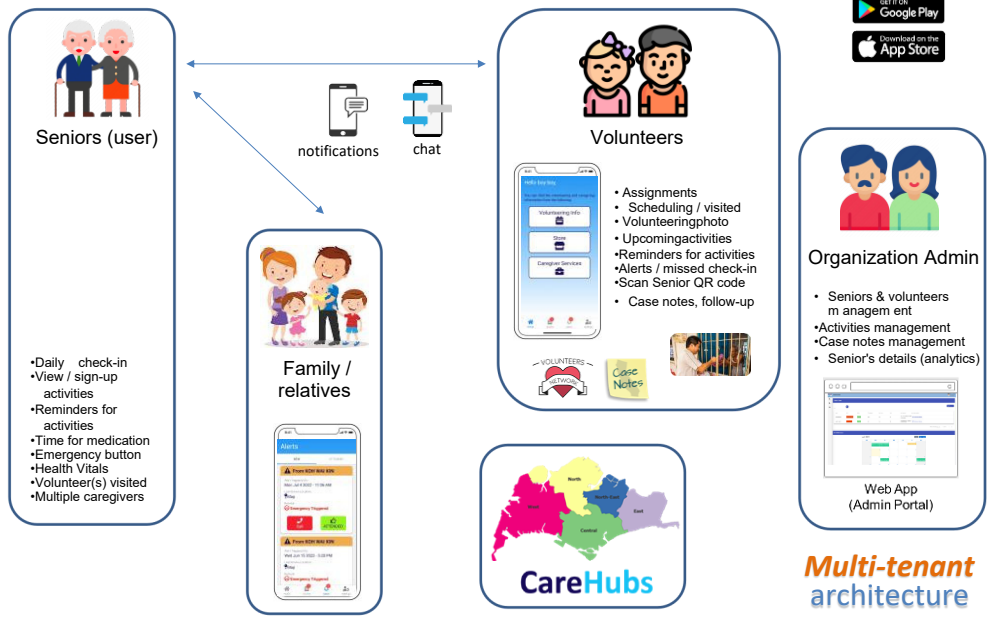
a) Home visit

b) Sun church

Identify Senior

HEALTH CHECK

a) Mobile applications, with notifications, chat/broadcast and online sign-ups (English, Chinese, Malay)



b) HomeSafe kit

April 28, 2023

THE STRAITS TIMES



- Stays alone • No cats/dogs • Home wi-fi • 5V wall adapter
- Prolonged non-movement, alert sent to others outside the flat
- Senior may have fell, fainted, unable to get to phone to call for help
- Notify Next of kin (and volunteers)
- Mobile app for multiple recipients

Why are S'pore's elderly dying alone, undiscovered for weeks?

Undetected deaths will become more salient as Singapore's population ages and household sizes shrink. Family members and the community must look after vulnerable seniors in their midst, with technology as a useful aid.



Grace Ho
Deputy News Editor

Earlier this week, a 68-year-old woman's decomposing body was discovered in her Housing Board flat after neighbours noticed a foul smell coming from the unit. A similar case in March involved an 80-year-old deceased woman who lived alone. "I hadn't seen her for a week. I thought she was away and didn't turn on the lights at night," a neighbour told reporters then.

Other cases went undetected for even longer. In 2020, the remains of an elderly woman and

her pet dog were found only after letters had piled up for months outside her condominium unit. The issue of undetected deaths will become more salient as Singapore's population ages and household sizes shrink, putting a strain on family support.

No doubt such incidents, while sad, are rare today. While the Health Ministry does not track the number of elderly who die alone at home, it has been reported that the Health Sciences Authority (HSA) handles fewer than 100 unclaimed bodies each year. This isn't even 0.5 per cent of the nearly 27,000 deaths registered in 2022.

But it cannot be taken for granted that this will always be the case. Already, the number of people aged 65 and older here nearly doubled to 644,000 in 2020, from 338,000 in 2010. Those living alone accounted for 80.2 per cent of resident households in 2020, up from 8.2 per cent in 2010.

This ageing, solitary demographic is something which countries like Japan are familiar with. There, dying alone, or "kodokushi", is a growing trend as fewer people get married and have children. A similar phenomenon in South Korea is "godoksa" or "lonely deaths", which has been exacerbated by the country's demographic crisis and gaps in

social welfare.

It's not just death itself, but the isolation leading up to it which can kill — literally. Researchers at Duke-NUS Medical School and Japan's Nihon University found that people aged 60 who see themselves as lonely can expect to live three to five years fewer than peers who don't see themselves that way.

ROLE OF FAMILY

So what can be done to minimise Singapore's very own "kodokushi"? The responsibility of caring for seniors can be extended beyond their children, said Mr R. Jai Prakash, principal consultant at social change consultancy SociTrain.

He said families should rope in other relatives, and even friends, to take turns in looking after the elderly. "It is also important to build good relationships with neighbours. The definition of family or a pseudo-family needs to be broadened."

The frequency of contact matters. For example, family members can make it a point to text their seniors a few times a day. If they do not reply for long periods of time, it may signal unusual behaviour requiring attention.

Some frail seniors with medical conditions can wear devices that

monitor vital signs, said Adjunct Associate Professor Corinne Ghoh of the National University of Singapore's Department of Social Work.

It could even be something as simple as hanging a mobile phone over oneself with a strap so that one can call one's children easily in times of need.

The point is to build in protective measures in one's lifestyle so that the older person is "sighted" daily by family members, she said. "The older person can feel a sense of security, and the family members can have peace of mind."

COMMUNITY AND SOCIAL SUPPORT

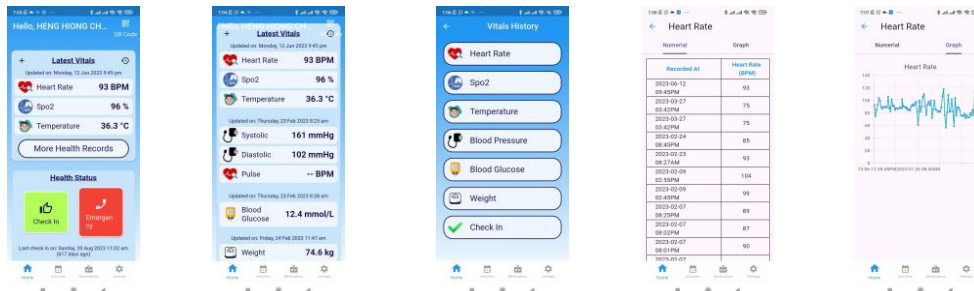
Studies show that social support is a key protective factor for older adults, helping to buffer them against stressful life events.

Prof Ghoh said that the quality and reliability of this support matters. "Even a single confidant whom the senior knows can bring down levels of depression," she said.

What counts as a social support network? It could be neighbours, friends and interest groups, faith-based organisations and grassroots agencies, or drop-in centres like the active ageing centres (AACs), which provide befriending and other activities,

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c) Health devices with readings, history and graphs (monitoring could share with caregiver / family doctor)



SinDance <https://youtu.be/CQZ4L8T200g> (songs)
SenzeGame <https://youtu.be/j6fQLBfpzbY>
<https://exergame.healthylongevity.app> (demo)

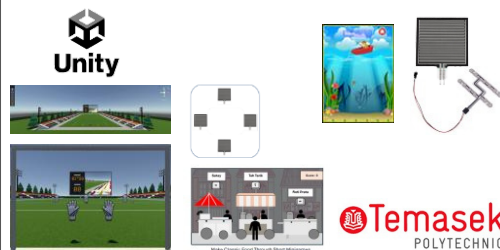


Showcase

Repetitions – count



exerPlay–sensors/firmware, Bluetooth, to control game engine



ExerGame – video game control with movement camera detection



exerDance – to choreographed movement and music



Health and MedTech with hospital / nursing

SenzeHub Pte Ltd – incorporated March 2019. Projects to-date:

- *HomeSafe kit for Seniors who are staying alone (family remote)*
- *Electronics, firmware and hardware devices*

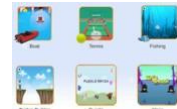


➤ *Machine Learning Detection Model IP – using built-in camera of laptop/tablet/handphone with Unity Game engine*

1. SGH wheelchair patients – sensor / game
2. TTSH Centre for Advanced Rehab Therapeutics (*pilot in-patient ward*)
<https://youtu.be/j6fQLBfpzby>
3. NUS Medicine/Alice Lee Centre for Nursing Studies – SinDance
<https://youtu.be/CQZ4L8T200g>
4. NUS Medicine/Alice Lee Centre for Nursing Studies – Care4Seniors (on-going)



Device camera machine learning detection model



Industry commercialization partner for research institutions - MedTech

- A*STAR IMRE – sweat sensor  (project approval \$1M+ 2024 – 2025)

- A*STAR IME – extravasation detection KKH / SKH / National Cancer Centre (2024 – 2025)

