Empowering older persons though digital literacy in Singapore

Presented by:
Karen Wee Siew Lin
Executive Director
Lions Befrienders Service Association (Singapore)
Background

➢ Largest number of pilots in eldercare in Singapore
➢ 14,000 seniors aged 60 and above
➢ Assigned by Ministry of Health Singapore to serve 27,000 seniors by 2030 in 10 assigned boundaries

Mission

▪ Seniors to age in place holistically with best quality of life:
  - Socially
  - Emotionally
  - Mentally
  - Physically
  - Spiritually
  - Financially

▪ Seniors to be empowered with engagement, self actualize
  - Contributing to last breath
  - 150 staff members and 1,000 volunteers
Enhancing Community Care through Technology

LB’s Digital Transformation Strategy

Preventive & Early-stage Intervention Eldercare

Virtual Befriending
- Exposing seniors to digital content & engagement.

Smartphone Deployment
- Equipping seniors with tools to access digital content.

Telemedicine & Teleconsultation
- Helping seniors seek medical help more safely and efficiently.

AI (Screening)
- Screening of seniors’ negative emotions & mental health.

IM-OK System (Monitoring)
- Empowering seniors to take ownership of their own well-being.

IM-HEALTHY Station (Monitoring)
- Promote easy monitoring & quick detection of change in health statuses.

Ongoing Development
- Improving current pilots & finding areas to innovate.

Outcomes

1. Strengthen LB’s Capability in Community Care
2. Change in Seniors’ Perception of Technology & Promotes Health-Seeking Behaviour
Technological Innovation as Enablers in Healthy Ageing

Digital health technologies have become a critical enabler for meeting the challenges of aging, with the potential to increase access, expand service coverage, improve the quality of service delivery, reduce health disparities, and lower healthcare cost (Duke-NUS Centre of Regulatory Excellence, 2020).

LB Tech Care Ecosystem

Tech for holistic care

- IM-Healthy
- IM-OK
- Bio-Medical
- Cognetivity
- IM-Happy
- Sound-eye
- Physical
- Mental Emotional
- Spiritual
- Social
- AMR

Tech for holistic care
To address concerns over the safety of seniors who live alone, the IM-OK tablet device empowers these seniors to proactively self-report their well-being at home by tapping the “I'm OK” button on the device at scheduled times daily. The device can also be customised to seniors’ needs, such as sending medication reminders, receiving online doctor consultation and accessing entertainment apps.

**News Coverage:**
- Lions Befrienders closes the digital gap with the use of technology into daily activities (Segment 1) (CH8, Silver Carnival 银色嘉年华, 31 August 2023)
- Helping Singapore’s seniors tackle the emotional impact of digitalisation: Active Ageing Centres step up to provide support for seniors to not be overwhelmed by the tides of technological transformation (Yahoo News, 28 August 2023)
- The tough work of trying to engage reclusive seniors and cut risk of their dying at home alone (Straits Times, 7 May 2023)

IM-Healthy is developed by LB as a one-stop, self-service vital health measurement station. Located at all 10 LB Active Ageing Centres (AACs), the station easily records seniors’ health components such as blood pressure, heart rate, muscle mass, body fat and more. This information can be shared with the seniors’ family members and healthcare professionals to track changes in health status or quickly detect potential health issues.

**AIDEN**
AIDEN is an Autonomous Mobile Robot (AMR) that can deliver items such as meals, groceries, medication and laundry to the doorsteps of frail or homebound seniors living in HDB flats, and even conduct check-ins on their well-being. Borne out of a joint collaboration between LB and Delta Electronics, the pilot trial for AIDEN was launched on 13 October 2023, serving daily meals to LB seniors at Blk 151 Mei Ling Street. AIDEN boasts the unique capability to move vertically within a building by taking lifts without requiring any expensive overhaul to existing lift infrastructure. These cost savings will allow AIDEN to be swiftly and efficiently deployed in various settings and applications, pending its successful trial.

**News Coverage:**
- Lions Befrienders Launch AIDEN, A Robot That Delivers Food To The Elderly (SilverStreak, 23 October 2023)
- Robot ‘butler’ trial launched at HDB rental block to deliver meals to seniors (Straits Times, 22 October 2023)
- Robot delivers essentials to seniors in HDB block in Queenstown (CNA, 14 October 2023)
LB Tech Care Ecosystem (Cont’d)

Pioneering tech in eldercare

**IM-Happy**
4000 seniors screened since 2021

IM-Happy is a software that leverages on Artificial Intelligence (A.I.) technology to assess facial emotions in real-time, allowing early detection of seniors who may have mental or emotional needs and concerns.

More about IM-Happy in the news:
- *Lions Befrienders closes the digital gap with the use of technology into daily activities (Segment 1)* (CH8, Silver Carnival 银色嘉年华, 31 August 2023)
- *Lonely seniors in Singapore: Who cares for them when they’re all alone? – Lions Befrienders’ AI-driven mental health intervention* (Yahoo News, 4 August 2023)
- *CH 8, 8world News, 19 September 2023*

**IM-Alert**
650 seniors screened

IM-Alert uses an A.I.-based application called CognICA to detect mild cognitive disorder (MCI) and dementia in seniors, providing comprehensive test results to understand seniors’ cognitive function and thus enabling prompt intervention to mitigate potential deterioration or health complications.

**SAY NO TO SCAM**
4000 seniors benefitted since 2022

Through a user-friendly web application that comprises a collection of educational videos and engaging quizzes, I Say No To Scam empowers seniors with the knowledge and skills necessary to recognise and combat various types of scams.

Recognition for LB TechCare
- Recognition at the 9th Asia Pacific Eldercare Innovation Awards (APEIA) for Innovation of the Year – Social Engagement Programme and Innovation of the Year – Ageing in Place Model
- Techblazer Awards 2023: IM-OK awarded finalist (top 3 out of 26) for the Best Adoption, NGO category
- 11th APAC Eldercare Innovation Awards: IM-Healthy selected into top 3 of Innovation of the Year—Productivity

**IM-Happy in the news:**
- *Lions Befrienders closes the digital gap with the use of technology into daily activities (Segment 1)* (CH8, Silver Carnival 银色嘉年华, 31 August 2023)
- *Lonely seniors in Singapore: Who cares for them when they’re all alone? – Lions Befrienders’ AI-driven mental health intervention* (Yahoo News, 4 August 2023)
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Holistic integration of programmes and services
Forge strategic partnerships
Leverage technology and innovation for eldercare

LB Tech Care Ecosystem (Cont’d)

Key Showcases

Digital for Life Singapore Festival 2022 and 2023
LB was the only charity to host a booth at this festival. In 2022, LB’s IM-OK device was launched in the presence of Mdm Halimah Yacob, President of Singapore, and the Minister for Communications and Information and Minister-in-charge of the Cyber Security Agency and Smart Nation Initiative, Mrs Josephine Teo.

Skills for Good Festival 2023
LB introduced Daisy, an interactive social robot, at the Skills For Good Festival 2023. A new addition to the LB TechCare family, Daisy can engage in conversation, tell jokes and lead exercise routines, effectively aiding in the caregiving duties of seniors.

SUSS Geronpreneurship Innovation Festival 2023
LB participated in the inaugural SUSS Geronpreneurship Innovation Festival 2023, showcasing LB TechCare focusing on preventive health management of seniors. The event showcased innovative and sustainable solutions to address the issues of Singapore’s rapidly ageing population.
• Part of the LB health-centric ecosystem
• Preventive Healthcare for seniors to age independently and healthily
  • Self-monitoring & reporting
• Wellness device for seniors
  • Entertainment, engagements
  • Sharing of their vital health information
What about seniors without IM-OK?

IM-OK supports the preventive health of our seniors
Expanding IM-Healthy eco-system to those without I-OK

What it measures

- Height
- Weight
- Blood Pressure
- BMI
- Heart Rate
- Bone Mass
- Muscle Mass
- Body Fat
De-stigmatising topics around mental wellness

Offering a novel way on MH screening to attract participation

Improving MH literacy to increase help-seeking behaviours among seniors

Providing early detection of MH with improved ease of access to MH screenings for seniors to seek help

The software is highly sensitive in picking up facial expression in data collection as it can measure up to 500 actions points from the facial features.

Designed & calibrated to analyze Asian facial features accurately and reliably to prevent biasness towards certain expression and culture.
CognICA

INTEGRATED COGNITIVE ASSESSMENT

Gap exists in existing assessment tools

<table>
<thead>
<tr>
<th>Precision Limitations</th>
<th>Practical burdens</th>
<th>Language dependence</th>
<th>Education bias</th>
<th>A learning effect</th>
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<tbody>
<tr>
<td>Assessor bias / subjective interpretation</td>
<td>Time consuming</td>
<td>Bias due to reliance on language</td>
<td>Less educated perform less well</td>
<td>Regular assessments not possible</td>
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<tr>
<td>Crude and static cut offs</td>
<td>Requires expert administration</td>
<td>Cultural inconsistencies</td>
<td></td>
<td>Not suitable for longitudinal monitoring</td>
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<td>Lack of sensitivity to early-stage disease</td>
<td>Cannot be delivered remotely</td>
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SOLVING THE PROBLEM

Cognetivity’s ICA is self administered, with no learning effect and no dependence on culture or education
AMR
Autonomous Motorised Robot

Objectives:
- Delivery of food, daily necessity & small items to seniors who are home bound
- Check-in of seniors (those who did not press IM-OK)

Features:
- No need for comms with lift
- Able to recognize occupancy level in lift
- Able to recognize obstacle & maneuver tight corridor (reverse to move to side)

Phase 1
- Intra-block
- Launched in October 2023

Phase 2: Multi-Building Navigation
Effective Q1 2024 Onwards

Multi-Building Navigation
Our Treasure Box
Smart Locker

Objectives:

For seniors
Allows needy seniors who miss the ration distribution during office hours to collect during their free time.
Promotes active ageing as seniors gain points for redemption by participating in our AAC activities.
Promotes social inclusivity by motivating the seniors to come down to the AAC.

For AACs
Reduces ration wastage by allowing seniors to only take what they need. Stay connected with the working seniors.

Features:

For seniors
Designed for easy usage (e.g. large and bold font for key points).
Ease of scanning of NRIC/Passion Cards.
Displays redeemable items for the seniors with the points accumulated.

For AACs
All-in-one handheld device for locker management.
Ability to do batch reserves and specific reserves for the locker.

Photo from Our Treasure Box launch that happened on 5th July 2024
Lions Befrienders

Connecting Seniors, Enriching Lives

Karen Wee Siew Lin
Executive Director
Lions Befrienders Service Association (Singapore)
Contact No: (+65) 8869 1862
Email address: karen.wee@lb.org.sg