

Application Fields and Innovative Technologies

Apollo–Sustainable Intelligent Community Health Service for Older People In Remote Areas CT.Wu, YY.Tsai, KY.Lin, YC.Chien, HH.Liou, KC.Chang. *Gerontechnology* 25(s)

Purpose Rural communities face persistent healthcare inequities intensified by population aging and limited medical resources, mirroring global patterns of restricted service access for older adults. To address these gaps, we developed the Integrated Health Information Management System (IHIMS). This community-embedded, data-driven platform enhances the capture of health information and risk stratification, enabling proactive, interdisciplinary care in underserved rural areas. **Method** IHIMS integrates multi-source health data from standardized community-based pre- and post-assessments, wearable devices, and embedded sensors at congregate meal sites. Baseline data were collected during routine screenings by trained staff using calibrated devices, with follow-up data obtained through continuous monitoring and scheduled reassessments in the same settings. An AI engine analyzed these data to generate real-time risk predictions, guiding interdisciplinary teams to deliver timely, tailored interventions under consistent measurement protocols. **Results and Discussion** Since 2018, this community-embedded model has demonstrated a substantial clinical and operational impact across rural congregate meal service sites, serving over 3,500 older adults daily. Its sustainability is reinforced by local physicians who provide daily 60-minute teleconsultations, five days a week, alongside more than 300 capacity-building sessions that trained community seed instructors to stabilize workforce needs. Older adults exhibited meaningful health improvements, including reductions in systolic blood pressure (from 133.7 to 125.9 mmHg) and diastolic pressure (from 72.9 to 68.5 mmHg), as well as gains in grip strength, standing speed, and walking speed, indicating clear functional benefits in resource-limited settings. A strong association between monitoring frequency and physiological stability further underscores the model's effectiveness, demonstrating a scalable and sustainable pathway for long-term rural elder care.

References

1. World Health Organization. Integrated care for older people (ICOPE): Guidance for person-centred assessment and pathways in primary care. 2019.
2. Tu CY, Wu CS, Yen CM, et al. Profiling social detachment in older people in Taiwan: A cluster analysis. *Int J Geriatr Psychiatry*. 2024;39(12):e70027.
3. Li PJ, Liao LC, Chuang CJ, et al. Low urbanization but not illiteracy was associated with poor medication adherence among elderly people in rural Taiwan. *Int J Clin Pract*. 2024;2024:8080712.

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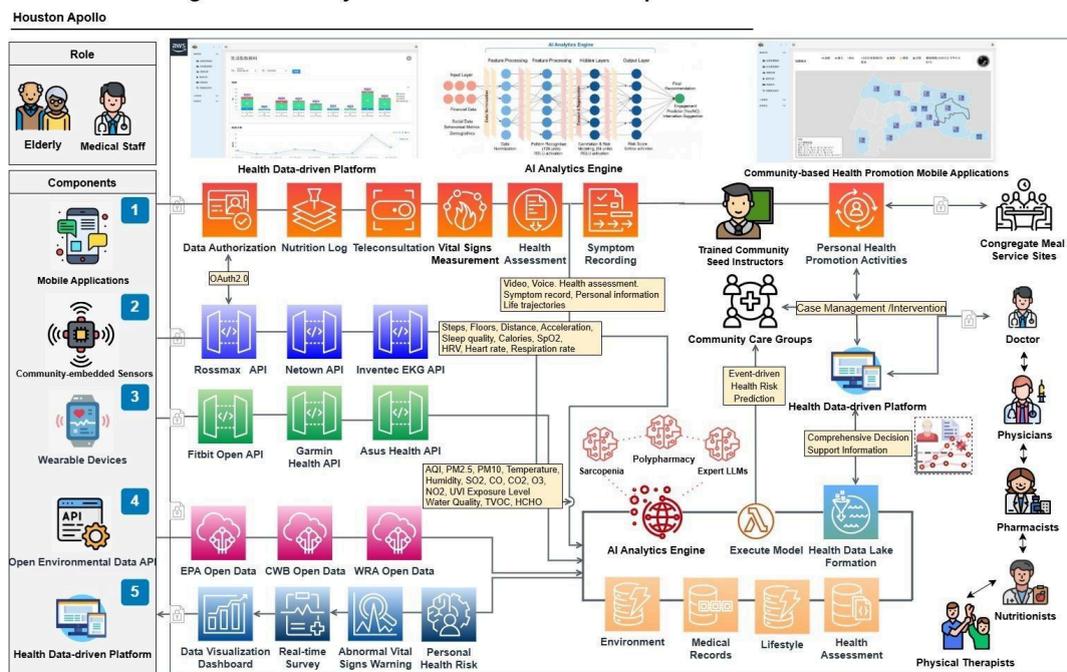


Figure 1. Sustainable intelligent community health service for older people in remote areas