Acute Medical Teleconsultations for Nursing Homes: A Cost-Saving Service Model to Avoid Unplanned Hospital Admissions

Singapore Healthcare Management 2025

OP060

Sengkang General Hospital
SingHealth

Koh Yi Qian Russell, SKGH
Ng Jun Jie Angus, SKGH
Ngo Hui Juan, SKGH

EGC Acute Medical Teleconsultation

The **EAGLEcare (EGC) Acute Medical Teleconsultation** is a service model introduced under the EAGLEcare programme by Sengkang General Hospital (SKH). Attended by SKH resident physicians from the SKH Transitional Care and Community Medicine Department, it delivers timely acute medical care to nursing home residents via teleconsultation, aiming to reduce hospital transfers and enhance continuity of care on-site. Currently SKH offers this service to 9 nursing homes in the northeast region of Singapore.

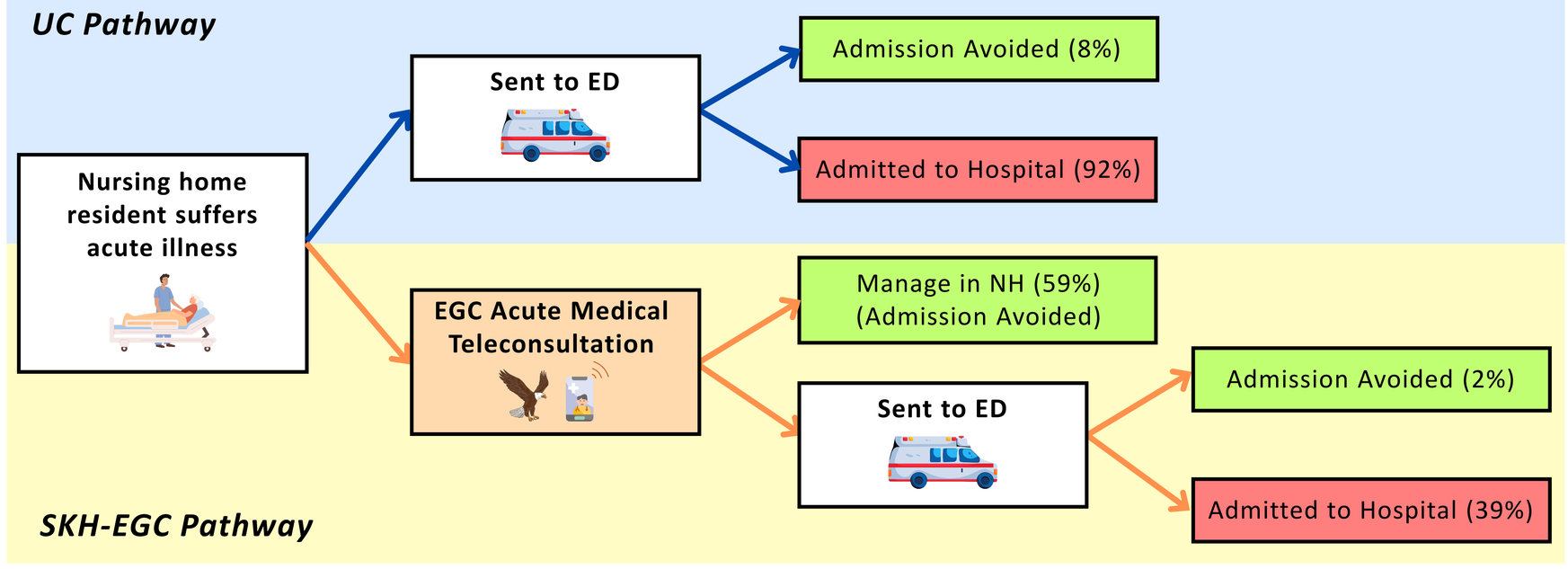
Purpose of Study:

To evaluate the cost-effectiveness of the EGC Acute Medical Teleconsultation service model in avoiding unplanned hospital admissions among nursing home residents, compared to usual care where nursing home residents are sent directly to the emergency department (ED).

Methodology:

This retrospective economic evaluation used 2022–2023 data from EGC teleconsultations and SKH ED visits. A decision tree model was constructed to estimate the expected outcomes and costs of two pathways: EGC Acute Medical Teleconsultation versus Usual Care.

Fig 1. Decision Tree Model simulating a nursing home resident's journey using either the Usual Care (UC) Pathway or EGC Acute Medical Teleconsultation (SKH-EGC) Pathway



^The probability of outcomes on each pathway was derived from observed outcomes of 685 nursing home residents managed via the SKH-EGC pathway and 3,286 nursing home residents managed under the UC pathway.

Results:

Estimated Outcomes	SKH-EGC Pathway	UC Pathway	Difference (Δ)
Expected Cost	$364	$598	-$234
Expected Effectiveness (Avoid Admission)	61%	8%	53%
Incremental Cost-Effectiveness Ratio (Δ Cost / Δ Effectiveness) = -$234/53% = -$444 (Cost Saving)			

Discussion:

The SKH EGC Acute Medical Teleconsultation service **demonstrated cost savings of $444 per unplanned hospital admission avoided**, highlighting its potential for scale-up. In 2022 and 2023, the service helped avoid 418 hospital admissions, amounting to over $185,000 in cost savings for SKH and SCDF (Fig 2). This estimate excludes additional savings from reduced ED congestion and bed days avoided. On average, nursing home residents spend 6 days in hospital upon admission, further emphasizing the resource savings.

By delivering timely clinical support to nursing homes, the service reduces avoidable ED visits and ambulance use, easing pressure on emergency services. These results support wider adoption of hospital-managed teleconsultation models to improve system efficiency and meet the growing demand from an ageing population.

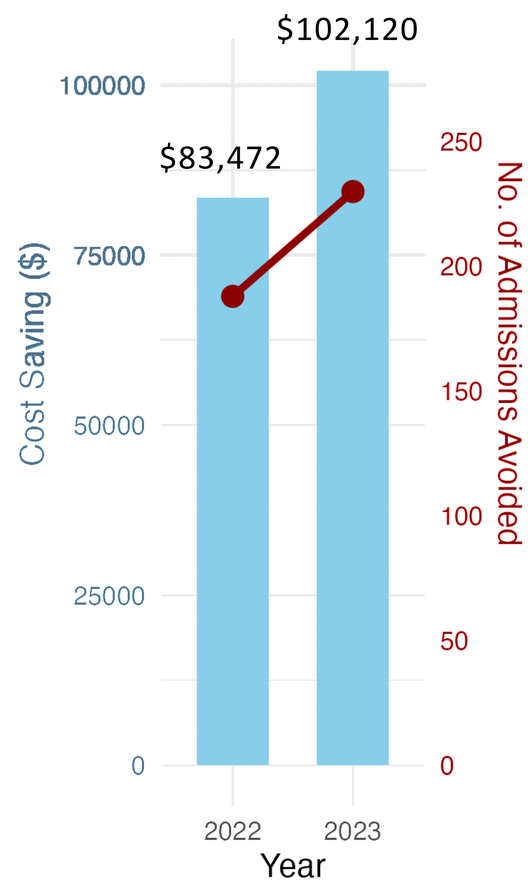
Key Assumptions

1. Nursing home residents receiving EGC Teleconsultation would have been sent to the ED.
2. Nursing homes are assumed to have similar care standards and clinical capabilities.

Cost Parameters:

Sent to ED	SKH ED visit and Ambulance Charges **$598**
EGC Acute Medical Teleconsultation	SKH RP consultation Charges **$116**

Fig 2. Annual Cost Savings & Admissions Avoided (Outcomes for 2022 & 2023)



Sensitivity Analysis:

A one-way sensitivity analysis (±30% variation) showed that the EGC Acute Telemedicine pathway **remained cost-saving across all tested scenarios,** with the greatest impact from hospital admission rates, ED visit and ambulance charges.