

## **Project Title**

Does an Integrated Palliative Care Program Reduce Emergency Department Transfers for Nursing Home Palliative Residents?

## **Project Lead and Members**

Project lead: Lim Yujun

Project members: Ho Peiyan, Laurence Tan, Sim Lai Kiow, Gerlie Magpantay, Joanne Chia, Yu Chin Hui, Tan Qing Wen, Perry Lee, Siti Zaleha Binte Sheikh Abd Rahman, Alecia Chua, James A Low

## **Organisation(s) Involved**

Khoo Teck Puat Hospital

## **Healthcare Family Group Involved in this Project**

Medical, Healthcare Administration, Nursing

## **Specialty or Discipline (if applicable)**

Geriatric Medicine, Population Health & Community Transformation

## **Project Period**

Start date: April 2018

Completed date: June 2020

## **Aims**

To evaluate the impact of the GeriCare Palliative Care Program in reducing Emergency Department (ED) transfers for Nursing Home (NH) Palliative residents

## **Background**

The prevention of inappropriate Emergency Department (ED) transfer of Nursing Home (NH) residents helps to reduce iatrogenic complications and improve the quality of life, especially in palliative care residents. Studies have shown that telemedicine,

weekly on-site physician visits, Advance Care Planning (ACP) and provision of education to NH staff can reduce ED transfer rates.

## Methods

This was a retrospective cohort study of residents from five NHs in Singapore who were recruited into GeriCare Palliative Care Program, from April 2018 to June 2020. In Adhoc consultations, NH residents who were planned for ED transfers were first triaged by the team via Telemedicine. Records of all enrolled palliative care residents who were triaged by telemedicine consultations were examined.

## Results

In this study, a total of 217 telemedicine consults were conducted for 187 unique NH residents across 5 NHs over a 27-month period from April 2018 to June 2020.

### 1) Demographics and ED transfer rates

- 82% of residents who were supposed to be transferred to ED averted transfers after adhoc teleconsultation.
- Statistically significant, there were more males in the ED transfer group compared to females.
- Both groups had similar age, comorbidity and frailty scores.
- Non-ED transfer group had a higher proportion of terminal care and symptom control conditions.

### 2) ACP completion

There were more ACPs documented in the Non-ED transfer group as compared to the ED transfer group.

- 43% of the male residents had documented ACP compared to 55% of the female residents in the ED transfer group.
- More ACPs documented comfort care (70% vs 21.7%) in the Non-ED transfer group than the ED transfer group

## Lessons Learnt

- 1) By having an integrated program with clinical support (preceptorship and telemedicine), ACP advocacy and education program, this had led to a significant reduction in ED transfers. The analysis of residents with ACP revealed that ACP with goals of care documented as “comfort” significantly reduced ED transfers.
- 2) The COVID-19 pandemic did not affect the effectiveness of the program. The program enabled residents to continue to receive quality acute and palliative care through conversion of physical visits and ACP to Telemedicine, TeleNursing and Tele-ACP.

## Conclusion

The GeriCare model comprises of a systematic framework, an integration of clinical support, ACP advocacy, and an education program that aims to optimize the residents’ quality of life by anticipating, preventing, and alleviating their suffering across the care continuum. The GeriCare Palliative Care Program demonstrated that the whole is greater than the sum of its parts and it is possible to enable NH residents to age-in-place comfortably with targeted initiatives and adequate support.

## Additional Information

- Singapore Health & Biomedical Congress (SHBC) 2021 Best Poster Award (Health Services Research – Bronze Award)
- Journal link - <https://pubmed.ncbi.nlm.nih.gov/34495751/>
- GeriCare website - <https://www.gericarenorth.com/>

## Project Category

Care Continuum, Intermediate and Long Term Care & Community Care, Nursing Home, End-Of-Life Care, Palliative Care

Technology, Digital Health, Telehealth

## Keywords

Telemedicine, Teleconsultation, Teleconferencing, Advance Care Planning, Preceptorship

**Name and Email of Project Contact Person(s)**

Name: Tan Qing Wen

Email: tan.qing.wen@ktph.com.sg



# Does an Integrated Palliative Care Program Reduce Emergency Department Transfers for Nursing Home Palliative Residents?

Lim Y<sup>1</sup>, Ho P<sup>2</sup>, Tan L<sup>1,2,3</sup>, Sim L K<sup>1</sup>, Magpantay G C<sup>1</sup>, Chia W K<sup>1</sup>, Yu C H<sup>1</sup>, Tan Q W<sup>1</sup>, Lee P<sup>1</sup>, Sheikh Abd Rahman S Z<sup>1</sup>, Chua A<sup>1</sup> & Low J A<sup>1,2,3</sup>

<sup>1</sup> GeriCare, Yishun Health, <sup>2</sup> Department of Geriatric Medicine and Palliative Care, Khoo Teck Puat Hospital, <sup>3</sup> Geriatric Education and Research Institute



## Background

The prevention of inappropriate Emergency Department (ED) transfer of Nursing Home (NH) residents helps to reduce iatrogenic complications and improve the quality of life, especially in palliative care residents. Studies have shown that telemedicine, weekly on-site physician visits, Advance Care Planning (ACP) and provision of education to NH staff can reduce ED transfer rates.<sup>1-2</sup> However, no study has evaluated the impact of an integrated program for NH residents comprising of all the above targeted interventions.

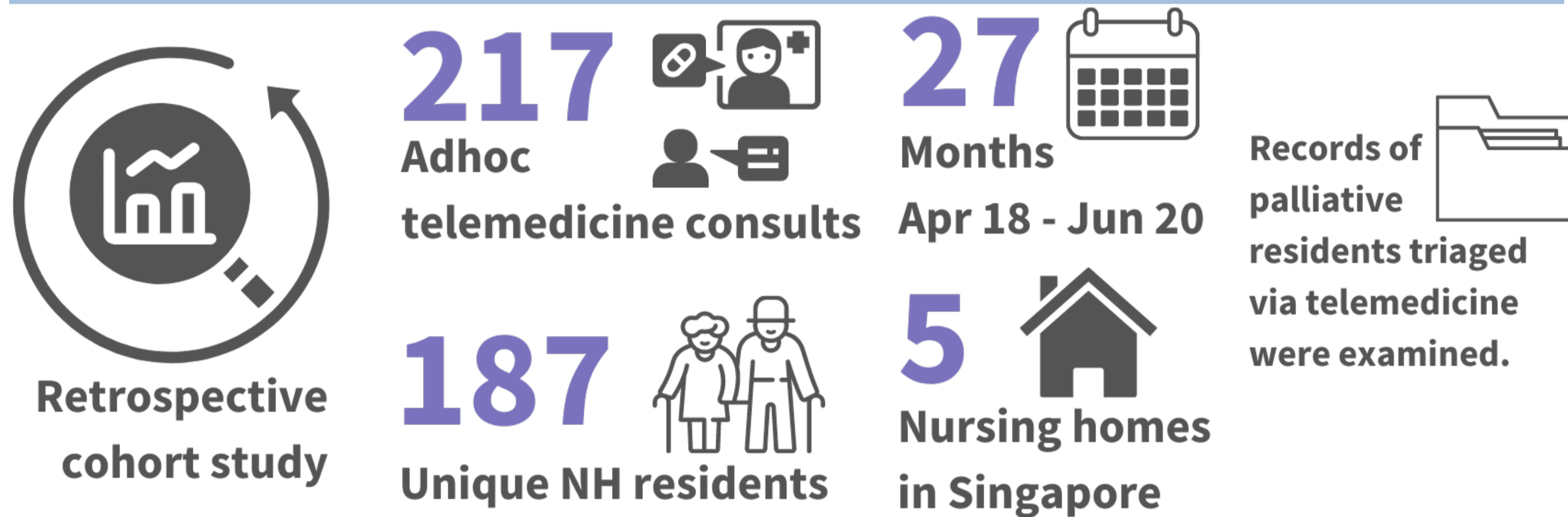
## Objective



The GeriCare Palliative program comprises of the **EPICT** model of care. In Adhoc consults, NH residents who were planned for ED transfers were first triaged by the team via Telemedicine. NHs were given support to manage residents in which ED transfers were averted using the model.

**AIM: To evaluate the impact of the GeriCare Palliative Care Program in reducing ED transfers for NH Palliative residents.**

## Methodology

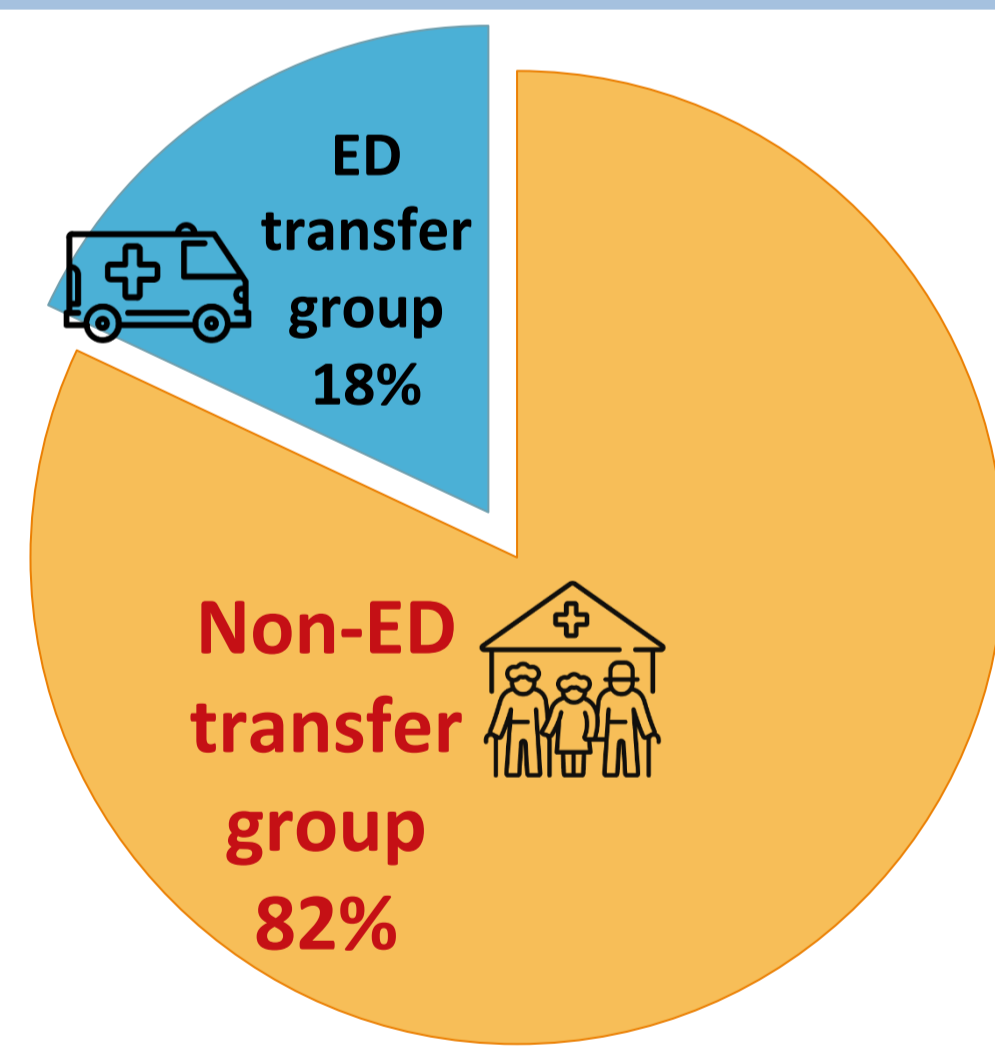


- Inclusion criteria**
- Life-limiting illness with prognosis less than one year as estimated by a palliative care nurse.
  - Residents who are symptomatic based on Edmonton Symptom Assessment Scale-Revised.<sup>3</sup>
  - Residents with two or more hospital admissions in the past year.

## Results

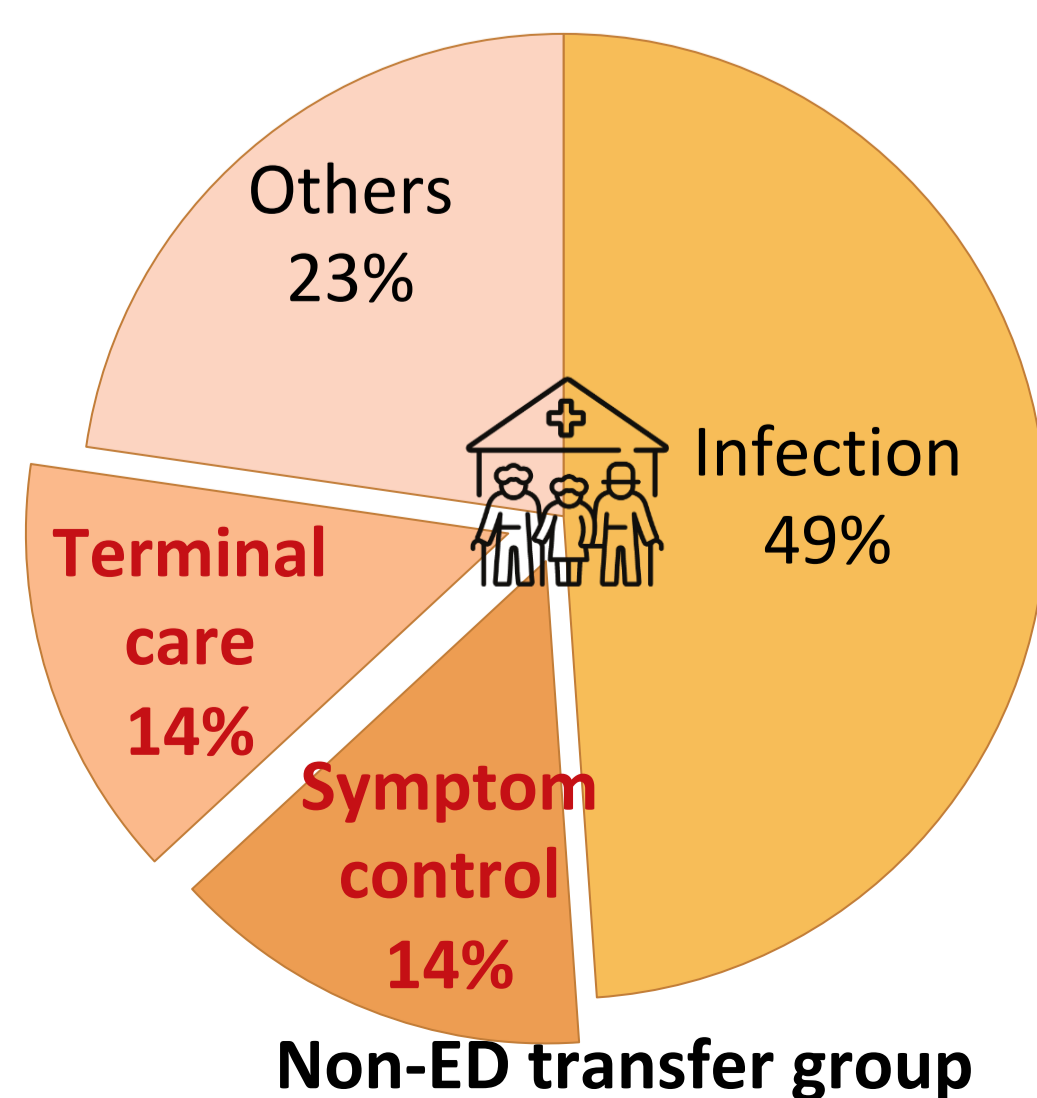
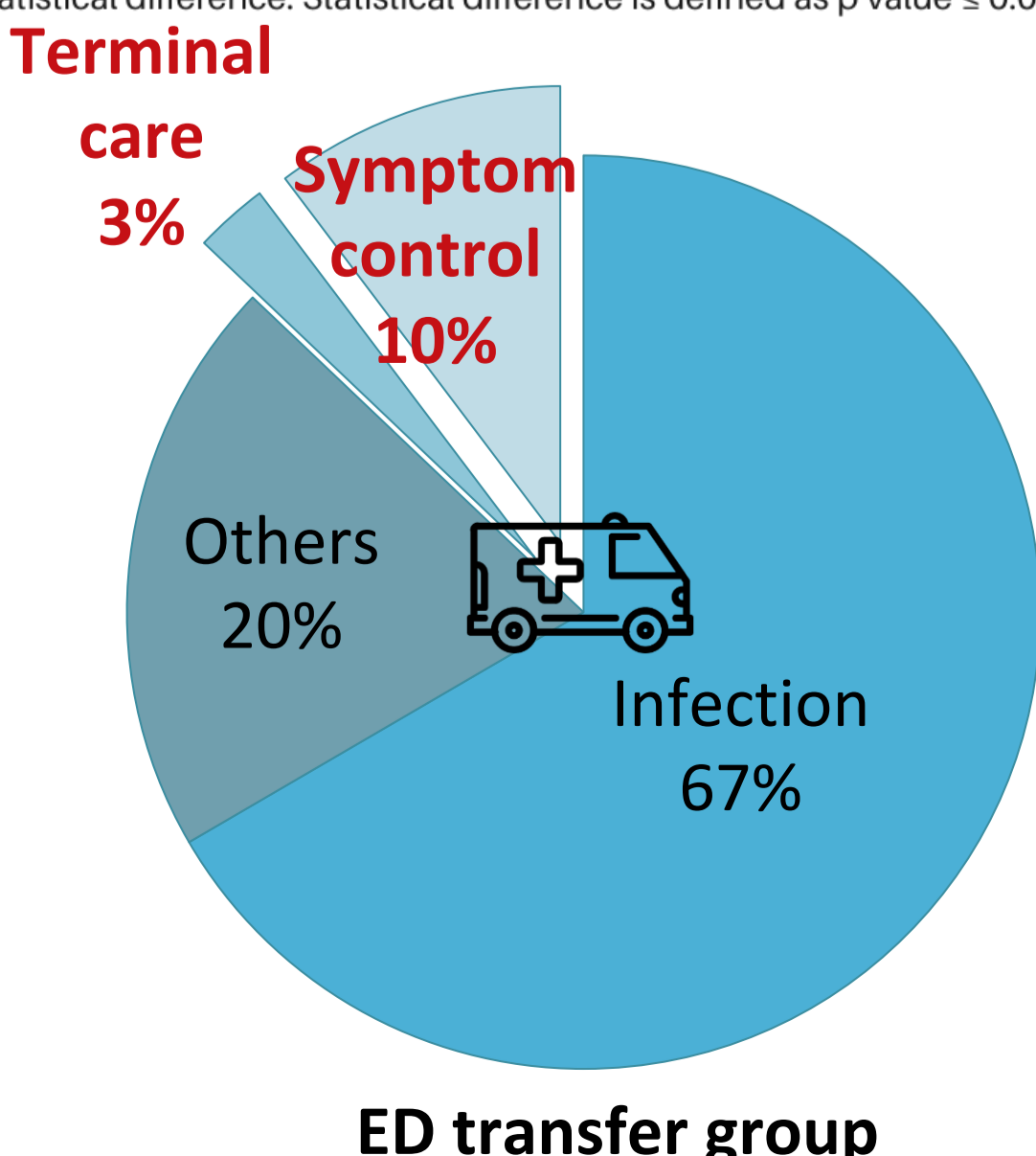
### 1. Demographics and ED transfer rates

- 82% of residents who were supposed to be transferred to ED averted transfers after adhoc teleconsultation.
- Statistically significant, more males were in the ED transfer group compared to females.
- Both groups had similar age, comorbidity and frailty scores.
- Non-ED transfer group had a higher proportion of terminal care and symptom control conditions.



ED transfer group (n = 39)	Variables (p-value)	Non-ED transfer group (n = 178)
80.3 ± 9.6	Age (0.610)	81.3 ± 11.2
28 (71.8%)	Gender (*0.002)	98 (55.1%)
11 (28.2%)		80 (44.9%)
6.9 ± 2.4	Charlson Comorbidity Index (0.531)	6.7 ± 2.4
7.1 ± 0.7	Clinical frailty score (0.214)	7.3 ± 0.8

\*Denotes statistical difference. Statistical difference is defined as p value ≤ 0.05.



Others included metabolic disorders, skin conditions and neurological conditions.

## Results (Continued)

### 2. ACP completion

More ACPs were documented in the Non-ED transfer group compared to the ED transfer group (Fig 1.)

- 43% of the male residents had documented ACP compared to 55% of the female residents in the ED transfer group.
- More ACPs documented comfort care (70% vs 21.7%) in the Non-ED transfer group than the ED transfer group (Fig 2.)

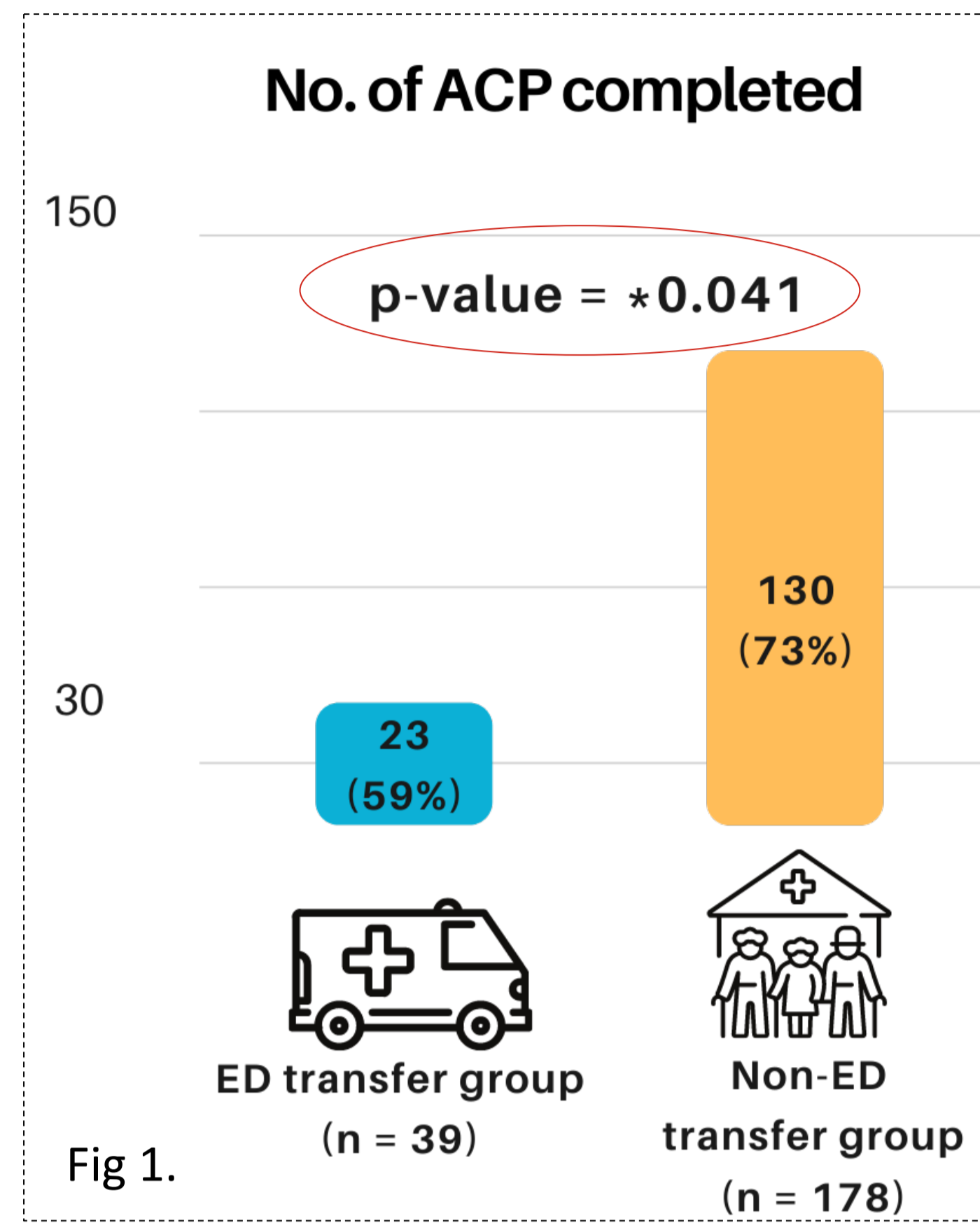


Fig 1.

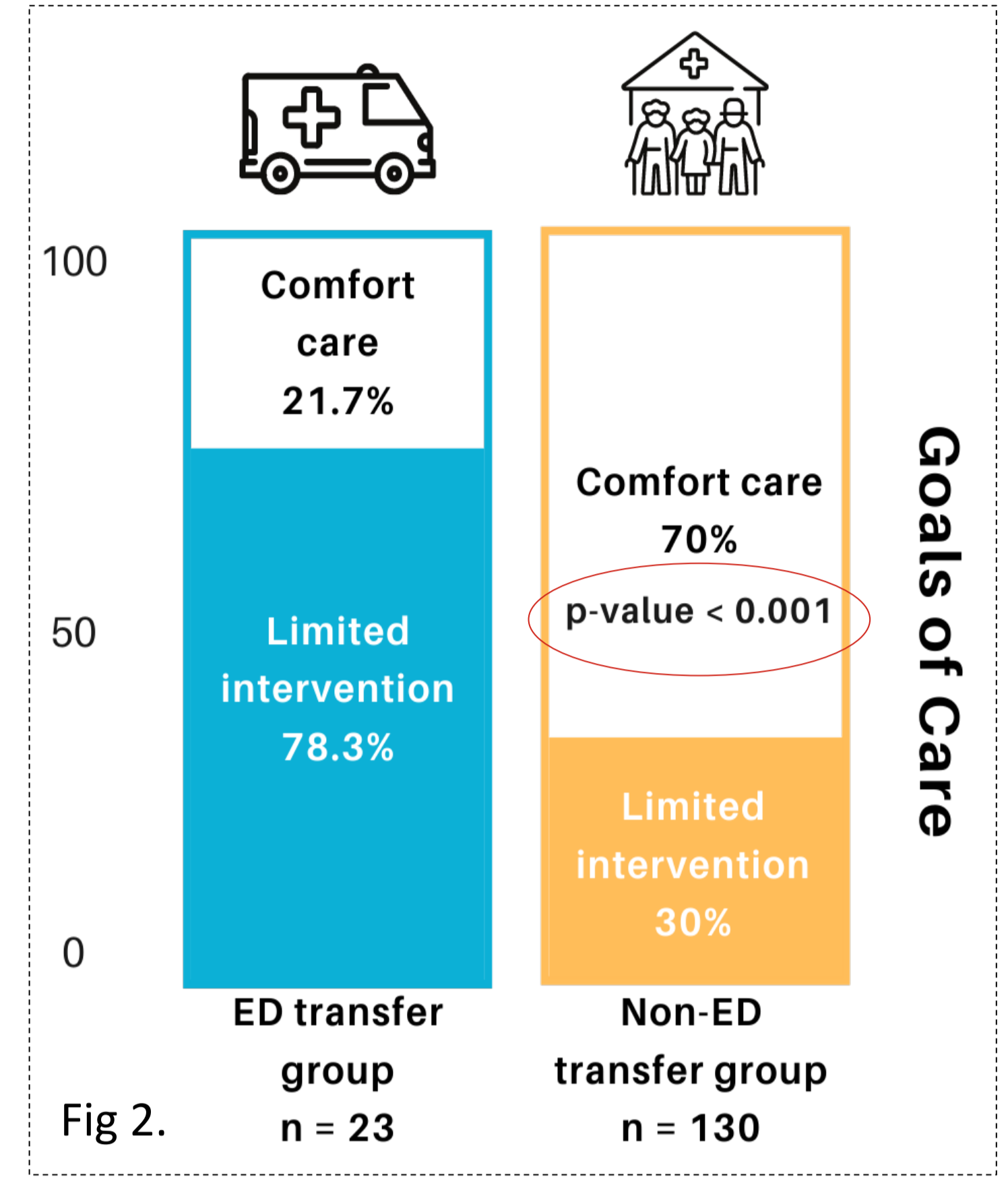


Fig 2.

## Discussion and Conclusion

Model of care	Physical visit <sup>1</sup>	Telemedicine + Training <sup>2</sup>	GeriCare Palliative Care Program (EPICT)
Reduction in ED transfers/hospitalization	36%	6% - 29%	82% ↓

**Discussion 1: An integrated program with clinical support (preceptorship and telemedicine), ACP advocacy and education program led to a significant reduction in ED transfers.**

- ED reduction rate for the program was 82%, compared to lower rates in other programs which used single or dual modality interventions.
- We hypothesized that the lower uptake rates for ACP discussion in our male residents might have contributed to the increased incidence of ED transfers.
- Analysis of residents with ACP revealed that ACP with goals of care documented as "comfort" significantly reduced ED transfers (p < 0.001).
- Suggested that preemptive discussion about End-of-Life care was pertinent in ensuring that the resident's wishes were honored, thus, avoiding unnecessary transfers.

### Discussion 2: COVID-19 Impact

- Our findings revealed that the pandemic did not affect the effectiveness of the program.
- The program enabled residents to continue to receive quality acute and palliative care through conversion of physical visits and ACP to Telemedicine, TeleNursing and Tele-ACP.
- We hypothesized that the transition of in-person preceptorship and ACP to teleconferencing platforms were effective as NH nurses were previously trained.

### Limitations

- As our study was a retrospective cohort study, which involved a modest sample of NHs, the generalizability of the findings might be limited and causation was difficult to establish.
- Further research involving a larger sample size that is inclusive of a control group would make the model of care replicable and sustainable.

## Conclusion

The GeriCare model comprises of a systematic framework, an integration of clinical support, ACP advocacy, and an education program that aims to optimize the residents' quality of life by anticipating, preventing, and alleviating their suffering across the care continuum. The GeriCare Palliative Care Program demonstrated that the whole is greater than the sum of its parts and it is possible to enable NH residents to age-in-place comfortably with targeted initiatives and adequate support.

## References

- Marshall EG, Clarke B, Burge F, et al.: Improving continuity of care reduces emergency department visits by long-term care residents. J Am Board Fam Med 2016;29:201-208.
- Toh HJ, Chia J, Koh E, et al.: Telegeriatrics: a pilot project to reduce unnecessary hospital admissions of nursing home residents in Singapore. ICT4AgeingWell 2015;91-96.
- Watanabe SM, Nekolaichuk C, Beaumont C, et al.: A multicenter study comparing two numerical versions of the Edmonton Symptom Assessment System in palliative care patients. J Pain Symptom Manage 2011;41:456-468.