NATIONAL QUALITY IMPROVEMENT PROJECT - MDS

Minimum Data Set (MDS)

Summary of FY2019 and FY2020 report

March 2022

Prepared by:

Minimum Data Set Sub-committee
National Palliative Care Quality Improvement Workgroup

On behalf of Singapore Hospice Council

Minimum Data Set Sub-committee members:

Dr Grace YANG	Chairperson
Dr Si Yin HO	
Ms Pamela KOH	
Ms Hui Ling LIM	
Dr Laurence TAN	
Dr Qingyuan ZHUANG	

SINGAPORE
HOSPICE
COUNCIL
Living before Leaving

Introduction

The National Palliative Care Minimum Data Set (MDS) in Singapore was developed to provide information on the longitudinal trends in the demographic and clinical profile of patients being referred to palliative care. This will ensure that palliative care services continue to improve in order to better meet the evolving needs of seriously ill patients and their caregivers in Singapore. The inaugural edition presented data from FY2017; results of the data collection for 4 years from FY2017 to FY2020 are now available.

Methods

De-identified patient-level data were submitted by participating institutions. Patient data were de-identified by masking of National Registration Identity Card (NRIC) numbers to the last 5 characters. Submitted data were by no means re-identifiable.

In the palliative care setting, an individual patient may receive care from multiple services, therefore record matching was used to link multiple referral records across institutions that were related to the same patient. Record matching was programmed and performed with the R software, version 3.6.3.

Referral records were matched within each financial year data set and linked to the same patient if their referral records reflected: i) identical masked patient ID (last 5 characters of NRIC), ii) identical genders, iii) year of birth (calculated as the difference between date of referral and age) of not more than 2 years apart, and iv) dates of death of not more than 1 day apart, if available. If patient referral records across different institutions were matched and deemed to be the same patient, a unique patient identification was assigned.

Key Findings

Overall, 19 institutions participated in the Singapore National Palliative Care Minimum Data Set (MDS) over the 4-year period from FY2017 to FY2020. Based on aggregated statistics collected by Singapore Hospice Council in FY2016, we estimate that the patients in the MDS represent approximately 95% of the patients referred to palliative care services in Singapore.

From FY2017 to FY2020, a total of 53,622 referrals were recorded, increasing from 12,535 referral records in FY2017 to 13,908 referral records in FY2020 (Figure 1). There are around 9000 unique patients per year in the MDS, in comparison to around 22,000 deaths per year in Singapore. [1] By inference, **just over 40% of deaths in Singapore receive specialist palliative care services**. This is in comparison to population-based estimates that 75% of people in high income countries die from chronic progressive disease with evolving and increasing healthcare needs, who may benefit from specialist or non-specialist palliative care. [2,3] Strategies for upscaling palliative care provision may include provision of non-specialist palliative care, which is currently not measured at a national level.

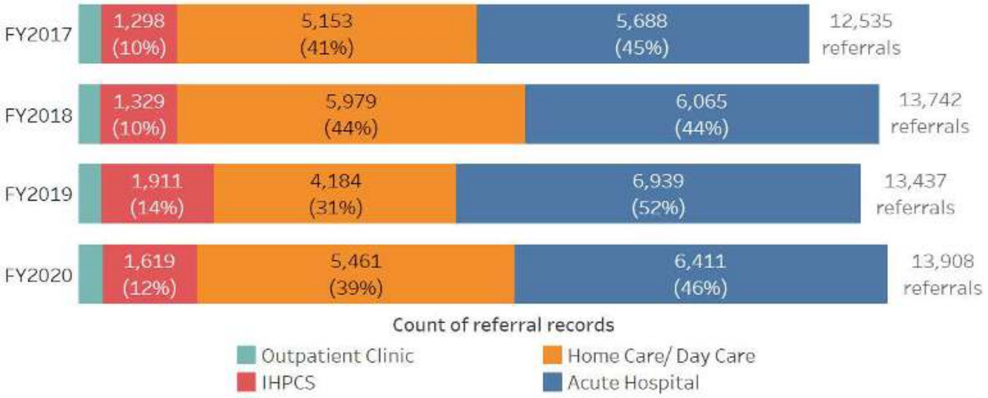
---

[1] Ministry of Home Affairs. (2019). Report on Registration of Births and Deaths. Retrieved from https://data.gov.sg/dataset/deaths-by-place-of-occurrence-and-ethnic-group. Available from Data.gov.sg Deaths by Place of Occurrence and Ethnic Group https://data.gov.sg/dataset/deaths-by-place-of-occurrence-and-ethnic-group

[2] Etkind, S. N., Bone, A. E., Gomes, B., Lovell, N., Evans, C. J., Higginson, I. J., & Murtagh, F. E. M. (2017). How many people will need palliative care in 2040? Past trends, future projections and implications for services. *BMC Medicine, 15*(1).

[3] Gómez-Batiste X, Martínez-Muñoz M, Blay C, Amblàs J, Vila L, Costa X, Espaulella J, Espinosa J, Constante C, Mitchell GK. Prevalence and characteristics of patients with advanced chronic conditions in need of palliative care in the general population: a cross-sectional study. Palliat Med. 2014;28:302–11.

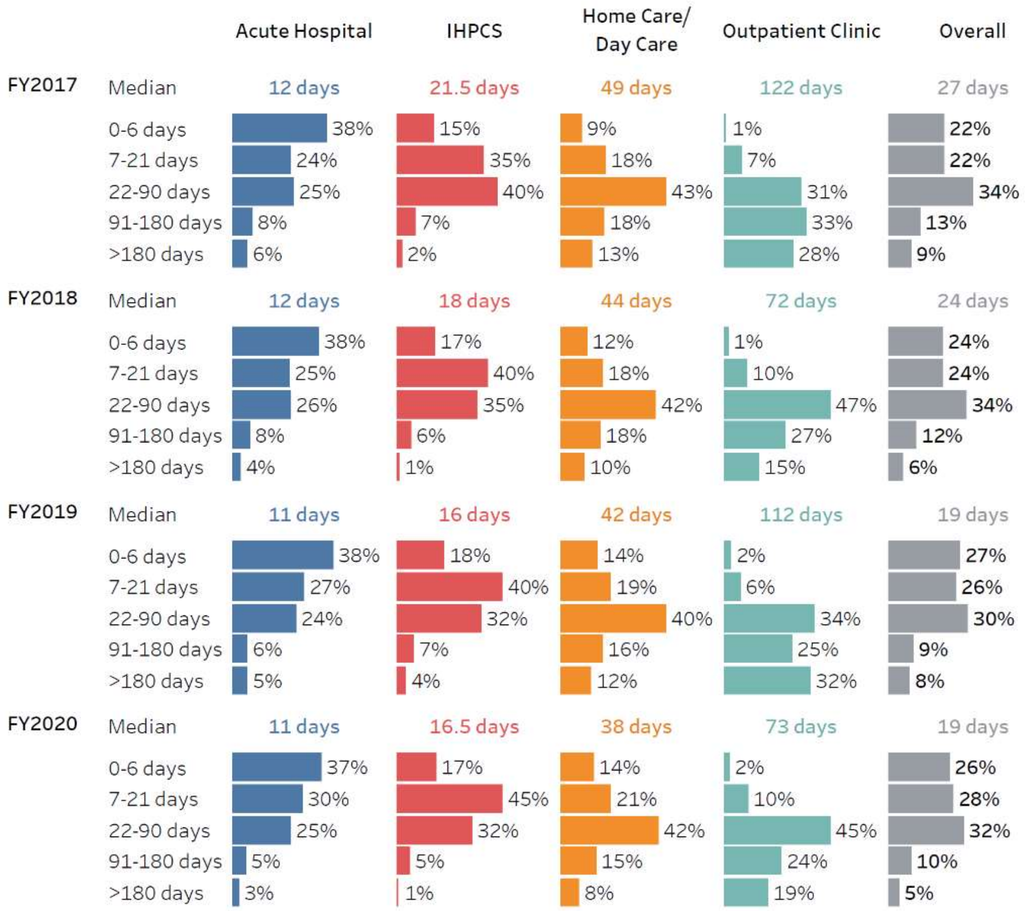
Figure 1. Count of referral records



People who receive specialist palliative care services do so very late in their illness journey

As shown in figure 2, the median time from referral to death was **11-12 days** for acute hospital services; **38-49 days** for day and home care; **16-21.5 days** for inpatient hospice and community hospital services; and **73-122 days** for outpatient services.

Figure 2. Timeliness of referral

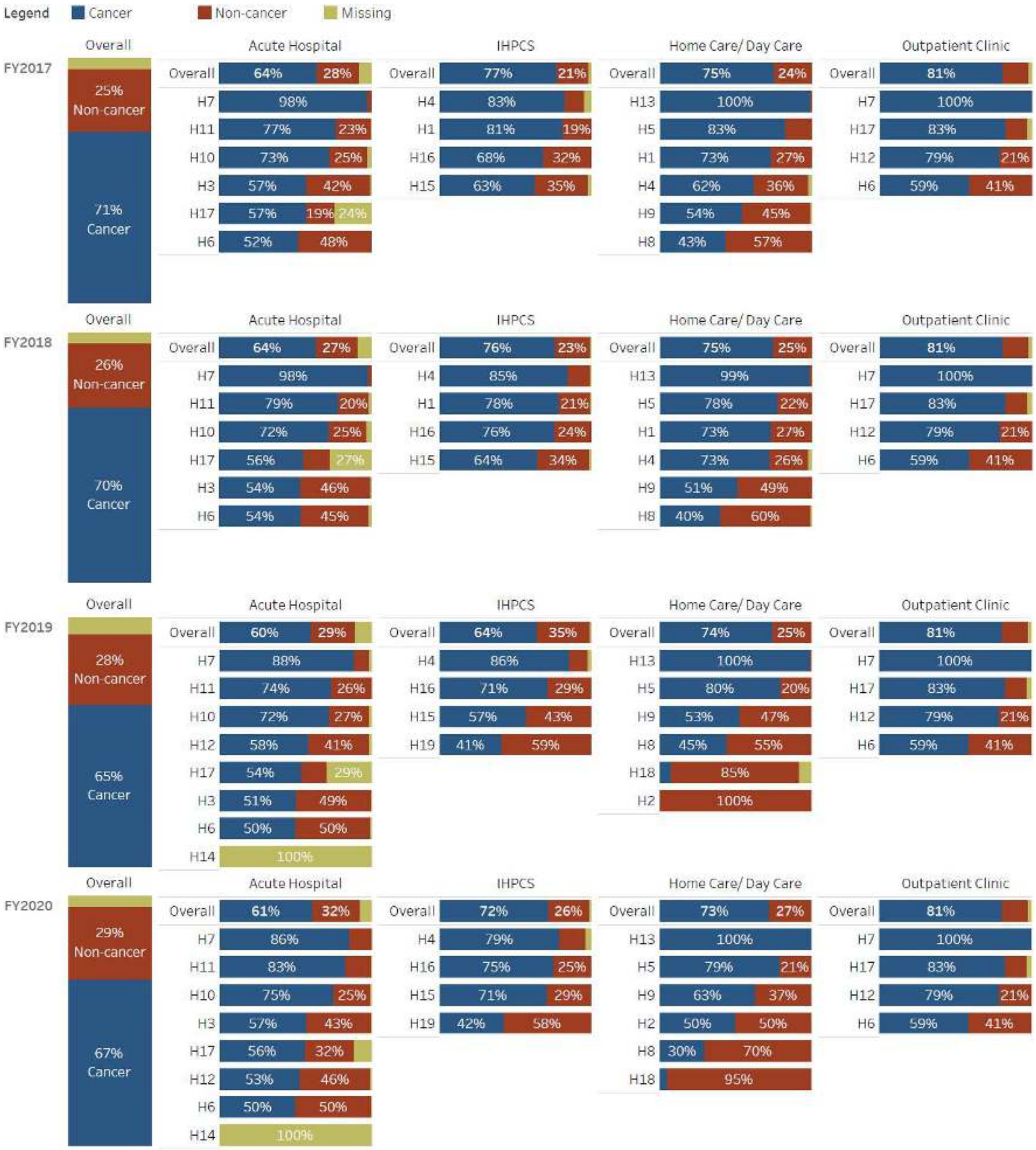


Note: Data from institution H1 for FY2019 and FY2020 were not included

Cancer vs non-cancer diagnoses

Cancer diagnoses accounted for 65-71% of all referral records, as shown in figure 3. There was a large variation in the proportion of cancer diagnoses among institutions (5.3% to 100.0%); this may reflect different target populations of various palliative care providers.

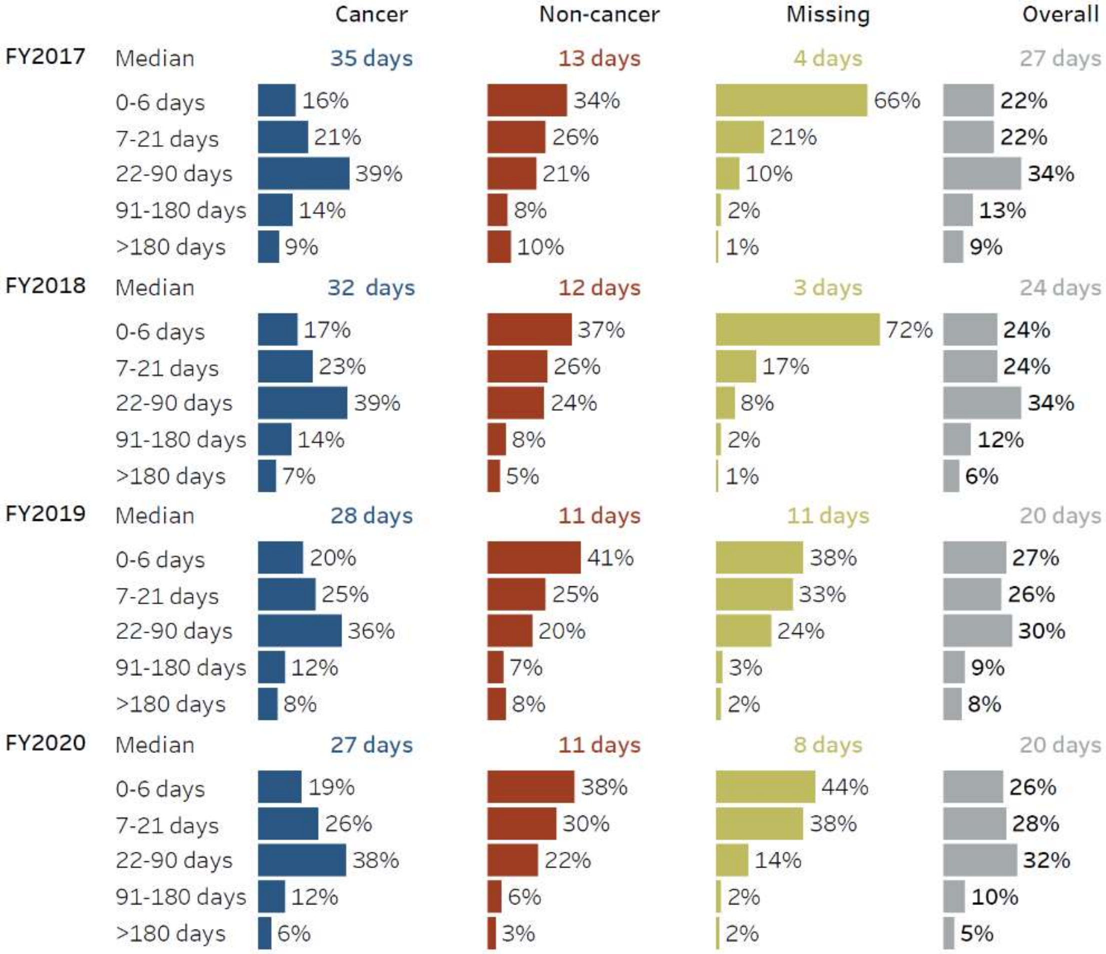
Figure 3. Cancer versus non-cancer diagnoses



Note: Data from institution H1 for FY2019 and FY2020 were not included

The median time from referral to death ranged from 27 to 35 days for referral records with cancer diagnoses and 11 to 13 days for non-cancer diagnoses (Figure 4).

Figure 4. Timeliness of referral, by diagnosis

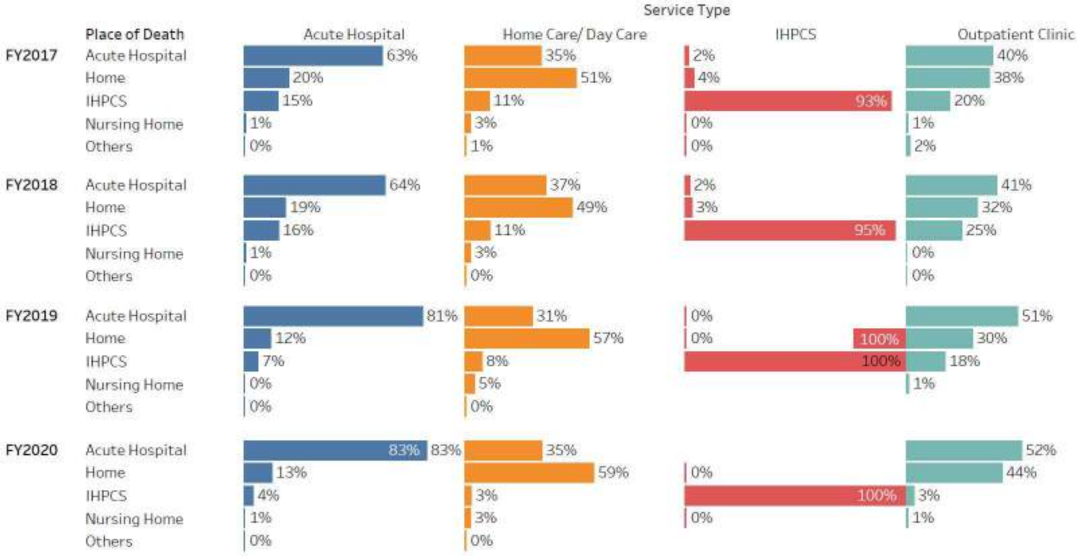


Note: Data from institution H1 for FY2019 and FY2020 were not included

Community-based palliative care services allow more patients to die at home

Out of the 53,622 patient referral records over the 4-year period from FY2017 to FY2020, 35,682 had passed on and data on place of death were available for 31,123 records. The place of death by referral to service type is shown in Figure 5. Among those referred to acute hospital services, majority passed on in the acute hospital. Among those referred to home hospice and day care, 49-59% of patients passed away in their homes – this is higher than the national average of 25%, suggesting that referral to home hospice and day care services is associated with a higher percentage of patients being able to pass on at home.

Figure 5. Place of death by referral to service type



Note: Data from institution H1 for FY2019 and FY2020 were not included

Future Plans

Insights from MDS have identified gaps and opportunities for improvement. With subsequent years of data import, longitudinal trends in patient profiles can be further studied. With widespread use of electronic medical records and increasing feasibility of automated data extraction using information technology, the data set could also be expanded to include indicators of case complexity such as performance status and phase of illness, and patient outcomes such as symptom severity. This would further enhance the insights gleaned from MDS in order to improve the quality of and access to palliative care in Singapore.