



Enhancing Access to Rehabilitation for Cancer Survivors

Nithia Angamuthu, National Cancer Centre Singapore
Moithi Babu Ramalingam, Singapore General Hospital



Background

As the prevalence of cancer is rising both nationally and globally, so is the survival rate, due to earlier detection of cancer and advancements in treatment.^{1,2} American Cancer Society uses the term cancer survivor to refer to anyone who has ever been diagnosed with cancer no matter where they are in the course of their disease.³ They may experience a wide range of cancer or treatment related impairments which may lead to long term disabilities. Common examples include musculoskeletal symptoms, persistent neuropathy and fatigue. Cancer rehabilitation is an important component of cancer care and should be made available early in disease trajectory. Presently in Outram Campus, there is no organized, integrated rehabilitation services for cancer patients aside from ad hoc services to support niche populations. Fragmentation may lead to gaps in care as patients with rehabilitative needs might be missed.

Objectives

We aimed to set up an on-site tertiary level cancer rehabilitation centre, the NCCS-SCS Rehabilitation Centre at National Cancer Centre Singapore in collaboration with Singapore Cancer Society and Singapore General Hospital to provide accessible, on-site multidisciplinary rehabilitation.

We aimed to calculate workload projections to plan for the required resources and to derive the business case.

Methods

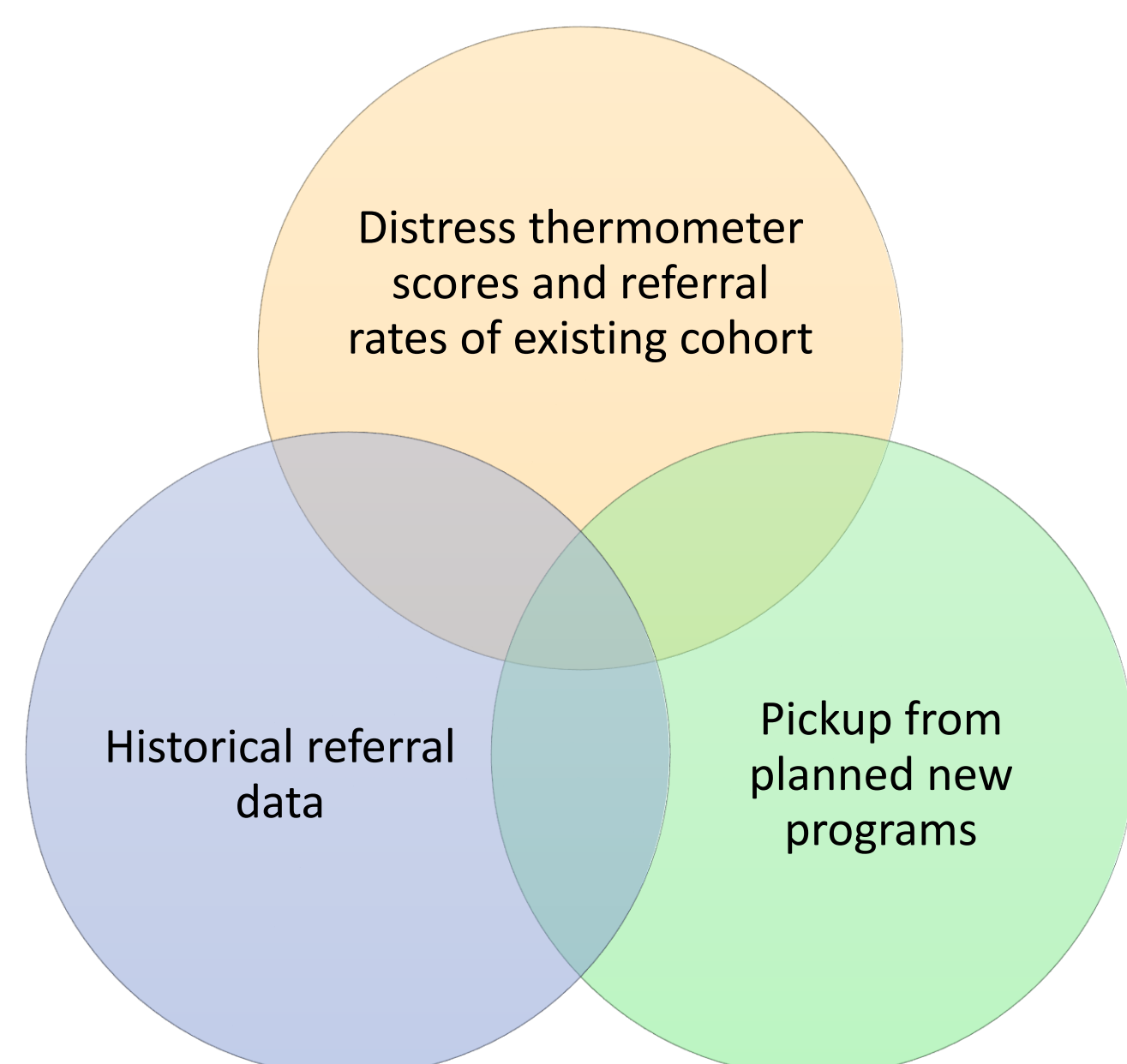


Figure 1: Multi-pronged workload projection calculation

Figure 1 demonstrates the multi-pronged workload projection methods. Firstly, we used symptom prevalence and service utilization data from a cohort of breast cancer patients who underwent Distress Thermometer screening [ACCESS Program⁴] to extrapolate impairments and referral rates. Secondly, historical referral data from NCCS to allied health disciplines was obtained. Lastly, we engaged with key stakeholders from various oncology disciplines to understand service gaps and potential areas of need. Staffing requirements were established in discussion with rehabilitation professionals from partner institutions.

Results

Table 1 shows the annual workload projected from ACCESS Program symptom prevalence and referral rates (unpublished internal data) based on the number of unique new Medical Oncology outpatient visits seen at NCCS in 2022.

Reason for referral	Prevalence of symptom	% referred to RMD/AHP	Projected annual workload based on DMO new visits
Fatigue	25%	10% (RMD)	156
		25% (PT)	364
		40% (OT)	418
CIPN	16%	17% (RMD)	177
		25% (PT)	261
		40% (OT)	418
Complex pain	17%	17% (RMD)	187
		30% (PT)	333
		40% (OT)	444
Appetite	16% (high distress) 36% overall	16% (DIT)	1300 (if 20% referred)
		No data	326 (if 50% referred)
Speech/swallow	10%	No data	326 (if 50% referred)

Table 1: Annual workload projected from ACCESS Program symptom prevalence and referral rates.

Using historical referral data from NCCS to SGH rehabilitation medicine physician and allied health services, a conservative estimate of anticipated workload that could be transferred to the NCCS was derived (Table 2).

Discipline	Existing 2019 workload at SGH/SHT	Transfer of workload (Conservative Estimates)
Physiotherapy	2897	690
Occupational Therapy	1186	355
Speech Therapy	1620	480
Dietician	952	455
Rehabilitation Medicine	566	283
Total	7221	2263

Table 2: Conservative estimate of transfer of workload to NCCS-SCS Rehabilitation Centre

For potential new referrals based on discussion with oncologists, 736 physiotherapy and 174 rehabilitation physician visits were predicted. The total projected annual workload is as follows: Physiotherapy 2384, Occupational Therapy 1217, Speech Therapy 806, Dietitian 1755, Rehabilitation Medicine 977 visits, with a grand total of 7139 annually. 2263 were transfer of workload from existing services and 4876 from anticipated new referrals.

Phase 1 signature programs such as Intra-treatment rehabilitation, prehabilitation, complex pain management and nutrition management were curated. Anticipating projected growth workload as referrals increase, staffing ratios were ramped up year on year, starting with 24 sessions in year 1 up to 40 sessions in year 5 when running at full capacity. Close consultations were held between SingHealth Facilities Development and the allied health team to specify the design requirement of the space. Figure 2 shows the floorplan and Figure 3 the operational timeline.



Figure 2: Customised floorplan of NCCS-SCS Rehabilitation Centre

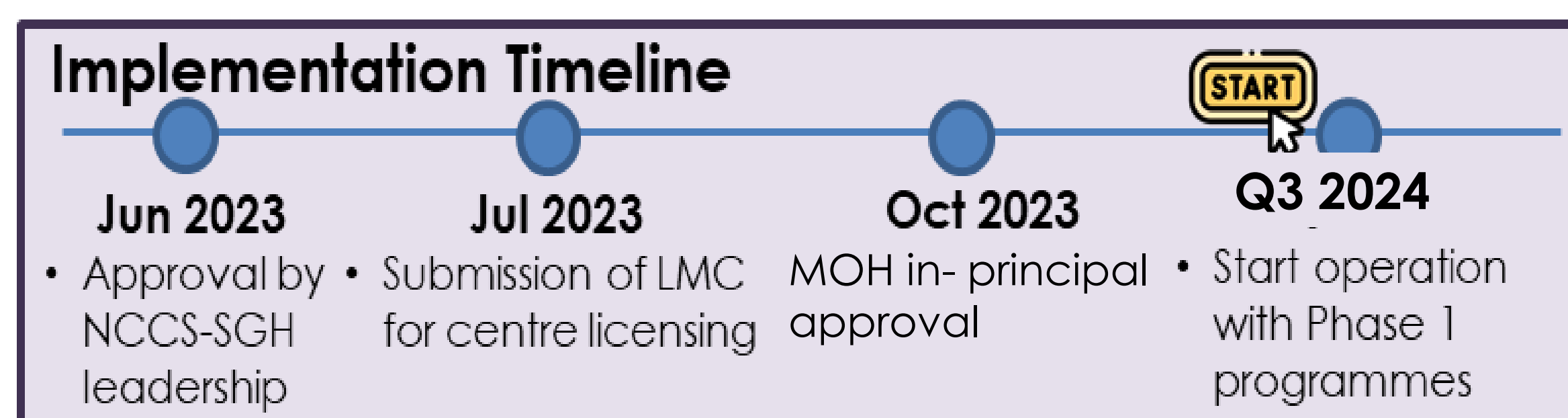


Figure 3: Implementation timeline.

Conclusion

Close collaboration with multiple stakeholders was beneficial in understanding gaps and needs to guide new service development. Future work will involve measuring patient outcomes including functional, physical, and psychological domains to measure the impact of rehabilitation interventions.

References

- Singapore Cancer Registry Annual Registry Report 2015
- Miller KD, Siegel RL, Lin CC, Mariotto AB, Kramer JL, Rowland JH, Stein KD, Alteri R, Jemal A. Cancer treatment and Survivorship Statistics, 2016 Ca Cancer J Clin 2016;66:271-289
- Survivorship: During and After Treatment. <https://www.cancer.org/cancer/survivorship.html> [Accessed 19/6/24]
- Ke Y, Tan YY, Neo PSH, et al: Implementing an inclusive, multidisciplinary supportive care model to provide integrated care to breast and gynaecological cancer survivors: A case study at an Asian ambulatory cancer centre. Int J Integr Care 23:14, 2023