

Project Title

Informal Workforce Transformation: Engaging Volunteers in Performing Para-Clinical Tasks

Project Lead and Members

Project lead: Kelvin Tan Guoping, Jaclyn Tan Ee Chen, Neoh Eng Chuan

Project members: Joshua Tan Kai Bin, Caroline Chung Sze Yun, Lim Ying Tong, Lim Thiam Beng

Organisation(s) Involved

Tan Tock Seng Hospital

Project Period

Start date: Oct 2018

Completed date: Jul 2019

Aims

To develop a Total Knee Replacement (TKR) volunteer transformation program which aimed to equip and empower volunteers to take on para-clinical roles in TKR rehabilitation to improve patients' exercise compliance and clinical outcome.

Background

Singapore's rapidly ageing population means more elderly suffer from degenerative diseases such as knee osteoarthritis, with more severe ones requiring TKR. Annually, TTSH receives 600 TKR patients. Rehabilitation exercise is strongly recommended after TKR to improve knee range-of-motion (ROM), muscle strength and functional mobility. Knee ROM in particular, is an important clinical indicator because it correlates with patients' function and influences patients' satisfaction. Patients with limited knee ROM often have functional limitation and poorer quality of life. Those with early developed severe knee stiffness might need manipulation under analgesia (MUA) to regain knee ROM. Evidence showed that higher exercise dosage in acute stage translates to better knee ROM after TKR. Hence, in TTSH, TKR patients are advised to

do exercise on their own during their free time in the ward, in addition to the once-daily exercise session with the physiotherapist. However, a “Go-and-See” in Ward 85 revealed that self-exercise compliance among TKR patients was poor. Between January to September, the data shows that the percentage of patients who achieve target knee ROM (i.e. $\leq 5^\circ$ to full knee straightening and $\geq 75^\circ$ knee bending) remains at the average baseline of 75%.

Methods

Refer to attachment

Results

Refer to attachment

Lessons Learnt

Effective teamwork and stakeholder engagement are paramount to the success of healthcare initiatives. What differentiates a team from a group is the complementary skills and synergy between members, maximising strength and minimising weaknesses. At the team’s core, there is mutual respect in appreciating everyone’s efforts and an assurance that the work done is important and valued. In every situation, we seek to understand the perspectives of all stakeholders before making key decisions, allowing us to ensure that all factors are thoroughly assessed before creating action plans. Finally, we learnt the importance of looking at the big picture – in improving the years of healthy life for all Singaporeans and building a community of carers. We have been open to sharing our ideas, innovation journey, strengths and challenges that we faced on various platforms. In doing so, we obtained valuable insights and suggestions that helped further refine our original ideas. It is heartening to know of others who have been inspired and are implementing similar innovative solutions to improve healthcare delivery in Singapore.

Conclusion

This novel initiative will be expanded to other acute institutions and community partners. TTSH will function as a centralised hub in sharing the programme pedagogy and supporting other institutions in building their own volunteer program. Through the aforesaid, we will create a ripple effect and form a greater community of carers. This will not only benefit bigger patient population but also optimise healthcare resources at larger scale. Community ties will also be strengthened.

Project Category

Workforce Transformation, Care Redesign,

Keywords

Workforce Transformation, Care Redesign, Informal Workforce, Volunteer Engagement, Volunteer Empowerment, Volunteer Training, New Pedagogy, Nursing, Physiotherapy, Orthopaedics, Rehabilitation Exercises, Patient Compliance Rate, Functional Mobility, Clinical Improvement, Manpower Cost Savings, Quality Improvement Methodology, Plan-Do-Study Act, Patient Satisfaction, Tan Tock Seng Hospital, Para-Clinical Roles, Total Knee Replacement, Knee Range of Motion, Go-and-See, Ask 5 Take 5, Fly-Wheel Theory, Self-Exercise Compliance, Volunteer Training Curriculum

Name and Email of Project Contact Person(s)

Name: Kelvin Tan Guoping

Email: kelvin_tan@ttsh.com.sg

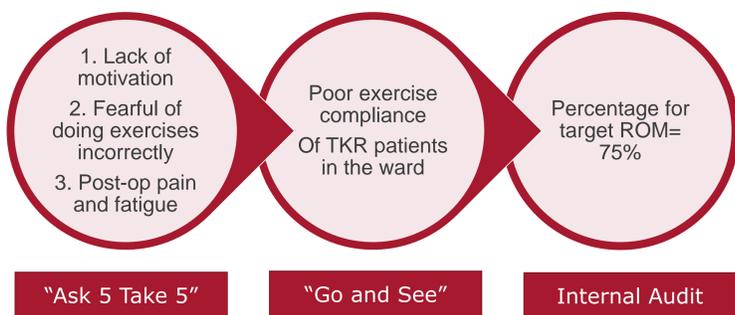
IMPETUS FOR CHANGE

With a rapidly ageing population and the growing burden of chronic diseases, the Singapore healthcare system strained with an increase in manpower demand for healthcare professionals. Given the shrinking national workforce, there is an urgent need to develop an innovative and sustainable solution while levelling the growing healthcare costs and upholding good healthcare standard.

Volunteers have been ever-present in healthcare settings. However, they are only involved in non-clinical tasks such as providing emotional support to patients and families, assisting with meals and facilitating recreational activities in various patient populations. The involvement of volunteers in performing para-clinical work remain unexplored.

REASON FOR ACTION

Rehabilitation is widely promoted and strongly recommended after total knee replacement (TKR) to improve knee range-of-motion (ROM), muscle strength and functional mobility. Knee ROM in particular, is an important clinical indicator where the success of the TKR is often measured based on restoration of knee ROM. Knee ROM after TKR correlates with patients' function and influences patients' satisfaction. Early restoration of knee ROM is important as knee ROM upon discharge from hospital is strongly associated with ROM 12 months later. Patients with limited knee ROM often have functional limitation and poorer quality of life.

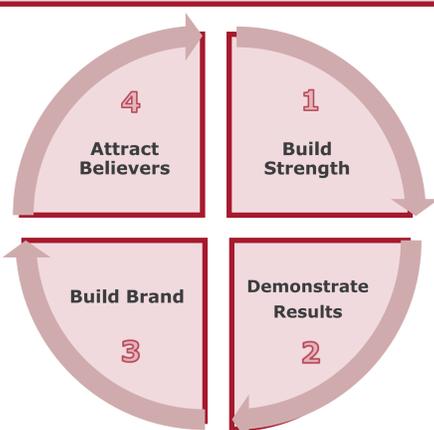


As evidence has proven that higher exercise dosage in acute stage translates to better knee ROM after TKR, patients are advised to do exercise on their own during their free time in the ward, in addition to the once daily exercise session with the physiotherapist. However, internal audit data shows that the percentage of patients who achieve target knee ROM (ROM $\leq 5^\circ$ to full knee straightening and $\geq 75^\circ$ for knee bending) upon discharge remains at the average baseline of 75%.

INTERVENTION / INNOVATION

The project team used this as an opportunity to develop a TKR volunteer transformation program which aimed to equip and empower volunteers to take on para-clinical roles in TKR rehabilitation to improve patients' exercise compliance and clinical outcome. Far as we know, this is the first program that has transformed the conventional healthcare delivery model to involve the informal workforce in actual clinical task in an acute hospital setting. With a structured training curriculum (Figure 2), volunteers can educate the patients on correct knowledge about TKR rehabilitation, as well as, guide and supervise them with their rehabilitative exercises.

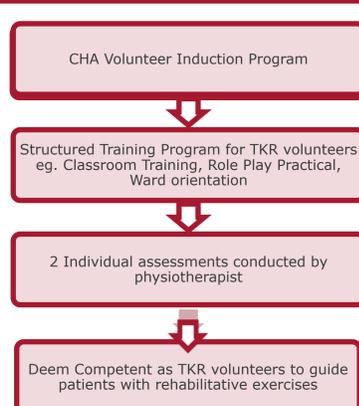
Fig.1 The Flywheel in the Social Sector



The project team adopted key concepts from Jim Collins' when crafting a comprehensive intervention strategy, with intentions that it would create a 'Fly-wheel Effect' (Figure 1) eventually.

1. Build Strength: we built strength by engaging all key stakeholders including orthopaedic surgeon, physiotherapists, nurses and CHA with close collaborations and constant communications. With "Clock Building" exercise, the team collectively agreed upon a common vision of developing Singapore's first informal workforce transformation program, striving towards a common end goal.

Fig.2 Volunteers Training Curriculum



INTERVENTION / INNOVATION



Figure 3 (Left): Volunteer Recruitment Drive during Singapore Patient Conference 2018 with Mr. Chan Heng Kee, Permanent Secretary, Ministry of Health. Figure 4 (Right): The Straits Times article (19th October 2019): 'TTS launches volunteer program for seniors, who will be taught simple clinical skills', featuring a trained volunteer performing bed exercises with patients following TKR Surgery.

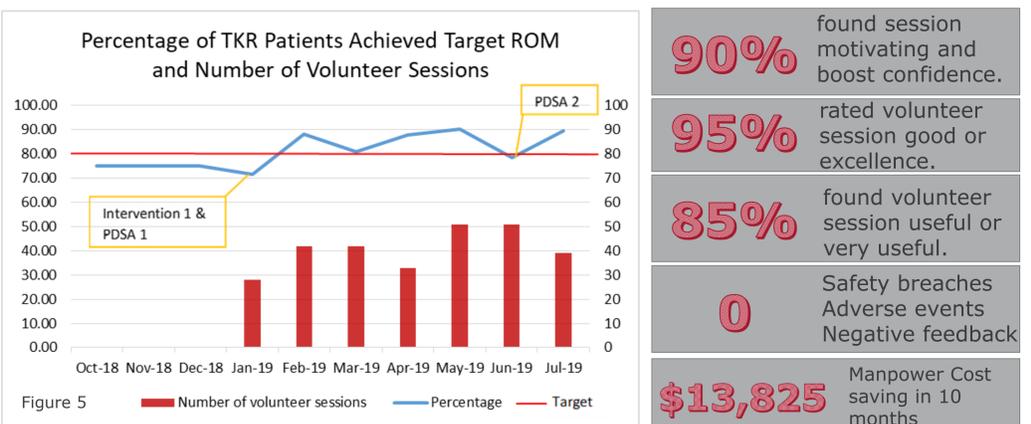
2. Demonstrate Results: A pilot trial with an ex-TKR patient as volunteer received positive responses. From October to December 2018, another 6 volunteers recruited. They contributed 104 volunteer sessions to 69 TKR patients. Clinical outcomes of TKR patients who receive the session were more superior. Random survey conducted on 41 patients shows that volunteers received good or excellent feedback from patients.

3. Build Brand: The success of this project was showcased on various media platforms such as Channel News Asia, The Straits Times and Lian He Zao Bao, to further strengthened the credibility, reputation and brand of this volunteer transformation program.

4. Attract Believers: The team facilitated the set up of a volunteer-led social committee to ensure that volunteers' voices are heard and their well-being was taken care of. We conduct quarterly volunteer gathering and feedback sessions, where we design and participate in team bonding activities. These help strengthen existing bonds between project team and volunteers and act as a platform to discuss how to further improve the program. As the project team and volunteers continued this close partnership, all volunteers became the believers and program advocates.

Overtime, the program runs in a self-sustaining manner as momentum is built through positive reinforcement.

RESULTS



90%	found session motivating and boost confidence.
95%	rated volunteer session good or excellence.
85%	found volunteer session useful or very useful.
0	Safety breaches Adverse events Negative feedback
\$13,825	Manpower Cost saving in 10 months

From January 2019 to July 2019, the TKR Volunteer program benefitted a total of 216 TKR patients with 286 volunteer-guided rehabilitation exercises session in ward 85. This contributed to an increase in the percentage of patients achieved ROM from a baseline of 75% to a 7-month average of 83.8% (Figure 5). In January 2019, the percentage was below the target of 80%, the project team did a PDSA and reduced frequency of CPM (continuous passive motion) to once a day, so that volunteers were able to attend to more TKR patients. In June 2019, the project team did another PDSA and implemented closer pain monitoring and serving patients with ice-pack and pain medication if the pain level is above moderate intensity before volunteer sessions.

IMPACT OF CHANGES

This project is cutting-edge as it is the first informal workforce transformation programme proving that with structured training curriculum and up-skilling volunteers to take on para-clinical tasks which improve patients' outcome and enhance patients' experience in a sustainable and cost effective manner. This transformed our healthcare delivery model, empowering competent volunteers to assist physiotherapists with clinical tasks. The success of this program provides future directions for other volunteer programs across Singapore, opening more opportunities for volunteers to take up para-clinical roles in other clinical areas. One major challenge of volunteer programmes is the retention of volunteers and sustainability of volunteer services. This project has proven the adoption of "Fly-wheel" theory is feasible to generate a self-sustaining momentum.

SPREAD CHANGES

This novel initiative will be expanded to other acute institutions and community partners. TTS will function as a centralised hub in sharing the programme pedagogy and supporting other institutions in building their own volunteer program. Through the aforesaid, we will create a ripple effect and form a greater community of carers. This will not only benefit bigger patient population but also optimise healthcare resources at larger scale. Community ties will also be strengthened.