Project Title

Virtual Wound Ward: Clinical Reinforcement Through Virtual Consultancy

Project Lead and Members

Project lead: Yvonne Lau

Project members: Kavitha D/O Sanmugam, Carolinean, Nur Shaqila Binte Nur Ishak

Organisation(s) Involved

St Lukes Hospital

Healthcare Family Group(s) Involved in this Project

Nursing

Applicable Specialty or Discipline

Wound Care, Advance Practice

Project Period

Start date: October 2020

Completed date: October 2023

Aims

The team incorporated the idea of setting up a “Virtual Wound Ward” by leveraging on technology to reinforce clinical care. The goal was to create an ecosystem of innovation to promote knowledge gain and clinical competence in wound management even during the pandemic. This would result in improved wound healing outcomes and reduced readmissions to the acute hospitals and overall healthcare costs. Our target was to outreach to 15 nursing homes within 4 years.

Background

Cross-institutional clinical reinforcement had to cease during the Pandemic, and this resulted in challenges for our partners in managing chronic wounds. As such, the team at SLH wanted to benefit the community care sector by leveraging on technology to reinforce clinical care. The team collaborated with different partners receiving our wound consultancy services to bring about innovation system change, allowing wounds to be tracked remotely via a portable wound scanner and pivoting face-to-face training to a hybrid mode of learning.

Methods

See poster appended/below

Results

See poster appended/below

Conclusion

Driven by St Luke's Hospital's (SLH) vision and mission of transforming community care and enriching lives, our team embarked on a mission to extend SLH's impact beyond our walls. Through this project, we set out to expand our wound consultancy services beyond physical consultations by developing a virtual platform to increase accessibility and convenience for patients across the community. By using wound scanners embedded with artificial intelligence (AI) to automate a clinically guided approach, it allows for an innovative leading force in wound management yielding better wound healing outcomes for the patients.

Project Category

Technology

Digital Health, Telehealth, Tele-Monitoring

Care & Process Redesign

Access to Care, Turnaround Time

Keywords

Virtual Wound Care, AI

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Virtual Wound Ward: Clinical Reinforcement Through Virtual Consultancy

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Project Definition & Background

Cross-institutional clinical reinforcement had to cease during the Pandemic, and this resulted in challenges for our partners in managing chronic wounds.

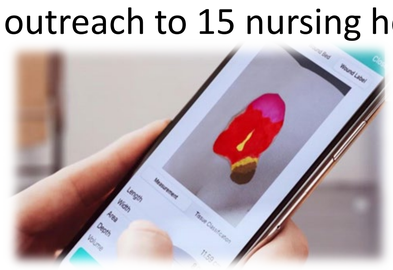
As such, the team at SLH wanted to benefit the community care sector by leveraging on technology to reinforce clinical care.

The team collaborated with different partners receiving our wound consultancy services to bring about innovation system change, allowing wounds to be tracked remotely via a portable wound scanner and pivoting face-to-face training to a hybrid mode of learning.

Project Scope & Goal

The team incorporated the idea of setting up a "Virtual Wound Ward" by leveraging on technology to reinforce clinical care.

The goal was to create an ecosystem of innovation to promote knowledge gain and clinical competence in wound management even during the pandemic. This would result in improved wound healing outcomes and reduced readmissions to the acute hospitals and overall healthcare costs. Our target was to outreach to 15 nursing homes within 4 years.



The Idea

Priority matrix was used to select the overall project. The Value Matrix (Fig.1) was used to categorise the impact and effort needed to complete the project. We decided to focus on the projects with the quickest wins where effort is low and impact would be high.

	Tasks	Effort	Impact
1	Onboard a new Learning Management System	High	High
2	Approach partners to do customised training	High	Low
3	Continue with whatsapp texts to answer queries	High	Low
4	Implementing a telecollaborative platform	Low	High
5	Develop all wound curriculum to E-learning	High	High
6	Partnering with vendors to utilise wound scanners to track wound healing	Low	High

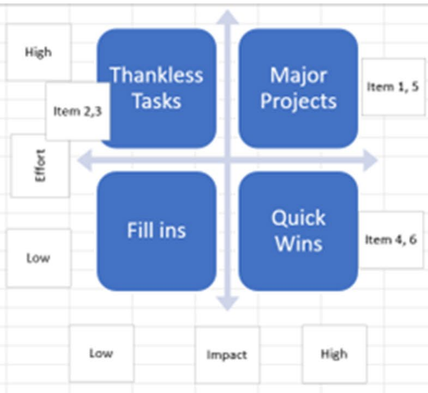


Fig 1: Priority-Value Matrix

Innovation

The rollout of the virtual solution allowed the team to increase their outreach to nursing homes and community services within the ILTC sector. Our clinicians were able to review wounds using the wound scanner dashboard to track wound tissue or size trending for healing outcomes, assess staff ability in assessing wounds accurately, review wound products, frequency of dressing change and advise accordingly. Virtual teaching and activities of wound assessment tools, treatment approaches and prevention/escalation protocols were conducted to improve the nursing home staff knowledge in better management.

Having a virtual platform was also an economical solution that helped to save time in travelling for our clinicians.

Implementation of Intervention

Patients with chronic wounds were identified to use the wound scanners to aid wound management in nursing homes, where staff have less experience treating chronic wounds. Wound scanners were loaned to these nursing homes, and trainings were conducted to ensure nursing home staff familiarity and ease of use. Wound clinicians provided recommendations on wound management during scheduled virtual sessions. Care practices were reinforced by SOPs and policies that were developed to support our wound clinicians in delivering quality care outside the hospital setting. Through remote monitoring, clinicians were able to review wound scanner parameters data and track wound progress, while providing guidance to the nursing home nurses when necessary.

Gantt Chart

Fig 2: Gantt Chart to illustrate the conceptualisation of the idea to start the project initiative, which is still ongoing

Impact & Sustainability

Prior to the start of this project, we carefully considered its long-term viability and sustainability. Recognising the potential financial constraints faced by nursing homes, we applied to AIC for CST funding to help defray the costs for the nursing homes. With the secured funding, nursing homes were afforded the opportunity to trial the solution without bearing excessive financial strain. The allocated funding not only facilitated the trial phase for nursing homes but also empowered SLH to allocate resources effectively towards this initiative. Remarkably, the transition from conceptualisation to the launch of the service was accomplished within a swift six-month period, with the idea conception in October 2020 and the launch in April 2021.

Findings

In line with our commitment to continuous improvement, stakeholders, including our nursing home partners, were actively engaged in providing 6 monthly evaluations of our services. This ongoing feedback loop enabled us to consistently review our approach and identify areas for enhancement in our clinical reinforcement efforts consistently averaging above 88% in all our efforts.

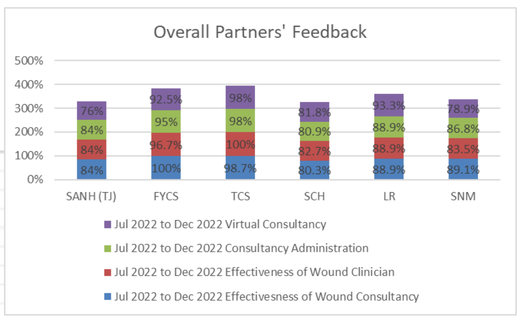


Fig 3: Jul 2022 to Dec 2022 Feedback

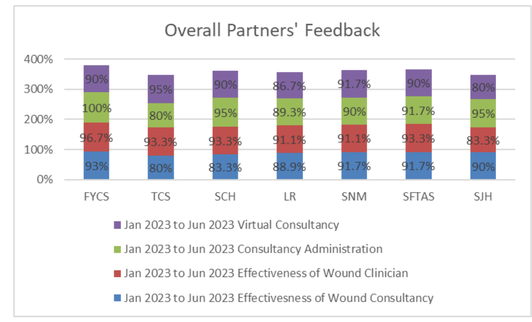
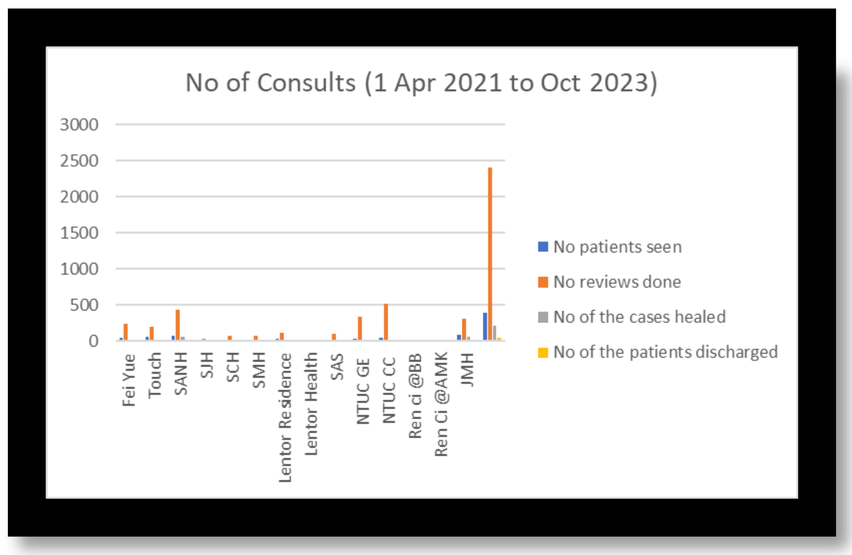


Fig 4: Jan 2023 to June 2023 Feedback



Partners	Fei Yue	Touch	SANH	SJH	SCH	SMH	Lentor Residence	Lentor Health	SAS	NTUC GE	NTUC CC	Ren ci @BB	Ren Ci @AMK	JMH	Total
No patients seen	38	50	69	5	16	17	23	4	8	29	37	4	7	84	391
No reviews done	236	197	434	22	69	69	117	0	102	335	517	2	5	304	2409
No of the cases healed	15	18	56	1	5	4	11	0	1	13	16	0	0	62	202
No of the patients discharged	5	5	4	0	0	1	2	0	1	6	9	0	0	2	35

Fig 5: illustrates our partners, no. of patient beneficiaries since the start of project, as well as the number of onsite versus virtual consults done across our partners.

Conclusion

Driven by St Luke's Hospital's (SLH) vision and mission of transforming community care and enriching lives, our team embarked on a mission to extend SLH's impact beyond our walls. Through this project, we set out to expand our wound consultancy services beyond physical consultations by developing a virtual platform to increase accessibility and convenience for patients across the community. By using wound scanners embedded with artificial intelligence (AI) to automate a clinically guided approach, it allows for an innovative leading force in wound management yielding better wound healing outcomes for the patients.