Extension of KKH@Home - Home Phototherapy Service to Cover Sundays and Public Holidays

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Aim / Objectives

- To reduce stress for the family and promote bonding by providing care in the home environment, offering a more comfortable and familiar setting for both the newborns and their parents.
- To minimise the risk of hospital-acquired infections for the neonates.
- To save inpatient bed days by avoiding inpatient hospitalisations.

Background

Neonatal jaundice is a common condition in newborns caused by elevated serum bilirubin (SB) levels, affecting many infants in the first two weeks of life and often leading to hospital readmission. In Singapore, it occurs in about 60% of full-term and 85% of preterm neonates (Academy of Medicine & College of Pediatrics and Child Health, Singapore, 2018), with phototherapy being the standard, safe, and effective first-line treatment.

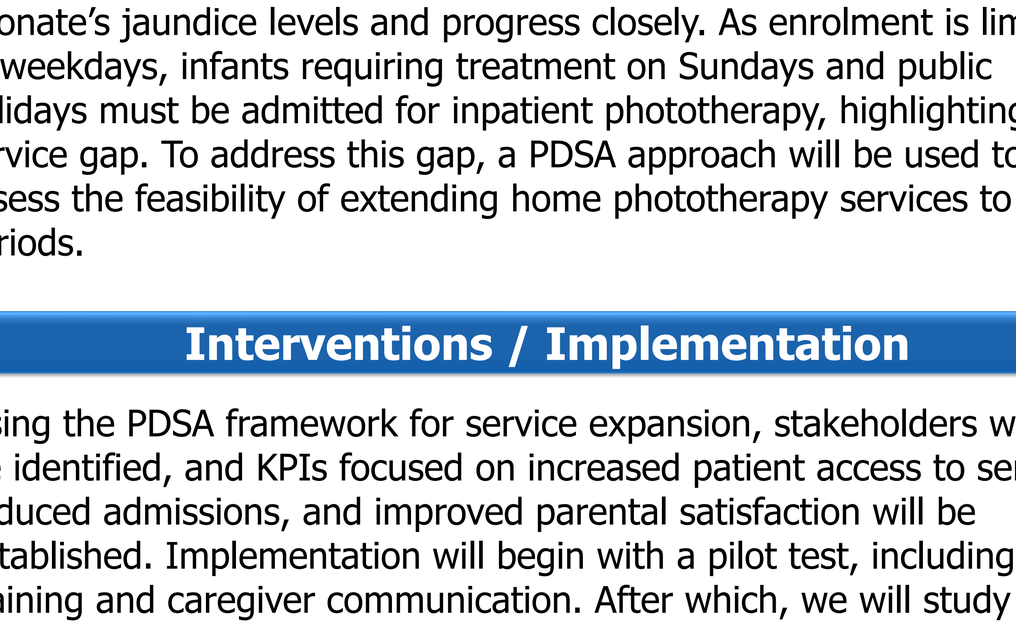
KKH@Home - Home Phototherapy service is an innovative healthcare initiative that offers home-based phototherapy for neonates with physiological jaundice requiring treatment. It is designed with a focus on parental empowerment and education, equipping parents with the knowledge and confidence to manage their newborn's care effectively at home.

The service includes daily video consultations or home visits by Advanced Practice Nurses (APNs), ensuring continuous medical oversight and personalised care. It also offers access to a portable home phototherapy machine and regular SB monitoring to track the neonate's jaundice levels and progress closely. As enrolment is limited to weekdays, infants requiring treatment on Sundays and public holidays must be admitted for inpatient phototherapy, highlighting a service gap. To address this gap, a PDSA approach will be used to assess the feasibility of extending home phototherapy services to these periods.

Interventions / Implementation

Using the PDSA framework for service expansion, stakeholders will first be identified, and KPIs focused on increased patient access to service, reduced admissions, and improved parental satisfaction will be established. Implementation will begin with a pilot test, including staff training and caregiver communication. After which, we will study the outcomes through parental satisfaction surveys, clinical metrics, and staff feedback.

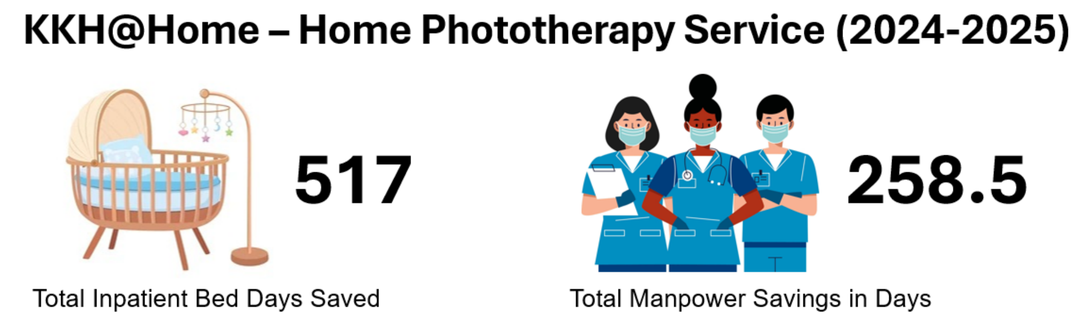
Based on pilot results, we will then determine the service expansion effectiveness and feasibility, refining and scaling up for standardised implementation across operations.

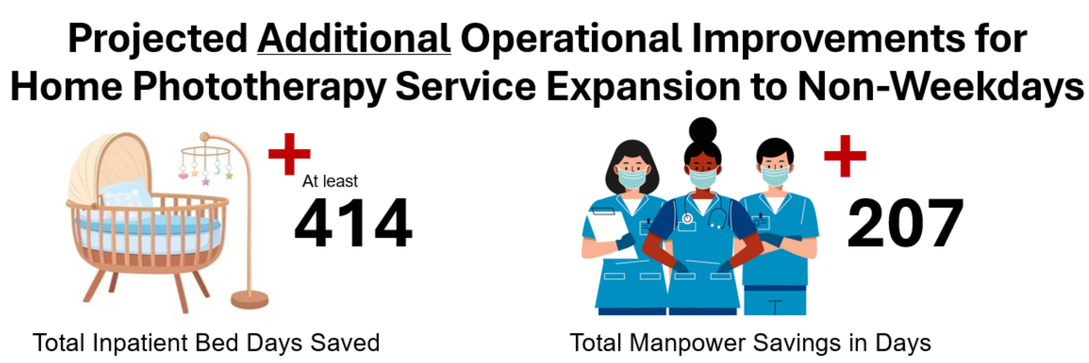


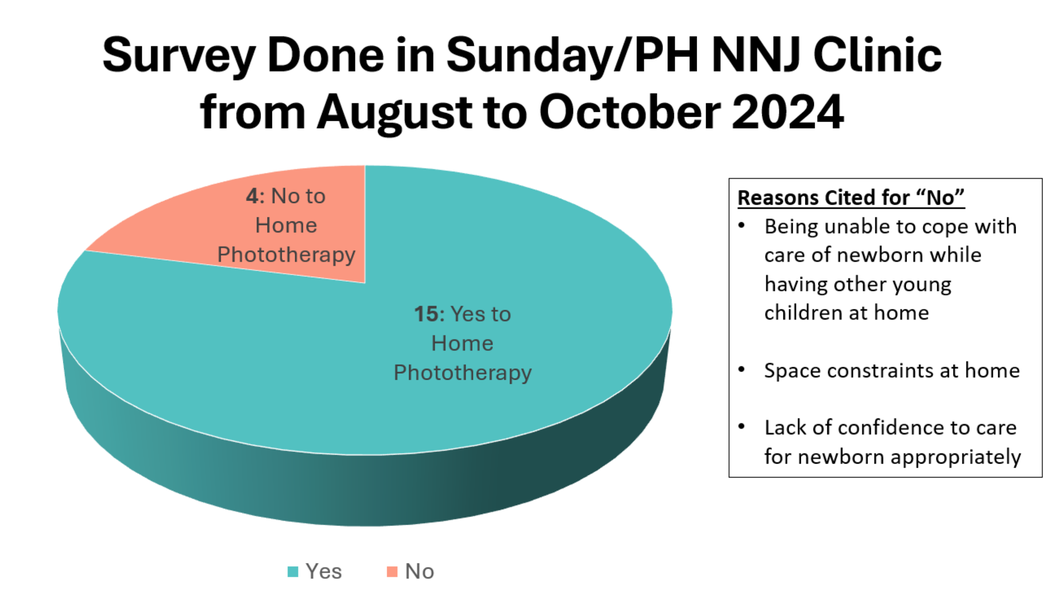
Results & Outcomes

Since the mainstreaming of KKH@Home - Home Phototherapy service on 1 April 2024 to 31 December 2025, 377 patients were recruited during the weekdays. Outcomes showed significant operational improvements: 1.3 days in average length of stay, 517 saved inpatient bed days, and 258.5 days in manpower savings. Parents have also consistently reported improved convenience and family bonding through the home-based treatment.

There were 2,628 patients being seen during the Sunday/PH NNJ clinic in 2024 and 2025. Of which, 414 required inpatient phototherapy which were potential candidates for home treatment. This would equate to an average of 3 patients admitted for phototherapy from the Sunday/PH NNJ Clinic per session. A clinic survey conducted from August to October 2024 also revealed that 79% of parents (15 out of 19) would prefer home phototherapy if made available. As such, there is strong potential for service expansion of home phototherapy to Sundays/PHs, which may conceivably translate to at least an additional 414 inpatient bed days saved and 207 days in manpower savings in one year.







Conclusion

Using the PDSA framework will allow for objective analysing and process organising of our service expansion of KKH@Home - Home Phototherapy to Sundays and PHs. This will enable systematic evaluation and refinement, ensuring sustainable growth and enhanced benefits for families requiring neonatal jaundice care.

Reference: Academy of Medicine & College of Pediatrics and Child Health, Singapore. (2018). *Guidelines on evaluation and management of neonatal jaundice* (Practice Guidelines). Retrieved from https://www.ams.edu.sg/view-pdf.aspx?file=media%5C4572_fi_961.pdf&ofile=CPCHS+Guidelines+on+Evaluation+and+Management+of+Neonatal+Jaundice+FINAL.pdf