

## **Project Title**

Home Equipment Loan Program (HELP) for Vulnerable Newborns

## **Project Lead and Members**

Project Lead: Associate Professor Zubair Amin

Project Members: Yvonne Ng Peng Mei, Zhang Suhe, Allelieh Javier Capistrano, Lim

Siew Hui Joanne, Moey Hui Qing Geraldine

## **Organisation(s) Involved**

National University Hospital

## **Healthcare Family Group(s) Involved in this Project**

Medical, Nursing

## **Applicable Specialty or Discipline**

Paediatrics, Neonatology

## **Project Period**

Start date: Dec 2020

Completed date: Implemented-To-Date

## **Aims**

- To ease family's financial burden by reducing hospital stay and providing free equipment loan
- To improve quality of training and provide a seamless transition to home

## **Background**

See poster appended/ below

## **Methods**

See poster appended/ below

## Results

See poster appended/ below

## Lessons Learnt

We learned the following:

- It is feasible to implement an innovative project if we work with stakeholders and listen to their concerns.
- Public Health Care organizations in Singapore do not implement projects aiming only for financial savings but are willing to support innovations that can directly benefit patients and families.
- It is critical to establish such programmes within the hospital's operational framework with proper policies and procedures in place.
- Some of the benefits of an innovation, such as better patient safety and improvement of staff morale, are only apparent and subjectively appreciated after the start of the project.

What we could have done differently?

- The HELP started amidst COVID-19 pandemic. We could not engage public health organizations and other charities and entities to support us.
- On hindsight, we could have parents' representation in the core group to be more responsive to their needs.

## Conclusion

See poster appended/ below

## Additional Information

Our message to the others is to be visionary, bold, and follow Singapore's 'Can Do' spirit wholeheartedly. Remember that for a ground-breaking innovation to flourish, it needs several crucial ingredients of success:

- Roots and Wings: An innovation needs Roots (underlying ethos) and Wings (means to execute a task) to succeed. At NUH, the Roots were institutional core values. The Wings were the seed grant from NUH Productivity and Innovation Fund.
- Innovation as Unreasonable: Innovation is a ground-breaking idea that results in better outcomes with lesser resources. Innovation breaks the paradigm of reasonableness – being bold and unorthodox.
- Breaching Boundaries: Expanding beyond the boundaries is necessary in acquiring and distributing knowledge. The Team listened to feedback of the affected families and borrowed ideas from the public library.
- Going Beyond: Providing free medical equipment to families is not a typical responsibility of a healthcare organization, but it can be done with support from visionary leadership.
- Listening to Your Heart: “When your heart and brain are in conflict, follow your heart” – as the adage goes. Brain is rational, risk averse, calculative. Heart is about passion, spontaneous, and can-do spirit.

## Project Category

Care Continuum, Intermediate and Long Term Care & Community Care, Home Care, Right-Siting

Care & Process Redesign, Value Based Care, Patient Satisfaction, Operational Management, Resource Allocation, Productivity, Cost Saving, Access to Care, Bed Occupancy Rate

## Keywords

Equipment Loan, Baby, Home Care, Caregiver Competency, Reduced Hospital Stay, Neonatology

## Name and Email of Project Contact Person(s)

Name: Associate Professor Zubair Amin

Email: [paeza@nus.edu.sg](mailto:paeza@nus.edu.sg)

# Home Equipment Loan Program (HELP) for Vulnerable Newborn

Department of Neonatology, National University Hospital, Singapore

## CONCEPTUALISATION

- We built on National University Hospital's core values of Compassion, Excellence and Patient Centredness.
- Medically vulnerable newborn babies have prolonged hospital stay and require support with expensive medical equipment for 6-18 months at home.
- HELP key objectives were:
  - To ease family's financial burden by reducing hospital stay and providing free equipment loan
  - To improve quality of training and provide a seamless transition to home
- HELP started operations in December 2020 with a \$50,000 grant from NUH Innovation and Productivity Fund to buy medical equipment., and expanded with donations from individuals.
- HELP functions like a library, equipment are loaned and used as long as needed, then returned to be loaned out again.
- Team members voluntarily implemented the program.

## PREVIOUS SITUATION before HELP

- The process of securing medical equipment for home use takes time and creates financial burden for families. The delay in hospital discharge resulted in higher healthcare costs and shortage of ICU/HD beds.
- Parents self sourced the equipment from commercial vendors and did not receive standardised training nor regular equipment maintenance. Some financially strapped parents resort to purchasing substandard equipment from informal sources (online marketplace or another family)
- Post-discharge, staff were unable to assist parents for issues with equipment (e.g., malfunction, responses to alarms) due to staff's unfamiliarity with equipment.



## REFERRAL & FOLLOW-UP PROCESS

- Currently, HELP has 6 ventilators, 4 oxygen concentrators, 7 oxygen saturation monitors and other equipment.



- Caregiver competency on equipment operation improves from repeated training by HELP team members, compared to a single demonstration session by the vendor.
- Caregiver collaboration with, and confidence in HELP team contributes to successful home care transition.



## BENEFITS

Since inception 1.5 years ago, we have served 16 families. HELP has improved healthcare provision holistically, through these aspects:

### CONVENIENCE

- Patients only need a referral from the attending physician to obtain equipment. There are no complicated administrative processes

### EFFICIENCY

- HELP reduces hospitalisation days, as equipment are readily available for use, with HELP team members providing training to parents
- Previous process of referral, equipment sourcing, delivery and training took 2-3 weeks

### INCREASED LONGEVITY

- Equipment's service life is extended from a typical <2 years to 8 years; the scale of benefit is also increased as one equipment is expected to benefit 5-8 families.

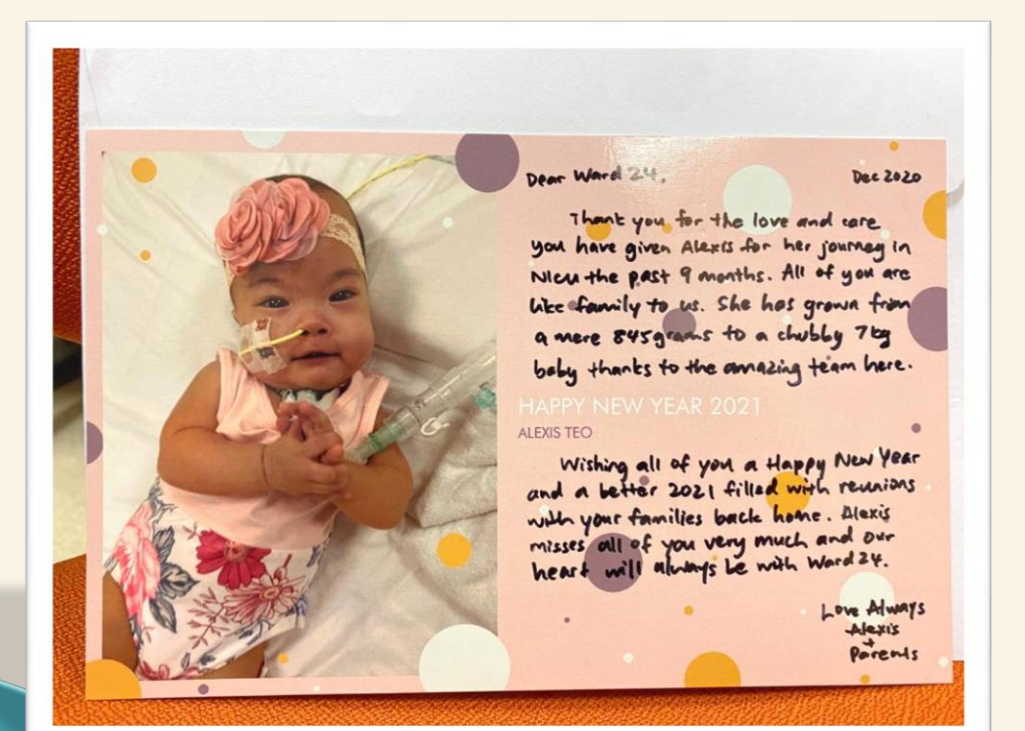
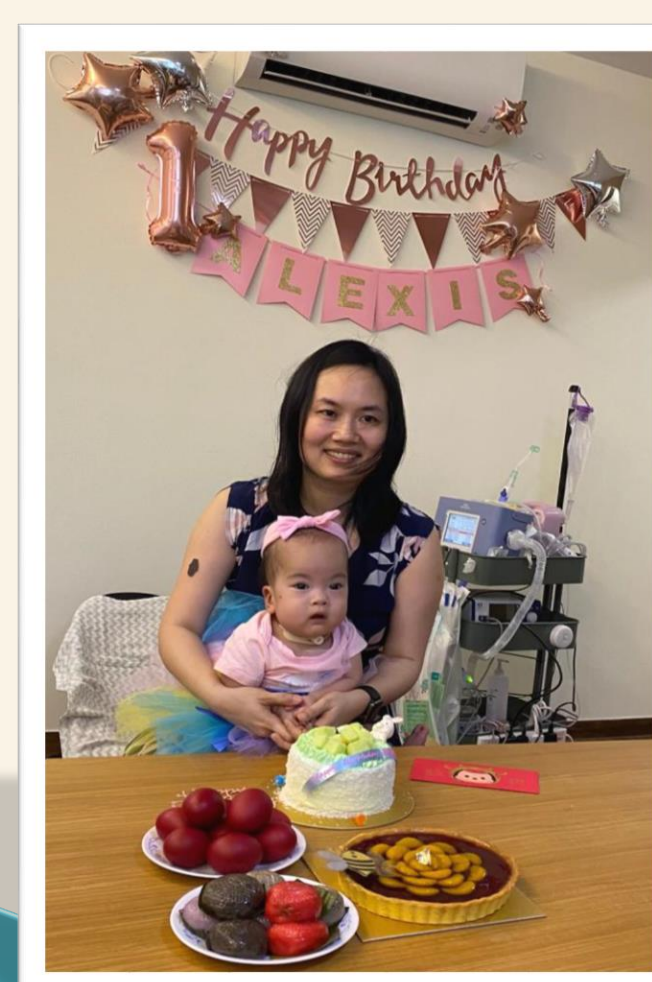
### INCREASED PATIENT SAFETY

- Equipment in HELP is commissioned in hospital, and undergo mandatory maintenance and certification
- Equipment undergo proper preventive maintenance and certification before being reused
- Previously, families occasionally obtained equipment from informal channels which may not have been maintained by certified personnel

### INCREASED STANDARD OF CARE

- Caregivers training starts in the hospital and is provided by the healthcare staff in a standardised and structured manner
- Previously, families receive training from different vendors, resulting in poor standardization and verification of competency in equipment use

## TANGIBLE OUTCOMES



### Reduced Hospital Stay

- For each patient, HELP can reduce hospital stay by 10-14 days.
- Each family saves \$14,000 to \$20,000 from reduction of hospital days

### Reduced Financial Cost

- Each family saves \$24,000 from purchase of full set of equipment.
- The direct savings for institution is estimated \$125,000 in the first year of HELP operation

### Improved Patient Experience

Department of Neonatology's Patient Experience Score peaked at 100% for the last four quarters, partly contributed by HELP.

Intangible outcomes of improved staff satisfaction and morale

### TEAM MEMBERS

- Associate Professor Zubair Amin | Head and Senior Consultant, Dept of Neonatology, National University Hospital
- Yvonne Ng Peng Mei | Senior Consultant, National University Hospital
- Zhang Suhe | Senior Nurse Clinician; Advanced Practice Nurse, National University Hospital
- Allelieh Javier Capistrano | Respiratory Therapist, National University Hospital
- Lim Siew Hui Joanne | Senior Staff Nurse, National University Hospital
- Moey Hui Qing Geraldine | Assistant Manager, National University Hospital