Project Title

Sleep Testing: Shifting from Hospital to Home

Project Lead and Members

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Project members:

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Organisation(s) Involved

Tan Tock Seng Hospital

Project Period

Start date: 2018

Completed date: 2019

Aims

To make sleep testing more accessible and affordable to patients, and done in the comfort of their homes

Background

See attached

Methods

See attached

Results

See attached

Lessons Learnt

Healthcare financing plays a crucial role in patients' decision-making process. While the cost of Home Sleep Testing (HST) is lower than lab-based Polysomnography (PSG), patients who are candidates for HST may reject this outpatient procedure as it requires an out-of-pocket payment. In contrast, lab-based PSG is fully Medisave deductible. This suggests a strong need to implement initiatives where the financial model supports the clinical model of care.

Conclusion

See attached

Project Category

Care Redesign, Workforce Transformation

Keywords

Care Redesign, Workforce Transformation, Job Redesign, Value Added Care, Waiting Time, Access to Care, Timely Diagnosis, Timely Treatment, Right Siting, Resource Allocation, Medical Services, Operations, Tan Tock Seng Hospital, Hospital to Home, Sleep Disorder, Home Sleep Testing, Sleep Laboratory, Polysomnography

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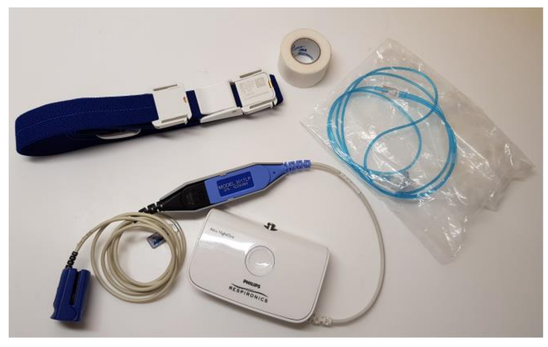
Sleep Testing: Shifting from Hospital to Home



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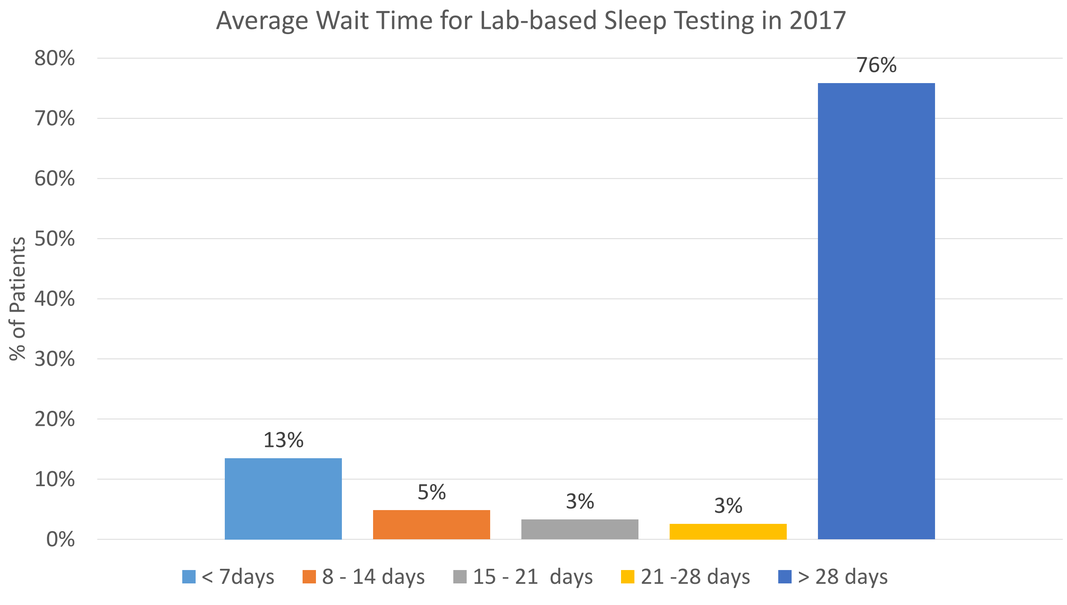
1. Background

Undiagnosed sleep apnoea has many ill effects including reduced neurocognitive function, poor performance, increased motor vehicle accidents and also increased long term cardiovascular risk, stroke risk and mortality. However, due to the growing demand coupled with the limited capacity of TTSH Sleep Lab, care delivery was inevitably delayed.

To address the above, TTSH introduced home sleep testing (HST) to make sleep testing more accessible and affordable to patients.

2. Assessment of Issue

Since 2014, demand for sleep studies grew by 11%. In 2017, 76% of patients waited beyond 28 days for lab-based testing and the average wait time was 5.45 to 5.78 months. This suggested a need to expand the service to meet clinical needs.



3. Strategy for Change

Given infrastructure and manpower limitations of Sleep Lab, HST as an alternative model, to shift care from a hospital-centric model to an ambulatory home care model was proposed.

Job redesign was also done to allow staff to perform to the top of their license. Patient Service Associates (PSA) were up-skilled to provide training to patients on how to use and operate the HST. The sleep technician could then focus on the technical (e.g. scoring of the test results) aspects of patient care.

4. Results & Conclusion

Greater Access to Care

With HST, more patients can receive timely diagnosis and treatment without an increase in cost (value-added care):

- With the pilot of 1 HST device, 93 patients benefitted from the service in 2019.
- The total number of sleep studies also increased by 12% from 2017 to 2019.
- In 2019, patients who would only have to wait 17 days if they opted for HST.

HST also provides an alternative avenue of diagnosis for patients who are unable to do lab-based testing:

- Patients who are unable to stay at the hospital e.g. patient is a caregiver
- Patients who are unable or not willing to pay for lab-based study can now opt for HST (avoidance of cost of admission)

Better Resource Allocation

Under this service, limited hospital resources are better allocated:

- Patients are managed at the most appropriate site and level of care they require.
- Unlike lab-based testing, HST is less labour-intensive as it does not require overnight monitoring by Sleep Technician.
- Since training of patient on HST device usage is conducted by the PSA, this has freed up the time of sleep technicians to attend to matters requiring their expertise (e.g. lung function testing). In 2019, a total of 46.5 hours of sleep technicians' time was saved.

5. Lesson Learned

The demand for HST did not increase at the expense of lab-based sleep testing. On the contrary, the accessibility of HST created increased awareness of sleep-related disorders and an avenue for diagnosis of a separate profile of patients

Tan Tock Seng HOSPITAL
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