Project Title

Redesigning Call-Out Systems for Chest Physiotherapy

Project Lead and Members

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Project members: Jaclyn Tan Ee Chen, Loh Wei Bing Jason, Audrey Lee Jia Yi, Koh Teng Han, Adeline Chi Hui Jia, Keith Chua Hao Sheng, Cheryl Chan Cai Ting, Joanne Yeo Wun Ching, Mary Ann Tay, Rachel Tang Su Shing, Suhana Bte Salim, Christopher Ng Thong Lian, Chloe Chung Lau Ha

Organisation(s) Involved

Tan Tock Seng Hospital

Project Period

Start date: March 2018

Completed date: September 2018

Aims

To redesign the call out system to better manage inappropriate chest physiotherapy call out cases and ensuring that staff provides timely, safe and effective management while minimising stress.

Background

Physiotherapists (working in hospitals are required to attend to call outs, defined as undertaking emergency calls and attending to patients after hours. Very often, these callouts require chest physiotherapy which utilizes a variety of techniques to loosen secretions and enhance its removal from the airway. A decision on whether to attend to the call out must be made quickly and one must weigh the risk of an intervention (inappropriate call outs) against the possibility of a positive result (appropriate call outs). Common concerns arising from call out duties includes having difficulties in

accurately recognizing the patient's problems and delivering value adding interventions to prevent further deterioration of condition for appropriate patients independently.

Methods

Refer to attachment

Results

Refer to attachment

Lessons Learnt

Embarking on a project that introduces significant change to current practice is an uphill battle. To make the journey smoother, it is important to engage staff and get their support and commitment in the change process. If we were to start this project again, we would approach key stakeholders much earlier and engage them to help with the spread of the new practice. This may result in lesser resistance in the beginning.

Change is inevitable and the only constant. It is crucial to engage stakeholders early to make the process smoother.

This project has seen savings for the patient, department in terms of man hours and transport cost and improved staff's stress level. Staff feedback is important as they are the ones providing this service and if staff is unable to provide the requirement of call-out service, it can result in dire consequences for patients. With consultant PT providing guidance, we can ensure appropriate patient care and at the same time, teach and develop other PTs with less experience in critical care.

Conclusion

The new call out system is effective in reducing attendance to inappropriate call outs and non-value adding interventions delivered, thereby cost saving to both hospital and patients. An evidence based clinical algorithm and support from consultant PT is vital

in ensuring accurate identification of problems and optimal selection of treatment. The reduction in number of actual attended call outs and support from a consultant PT reduce fatigue and stress levels significantly of PTs who are rostered for call out duties. Altogether, the new call out system would ensure a sustainable delivery of emergency chest PT services to patients without increasing healthcare cost

Project Category

Workforce Transformation

Keywords*

Workforce Transformation, Workflow Improvement, System Redesign, Quality Improvement, Physiotherapy, Call-Out System, Staff Fatigue, Quality Improvement Tools, Root Cause Analysis, Pareto Analysis, Waste Reduction, Manhour Savings, Cost Savings, Tan Tock Seng Hospital, Call-Out Activation, Inappropriate Call-Outs, Emergency Chest Physiotherapy, Clinical Algorithm and Support, Improved Staff Stress Level

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Redesigning Call-out System for Chest Physiotherapy

Tan Tock Seng Hospital

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BACKGROUND

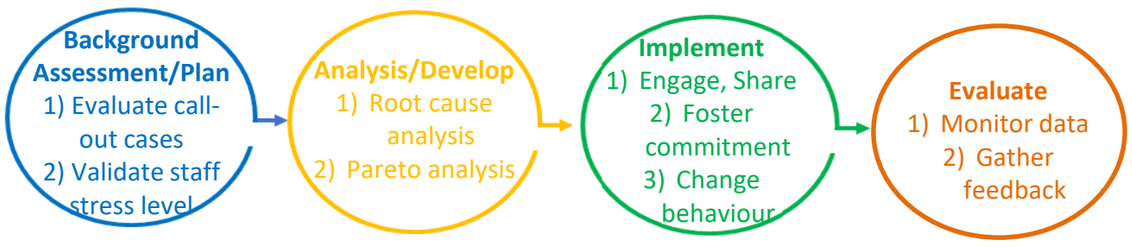
Physiotherapists (PT) working in hospitals are required to attend to call-outs, defined as undertaking emergency calls and attending to patients after hours. Very often, these call-outs requires chest physiotherapy which utilizes a variety of techniques to loosen secretions and enhance its removal from the airway. A decision on whether to attend to the call-out must be made quickly and one must weigh the risk of an intervention (inappropriate call-outs) against the possibility of a positive result (appropriate call-outs). Common concerns arising from call-out duties includes having difficulties in accurately recognizing the patient's problems and delivering value-adding interventions to prevent further deterioration of condition for appropriate patients independently.

IMPETUS FOR CHANGE

Patients who requires emergency chest PT are often critically ill or under respiratory distress. In such situations, the PT has to make prompt and accurate decision as patients may deteriorate rapidly. An inappropriate treatment or decision made, may potentially lead to unfavourable clinical outcome. It can be stressful for PTs to be on call-out duty. Even more so for less experienced PTs when faced with inappropriate call-outs and to make the judgment call for declining such unnecessary request. These PTs may lack the experience and training to discuss the call-outs with the medical team in a timely manner.

STRATEGY

Our plan was to redesign the call-out system to better manage inappropriate chest physiotherapy call-out cases and ensuring that staff provides timely, safe and effective management while minimising stress.

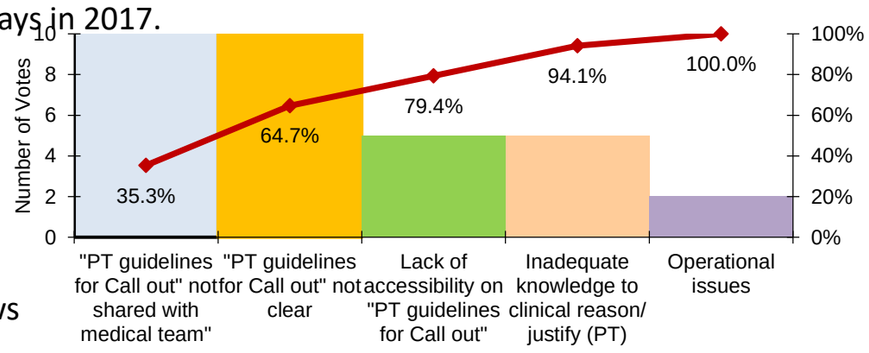


Evaluating call-out cases in 2017 and Validating staff stress level

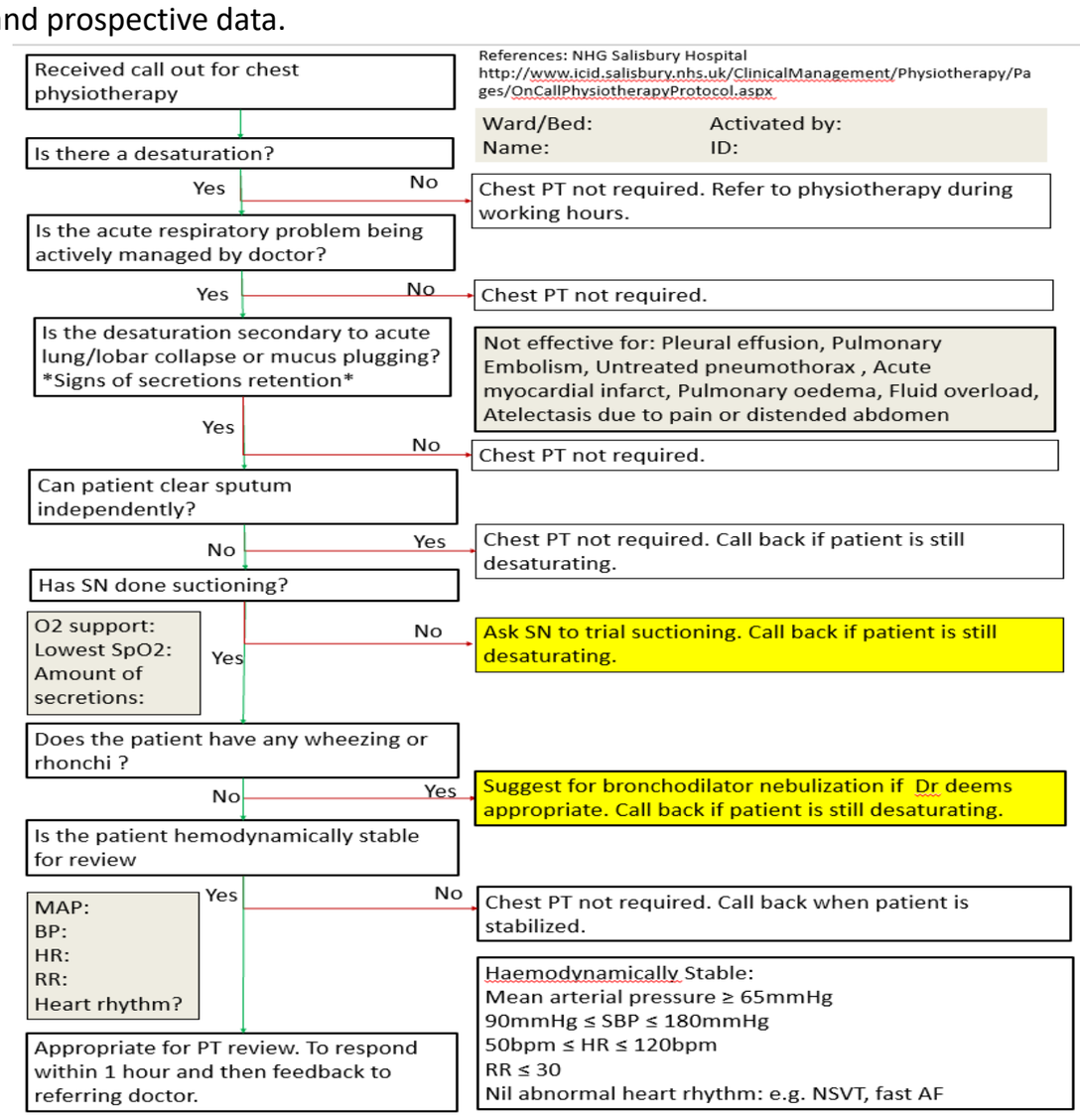
A total of 194 call-out cases for chest physiotherapy in 2017 was reviewed. The average time taken to manage a call-out including travelling time between home and hospital is 94 minutes. Attended cases includes returning to screen the patients and/or assess and treat the patients. Physiotherapists attended to inappropriate cases for a total of 81 days in 2017.

Analysis

Staff was surveyed and interviewed and contributed to the process of root cause analysis. The pareto graph on the right shows the top root causes.



The algorithm below was developed to provide a clear and safe guide with a criterion for call-out activation. This guide provides a safe framework for basic practice, enabling Physiotherapists to make decisions within the scope of their knowledge and experience. It is also used to define appropriate cases to evaluate 2017 baseline data and prospective data.



REDESIGING THE SYSTEM & IMPEMENTING

1) PT Guideline

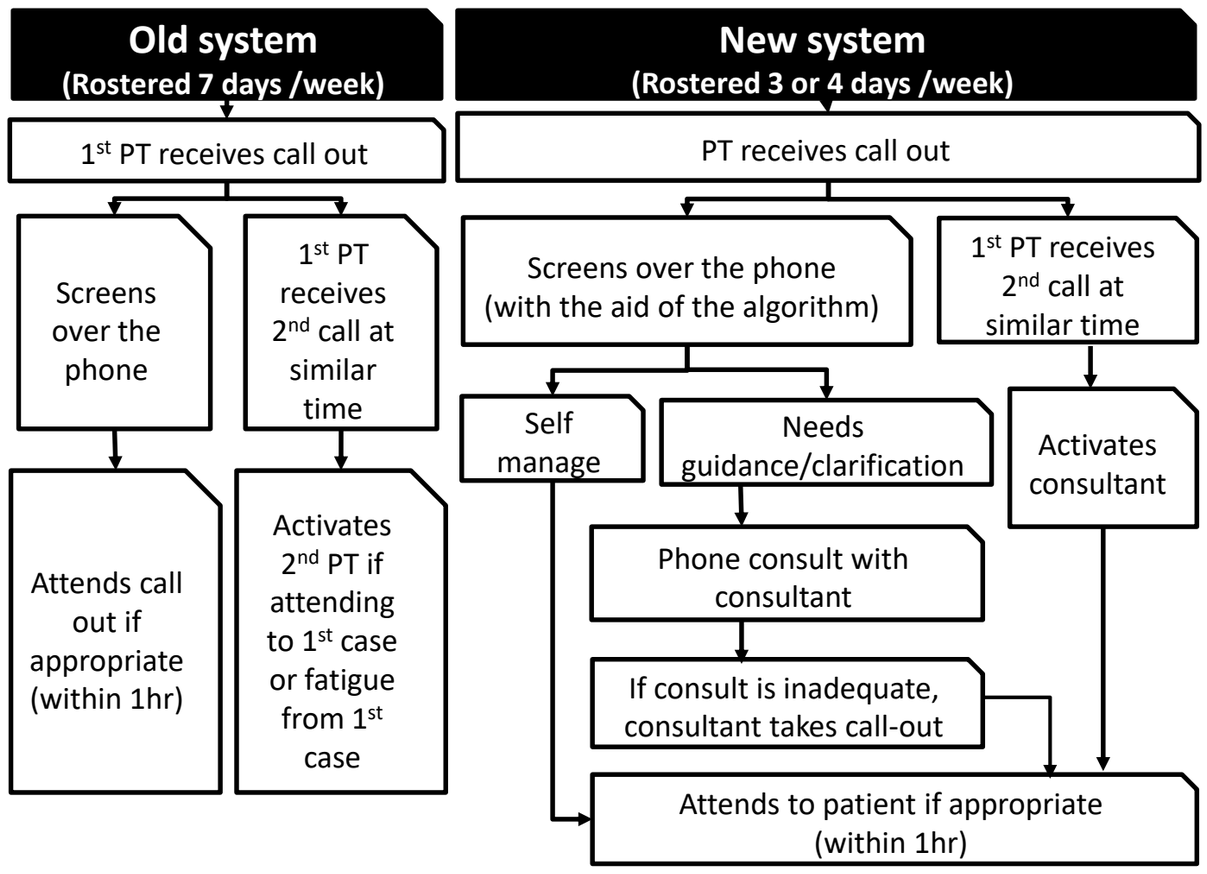
Developed clear PT evidence based guideline in the form of algorithm.

2) Making information accessible

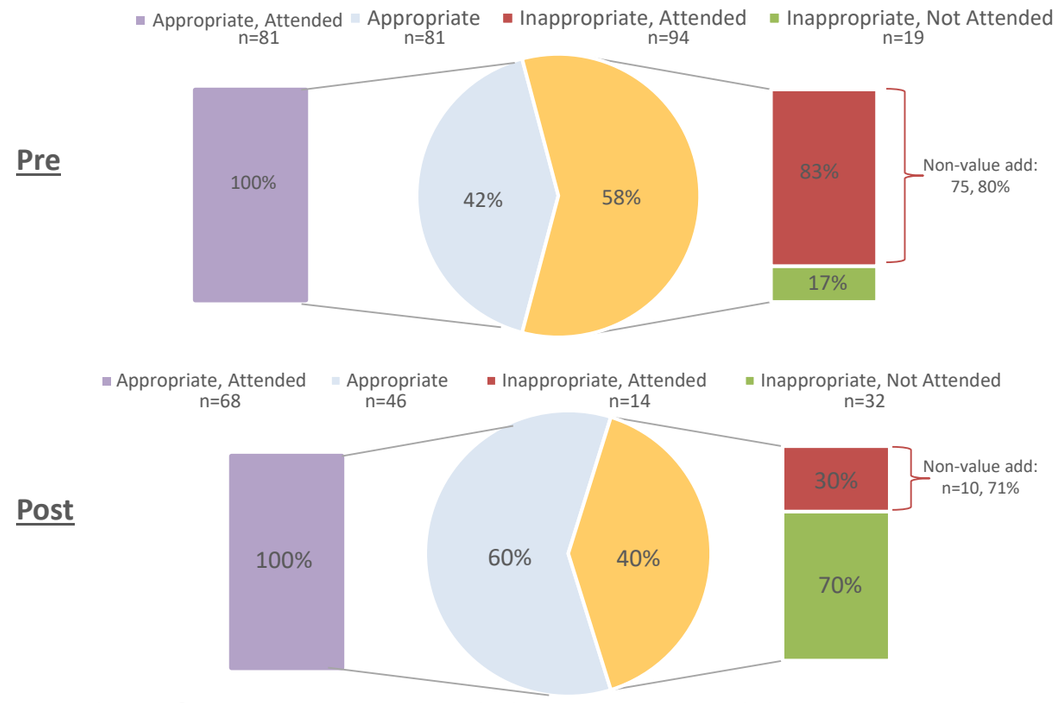
This included shared folders found in the hospital's computer system, eLearning platform where staff can access the guide via a mobile phone or computer and hardcopies placed next to where the call-out phone is retrieved prior to duty.

3) Train and roster consultants

Guides PTs with less experience. Consultant PTs are trained and specialised in cardiopulmonary physiotherapy. They have experience in management of ICU patients and able to manage patients requiring mechanical insufflation-exsufflation.



EVALUATION AND MEASUREMENT OF IMPROVEMENT



- The number of inappropriate attended cases improved by 53%, actual saving is approximately 80cases (based on annualised result) and based on 2017 projection, $11,360 man-hours and transport cost was saved for the department. Cost savings for patients would be approximately $150 per session.
- Annualised results showed that PTs are required to come back to attend inappropriate call-out 6 time less compared to previously.
- All cases were reviewed to evaluate the effectiveness and appropriateness of all call-outs. Number of attended inappropriate call-outs with non-value adding service has also greatly reduced from 75 to 10.
- PTs stress level improved from 3.86 to 2.82 on a Likert scale of 1-5.

CONCLUSION

The new call-out system is effective in reducing attendance to inappropriate call-outs and non-value-adding interventions delivered, thereby cost-saving to both hospital and patients. An evidence-based clinical algorithm and support from consultant PT is vital in ensuring accurate identification of problems and optimal selection of treatment. The reduction in number of actual attended call-outs and support from a consultant PT reduce fatigue and stress levels significantly of PTs who are rostered for call-out duties. Altogether, the new call-out system would ensure a sustainable delivery of emergency chest PT services to patients without increasing healthcare cost.