Project Title

Infection Prevention Competency in Pandemic Resuscitation (IP-CPR)

Project Lead and Members

Author: Dr Ting Sing Ling

Team:

- SNM Rodona Dela Paz Labuanan
- NE Amudah Jayachandran
- SSN Sugeeta Ramadas
- SN Iris Kay Maghirang Argana

Organisation(s) Involved

SingHealth Community Hospitals

Healthcare Family Group Involved in this Project

Medical, Nursing

Aims

Our primary aim was to increase competency and adherence to infection prevention and control measures during resuscitation from 60 % to 100% for healthcare workers (HCW) in Bright Vision Hospital within 3 months, as assessed by internal audit of our Infection Control Nurse (ICN). We aimed secondarily for zero COVID 19 infection as a result of nosocomial transmission from resuscitation among HCWs in this time.

Background

See poster appended / below

Methods

See poster appended / below

Results

See poster appended / below

Conclusion

See poster appended / below

Additional Information

Singapore Healthcare Management (SHM) Conference 2021 – Merit Award (Risk Management Category)

Project Category

Care & Process Redesign, Workflow Redesign, Safe Care, Risk Management Training & Education, Simulated Training

Keywords

Cardiopulmonary Resuscitation, COVID-19, Healthcare Workers, Infection Prevention and Control, Cause and Effect Analysis, Pareto Chart, Personal Protective Equipment, Airborne Precaution, COVID-19 Code Blue Algorithm

Name and Email of Project Contact Person(s)

Name: Ting Sing Ling

Email: singaporehealthcaremanagement@singhealth.com.sg

Infection Prevention Competency in Pandemic Resuscitation (IP-CPR)

Singapore Healthcare Management 2021

SingHealth Community Hospitals

Bright Vision • Outram • Sengkang

Author - Dr Ting Sing Ling
(SingHealth Community Hospital)
Team:
SNM Rodona Dela Paz Labuanan
NE Amudah Jayachandran
SSN Sugeeta Ramadas
SN Iris Kay Maghirang Argana

Background

Bright Vision Hospital (BVH) was the first community hospital to respond to the challenge of caring for COVID-19 patients at higher risk of clinical deterioration. Healthcare worker infection rates are as high as 20% in various reports. This risk increases dramatically during resuscitation of COVID-19 patients due to the aerosol generating nature of Cardiopulmonary resuscitation (CPR). This is especially so when healthcare workers (HCWs) do not adhere to infection prevention measures such as appropriate Personal Protective Equipment (PPE) donning and doffing. The safety of our staff is paramount as only healthy HCWs can continue clinical care, allowing us to keep patients at the heart of all we do.

A group simulation session on resuscitation of a COVID-19 patient in BVH, revealed only a dismal 60% of HCWs were competent and adhered to infection prevention and control (IPC) measures.

Mission Statement

Our primary aim was to increase competency and adherence to infection prevention and control measures during resuscitation from 60 % to 100% for HCWs in Bright Vision Hospital within 3 months, as assessed by internal audit of our Infection Control Nurse (ICN).
We aimed secondarily for zero COVID-19 infection as a result of nosocomial transmission from resuscitation among HCWs in this time.

Analysis of problem

A project team consisting of doctor and nurses was formed. Brainstorming helped to enumerate possible factors contributing to low passing rate by using a Cause and Effect Analysis (Figure 1).

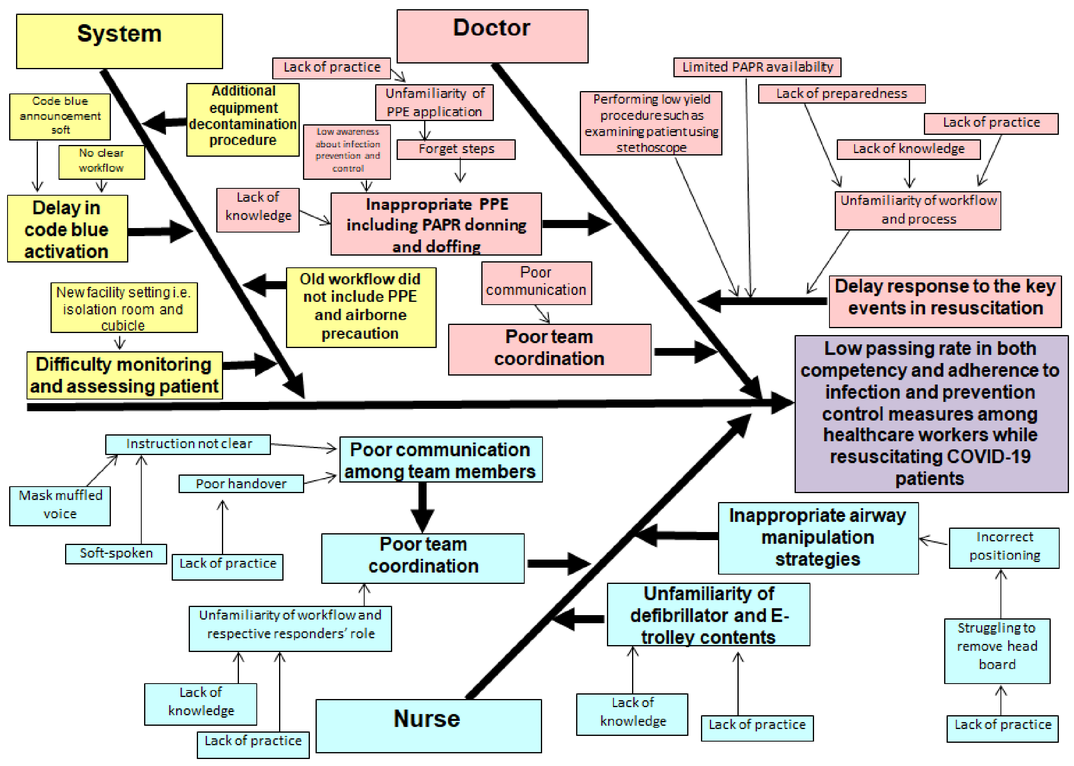


Figure 1

Pre-intervention weighted voting was conducted with Pareto Chart to elucidate the top contributory causes (Figure 2).

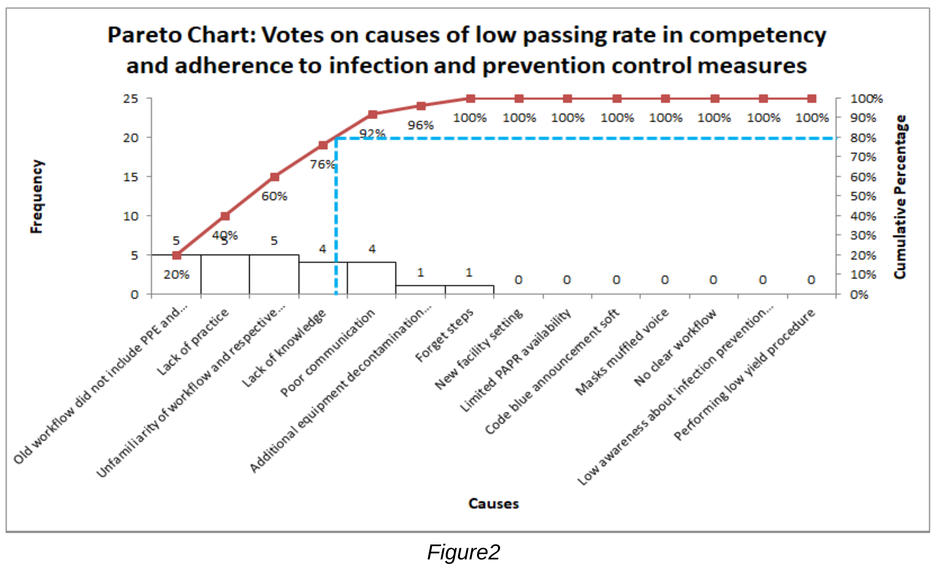


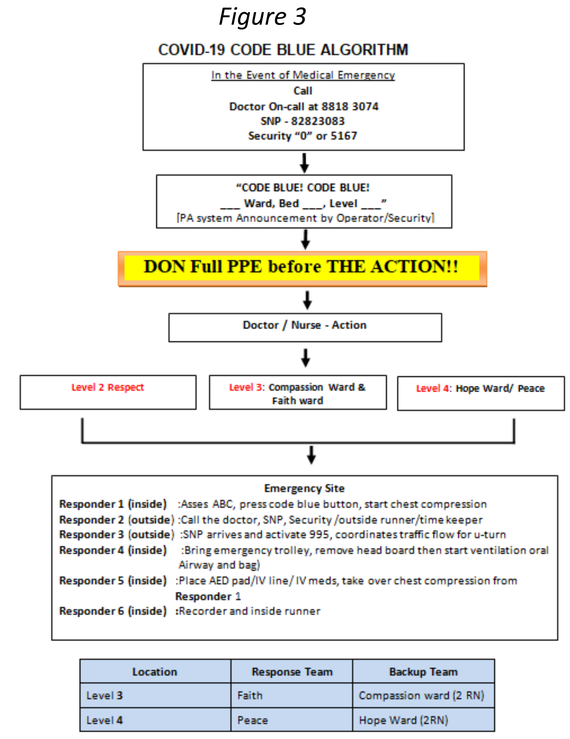
Figure2

Top-ranked factors for low passing rate were: old workflow did not include PPE and airborne precaution, lack of practice, unfamiliarity of workflow and respective responder's role and lack of knowledge.

Interventions

PDSA 1

Figure 3



PDSA 2

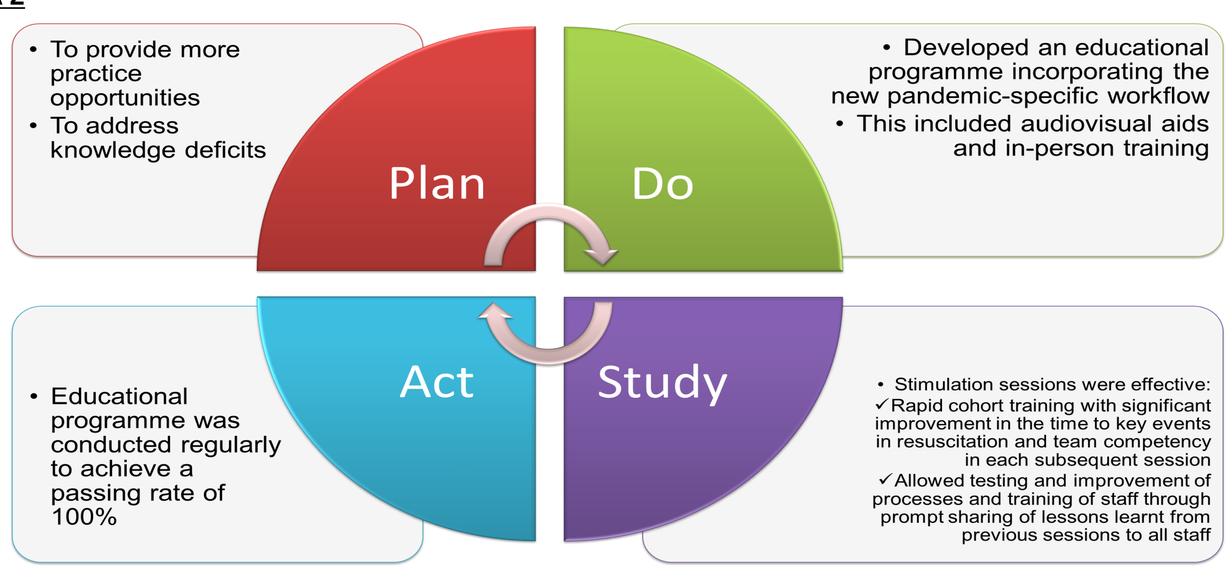


Figure 4: Standardised multi-rater assessment using checklist and video recording review

Figure 5: We innovatively modified equipment e.g. code blue shield and enhanced facilities to optimize resuscitation process and minimize transmission

Results / Impact

Over 3 months, 100% of healthcare workers were found by our ICN to be competent and adhering to infection prevention and control measures while resuscitating COVID-19 patient (Figure 6). However, more data points will be needed to monitor sustainability of results.

There was zero COVID-19 infection transmission from resuscitations among healthcare workers.

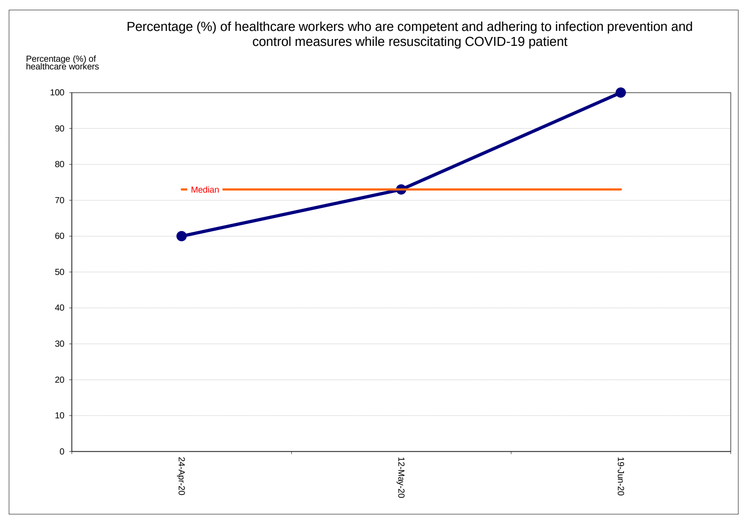


Figure 6

Spread and Sustainability Plans

Continuous education is crucial. The new educational programme including simulation sessions, was effective at improving healthcare workers' competency and adherence to infection prevention and control measures. This will be sustained with regular conduct every 3 months, and at shorter intervals when there are new staff.

We will continue our current practice when we revert to business as usual, as it is applicable to our own setting for isolated patients in negative pressure rooms. We have shared our new workflow and educational programme with our two sister community hospitals to spread the benefits, as there is applicability to their peacetime resuscitation as well.

We conclude that the high-value sustainable and spreadable intervention of conducting stimulation sessions for HCWs with regard to pandemic-specific resuscitation results in increased competency of HCWs in infection prevention, maintaining this vital human resource for pandemic clinical operations.