Personal Protective Equipment Pictorial Guide

Singapore Healthcare Management 2023

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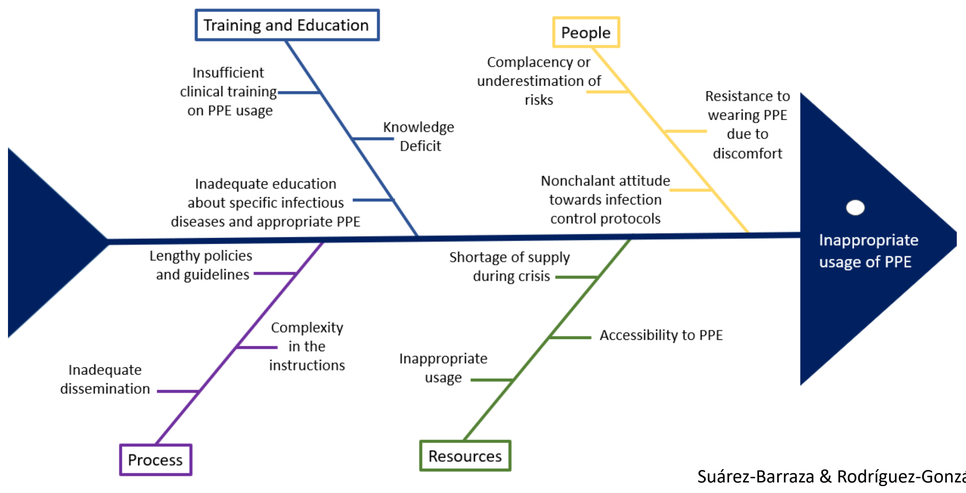
Introduction

Personal protective equipment (PPE) is crucial in preventing healthcare-associated infection (HAIs) and ensuring workplace safety.[1] However, proper use of PPE can be challenging , especially when dealing with different infectious diseases for accurate and appropriate use of PPE with reference to the lengthy policies and guidelines. Therefore the use of a pictorial guide was designed to provide a guidance for reference for Health Care Workers (HCWs) in SNEC.

Ishikawa Cause and Effect Diagram



Suárez-Barraza & Rodríguez-González, 2018. [2]

Objectives

- To create a resource that health care workers (HCWs) can use to easily refer to and apply correct PPE usage for different infectious diseases.
- To enhance HCWs' knowledge in applying correct isolation precautions to prevent HAIs.
- To improve workplace safety and patient safety by promoting proper PPE use.

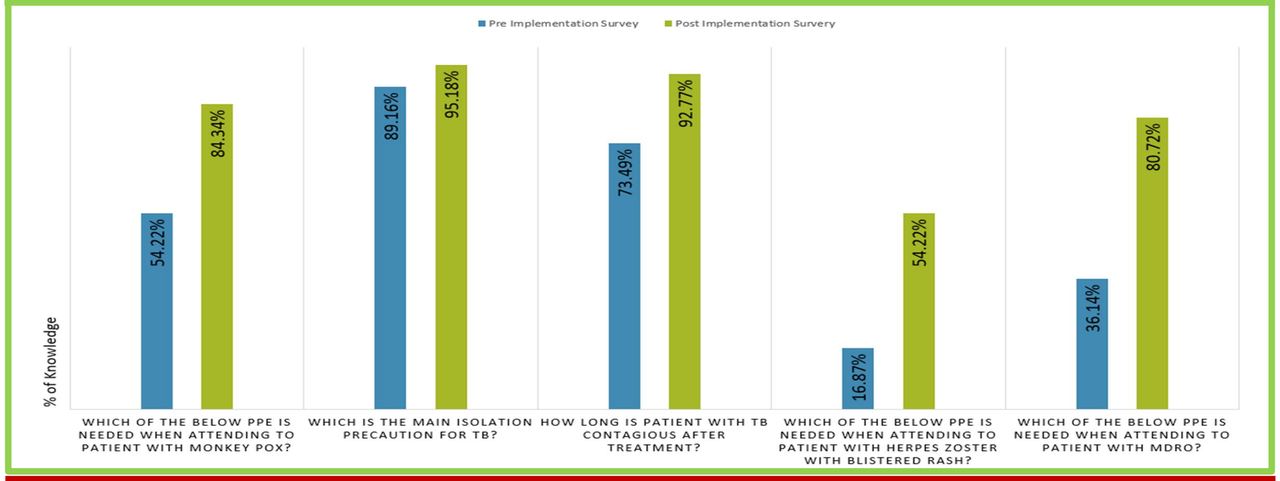
Methodology

The study was conducted in SNEC with 83 HCWs between January to April in year 2023 from different healthcare professions inclusive of allied health professionals, ancillary and clinical staffs.

The PPE pictorial guide included images of different types of PPE and their correct usage for various infectious disease, such as COVID-19, Tuberculosis (TB), and Methicillin-resistant Staphylococcus aureus (MRSA).

Pre and post implementation surveys were conducted to assess the effectiveness of the intervention. The feedback from HCWs was also collected to evaluate the acceptability of the PPE pictorial guide

PPE Pictorial Guide Pre and Post Implementation Survey



Results

The result showed a significant improvement in HCWs' knowledge in applying correct isolation precautions after the implementation of the PPE pictorial guide in comparison to guideline from institutional policies. **The mean score for knowledge increased from 54% in the pre-implementation survey to 81% in the post-implementation survey.** Feedback from HCWs was also positive, with all participants finding the PPE pictorial guide easy to understand and use indicating the effectiveness of the intervention in improving workplace safety and preventing HAIs.

PPE Pictorial Guide

Disease-specific isolation recommendations

Types of Precaution	Disease/ condition	Duration of precaution	Surgical mask	N95 Mask / Powered air purifier respirator	Isolation gown with cuff	Gloves	Eye protector
Airborne precaution	Monkey Pox	Duration of illness		✓	✓	✓	✓
	Pulmonary Tuberculosis Active and suspect	Discontinue precaution only when patient on effective therapy for 14 days and 3 consecutive sputum smears negative for acid-fast bacilli		✓	✓	✓	✓
	Measles	4 days after onset of rash; duration of illness in immune compromised		✓	✓	✓	
Droplet precaution	Mumps / Rubella	Until 5 days after the onset of swelling		✓	✓	✓	
Airborne + Contact precaution	Herpes Zoster (Varicella Zoster/ Shingles) Duration of illness	Duration of illness		✓	✓	✓	✓
Airborne + Droplet + Contact precaution	Coronavirus associated with severe acute respiratory syndrome (SARS-Co V)	From onset of symptoms		✓	✓	✓	✓
Contact Precaution	Clostridium difficile	Duration of illness + 2 days after last unformed stool	✓		✓	✓	
	Conjunctivitis	Bacterial pink eye: after 24 hours of antibiotic treatment Viral pink eye:1 week	✓		✓	✓	
	Human Immunodeficiency syndrome (HIV)	Duration of illness	✓		✓	✓	
	Hepatitis B	Duration of illness	✓		✓	✓	
	Multidrug-resistant organisms(MDROs) e.g. MRSA, VRE, CP-CRE	Duration of illness	✓		✓	✓	
	Herpes Zoster (Varicella Zoster/ Shingles) Until lesions dry and crusted	Until lesions dry and crusted	✓		✓	✓	

Eye protector are to be worn if there is possibility of splashes, sprays, respiratory droplet exposure and during aerosol generating procedure (AGP)

https://www.cdc.gov/infectioncontrol/guidelines/isolation/appendix/type-duration-precautions.html#T

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Continuous PDSA Cycle

Act

Act upon the findings from the study phase to refine and enhance the PPE pictorial guide.

Revise the guide based on the feedback and data analysis, ensuring clarity and effectiveness.

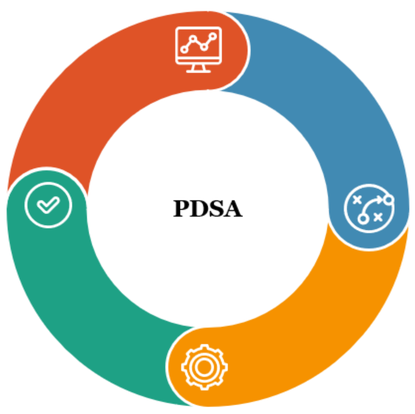
Implement any necessary adjustments or modifications to address identified areas for improvement.

Study

Collect data through pre- and post-implementation surveys to evaluate the impact of the pictorial guide on HCWs' knowledge and confidence levels.

Gather feedback from HCWs through interviews or questionnaires to assess the usability and effectiveness of the guide.

Analyze the data to determine any changes in HCWs' knowledge and confidence, as well as identify areas for improvement.



Plan

Identify the need for an easily accessible PPE pictorial guide to improve HCWs' knowledge and confidence in applying correct isolation precautions.

Set clear objectives, such as enhancing HCWs' understanding of PPE usage and preventing HAIs.

Develop a comprehensive and visually appealing pictorial guide, incorporating different types of PPE and their appropriate usage for various infectious diseases.

Determine the target audience and devise a plan for the implementation and distribution of the guide.

Do

Implement the PPE pictorial guide by providing copies to HCWs in the healthcare facility.

Conduct training sessions or workshops to educate HCWs on the purpose and proper utilization of the pictorial guide.

Encourage HCWs to incorporate the guide into their daily practice when dealing with infectious cases.

Repeat the PDSA cycle if further refinements are required, incorporating the revised guide and assessing its impact on HCWs' knowledge and confidence. By following the PDSA cycle[3], the project can continuously assess, refine, and optimize the PPE pictorial guide to effectively enhance HCWs' knowledge and confidence in applying correct isolation precautions. This iterative approach ensures that the guide remains relevant, accessible, and impactful, ultimately improving workplace safety and preventing HAIs in the healthcare setting.

Conclusion

The PPE pictorial guide was an effective intervention in enhancing HCW's knowledge and confidence in applying correct isolation precautions in preventing HAIs. The easy-to-refer format of the guide made it accessible and usable for HCWs from different professions. The positive feedback from HCWs and the significant improvement in their knowledge and confidence underscore the importance of providing such resources to improve workplace safety and patient safety. The findings of this study have important implications for healthcare facilities seeking to enhance their infection prevention and control measures.

References
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