

Utilizing Human Factors and System Design Approach Improved Isolation Compliance at a Community-based Acute Tertiary Care Facility

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Objectives

- Describe how using human factors and a systems approach can help identify barriers in infection prevention processes.
- Identify four factors used when implementing a system design approach for process improvement.
- Identify the interventions that were implemented to improve isolation compliance.

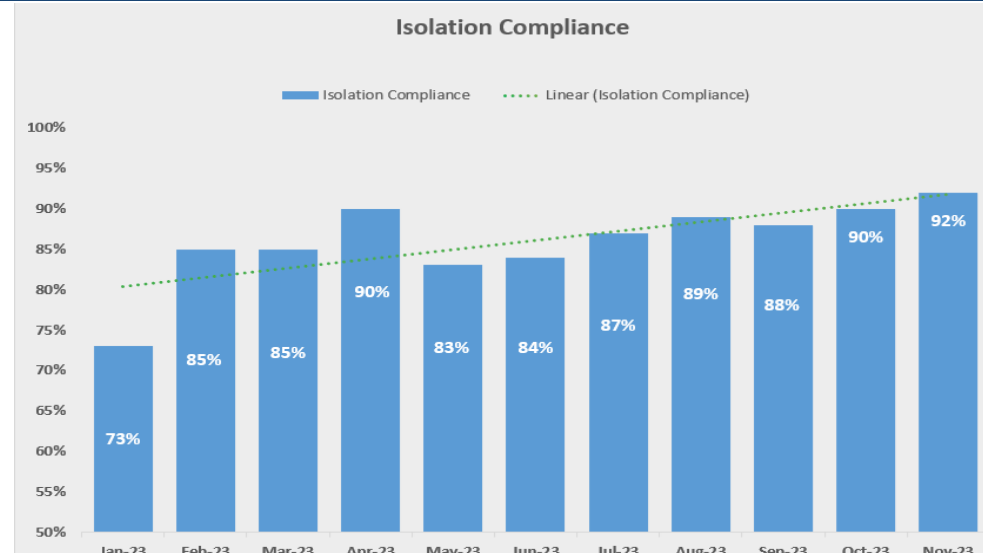
Background

Transmission-based precautions (TBPs) are recommended in preventing the transmission of infectious pathogens between patients and healthcare workers (HCW). To determine compliance, a point prevalence study was conducted. Patient isolation status was validated by an infection preventionist (IP). Isolation audits were conducted on the correct isolation sign on the patient room door and personal protective equipment (PPE) availability. Isolation categories included contact, airborne, droplet, enhanced, and enteric isolation. Results revealed 73% isolation compliance. To address this issue and identify barriers, human factors and system approach was utilized to improve compliance.

Methods		
PETT scan (people, environments, tools, and tasks) SEIPS, Systems Engineering - Initiative for Patient Safety		
Work System Factors	Barriers	Facilitators
People <ul style="list-style-type: none"> Healthcare workers Visitors Infection preventionist IT 	<ul style="list-style-type: none"> Lack of education Ignoring the isolation order alert in the EMR. Failure to post the sign at the entrance of the patient's room. Ignoring the isolation sign posted at the entrance of the room. 	IPs, nursing
Environment <ul style="list-style-type: none"> Variability of isolation signage. Isolation signs not matching the new EMR isolations. PPE not readily available. 	<ul style="list-style-type: none"> Isolation signs do not match new EMR isolation alerts. It was not clear who was responsible for stocking isolation cabinets. 	IPs, nursing
Tools <ul style="list-style-type: none"> New electronic medical record (EMR). 	<ul style="list-style-type: none"> Isolation alerts in the EMR not matching the isolation policy. Lack of knowledge on how to navigate the new EMR. 	IPs, IT, nursing
Tasks <ul style="list-style-type: none"> Policy alignment with EMR isolation orders and alerts Education Increasing rounds Adequate supply of PPE Isolation reconciliation Accountability 	<ul style="list-style-type: none"> Time 	IPs, nursing

Results

A total of 2,840 isolation rooms (approximately 250 per month) were audited. Results were tabulated for 11 months from January to November 2023. During this period, isolation compliance with TBP's increased from baseline 73% to 92% which was a 26% increase.



Conclusion

By using human factors and system design approach, isolation compliance with TBP's increased 26% from 73% to 92%. This approach helped to understand the interactions among healthcare workers, processes, and systems. This project ultimately addressed factors that could impact safety outcomes for patients and healthcare workers.

References

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