

Provider perspectives and compliance with use of novel stethoscope protector in the hospital setting

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Introduction

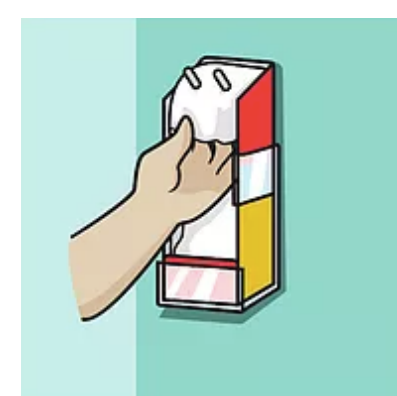
- Stethoscopes can act as fomites and transmit bacteria among patients
- The mean rate of stethoscope contamination has found to be 85%.
- A causal link between contaminated stethoscopes and healthcare associated infections (HCAI) is not well established, but decontamination of stethoscopes between patients is standard of practice, especially for patients on contact precautions (POCP).
- Methods of protection when examining POCP include: using a hospital-provided disposable stethoscope vs using provider's own stethoscope with an improvised barrier such as a glove.
- The purpose of this study was to determine practices and attitudes of care providers regarding the use of stethoscopes during physical exams of patients and compare these perceptions to observational data assessing provider compliance to contact precautions.

Methods and Materials

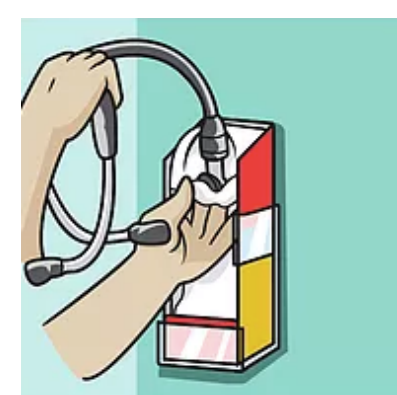
- The following care providers in the medical and surgical intensive care units were included in this study: resident physicians, fellows, attending physicians, ICU nursing staff.
- This study included a 17-question survey distributed to care providers relating to the effectiveness, compliance, and their preferences regarding stethoscope use.
- Additionally, physicians and nurses were observed performing auscultation exams over a 6-week-period and data was collected regarding their compliance with contact precautions and their behaviors relating to stethoscope use.
- Following this, a 4-week period of intervention was initiated where dispensers containing StethOprotect (B&B Medical Products) disposable stethoscope covers were made available to providers as an alternative method of barrier protection for their stethoscopes.
- After this 4-week period to allow providers to be familiarized with the product, another 6-week period of observation was performed.
- A statistical analysis was completed to determine how frequently the disposable covers were used and if there was a change in the rate of compliance to precaution protocols.

INSTRUCTIONS FOR USE:

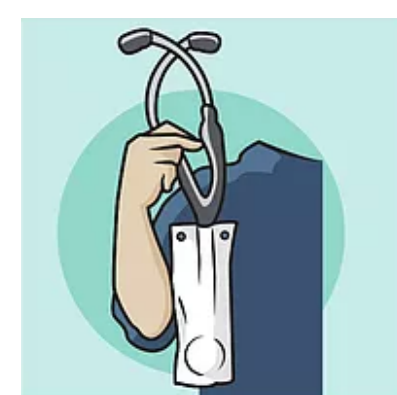
1) Insert two fingers of your non-dominant hand into the fold on top of the pouch and pull out gently to open it.



2) Insert the stethoscope into the pouch using your dominant hand and let it slide all the way to the bottom of the pouch.



3) Pull the pouch and the stethoscope in it as one unit up and out to release it from the hooks



4) Use the protected stethoscope to examine your patient and when done pull it off the stethoscope and dispose of it.



<https://www.bbmedicalproducts.com/install>

Results

Survey Results:

	Always	Often	Rarely	Never
How often do you suspect that stethoscopes are involved in the spread of nosocomial infections?	8.1%	68.9%	23.0%	0.0%
When a patient is on contact precautions, how frequently do you use the disposable stethoscope that is kept in the patient's room for your physical exam?	25.0%	33.3%	33.0%	8.4%
How often are the disposable stethoscopes not readily available at the bedside for patients on contact precautions?	5.0%	55.0%	40.0%	0.0%
How often are the disposable stethoscopes not easily found at the bedside for patients on contact precautions?	4.0%	65.6%	29.6%	0.0%
Do you believe the disposable stethoscopes are as effective as your personal stethopes?	Yes: 3.3%		No: 96.7%	
Have you ever experienced discomfort or irritation after using a disposable stethoscope that is shared by other providers?	Yes: 47.5%		No: 52.5%	
How often have you found a disposable stethoscope to be unsanitary when kept at bedside?	14.8%	57.3%	23.0%	4.9%
How often have you found a disposable stethoscope to be unusable when kept at bedside?	3.3%	36.1%	37.6%	23.0%
When a patient is on contact precautions, how frequently do you use a disposable glove covering your own stethoscope for your physical exam?	26.7%	36.7%	21.6%	12.0%
Do you find using a glove as a barrier over your stethoscope to be cumbersome or awkward during physical exam?	Yes: 67.8%		No: 32.2%	
Has your stethoscope ever come into contact with a patient on contact precautions despite using a glove as a barrier?	Yes: 62.1%		No: 37.9%	
How often do you see other providers not using barriers or disposable stethoscopes while examining a patient on contact precautions?	1.6%	62.3%	32.8%	3.3%
Do you believe that your personal stethoscope is more sensitive to auscultatory physical exam findings than the disposable stethoscopes available at bedside?	Yes: 98.4%		No: 1.6%	
Do you believe that more sensitive auscultation would affect your clinical decision making?	Yes: 90.2%		No: 9.8%	
How often do you clean your stethoscope with alcohol after examining a patient on contact precautions?	42.6%	39.4%	18.0%	0.0%
When you clean your stethoscope, how often do you clean the body/hose in addition to the diaphragm?	45.9%	31.1%	23.0%	0.0%
How often would you use a fitted disposable stethoscope cover if it was available at bedside for a patient on contact precautions?	45.8%	32.2%	13.6%	8.4%

Observation Results:

Overall Compliance			
		Frequency	Percent
Pre	Compliant	33	78.6%
	Non-Compliant	9	21.4%
	Total	42	100.0%
Post	Compliant	25	86.2%
	Non-Compliant	4	13.8%
	Total	29	100.0%
Pre: 78.6%; Post: 86.2% (p=0.54)			

Glove w/ Personal Stethoscope			
		Frequency	Percent
Pre	Yes	8	24.2%
	No	25	75.8%
	Total	33	100.0%
Post	Yes	6	24.0%
	No	19	76.0%
	Total	25	100.0%
Pre: 24.2%; Post: 24% (p=0.99)			

Dispoable Stethoscope			
		Frequency	Percent
Pre	Yes	25	75.8%
	No	8	24.2%
	Total	33	100.0%
Post	Yes	14	56.0%
	No	11	44.0%
	Total	25	100.0%
Pre: 75.8%; Post: 56% (p=0.11)			

Sleeve w/ Persoal Stethoscope			
		Frequency	Percent
Pre	N/A	-	-
		-	-
	Total	-	-
Post	Yes	5	20.0%
	No	20	80.0%
	Total	25	100.0%
Post: 20%			

Discussion

- Physicians and nurses have a strong preference for their own personal stethoscope over a disposable (96.7%)
- Only 39.4% of respondents often or always used the disposable stethoscope to POCP.
- For providers using their own stethoscopes, 63.4% of respondents reported often or always using a disposable glove as a barrier.
- Many providers realized they are not always compliant with contact precautions.
 - 18.0% of respondents admitted to rarely cleaning their stethoscope with alcohol after examining POCP
 - 63.9% stated they often or always note other providers not using barriers or disposable stethoscopes when examining POCP.
- During the initial observational period, 78.6% (n=33) of providers were found to be compliant with contact precautions using either disposable stethoscope or a glove barrier
- Although providers perceived using a disposable glove barrier more frequently than the provided disposable stethoscopes, 75.8% (25/33) of compliant providers used a disposable stethoscope while 24.2% (8/33) used a glove barrier.
- Following the introduction of the fitted disposable stethoscope cover, 86.2% (n=25) of providers were found to be compliant with contact precautions.
 - During the post-intervention observation, 56.0% (14/25) of compliant providers used a disposable stethoscope and 24.0% (6/25) of providers used a glove as an improvised barrier.
 - Whereas 78.0% of respondents to the survey stated they would be interested in using a fitted disposable stethoscope cover, in observation only 20.0% (5/25) of compliant providers used the provided fitted disposable cover.
- Though it did not meet statistical significance (p=0.54), the absolute percentage of compliance to contact precautions increased with the introduction of the fitted disposable stethoscope cover.
- Although a minority of providers chose to use the fitted disposable stethoscope cover, it did serve as an additional method of improvised barrier, allowing more providers to use their own stethoscopes to perform what they felt to be more sensitive patient exams in compliance with contact precautions.

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