

POSTER PRESENTATION

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Predictors of stethoscope contamination following a standardized physical exam

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Introduction / objectives

The relative contribution of stethoscopes in microbial cross-transmission in comparison to the examiners' hands has not been well described. The aim of this study is to compare stethoscope versus hand contamination following a physical exam and identify predictors of stethoscope contamination.

Methods

Following a standardized physical exam using sterile gloves and a sterile stethoscope, bacterial contamination of the following regions were assessed using contact plates: stethoscope diaphragm, stethoscope tube, fingertips, thenar region, hypothenar region and back of physician's dominant hand. Total aerobic colony count (ACC) were determined on digital photographs using a counting tool.

Results

A total of 56 patients (62% males; median age, 66) were recruited. Median (IQR) contamination (in ACC/25cm²) of examiner's dominant hand and stethoscope were as follows: fingertips: 835 (IQR, 332-1638), stethoscope diaphragm: 173 (IQR, 36-535), stethoscope tube: 116 (IQR, 34-321), hypothenar region: 16 (IQR, 8-59), thenar region: 15 (IQR, 4-71) and dorsum of hand: 3 (IQR, 1-16). The stethoscope diaphragm and tube were significantly more contaminated than the thenar or hypothenar regions (Wilcoxon ranksum test: $p < 0.001$). There was no difference between the level of tube and diaphragm contamination. Diaphragm contamination was strongly associated with the patient's level of skin contamination ($p < 0.001$), the patient's BMI ($p = 0.01$) and the degree of humidity of the patient's skin ($p < 0.001$).

Conclusion

Our results suggest that stethoscopes' diaphragm and tube are significantly contaminated following a physical exam and identify predictors of heavy contamination. These findings suggest the need to decontaminate stethoscopes following each use.

Disclosure of interest

None declared.

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