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Disinfection of Shared Mobile Phones Carried by Registered Nurses: A Comparison of Two Methods

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Disinfection of Shared Mobile Phones Carried by Registered Nurses: A Comparison of Two Methods



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Introduction

This study determined the efficacy of cleaning products on mobile phones. Previous research has demonstrated the risk for bacterial cross contamination between healthcare workers' hands, close contact equipment, and mobile communication devices. There is extensive literature on survival of organisms on inanimate objects. Mobile communication devices can act as a reservoir for bacteria associated with nosocomial infection. Additional studies show cross contamination between the healthcare workers hands, the mobile phones, and the patient.

Research Problem/ Question

1. Is 70% isopropyl alcohol or PhoneKleen™ effective in reducing bacterial counts on mobile phones?
2. Is either 70% isopropyl alcohol or PhoneKleen™ more effective in reducing bacterial counts on mobile phones?

Methodology

A random sample of 66 shared mobile phones was sampled in 11 acute and critical care units. Two phone cleaning products were tested (70% isopropyl alcohol wipe and PhoneKleen™). The phones were cultured by having the RN hold the phone, and the researcher would aseptically obtain the culture by swabbing the keypad, mouthpiece, earpiece, and back areas of the phone using 3 long strokes per side, constantly rotating the swab and not touching the RN's fingers. The phones were cultured before and after cleaning with the RN performing hand hygiene between the cultures.

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Analysis/Results



Table 1. Contamination Prior To and After Cleaning

	% of mobile phones contaminated with pathogenic bacteria prior to cleaning	% of mobile phones contaminated with pathogenic bacteria after cleaning
70% Isopropyl Alcohol	0	0
PhoneKleen™	0	0

Table 2. Presence of Normal Skin Flora

	All mobile phones cleaned
Normal Skin Flora	42
% Mobile Phones with Skin Flora	64%

Table 3. Disinfection of Normal Skin Flora

	70% Isopropyl Alcohol		PhoneKleen™	
	Prior to mobile phone cleaning	After mobile phone cleaning	Prior to mobile phone cleaning	After mobile phone cleaning
Normal Skin Flora	21	4	21	5
% Mobile Phones with Skin Flora	64%	12%	64%	15%

Conclusions/Implications

Inanimate objects may harbor pathogenic bacteria which could result in cross contamination from health care workers to patients resulting in hospital acquired infections. Previous studies have demonstrated pens, stethoscopes, pagers, computer keyboards, and mobile phone devices culture positive for pathogenic and non-pathogenic bacteria including multi-drug resistant organisms. Health care workers are responsible for maintaining clean shared mobile phones, by following the cleaning process. Culture results did not reveal the presence of pathogenic bacteria, however normal skin flora was found. Shared mobile telephones are not a source of hospital acquired infection when cleaned with 70% isopropyl alcohol wipe or PhoneKleen™.

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