



# Description of The Contamination of Healthcare Workers' Mobile Phones at King Saud University Hospital (KSUMC)



Deanship of Scientific Research

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## BACKGROUND

Mobile phones have become increasingly widespread; this can be attributed to the emergence of smartphones, which have become an indispensable part of daily life. Phones come into close contact with the human body, specifically the hands. In hospitals, the hands of healthcare workers are an important way by which the transfer of contaminating microorganisms may occur. As healthcare workers may frequently handle their mobile phones throughout the day, they are expected to be a way by which microorganisms are transferred.

## OBJECTIVES

Culture, determine and identify microbial contamination of cell phones used by healthcare workers both directly and indirectly involved in patient care at King Saud University Medical City (KSUMC), a tertiary care center in Riyadh, Saudi Arabia.

## METHODS

Healthcare workers either directly or indirectly involved in patient care as well as medical students were recruited from various departments to participate in our study. Samples were collected by rotating a sterile swab dampened with saline on the surface of the phone. The swabs were then cultured on blood and mcconkey agar then identified via microscan.

## RESULTS

In total, 130 swabs were collected. 43.6% of collected samples harbored staphylococcus epidermidis. Staphylococcus hominis was found on 11.5%. Both Staphylococcus aureus and Staphylococcus warneri were found in 2.6% of collected samples. Culture positive phones were observed in 67% of female participants. It was also found that 95% of samples obtained from laboratory settings and medical students were positive.

## RESULTS co...

Growth was found in 91.1% of samples from all participants with the exception of consultants and nurses in whom 56.9% had positive growth. Cell phones owned for more than one year were more likely to be culture positive.

## CONCLUSION

Mobile phones can harbor various types of organisms and appropriate hygiene is necessary to avoid it becoming a reservoir.

## ACKNOWLEDGMENT

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## REFERENCE

- 1.Ramesh J, Carter A, Campbell M, et al. Use of mobile phones by medical staff at Queen Elizabeth Hospital, Barba- dos: evidence for both benefit and harm. J Hosp Infect 2008;70:160e165.
- 2.Chawla K, Mukhopadhyay C, Gurung B, Bhat P and Bairy I. Bacterial 'Cell' Phones: Do cell phones carry potential pathogens? An ICMR short term studentship project from Kasturba Medical College, Manipal, Karnataka. Online J Health Allied Scs. 2009; 8 (1)
- 3.Beschizza R. Cell Phones Filthier than bottom of shoe 2007 Jan. Available from: URL: [http://www.wired.com/gadgetlab/2007/01/cell\\_phones\\_fil/](http://www.wired.com/gadgetlab/2007/01/cell_phones_fil/)
- 4.Brady RR, Verran J, Damani NN, Gibb AP. Review of mobile communication devices as potential reservoirs of nosocomial pathogens. J Hosp Infect 2009; 71: 295–300.
- 5.Dancer SJ. Importance of the environment in meticillin-resis- tant Staphylococcus aureus acquisition: the case for hospital cleaning. Lancet Infect Dis 2008;8:101e113.

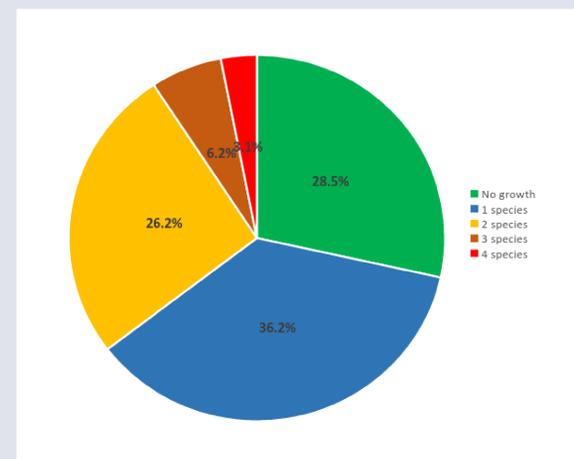


Figure 1. Number of species isolated from each cellphone

Table 2. Isolated microorganisms

	N	%
Staphylococcus epidermidis	68	43.6%
Micrococcus and related species	33	21.2%
Staphylococcus hominis	18	11.5%
Bacillus species	9	5.8%
Staphylococcus aureus	4	2.6%
Staphylococcus warneri	4	2.6%
Staphylococcus haemolyticus	3	1.9%
Other Staphylococcus species	5	3.2%
Streptococcus mitis/oralis	4	2.6%
Other microorganisms	8	5.1%