

Microbial Contamination of Cell Phones of Health Care Workers: Case Study in Mampong Municipal Government Hospital, Ghana

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Abstract : The use of cell phones has become an indispensable tool in the hospital's settings. Cell phones are used in hospitals without restrictions regardless of their unknown microbial load. However, the indiscriminate use of mobile devices, especially at health facilities, can act as a vehicle for transmitting pathogenic bacteria and other microorganisms. These potential pathogens become exogenous sources of infection for the patients and are also a potential health hazard for self and as well as family members. These are a growing problem in many health care institutions. Innovations in mobile communication have led to better patient care in diabetes, asthma, and increased in vaccine uptake via SMS. Notwithstanding, the use of cell phones can be a great potential source for nosocomial infections. Many studies reported heavy microbial contamination of cell phones among healthcare workers and communities. However, limited studies have been reported in our region on bacterial contamination on cell phones among healthcare workers. This study assessed microbial contamination of cell phones of health care workers (HCWs) at the Mampong Municipal Government Hospital (MMGH), Ghana. A cross-sectional design was used to characterize bacterial microflora on cell phones of HCWs at the MMGH. A total of thirty-five (35) swab samples of cell phones of HCWs at the Laboratory, Dental Unit, Children's Ward, Theater and Male ward were randomly collected for laboratory examinations. A suspension of the swab samples was each streak on blood and MacConkey agar and incubated at 37°C for 48 hours. Bacterial isolates were identified using appropriate laboratory and biochemical tests. Kirby-Bauer disc diffusion method was used to determine the antimicrobial sensitivity tests of the isolates. Data analysis was performed using SPSS version 16. All mobile phones sampled were contaminated with one or more bacterial isolates. Cell phones from the Male ward, Dental Unit, Laboratory, Theatre and Children's ward had at least three different bacterial isolates; 85.7%, 71.4%, 57.1% and 28.6% for both Theater and Children's ward respectively. Bacterial contaminants identified were *Staphylococcus epidermidis* (37%), *Staphylococcus aureus* (26%), *E. coli* (20%), *Bacillus* spp. (11%) and *Klebsiella* spp. (6 %). Except for the Children ward, *E. coli* was isolated at all study sites and predominant (42.9%) at the Dental Unit while *Klebsiella* spp. (28.6%) was only isolated at the Children's ward. Antibiotic sensitivity testing of *Staphylococcus aureus* indicated that they were highly sensitive to cephalexin (89%) tetracycline (80%), gentamycin (75%), lincomycin (70%), ciprofloxacin (67%) and highly resistant to ampicillin (75%). Some of these bacteria isolated are potential pathogens and their presence on cell phones of HCWs could be transmitted to patients and their families. Hence strict hand washing before and after every contact with patient and phone be enforced to reduce the risk of nosocomial infections.

Keywords : mobile phones, bacterial contamination, patients, MMGH

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