

Contamination of Portable Phones with Pathogenic Bacteria, A Comparative Study between Staff at Al Hussain Teaching Hospital and Staff at Samawa Technical Institute

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Abstract

The study was conducted to identify the key role of mobile phones in transmitting bacterial infection to users of these devices. Bacteria on the surface of mobile devices were isolated to diagnose and to know the damage and effects on the health of users of these devices. The study samples included 40 samples, divided into 20 swabs of mobile phones from Al Hussain Teaching Hospital employees and 20 swabs of mobile phones from employees and students at the Samawa Technical Institute. Worms from these samples have been grown for study and identification in cultural media. Biochemical tests were performed to determine species. *Bacillus* spp., *Pseudomonas* spp. have been isolated. spp *Enterobacter*. *Staphylococcus aureus*, *epidermidis Staphylococcus*, sp.. *Staphylococcus aureus*, *Staphylococcus epidermidis* and *Pseudomonas* spp are the most common bacterial species. And that's *Bacillus* spp. The main objective of the current study was to verify bacterial pathogens contamination on mobile phones and also to verify the role of the mobile phone in the transport of pathogens from person to person.

Key words: *Bacteria, portable phones, contamination, transmission.*

Introduction

Portable telephone is an electrical portable elongated device for individual communication. The massive mobile phone mainstream by finger. My research has shown in less than 30 years that a mobile phone can pose a health hazard with tens of thousands of microbes living on every square inch of the phone. Due to the basic need for mobile phones, mobile phones can be used by individuals who may be from someone who is unhealthy to someone else. The relentless handling of the telephone by different users therefore presents a group of microorganisms. Because dealing with a dissimilar person makes the carrier good for microbes, expressly those accompanying with the skin, which lead to the banquet of various germs from person to person. Most pathogens are pathogenic, in particular from hospital staff, as the number of illnesses with a dissimilar illness is available ^[1]. The mobile phone can spread communicable diseases by repeated hand contact ^[2]. *Staphy. Staphy. Aur.*, a communal bacteria which creates up to 25 percent of vigorous societies and animals on the membrane and even in the nose,

can cause sicknesses from irritations and carbuncles to pneumonia and meningitis. The main lake *S. Aureus* is the hand from which the food is prepared. ^[3] Finger helps to spread many microbes containing intestinal species as an important way^[4] *Proteus Mirabilis* *Proteus mirabilis* is one of the greatest frequently found cancer pathogens in medical sampling. It can cause a assortment of contaminants acquired in the community or hospital containing urinary tract, respiratory tract, wounds, burns, bacteremia, meningitis, neonatal brain, peptic edema and bone. ^[5] Following *Escherichia coli*, *P. Mirabilis*, an enterobacteriaceae member most frequently isolated from European clinical microscopy^[6] Hospital contamination accounts for ~3 percent in the USA^[7] The metastatic met-proatite *Pseudomonas aeruginosa* inhabits worldly, aquatic, animal, human and animal environments^[8]

Materials and Method

Samples of mobile phones were serene from 40 devices, 20 Al Hussain Teaching Hospital employees and 20 Samawah Technical Institute employees during

a three-week period of 20 April 2017 and 11 May 2017 in Samawah, Iraq, with sterile cotton swabs. Each swab spot is immediately placed on three plates of nutrient media, Macarkey media and blood media. The dishes were hatched at 37°C for 48 hours and the progress and expatriate portrayal of segregates were observed. Colonial morphological descriptions, gram dye^[1,8] mobility tests and key identification^[9,10] were used for bacterial identification.

Results and Discussions

For strong living, microbiological ethics in sterility are essential. However, monitoring applications that differ from the natural hygiene ethics of both developing and industrialized countries is not unusual. This test confirms this difference, because a variety of bacteria have been found on cell phones. The results indicate that *Staphylococcus aureus* epidermidis, *Pseudomonas aeruginosa*, *Bacillus* sp., *Proteus* sp. *Enterobacter aerogenes* are the principal infectious insulates typically accompanying with mobile phones as seen in the Table 1. These creatures can have entered the telephone via the membrane and from hand to hand. This is since inaccessible germs are a subcategory of the natural

skin microorganisms that previous researchers have progressively developed.^[11] The recurrent handling of different users may result in dissimilar hygiene profiles resulting in stable skin, frequency and degree of insulation. This has many things to do with health. *Staphylococcus aureus* is known to cause illnesses ranging from pimples and boils to pneumonia and meningitis, a scenario supported by the colony's high population.

Table (1) : Percentage of bacterial insulates from the samples collected from portable phones

NO.	Bacteria	Percentage (%)
1	<i>Staphylococcus aureus</i>	39%
2	<i>Staphylococcus epidermidis</i>	16%
3	<i>Pseudomonas aeruginosa</i>	14%
4	<i>Bacillus</i> sp.	12%
5	<i>Proteus</i> sp.	11%
6	<i>Enterobacter aerogenes</i>	8%
SUM.		100%

Table (2) : Comparative between Percentage of bacterial insulates from staff at Al Hussain Teaching Hospital and Staff at Samawa Technical Institute.

NO.	Bacteria	Staff at Al-Hussain teaching hospital (%)	Staff at samawa technical institute(%)	SUM. Of Percentage (%)
1	<i>Staphylococcus aureus</i>	23 %	16%	39%
2	<i>Staphylococcus epidermidis</i>	9%	7%	16%
3	<i>Pseudomonas aeruginosa</i>	8%	6%	14%
4	<i>Bacillus</i> sp.	8%	4%	12%
5	<i>Proteus</i> sp.	7%	4%	11%
6	<i>Enterobacter aerogenes</i>	6%	2%	8%
SUM.		61%	39%	100%

The existence of a gram-negative rod, the coli affiliate *Aerobacter aerogenes*, indicates the potential for fecal contamination on the mobile phone. Gambian sepsis occurs mainly as a result of *Pseudomonas aeruginosa* and *Enterobacter* spp.^[12] It was also suggested that the atomic toxin or lipid sclerosis (LPS) produced

by affiliates of this group was considered to be a key factor in septic shock. Sp. *Bacillus*. The frequency of 100% of the occurrence of a significant living organism in food waste was determined.^[13] This certainly contributes significantly to the damage to nutrition and to food contamination if nutrition is ready or annoyed

with infested hands. The general consequences of these findings are that portable telephones that sort communications relaxed and reachable also provide good vector pathogens for the transmission of illness. If care is not taken, vehicles can transport biological armaments. Karabay and colleagues^[14] conveyed that portable telephones could be contaminated with bacteria such as *Escherichia coli*, *Pseudomonas aeruginosa* and *Klebsiella pneumoniae*, which cause sanatorium infections and could attend as a means of spreading pathogens acquired in hospitals. There are portable phone users everywhere: on the market, at home, in hospitals and in schools. It can be the cause of infection spreading in society. Our discoveries show that isolates are linked to dissimilar strata of mankind. Today, cellphones are important to doctors and other health care professionals. Subsequently boundaries on the use of portable telephones by HP are not a concrete elucidation, various scientists advise adherence to anti-infection protection measures such as individual sterility requirements. It should also be conversant that these campaigns can be a foundation of sanatorium infections to and from the municipal. Further studies on possible means of decontamination from mobile phones should be found, For example, the use of alcohol and/or tissue cleansing and for use in hospitals with large bed capacity and comprehensive care facilities. The situation in hospitals plays an important role in the transportation of living organisms with hospital infections. Microorganisms can be transferred from person to person or from importable objects (e.g. medical speakers, bronchoscopes, pagers, dry styles, hospital codes, computer keyboards, mobile phones and fixed phones) to hands and vice versa^[15-18]. Oh, Karabay et coll. 2007)^[14] found the majority of isolated organisms to be plants of the skin. Conversely, 16.7% of the illustrations were constructive for pathogens notorious to be linked to sanatorium transfusions, such as *Enterococci spp*, *S. Aureus*, *K. Pneumonia*. *Pneumonia*. *Intestinal staphylococcus (VRE)* and *staphylococcus aureus (MRSA)* vancomycin have not been inaccessible. Other detectives have reported that phones, intercoms, dictators and mattress flushes may be adulterated with pathogenic bacteria.^[17,19-20] . Jeske et al^[21], It was also reported that bacteria were contaminated by personal portable telephones from the hands of anesthesiologists (38/40) doctors, 4/40 In the operating room with human pathogenic bacteria. The use of portable telephones by people treated in intensive care units, burning wings and operating rooms can be more hygienic because

mobile phones are often used near illness, unlike fixed phones. ICU diseases and burn illnesses are highly susceptible to infectious illnesses, Therefore, the risk of transmission of living organisms accompanying with sanatorium infections is increasing.^[20-22] Extra than half of the British populace have portable telephones and increased industrial presentations have augmented the use of these campaigns to connect health workers (HCWs) and illnesses more effectively.^[23] Innovations in portable communications have improved patient illness control; however, augmented use of portable headphones with a higher background in the hospital contamination rate is observed. Since restricting the use of portable headphones by health workers is not effective in preventing the spread of contamination in hospitals, Effective prevention strategies, including environmental pollution, manual hygiene, monitoring and adhesive insulation, need to be developed to prevent them.^[24,25] Unpretentious cleaning of 70% isopropyl computers and telephones can reduce bacterial loads.^[25,26] The control measures are very unpretentious and can include engineering changes such as the use of hands-free cell phones and exteriors that the right staff can easily clean, disinfect, wash their fingers and wear gloves.^[20,26] Contamination control staff who reside in a medical facility can generally advise on routine medical checks. These unpretentious control dealings can reduce indisposition and transience and thus reduce medical care costs for health centers and other care providers^[26].

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