Contaminated Mobile Devices and HAI Risk

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Speaker, Disclosures

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Disclosure: Providing clinical consulting services to PhoneSoap.
CE Requirements

In order to obtain CE credit, attendees must listen in to the entire webinar.

An email with instructions for obtaining your contact hour certificate will be provided within 48 hours.
Learning Objectives

At the end of this presentation, participants will be able to:

1. Share one way in which environmentally transmitted pathogens impact HAI risk.

2. List two types of mobile electronics and two additional hand held devices used daily in healthcare facilities.

3. Discuss one published study reporting contamination of hand held electronic devices and their potential role in infection transmission.

4. Describe two challenges associated with cleaning mobile devices.

5. Describe a 4 step plan to reduce the risk of contaminated mobile devices to patients in healthcare facilities.
1. Describe how environmentally transmitted pathogens impact HAI risk.
Impact of environmentally transmitted pathogens

- Environmentally transmitted pathogens = some of the most resistant to antibiotics e.g. methicillin-resistant *S. aureus* (MRSA), *Clostridium difficile*, vancomycin-resistant enterococci (VRE), multi-drug resistant *Acinetobacter*.

- *Clostridium difficile* spores, vancomycin-resistant *Enterococcus* (VRE), methicillin-resistant *Staphylococcus aureus* (MRSA) and *Acinetobacter baumannii* recovered after 4–5 months.³

- Patients at greatest risk = those with indwelling device(s) e.g. bladder catheters, IVs, or if they have a post operative incision.⁴
Impact of environmentally transmitted pathogens

In one study, admission to intensive care unit rooms previously occupied by carriers of methicillin-resistant Staphylococcus aureus (MRSA) or vancomycin-resistant enterococci (VRE) was found to confer a 40% increased risk of acquisition, presumably through environmental contamination.

Increased focus on environmental contamination

Increased focus on the environment’s role in infection transmission in recent years due to:\(^1\)

1. Patients acquiring antibiotic-resistant bacteria from prior hospital room occupants,

2. Increased patient illness and death from drug resistant bacteria e.g. MRSA and CDI,

3. The end of the antibiotic era is predicted due to bacterial resistance increasing faster than development of new antibiotics,

4. Reduction federal reimbursement for HAIs.\(^2, \textsuperscript{15}\)
Drying your hands with paper towels decreases bacterial counts on hands by 45-60%, while using a hand dryer instead can increase the bacteria on your hands by how much:

A. 10%
B. 100%
C. 255%
Drying your hands with paper towels decreases bacterial counts on hands by 45-60%, while using a hand dryer instead can increase the bacteria on your hands by how much:

C. 255%
Sources of environmentally transmitted pathogens

Patient zone:
1. Patient
2. Solid surfaces: bedside tables and bed rails
3. Moveable equipment which remains in room for entire patient stay: IV poles and pumps
4. Soft surfaces: gowns, bed sheets, privacy curtains, uniforms, lab coats
5. Hand held devices: cell phone, TV remote, call bell
Sources of environmentally transmitted pathogens

Healthcare worker, physician, family, visitors:

1. Hands, nasal colonization
2. Gloves
3. Uniform, scrubs
4. Lab coats
5. Hand held devices: cell phones, wireless phones, stethoscopes, glucometer, medication scanner
2. List mobile electronics and additional hand held devices used daily in healthcare facilities.
Mobile electronics in healthcare

- Cell phones, pagers, tablets or iPads, Spectra-link and other portable phones and communication devices
- Patients viewing lab test results, patient reminders about upcoming appointments, video consult with physician
- Healthcare provider accessing medical records, checking lab results
- Patient education and/or a healthcare worker training.
And many more difficult to clean hand held devices including: stethoscopes, reflex hammer, pens, blood pressure cuff, scissors, ID card, pagers, lanyard, keys, glasses, electronic thermometer, medication scanner, pulse ox probe, call bells, etc.
What is the reason for increased shedding of *Staph aureus* during a cold?

A. Increased nose touching transfers *S aureus*
B. Swelling of nasal turbinates increases aerosols
C. Rhino virus transforms during flu season to *S aureus*
What is the reason for increased shedding of *Staph aureus* during a cold?

**B. Swelling of nasal turbinates increases aerosols**
3. Discuss published studies reporting contamination of hand held electronic devices and their potential role in infection transmission.
Role of contaminated hand held electronic devices in HAI risk

• A 2015 clinical paper reviewed thirty-nine studies on contamination of mobile phones in healthcare.\(^{14}\)

• In this review, mobile phones were found to be consistently contaminated with bacteria that cause HAI.

• A primary review conclusion = use of mobile phones by healthcare workers increases contamination of hands and face; likely contributing to transmission of pathogens, including MDRO.

• In another study samples were taken from cell-phones of all hospital staff in orthopedic OR; 94% cell-phones were contaminated prior to cleaning (wiping) and 75% were contaminated after wiping.\(^{10}\)
Role of contaminated hand held items in HAI risk

- In a 2017 study published in the Journal of Arthroplasty, badges, lanyards, and pagers from Orthopedic OR personnel were cultured.
- Most contamination was found on name badge lanyards, primarily growing MSSA or MRSA.
- Conclusion = operating room personnel should not use lanyards for ID badges.\textsuperscript{11}
- In another 2017 study published in AJIC, the same strain of \textit{S. aureus} was cultured from mobile phones and hands of nursing staff.\textsuperscript{14}
APIC Conference 2017 Session WSOH-093. Bacterial Colonization of Mobile Phone Carried by Health-Care Providers: A Cross-Sectional Study in a Tertiary Care Teaching Hospital
Apivanich S., et al.

BACKGROUND: The aim of this cross-sectional study was to evaluate the bacterial contamination of mobile phones used by HCWs in a tertiary care teaching hospital.

METHODS: 173 mobile phones (MPs) from nurses, physicians, and medical students were screened for microbial contamination; a total of 346 cultures before and after cleaning the mobile phone with a disinfecting wipe.

RESULTS: 54% of HCWs reported never washing their hands before using MPs. The rate of bacterial contamination of MPs was 100%. Coagulase-negative staphylococcus (45%) was the most frequently isolated bacteria, followed by pathogenic bacteria 3-27% (Pseudomonas spp., Staphylococcus aureus, Acinetobacter spp. and Acinetobacter baumannii).

CONCLUSIONS: MPs can act as reservoirs of both pathogenic and nonpathogenic organisms. Transmission of pathogens can be reduced by hand hygiene and regular cleaning of MPs.
Some bacteria are psychrophilic (prefer cold), some are thermophilic (prefer hot temperatures), and many are mesophilic (prefer normal temperature ranges).
What category do most pathogenic bacteria fall into?

A. Thermophilic (hot)
B. Psychrophilic (cold)
C. Mesophilic (moderate normal)
Some bacteria are psychrophilic (prefer cold), some are thermophilic (prefer hot temperatures), and many are mesophilic (prefer normal temperature ranges). What category do most pathogenic bacteria fall into?

**C. Mesophilic (moderate normal)**

- Genetically identical isolates were detected from mobile phones, their user and others, demonstrating that mobile phones serve as reservoirs of bacteria in the health care environment.

- Bacterial surface contamination of mobile phones increases the risk of cross contamination between the device and the palm or fingers of health care personnel.

- Hand hygiene should be repeated after use of mobile phones and prior to patient contact.

- The study evaluated the potential contamination of portable electronic devices (PED) and associated risk factors for contamination in the hospital setting – i.e. Netbooks and tablet-based personal computers, for example iPads.

- A convenience sampling of devices in 2 large medical centers was undertaken to identify bacterial colonization rates and potential risk factors.

- All devices yielded at least 1 positive culture from the screen or cover.

- Conclusion: Portable electronic devices are increasingly being used in the hospital setting. As with other fomites, these devices represent a potential reservoir for the transmission of pathogens.
Lessons Learned from 2017-2018 Flu Season

**Cell phones** are capable of transferring not only messages but also disease-producing microbes including influenza virus.\(^24,25\)

Influenza virus infection is an ongoing health and economic burden causing epidemics with pandemic potential, **affecting 5-30% of the global population annually**, and is responsible for millions of hospitalizations and thousands of deaths each year.\(^26\)

Influenza virus may be transmitted among humans in three ways: (1) by direct contact with infected individuals, (2) **by contact with contaminated objects (such as cell phones)** and (3) by inhalation of virus-laden aerosols.\(^27\)
Cell Phones and Colonization

Constant handling + heat generated by body and phone = breeding ground for microorganisms
Stethoscopes

• A study published in AJIC in 2017 focused on the hand and stethoscope hygiene of medical students, residents and attending physicians.

• Study results: There was zero cleaning of stethoscopes before and after educational interventions.5

• In a 2017 survey 1000 IPs: The primary protocol for cleaning stethoscopes was reported to be wiping the head of the stethoscope with alcohol between patients, but not the rest of the stethoscope.
FINDINGS: Prior cleaning did not appear to have a significant effect on contamination rates, perhaps because cleaning was inadequate and/or there was a tendency for contamination to reoccur rapidly between cleanings.

High rates of contamination were found on call bells and over bed tables in keeping with reports that some of the most heavily contaminated surfaces are those closest to the patient bed.

TV Remotes

- A study done at the University of Arizona led by Microbiology professor Chuck Gerba showed that the TV remotes in hospital harbored more germs than any other surface in the hospital rooms.

- Fifteen different hospital rooms were studied and 28 television remote controls were tested.

- When tested, dirty remotes had an average of three times greater CFU than other surfaces, including MRSA.

Glucometers

• Glucometers – Unless single patient use, standard guidelines recommend cleaning/disinfection of these devices between patients.

• Outbreaks involving contaminated glucometers have been reported in long-term care settings, such as nursing homes and assisted living facilities.

• During the last 10 years, at least 15 outbreaks of HBV infection have been reported due to failures of basic principles of infection control during blood glucose monitoring.

• Under-reporting and under recognition of acute HBV infection is likely contributing to an underestimate of transmission.⁶
The average person touches their nose how many times every day, potentially then contaminating hands, environment and patients?

A. 100
B. 150
C. > 250
The average person touches their nose how many times every day, potentially then contaminating hands, environment and patients?²⁹

C. >250
4. Challenges associated with cleaning mobile devices, methods currently in use to clean them and results of a recent survey.
Challenges related to cleaning hand held electronic devices

- Introduced into healthcare at a faster pace than cleaning protocols
- Frequently touched - not always with clean hands, sometimes with gloved hands
- Carried by healthcare workers (“third hand”) moving from patient to patient and room to room
- Delicate functionality, can’t use common cleaning and disinfection solutions
- Manufacturer’s instructions for use (IFU) list products not available or not disinfectants.
- Devices can be contaminated even if not “visibly soiled”.8
Challenges related to cleaning hand held electronic devices

• 2017 study - differences in contamination rates of mobile phones in ICU among students and other healthcare workers.

• 110 mobile phones assessed, 25% of students and 20% of all other healthcare worker = phones were clean.

• Common in both groups were coagulase-negative staphylococci (CoNS) and *Staphylococcus aureus*.

• Most HCWs cleaned phones weekly, 1/3 medical students cleaned phones several times/year.

• 40% HCWs reported alcohol disinfectant to clean phones; most medical students used a dry cloth.
Challenges related to cleaning hand held electronic devices

- Even when a mobile device is cleaned of fingerprints, the surface of the device may still be covered with potentially harmful bacteria. Alternatively, even when a device has been disinfected, it may not necessarily be clean.

- Regular cleaning of a device by wiping with a moist microfiber cloth may eliminate some bacteria. An additional level of decontamination is often needed to remove more dangerous and long-lasting bacteria.

- The findings of a 2011 study conclude that the mobile phones of patients and their visitors represent a distinctly “higher risk for nosocomial pathogen colonization than those carried by healthcare workers and that specific infection control measures may be required for this threat.”
Methods vary for cleaning and disinfecting cell phones, stethoscopes and other hand held devices

• Wipe with lint free cloth
• Wipe with cloth and disinfectant solution
• Use germicidal wipe
• Rub with alcohol sanitizer
• UV disinfectant
• Nothing
Manual cleaning/disinfection of hand held electronics

One peer reviewed study\textsuperscript{16}

- After cleaning with 5 types of wipes, the touch screens were cleared of contamination.
- Discoloration and damage were observed with Products C, V, and P.
### Pros and Cons of *Manual* Cleaning of Mobile Electronic Devices

<table>
<thead>
<tr>
<th>Pro’s</th>
<th>Con’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Wipes are widely in use in healthcare facilities</td>
<td>• Bleach wipes can produce an offensive odor</td>
</tr>
<tr>
<td>• Wipes are easy to use and easily accessible</td>
<td>• Disinfectant solutions can pit and corrode electronic and other devices</td>
</tr>
<tr>
<td>• Wipes are effective for low – intermediate level disinfection</td>
<td>• An average 200 bed hospital will dispose of 5 truck loads of disinfectant wipes in landfill over 10 years.</td>
</tr>
<tr>
<td></td>
<td>• Two minutes is required for full wipe and dry time.</td>
</tr>
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<td></td>
<td>• Human factors prevent standardized cleaning of every device every time.</td>
</tr>
</tbody>
</table>
Use of Add On Products to Reduce Cell Phone Contamination

- Covers and cases: Protects body not screen – some versions are antimicrobial
- Sleeves, baggies: Protects cell phones from cross-contamination and harsh disinfectants that could cause damage
- Screen protectors: Plain and antimicrobial clear adhesive film – some versions contain antimicrobial product to help reduce microbial growth
**Automated** cleaning/disinfection of hand held devices

One study demonstrated that an enclosed ultraviolet-C radiation device was effective in rapidly reducing methicillin-resistant *Staphylococcus aureus*, and with longer exposure times, *Clostridium difficile* spores, on in-use mobile electronics and other devices (including stethoscopes, etc.).

![Image of ultraviolet light spectrum]

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Automated disinfection of mobile devices

• UV light is frequently used as a method of environmental, water and air disinfection in healthcare. \(^\text{12}\)

• There are three UV light wavelength categories: UV-A, UV-B and UV-C. The UV-C wavelength is the germicidal wavelength. \(^\text{13}\)

• UV-C breaks apart the DNA - inactivates microorganisms. \(^\text{13}\)
Novel UV Device: Automated disinfection of mobile electronics and other hand held items

- A novel UV device has been proven to eliminate surface contamination on phones, iPads and other small devices without damage e.g. stethoscopes, lanyards, pagers, glucometers.

- Kill claims = 99.99% of microorganisms including one mycobacterium spp.

- UV-C light does not get hot, will not damage the phone.\textsuperscript{23}

- Studies underway at four large US medical centers, comparing efficacy of novel UV disinfection device to germicidal wipes for electronics and other small hand held items.\textsuperscript{28}
Novel UV Mobile Device Disinfection Unit - Efficacy Testing

- All cycles of UV light produced a 6 log reduction or better for the mixture of microbes. Suspensions of twenty-four hour cultures of *Staphylococcus aureus* (*Staph. aureus* ATCC 25923), *Escherichia coli* (*E. coli* 25922) *Salmonella typhimurium* (*S. typhimurium* ATCC 14028) and *Klebsiella pneumoniae* (*K. pneumoniae* ATCC 13882) Each 0.1 ml of the mixture contained 65,000,000 colony forming units (CFUs).

- All cycles of UV light produced a 6 log reduction or better for *Mycobacterium smegmatis*. Suspensions of *M. smegmatis* were made in Typtic Soy Broth (TSB) supplemented with Tween 80. Each 0.1 ml of the *M. smegmatis* suspension contained 160,000,000 CFU. *M. smegmatis* is commonly used in work on the Mycobacterium genus due to its being a "fast grower" and non-pathogenic.
UV disinfection units for mobile electronics, can also automate disinfection of other difficult to clean hand held devices.
## Pros and Cons of *Automated* Cleaning of Mobile Devices

<table>
<thead>
<tr>
<th>Pro’s</th>
<th>Con’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Proven effective 6 log reduction of pathogens in 30 seconds</td>
<td>• Cost</td>
</tr>
<tr>
<td>• No contact with harsh chemicals</td>
<td></td>
</tr>
<tr>
<td>• Reduced wipes waste in landfill</td>
<td></td>
</tr>
<tr>
<td>• Standardized reliable cleaning of every device every time</td>
<td></td>
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<tr>
<td>• No damage to electronics</td>
<td></td>
</tr>
<tr>
<td>• Can disinfect many more hard to clean hand held devices than simply cell phones</td>
<td></td>
</tr>
</tbody>
</table>
Staph aureus is a pathogen that can cause many types of healthcare associated infections. What is the average % of population that is colonized with nasal Staph aureus?

A. 5 - 10%
B. 30-40%
C. 70 – 80%
*Staph aureus* is a pathogen that can cause many types of healthcare associated infections. What is the average % of population that is colonized with nasal *Staph aureus*?¹⁶

B. 30-40%
<table>
<thead>
<tr>
<th>Pro &amp; Con Summary</th>
<th>Germicidal Wipes</th>
<th>UV Device</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRO</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 log reduction mycobacterium in 30 seconds</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>No contact with harsh chemicals</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Reduced waste in landfill</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Standardized cleaning every device every time</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>No damage to electronic or other hand held devices</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Easy to use and easily accessible</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Low or intermediate level disinfection</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>CON</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Two minutes wiping plus dry time</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Damage to mobile device – voiding warranty</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Offensive odor</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Increases landfill</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Lack of standardized use and efficacy</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

- In 2017 a survey was sent to 1125 Infection Prevention professionals, 218 responded (19% response rate)
- 17 questions – Survey Monkey
- Topic: Cleaning Hand Held Electronic Devices
- 48% responded that they had no hospital policy or protocol for cleaning hand held electronic devices.
Survey Results: Processes for cleaning mobile devices - no hospital policy or protocol

Q9 Which of the following processes best reflects your policy or protocol for cleaning of healthcare worker mobile phones?

- Use a disinfectant...
- Wipe with a soft, lint-free...
- Wipe with germicidal...
- Rub with alcohol base...
- Clean with a damp cloth...
- Wipe the handset surf...
- UV disinfection...
- No standard policy or...
- Other (please specify)

Answered: 202  Skipped: 16
Survey Results: Frequency of cleaning mobile devices - no hospital policy or protocol

Q10 Which of the following best reflects the frequency for cleaning mobile phones per your facility policy or protocol?

- When visibly soiled
- Once a shift
- Daily
- Before and after use

Answered: 192  Skipped: 26
Survey Results: Use of innovative products for cleaning mobile devices - None
Survey Results: Process for cleaning stethoscopes – alcohol wipe

Q14 What is the process reflected in your policy or protocol for cleaning reusable stethoscopes between patients?

- Alcohol wipe after every...
- Inconsistent wipe with...
- UV disinfection
- No standard policy or...
- Other (please describe)
- Other (please specify)

Answered: 192 Skipped: 26
Three UV light wavelength categories are UV-A, UV-B and UV-C. Which wavelength is germicidal?

A. UV-A
B. UV-B
C. UV-C
Three UV light wavelength categories are UV-A, UV-B and UV-C. Which wavelength is germicidal?

C. UV-C
5. Propose a four step plan to reduce the risk of contaminated mobile devices to patients in healthcare.
Four Step Plan to Reduce the Risk of Contaminated Mobile Devices

1. Risk Assessment to guide selection of mobile device cleaning process(es)
2. Expansion of Hand Hygiene Protocol to include cleaning/disinfection of mobile devices
3. Staff education regarding new protocol
4. Assessment of compliance
1. Risk Assessment to Guide Selection of Mobile Device Cleaning Process(es)
1. Risk Assessment to Guide Selection of Mobile Device Cleaning Process(es)

• If cell phone disinfection is approached using a risk assessment, identify areas of highest risk – i.e. Operating Room, NICU, Compounding Pharmacy, Sterile Processing, Oncology, Outpatient Infusion, Dialysis

• Consider use of UV disinfection in highest risk areas due to: automation which increases reliability, and disinfection of visitor, healthcare worker, physician cell phones as an adjunct to the existing hand hygiene program
# Example of Mobile Device Cleaning Risk Assessment

<table>
<thead>
<tr>
<th>EVENT</th>
<th>PROBABILITY OF OCCURRENCE (How likely is this to occur)</th>
<th>RISK FOR PATIENT (What the risk to patient of HAI would most likely be)</th>
<th>RISK LEVEL (score of 5 or &gt; is considered highest risk – improvement indicated)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score: High</td>
<td>Med</td>
<td>Low</td>
</tr>
<tr>
<td>-------</td>
<td>--------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Mobile device contamination risk</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

- Likelihood of contamination of HCW mobile devices during 8 hour shift
- Sub optimal compliance with routine cleaning and disinfection of HCW mobile devices during 8 hour shift
- Patient visitors and family commonly use their mobile devices while in patient rooms
- Sub optimal compliance with routine cleaning and disinfection of family/visitor mobile devices prior to visiting patients

## Patient Risk of Infection

- Patients on unit have unhealed surgical incision
- Patients on unit have indwelling lines and drains
- Patients on unit have infection or colonization with MDRO
- Patients on unit have other infectious disease
- Unit is Intensive Care, Bone Marrow or organ transplant, post-op surgical, Oncology
- Patients have compromised immunity e.g. dialysis, oncology, transplant

## Risk of pathogen transmission from patient to patient

- Unable to determine compliance with cleaning mobile devices
- Sub optimal compliance with healthcare worker hand hygiene
- Sub optimal compliance with Respiratory Hygiene/Cough Etiquette and Standard Precautions
- Sub optimal compliance with Contact Precautions
- Sub optimal cleaning and disinfection of environment
- Currently in Flu season (November through March)

Adapted from University of North Carolina SPICE IC Risk Assessment Tool [https://spice.unc.edu/resources/template-risk-assessment-for-ltc/](https://spice.unc.edu/resources/template-risk-assessment-for-ltc/)
2. Expansion of Hand Hygiene Protocol to include cleaning/disinfection of mobile devices

- Hands of HCW and mobile phone are contaminated with the same type of organisms Ulger et al. (2009)
- Recommendations to reduce infection risks associated with contaminated mobile devices commonly include strict hand hygiene. Brady, et al. (2009)
- Multiple investigators have shown that HCW mobile devices provide a known reservoir of pathogenic bacteria that can contaminate hands and be transmitted to patients. Barclay (2011)
- In one study 94% cell-phones were contaminated prior to cleaning (wiping) and 75% were contaminated after wiping.¹⁰
- Most people carry mobile phones along with them to places such as toilets and kitchens where microorganisms thrive. Kumar, et al. (2014)
# Sample Protocol

**Title:** Hand Hygiene and Cleaning/Disinfection of Hand Held Devices  
**Date Created:** March 2018

## BACKGROUND
- The Centers for Disease Control and Prevention states that hand hygiene is the single most important procedure for preventing health-care associated infections.\(^1\)
- In 2015 a clinical paper reviewed thirty-nine studies on contamination of mobile phones in healthcare – all conclude that they are contaminated with bacteria that cause HAIs.\(^2\)
- In one study samples taken from cell-phones all hospital staff in orthopedic OR - 94% cell-phones contaminated prior to cleaning (wiping) and 75% contaminated after wiping.\(^3\)
- 2017 study – monitoring of hand and stethoscope hygiene zero cleaning of stethoscopes before and after educational interventions.\(^4\)

## Hand Hygiene

<table>
<thead>
<tr>
<th>Hand Hygiene</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand sanitizing</td>
<td>Rub alcohol-based hand sanitizer into hands vigorously until dry according to WHO 5 moments.</td>
</tr>
<tr>
<td>Hand washing (when hands are soiled and during care of patients with diarrhea)</td>
<td>Wash hands with soap and water for at least 15 seconds according to WHO 5 moments.</td>
</tr>
</tbody>
</table>

## Hand Held Device Use and Cleaning

| Hand Hygiene should be performed between patient care and device use.  
Gloves should not be worn during device use | Process                                                                 |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning devices:</td>
<td>Cleaning and disinfection processes for hand held devices:</td>
</tr>
</tbody>
</table>
|  ✓ For tablets used for intake in Clinics, and Skyping for inpatients – after each patient use  
  ✓ For provider, nurses, surgeons, anesthesia provider phones – at the start and end of each shift  
  ✓ For tablets used for surgeon preference cards in OR for instrument trays – every 8 hours | ✓ UV disinfection with product designed for hand held devices – 30 second cycle time OR  
   ✓ Clean thoroughly with germicidal wipe, allow to dry – 2 minutes clean and dry time  
   ✓ Consider UV disinfection for high risk patient areas since studies have demonstrated that phones are contaminated even after wiping. |

4. Avoid use in isolation rooms.  
Avoid use in isolation rooms
3. Staff education regarding new protocol
4. Assessment of compliance
Conclusions

• **Microbial contamination** of the mobile phones and their increased use among the HCWs poses a significant epidemiological risk to patients in our healthcare system.

• Mobile device use is expanding at a faster pace than protocols for cleaning and disinfection, and a recent survey concludes that **cleaning is not performed consistently**.

• A Risk Assessment may be useful in guiding decisions regarding what process(es) to use for which patient populations/departments

• Cell phones and tablets have become extensions of the hands of healthcare workers, consequently cleaning of mobile devices may logically fit as a component of any **hand hygiene protocol/program**.
References are included in following 3 slides.

For copy of slides, Risk Assessment, Hand hygiene and Mobile Device Cleaning Protocol please email: DeniseAGraham@gmail.com

For questions regarding presentation: SueABarnes@gmail.com
References

6. CDC HBV outbreaks: https://www.cdc.gov/injectionsafety/blood-glucose-monitoring.html
7. PhoneSoap survey of IP professionals 2017.
References


References

28. Wesley LaPorte CEO PhoneSoap wes@phonesoap.com
Post Webinar Session

1. This device can be mounted on the wall, put on wheels or positioned on a table top. What is the best way for this to be deployed in your facility if you had to choose?

2. If priced Right, how many would you deploy in your unit/facility etc. For example, every patient room, every entrance, every nursing station, etc?

3. In order for these units to be purchased using your discretionary budget, what would they need to be priced at?

4. If purchased using discretionary budget, would it be preferable as a whole unit purchase, a lease, a rental?

5. What price would you expect / be willing to pay for this device?

6. Would you purchase and extended warranty through us to cover bulbs replacement, just use the standard warranty, use your own facility service it?

7. What the limit is for capital expenditures/equipment - for smaller hospitals it may be $1,000 - for larger it could be as much as $5,000.

8. Is $1,500 a reasonable price for purchasing the PhoneSoap Med+, unit and if (I think $2,000) would be reasonable with addition of warranty and associated software, and if lease option would be preferred by any.
Post Webinar Session

9. Given Healthcare Associated Infections are hot topics clinically and financially, what resources are you getting allocated from an IP perspective to battle these pathogens? Is that different today than ever before, and if so how with any examples?

10. What is the budget that you as an IP are getting to battle these important vectors of infection? What is the process of acquiring tools needed to help you?

11. Can you think of other departments invested in diminishing the spread of these pathogens, and do you have any examples where you have worked together to acquire instrumentation, a service or supply, or other resources? What did that look like if you can describe?

12. Maybe even keep it as simple as: When you believe you need something that can help you or your team perform their duties better, walk me through that process from start to finish? Any recent success stories you can share? If there was a business case involved, what were the criteria that you had to meet?

13. Finally. What is the simplest way to successfully get folks educated about this new tool in Infection Prevention, and what would be the ideal acquisition model to do so? Who are the stakeholders besides yourselves that if you had support from in your institution, this could get done quickly and would be well supported and funded?

14. How would you go about justifying the purchase or lease of PS units to roll out into your Health System, and what are the main hurdles financially or operationally in doing so?