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Hand Hygiene in CSSD

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Introduction

The “CORE” function in a CSSD is to process surgical instruments and/or reusable medical devices that is used during surgery.

The process in CSSD render these items disinfected or sterile. Both methods require these items to be cleaned in order to reduce the microbial bioburden.

Infection prevention principles is key during processing as a breach can compromise the disinfection or sterility processes and pose a potential risk to the patient.

To mitigate this risk, an effective Hand Hygiene strategy should be implemented by CSSD staff.

WHO – Multimodal Hand Hygiene Improvement Strategy

" Health care associated infections places a serious disease burden and has a significant economic impact on patients and health-care systems throughout the world.

Yet good hand hygiene, the simple task of cleaning hands at the right time and in the right way, can save lives."

Actions proposed by the strategy:

- Improvement of infrastructure for Hand Hygiene
- Enhancement of knowledge and the perception of Hand Hygiene and Health Care associated Infections

Goal:

To reduce both the spread of infections and multi-drug resistant organisms (MDRO's) as well as reducing the number of Health Care associated Infections.

5 Moments of Hand Hygiene

- Hand Hygiene is considered to be the primary measure necessary to reduce Health Care associated Infections
- The 5 Moments for Hand Hygiene is the key to protect the patient, the health care worker and the health care environment from the spread of pathogens and therefore reducing the risk of HAI's

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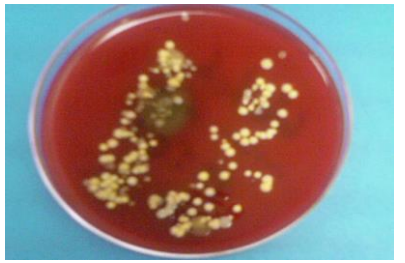
BBE – Bare Below Elbow

- No long sleeves
- Remove all jewelry including rings, watches, bangles and cultural apparel
- Nails short, unvarnished and no artificial nails
- Cover lesions with waterproof plaster



Understanding why HH is important in non-patient care Zones

Bacterial Flora on Hands:

- Bacteria found on the hands can be divided into two groups namely resident or transient organisms.
- Resident flora is less likely to cause infections.
- Transient flora colonizes the superficial layers of the skin and is more likely to be removed by HH. These organisms is more likely to survive on the skin and sporadically multiply.
- Transient organisms are acquired by health care workers hands from direct contact with the patients or contaminated surfaces and or instruments.
- These organisms are frequently associated with HAI's and can easily be transferred to other surfaces during cross contamination.

Organism survival times on hands:

Several studies have shown the ability of micro-organisms to survive on hands for different time frames

- Acenitobacter spp – 60minutes for survival on hands with no to ineffective hand hygiene
- E coli & Klebsiella spp – Only 50% of these bacteria is removed after 2 – 6 minutes
- VRE (Vancomycin resistant Enterococcus spp) – Survived at least 60 minutes on gloved and ungloved fingertips
- Pseudomonas aeruginosa & Burkholderia cepacia – were transmissible by handshaking for up to 30 minutes
- Note that staff with dermatitis is more likely to be colonized for prolonged periods of time

This demonstrates that contaminated hands could be the source of spread of micro-organisms

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Health Care workers hands become progressively more contaminated in the absence of proper hand hygiene

Surgical Site Infections

- Post operative infections is the most frequent type of HAI's
- WHO reports approximately 1 in 10 people who have surgery acquires a SSI
- Surgical instruments pose a risk of contamination and could act as fomites for the organism leading to a SSI
- The average SSI leads to approximately 1 week of additional hospitalization and increases the risk of mortality
- 55% of SSI's may be prevented with evidence based strategies starting with Hand Hygiene in CSSD

Study 1: 5 Moments of Hand Hygiene in CSSD – Mr Assaf Almalki

- Aim of the study: To reduce cross contamination in surgical instruments processed
- Poor compliance in HH can result to compromise the cleanness and disinfection of surgical instruments and affect the efficiency of the overall sterilization process of surgical instruments
- Interventions – Daily HH audits; weekly reporting on HH Compliance %; Quality improvement strategy with corrective actions; monitored the consumption of ABHR (Alcohol based hand rub)
- Outcome – Increased staff awareness and knowledge by formal and informal training
- 5 Moments in CSSD as identified by this study:

1. Before & after receiving instruments
2. Before & after decontamination process
3. Before & after assembling, preparation and packaging
4. Before & after loading the instruments for sterilization
5. Before & after unloading, storage, distribution and dispatching to end user

“Sterile is not sterile until clean is clean”

Study 2: Beyond the patient zone, Improving HH performance in a sterilising service department – by Kerryanne Tolson, Mark Friedwald (Australia)

- Aim of the study: The Hand hygiene program inclusive of the audit methodology to measure compliance was reviewed
- 5 Moments does not relate to non-patient zones
- Interventions: Strategic placement of ABHR other than basins already in place; HH signage – attention to HH & point of action; measurement done on the identified "5" moments
- Outcome – Overall HH compliance improved month on month

- 5 moments as identified in this study

1. Hand hygiene on entry and exit to & from designated areas – Activities in different areas present a potential risk of exposure to biological and chemical hazards. HH between "dirty" and "clean" areas significantly lowered the risk to the HCW, the general environment and equipment preparation zones.
2. Before putting on gloves
3. After removing gloves
4. Prior to handling thermally disinfected items – as many items do not progress to a sterilization process. Any contaminants transferred prior to final packaging of disinfected devices poses a risk to patients.
5. Prior to handling sterile stock – Sterility needs to be maintained until point of use

To mitigate this risk, an effective Hand Hygiene strategy should be implemented by CSSD staff.

5 Moments of Hand Hygiene in CSSD

1. After receiving of instrument & the decontamination process
2. Before assembling & packing
3. Before loading packs for sterilization
4. Before unloading & storage of sterilized packs
5. Before distribution and/or dispatching

Conclusion:

Hand hygiene should remain the focus even in non-patient zones as this also influences patient outcomes

References

- Study: 5 Moments of CSSD hand hygiene – by Assaf Almalki
- WHO – A Guide to the implementation of the WHO Multi Modal Hand Hygiene Improvement Strategy
- WHO – Guidelines on Hand Hygiene in Health Care
- Bbraun.co.za/CSSD
- www.cdc.gov/infectioncontrol/guidelines
- Study: Beyond the patient zone: Improving Hand Hygiene performance in a sterilizing services department – by Kerryanne Tolson & Mark Friedewald

Thank you!