Infection Prevention During Wound Care Procedures, Part 1: Background on Risks and the IPC Program for Wound Care Presentation Transcript

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Hello everyone!

My name is Carolyn Kiefer, and I work at the Virginia Department of Health as a Regional Infection Prevention Coordinator.

I'm with you today to share the first training module in a three-part series on infection prevention during wound care procedures.

This module will focus on Wound Care infection Risks and Your Infection Prevention and Control Program and how you can mitigate them.

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As I had mentioned, this is part 1 of a 3-part series. The objectives for the 3 trainings as a whole are to:

1. Discuss risks for infection transmission with wound care procedures
2. Describe infection prevention practices to prevent transmission of infections with wound care and
3. Identify how to apply infection prevention to wound care procedures

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In this module, we will we'll be focusing on the background on risks with wound care and what the importance of the infection prevention and control program is for mitigating these risks

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- In the chain of infection transmission, wounds can be portal of entry for pathogens since the skin's natural barrier of protection is damaged. Wounds can also serve as a reservoir for pathogens and be source for transmission.
- As we talk about wounds, we are referring to a large variety that can be encountered and cared for in all types of healthcare settings. They may be the result of injury, underlying health conditions, or from an elective or non-elective surgical procedure. Wounds may be acute, a fresh wound that should heal quickly, or chronic that there are delays in healing.

Common wounds that have more risk for infection and require wound care include pressure ulcers and diabetic and vascular and surgical wounds.

- As we discuss wound care, we are referring to any activity that helps heal the breaks in the skin. Wound care activities may include, but are not limited to, dressing changes; irrigation; debridement; and use of vacuum assisted closure devices (otherwise none as wound vacs).
- During wound care, residents or patients with colonized or infected wounds can be a source for infection transmission, but so can colonized or infected healthcare personnel. A common example is healthcare personnel with Group A *Streptococcus* that is in their throat and transmit droplets to an open wound during wound care. Or vice versa, a patient or resident with Group A *Streptococcus* in their wound that is irrigated, and the droplets transmit to a healthcare personnel.
- It is extremely important to ensure that infection prevention measures are being followed to protect the health and safety of patients, residents, and healthcare personnel no matter the wound type or procedure.

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- So, I briefly mentioned how transmission has occurred to and from wounds with wound care. But there are other ways, and they all occur because of lapses in basic infection prevention practices
- Specific common lapses include:
    - Hands not being cleaned at the right times- such as not cleaning hands before and after wound care or with removing and putting on new gloves
    - Improper selection and use of personal protective equipment (PPE)- such as reuse of gloves or not changing gloves when going from dirty to clean tasks, and not wearing masks with wound care where there are splashes and sprays or during a group a streptococcus outbreak with performing wound care.
    - Improper use of medications like creams or ointments. Having multi use ointments and not dedicating them to an individual patient or resident and being taken to room to room and then putting them back into the central storage. Then there is the contamination of clean and dirty supplies since that multi use ointment would then be considered dirty.
    - Not cleaning, disinfecting, or sterilizing shared equipment following manufacturer's instructions. So, any equipment used during that wound care equipment that may have contact with contaminated dressings or blood, body fluids, or tissue like scissors or podiatry equipment.
    - And then not cleaning and disinfecting the environment after contamination from splashes or sprays from wounds that are infected or colonized. Now, after any

wound care procedure, the surrounding environment should be assumed to be contaminated and cleaned and disinfected accordingly.

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- An example of infection transmission related to wound care was at a hospital in Maryland. The outbreak involved 10 healthcare associated cases of Acinetobacter baumannii infection
    - The investigation identified that 8 of 10 patients had received lavage wound care treatment.
    - 3 of these patients when on to develop bloodstream infections and pneumonia, and subsequently required ICU admission.
    - 2 of these eventually died
- With the investigation and assessing wound care practices at the facility, identified that the lavage procedure's splashes and sprays contaminated the environment. Then, proper cleaning and disinfection did not occur after the procedure to remove the contamination, which then served as a source for infection transmission.

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- Another investigation with wound care implicated involved Group A Streptococcus or GAS in a skilled nursing facility. Residents of long-term care facilities, especially those with wounds, are more vulnerable to GAS infections and more at risk for severe infections and death. GAS outbreaks in long term care facilities often implicate lapses in wound care procedures.
    - In this specific outbreak, GAS was identified in 7 residents with postsurgical wounds or decubitus ulcers.
    - 5 staff members were identified to have strep pharyngitis or strep throat.
- With assessment of IPC practices, wound care lapses were identified and those included:
    - Lack of hand hygiene being performed and hand hygiene products not sufficiently available
    - Facemasks were not worn during wound irrigation.
    - Gloves that had been used, already worn, were stored in healthcare worker's pockets.
    - Staff were not wearing PPE when entering rooms of residents on Contact Precautions.

- And equipment shared between residents was not routinely cleaned and disinfected before use on another resident.

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- What is interesting about this investigation is that they also evaluated whether infected or colonized wounds were shedding during wound care.
- To do this, they selected 5 residents with unknown GAS status and had wounds. They placed petri dishes below and adjacent to these wounds during wound care. What they found was 1 of the 5 plates grew GAS. This was from a resident with a sacral wound with a wound VAC. Their wound vac dressing change included irrigation with saline pods. Saline pods are small volume, and one would think would not have the risk for splashes or sprays as compared to more aggressive irrigation like pulse lavage.
- Although the initial introduction of GAS into this facility may have occurred via staff while working ill with GAS pharyngitis or residents admitted to the facility while colonized or ill, the investigators hypothesized that saline irrigation of GAS-colonized or infected wounds contributed to continued transmission through dispersal of GAS-laden droplets.
- And with breaches in infection control, intra facility transmission was enabled indirectly to residents through contaminated hands of staff or directly to staff providing wound care when they didn't use facemasks.

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Outbreaks like the two covered can be prevented if proper IPC practices are followed with each and every wound care procedure. This all starts with what is in place with the IPC Program.

- At a minimum, policies and procedures should address import aspects of wound care IPC. This includes evaluation and documentation of wounds and wound care plans; hand hygiene and PPE use; handling of wound care supplies and storage (including wound care carts), procedures for handling multi-dose wound care medications; and cleaning and disinfection of environmental surfaces and reusable wound care equipment.
- Your facility policies and procedures should be based on current standards of practice and developed using evidence-based guidelines
- Wound care should only be performed by staff who have received specific education and training, along with an assessment of their competency. Education and training should be provided upon hire and at least annually. Additional trainings should occur if new wound care treatments or equipment are introduced, new policies and procedures are developed, or in response to deviations from recommended practices. Your IPC program should maintain documentation of all training and competency assessments.
- The value of audits is they are a tool that helps lead to staff proficiency, with proficiency leads to competency, and then competency leads to better patient or resident outcomes.

Auditing should occur on hire, and can be part of the competency assessment, annually, and with policy and procedure changes and with identified gaps in practices

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In some healthcare facilities, especially nursing homes, wound care services might be provided by consultants or contract staff. Regardless the setting, it is still the facility's responsibility to ensure that consultants are aware of and follow recommended IPC practices during wound care. Verifying the practices are being followed should be done through auditing practices

Roles and responsibilities should also be clear, identifying who is responsible for providing supplies and equipment used during wound care procedures, and this can be PPE and dressing materials; and identifying who is responsible for reprocessing reusable wound care equipment, including how and where reprocessing will be performed

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So now let's apply what you have learned with our first scenario.

A new wound care nurse has started working at a nursing home. *Before this nurse begins caring for residents' wounds at this nursing home, what first must occur?*

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Before this nurse begins caring for resident's wounds at this facility, it is their responsibility to ensure IPC practices during wound care are followed, even if this is an external consultant.

To do this, the facility must communicate their wound care policies and procedures;

Identify who is responsible for providing supplies and equipment for the wound care procedures, including PPE and dressing materials;

And identify who is responsible for reprocessing reusable wound care equipment, including how and where reprocessing will be performed.

Also, they should periodically monitor that IPC is being adhered to with wound care. This should be for not only their staff, but also for an external contractor.

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As with any infection prevention practice, wound care starts with Standard Precautions, which should be used, for all wound care procedures.

Standard Precautions with wound care includes performing hand hygiene, proper selection and use of PPE, proper handling of wound care supplies, including medications, and cleaning and

disinfection of environmental surfaces and reusable wound care equipment. In the next module we will discuss application of Standard Precautions during wound care procedures.

In the last module, we will cover when to apply transmission-based precautions (which, depending on the pathogen, would be Contact or Contact and Droplet) and for nursing homes only, when to use Enhanced-Barrier Precautions.

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On these slides you may find some resources that may be helpful to you for additional training, education, and assessments.

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VDH also has resources listed on our website for Enhanced Barrier Precautions, wound care IPC assessment tool, and quick guide that cover the very basics of IPC with wound care to help nursing home infection preventionists

The Minnesota Department of Health also has a 3-page recommendation sheet of the essentials we have addressed in these slides.

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This presentation on wound care IPC would not be possible without the teamwork of our regional infection preventionists, Wendy Farris, Kayleigh Rehkopf, and Holly Spindle who were instrumental in providing their knowledge and experience from the field.

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This concludes module one on the Background on Risks and the IPC Program for Wound Care. Thank you!