

Dead In Their Tracks? Best Practice For Precautions Against MDROs

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### **Abstract**

An increasingly common problem for hospitals in recent years has been the rise of Multidrug Resistant Organisms, or MDROs (Czaja, 2012). These organisms, which are resistant to multiple antibiotics, can pose a problem as they are difficult to kill. While they are not a threat to healthy individuals, they can affect patients with invasive devices or suppressed immune systems (Czaja, 2012). These organisms can cause issues for hospitals as they can drive up costs and increase the pain and suffering of patients infected. One way to prevent the spread of MDROs is Contact Precautions, or CPs. Consisting of a gown and gloves, CPs are designed to prevent the spread of MDROs via physical transmission. However, with the extra cost of CPs, as well as compliance problems, some may wonder if CPs are worth it. My preceptor for my clinical rotations suggested I look further into this issue, so I decided to research CPs. While there are benefits to CPs, there are some unintended side effects as well. CPs may not be a one-size-fits-all solution either. We will take a closer look at CPs to determine their true effectiveness. While prevention is the best method, there may not be one best method of prevention.

### **Background**

MDROs are organisms that are resistant to multiple common antibiotics. They develop a resistance to antibiotics after frequent incomplete treatments or multiple exposures in a hospital setting (Czaja, 2012). These organisms do not affect healthy individuals, but they can harm patients with weak immune systems, open wounds that have been infected, or invasive devices (IV lines, catheters, etc.) that have introduced the organism into the patient's system (Czaja, 2012). Common MDROs include Methicillin Resistant Staphylococcus Aureus (MRSA), and

Vancomycin Resistant Enterococcus (VRE). Both of these bacteria are commonly seen in patients with an MDRO. These bacteria can cause infections in patients, which leads to complications. Patients may have to stay longer, receive antibiotics that may be harder on organs, and suffer lower quality of life while in the hospital. In an effort to prevent transmission of MDROs, hospitals will institute CPs. Consistent of gloves, a gown, and signage on the patient's door instructing visitors to follow precautions. But do they work well? During my clinical rotation, my preceptor suggested I look further into CPs, and how effective they actually are. In order to determine the efficacy of CPs, I reviewed relevant research. The results were somewhat surprising.

### **The PICOT Question**

In nursing research, when a question is being proposed, it is queried in the PICOT format. The PICOT format describes the parameters of the question: Patient, Intervention, Comparison to control, Outcome desired, and Time interval for the occurrence to take place. With that in mind, my PICOT question was as follows:

In patients with MDROs, do CPs, as opposed to gloves or handwashing, help decrease the incidence of MDROs over time in general?

During my research I found many different opinions on the subject, with many different viewpoints on CPs and their usefulness in the hospital setting.

### **Support**

There was trustworthy research supporting the use of CPs. A 2013 study from the University of Maryland found that CPs were linked with “activities likely to reduce transmission

of MDROs “(Morgan et al.). The Maryland Department of Epidemiology and Public Health echoed this sentiment, noting that “compliance with CPs” can assist in reduction of environmental transmission of MDROs. The 2013 study noted that CPs improved handwashing compliance, as well as reducing the amount of traffic in the rooms of patients with MDROs (Morgan et al.). These activities can lead to an elimination of transmission of MDROs outside the infected patient’s room. This leads to better outcomes, as other patients are not infected, which improves care quality. This also reduces costs to hospitals, as additional treatments for newly infected patients are not needed. Contact precautions can have very beneficial effects in terms of transmission prevention.

### **The Opposition**

Other studies didn’t view CPs as favorably. These reviews indicated that CPs may not be the best method to prevent transmission. Some indicated that there may not be a need for CPs, with others even suggesting that CPs provide no benefits over gloves. A 2012 Swiss study suggested that CPs may not be as necessary in a “non-epidemic setting”, such as a tertiary care center (Tschudin-Sutter, Frei, Dangel, Strander, and Widmer). The Journal of American Geriatrics Society came to similar conclusions, indicating little difference between CPs and gloves, and even suggested that gloves may be preferable in “long-term-care facilities” (Trick et al., 2004). Both studies found that gloves are similarly effective as CPs in longer term facilities, such as nursing homes, tertiary care centers, and rehabilitation centers. If the prevention levels are the same, gloves may be the better choice, as they can cut down on costs for the facility in question. While CPs may work well, they aren’t necessarily a universal solution.

### **A Mixed Bag**

Other findings offered a new perspective: uncertainty. A 2012 randomized trial of ICUs noted that there were few differences in transmission rates between gloves and CPs. However, they suggested that the results be replicated before conclusions were made (Harris et al.). The 2013 University of Maryland study observed that CPs may also have drawbacks, such as less contact with healthcare workers and visitors. With less trips being made into the patient's room, the patient may grow lonely, and even depressed, as they get less social interaction than a normal patient would (Morgan et al.). A review of New York Presbyterian hospitals found that adherence to CPs is not always ideal, which can lead to skewed results. They recommended correction of non-adherence (Clock, Cohen, Behta, Ross, and Larson, 2010). These studies all suggested that while CPs have benefits and drawbacks, no clear conclusions can be made due to less than ideal compliance. In order to properly determine the effectiveness of an intervention, a clear picture must be established first.

### **Observations and Recommendations**

At the conclusion of my research, I gathered my observations and reported to my preceptor. My findings indicated that CPs had the clear benefit of MDRO transmission prevention, when used properly. They can also improve compliance with handwashing behavior. However, they may reduce visits into patient rooms, which can be depressing to the patient. Additionally, in long term settings, there may be little benefit from CPs as opposed to gloves. With this in mind, the nurse manager of the floor decided to keep utilizing CPs for the foreseeable future. The medical unit is a fairly high acuity unit in the hospital, and there are frequently patients on the floor who are under contact precautions. The nurse manager felt that,

with the high prevalence of patients with MDROs, CPs are the most effective way to prevent transmission. Sometimes the best change is no change at all.

### **Conclusion**

After research into Contact Precautions and their effectiveness, I found that CPs are the best form of prevention on the Medical floor of Cheyenne Regional Medical Center. They are very effective...when used properly, and can keep patients safe from the threat of MDROs.

While they may result in less visits from providers and patients, they still protect the patient's physical health. Additionally, while CPs may not be as effective in long term settings, such as nursing homes, CPs are very effective in higher acuity settings, such as the Medical floor where I rotated. As the old saying goes, "If it isn't broke, don't fix it."

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