

EXTENDED ABSTRACT

Infection prevention in long term care, Assessing risk and individualizing care, Spread the word not the germ

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Introduction

The increasing prevalence of multi-drug resistant colonization and infection in long term care is an important issue when considering control of multi-drug resistant organisms. Long term care facility residents have multiple risk factors for infection and colonization. Because of the extended nature of stays in long term care, infection prevention strategies and interventions must be individualized, to maximize elder dignity and control.

Elements of an infection prevention and control program in long term care include a group of individuals who oversee surveillance, investigate outbreaks, develop policies and procedures, oversee isolation precautions, monitor resident and occupational health, educate, and review antibiotic use. When risk is analyzed, then resources can be focused on the areas of greatest risk by the infection control program. Infection prevention resources are too precious to waste on programs, interventions or products that are not needed. In the United States, the percentage of elders who live in nursing homes has decreased relative to the general population. However the number of short term admissions increased 60% between 1999 and 2004. It is estimated that over 30% of Americans aged 65 and older will stay in long term care sometime in their lives.¹ The biological, psychological and social needs of the individual must be considered by identifying

the different strategies for managing infected and colonized individuals in long term care

Risk Factors

Intrinsic factors for the development of infection in the elderly include current active infection, loss of skin integrity, invasive devices (urinary catheters, IV catheters/ports), ventilator use, dialysis, immune system compromise, HIV, splenectomy, chemotherapy, history of infection or colonization in past 3 months, history of antibiotic use in past 6 months, dependence for personal care, poor nutritional status, poor oral hygiene, and swallowing issues and aspiration risk.²

A significant extrinsic risk factor is movement of frail elders within the healthcare system and the community. As medical care becomes increasingly complex, there is increased exposure to organisms as individuals move from the community to hospitals to long term care and back into the community. At one time, long term care facilities were more sheltered from pathogens that are more common in hospitals and other acute care facilities. As individuals move back and forth, the opportunities increase for an elder to be a reservoir for transmission as well as to acquire colonization and infection. This interaction among hospitals, long term care facilities and the community, increases risk of acquiring and being a reservoir for multi-drug resistant organisms.

Another significant extrinsic risk factor can be lack of vaccination of not only the residents, but also the employees.

Figures 1 and 2 show the related development of Influenza Like Illness (ILI) in a long term care facility. ILI case definition is fever and three or more of the following during influenza season: chills, headache or eye pain, malaise or loss of appetite, sore throat, dry cough and myalgias. Figure 1 shows reported employee illness that met the surveillance definitions of ILI in 2005, which peaked on 20 January, 30 January and 4 February. Resident cases of ILI with the same surveillance case definition peaked on the 24 January, 4 February and 7 February.

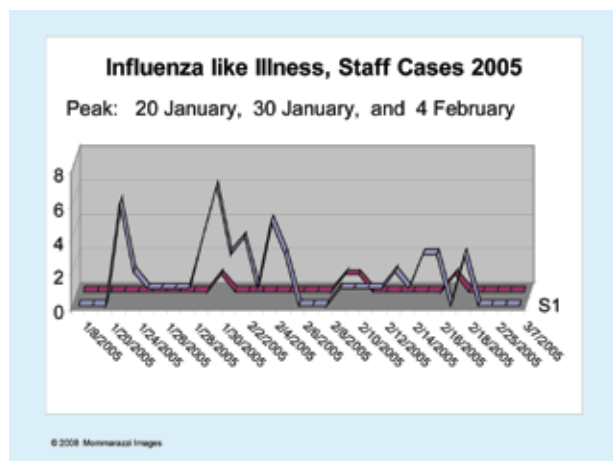


Figure 1. Staff Cases of Influenza Like Illness

Multi-drug Resistant Colonization

As infection control in long term care is generally based upon symptoms of infection rather than culture results, the extent of multi-drug resistant colonization is unknown at this time. Figure 3 shows one example where the extent of MRSA “known and assumed colonized” residents is compared to the “actual” colonized residents in a point prevalence sampling of one long term care facility.

Standard and Transmission Based Precautions

Appropriate use of Standard Precautions becomes a critical approach in long term care, as many significantly colonized residents may not be identified. Screening cultures are economically out of the reach

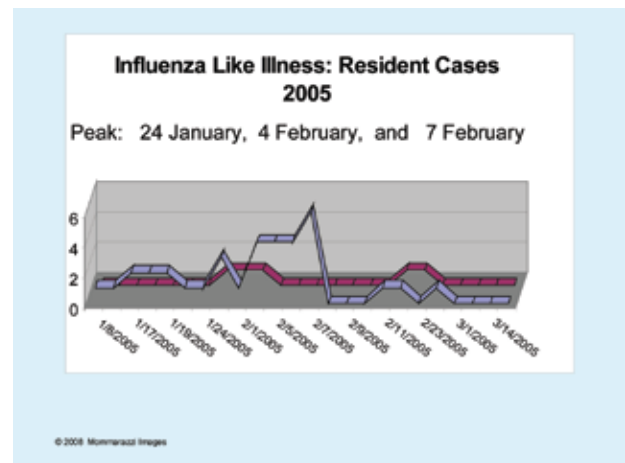


Figure 2. Resident Cases of Influenza Like Illness 3-4 days after staff peak

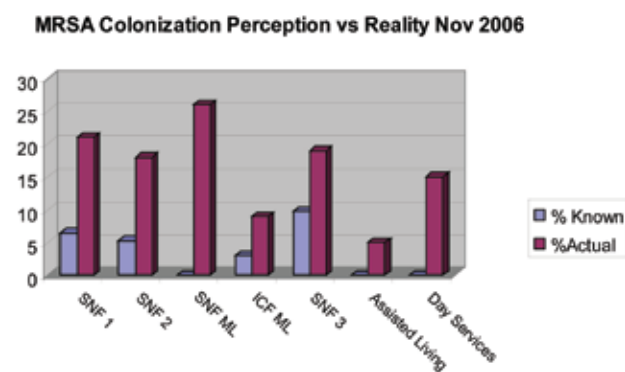


Figure 3. Point Prevalence MRSA nares screening: Comparison of Known vs. Actual MRSA Colonization Rates

of most long term care facilities, and are controversial in many parts of the world. Because of the extended nature of long term care stays, prolonged Transmission Based Precautions can increase the sense of isolation and embarrassment, can impact mood, and increase risk for falls and other injuries as well as increase cost.² As a result, colonization and infection are generally treated as two separate considerations in United States long term care facilities. Residents with active infections, uncontained drainage, or open wounds are managed with Contact Precautions, while residents with no signs or symptoms of active infection, clean hands, clean clothes, clean equipment, contained drainage and covered or healed wounds are managed with Standard Precautions (Figure 4).

This also means that Standard Precautions need to be reinforced frequently, with appropriate hand hygiene, gloves, gown, mask and eye protection (Personal Protective Equipment or PPE) for the potential of coming in contact with another person's blood or body fluids. PPE is not just for isolation. Cohorting also becomes a critical consideration. An uncolonized resident with multiple intrinsic risk factors who is placed with a MRSA colonized resident is at increased risk for acquiring MRSA, especially if they are both dependent on the staff for personal care.

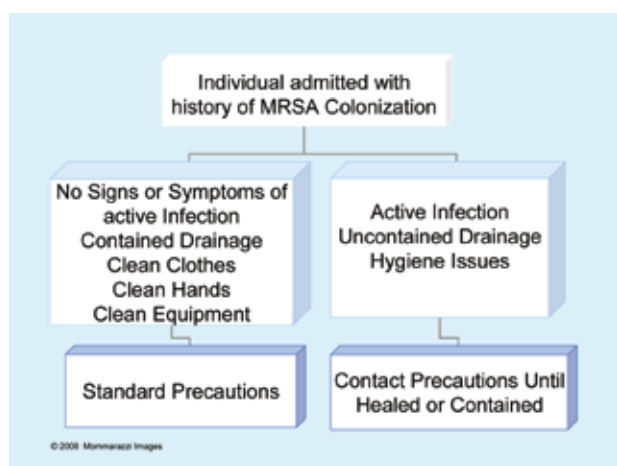


Figure 4. Decision Tree for Standard and Contact Precautions

Conclusion

A back to the basics approach can be cost effective as well as Person-Centred. Hand hygiene, basic cleanliness of humans and the environment, antibiotic stewardship and vaccination programs, and appropriate use of Standard Precautions are the cornerstones of basic infection control. Acute care facilities, public health

departments and long term care communities need to communicate and work together. Research specific to long term care must be done, so that interventions that are evidence based within long term care, and not extrapolated from acute care, can be utilized. There are microbiological, social, and political forces which are impacting infection prevention and control in long term care. We need to act to become part of the solution to find the best way to humanely care for our elders and others in long term care.

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