system would be questioned. However, the most critical question to address is efficacy. During the 20 years that various editions of this type of diagnosis-driven system have been used, system users have described problems with its effectiveness in preventing nosocomial transmission of infection.

By way of one specific example, there are many reports in the literature of outbreaks caused by methicillin-resistant *Staphylococcus aureus* (MRSA) in intensive care units, newborn nurseries, and burn units.[1-6] These outbreaks have occurred in many different centers, suggesting that individual hospital implementation of this isolation system is not the problem. If outbreaks of this type occur with this system in place, one wonders about its efficacy. The disease-specific isolation system has never been studied prospectively, but it has been lamented retrospectively. Chasing outbreaks with added control measures, additional education of-staff, increased antimicrobials, increased laboratory activity, and so on can not only drain a hospital's budget but also increase the cost of care for the client.

Contamination of caregiver's hands from an undiagnosed patient source has been implicated as the source of transmission in the majority of MRSA outbreaks.[5-7] Caregiver handwashing frequency has been noted to be suboptimal after patient contact[8] and this behavior is reinforced when they are taught to practice "special" precautions for diagnosed/labeled infections, as in disease-specific isolation. The unstated corollary is that less than "special" care is acceptable for undiagnosed/unlabeled cases. On the other hand, gloving for anticipated contact with contamination provides caregivers with clear, consistent instructions that are the foundation of body substance isolation. Ms Crow's observation of improper gloving technique, that is, gloving for activities that do not involve anticipated contamination, is attributable more to caregiver anxiety and inappropriate application of information than to any given precaution system. Indeed, "overgloving" is a health care industry-wide problem and occurs in facilities practicing body substance isolation as well as those using either "old" or "updated" universal precautions. Refining gloving technique to appropriate tasks is a problem we need to face together rather than attempt to use as an indicator of system competition.

Finally, the comment that "little emphasis is placed on airborne infections," directed at both universal precautions and body substance isolation, reflects a lack of understanding of either system. Universal precautions is a system designed to prevent transmission of hepatitis, acquired immunodeficiency syndrome, and other blood-borne diseases. These are not spread by the airborne route. Body substance isolation is a two-tiered system: (1) precautions to prevent contact-transmitted diseases are practiced on all patients, all the time; (2) for patients who are suspected of or diagnosed as having diseases spread by the airborne route (pulmonary tuberculosis, pharyngeal diphtheria, etc), additional precautions are taken, such as segregation of the patient from those who are susceptible. This category, referred to as stop sign isolation, relates to the Centers for Disease Control's categories of respiratory/strict isolation, except that more emphasis is placed on restriction of nonimmune individuals.

As practitioners of infection control, we are responsible for determining which system of infection prevention precautions is most effective for our own institutions. To do that we must assess the nosocomial infections that occur and why they occur, assess the level of knowledge of our caregivers relative to the behaviors we expect them to exhibit in order to prevent transmission, evaluate our systems to identify the effect of a diagnosis-driven system (what services/employees/patients are at risk from an undiagnosed case?), and the cost-effectiveness of procedures that bag, burn, or cook items from diagnosed cases. The choice before all of us must be made in recognition of these issues and with accurate information regarding alternatives. Ardent searchers are open to "erroneous recommendations" only if they are ill-informed and make erroneous assumptions.

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**REFERENCES**

1. Aldridge KE: Methicillin-resistant *Staphylococcus aureus:* Clinical and laboratory features. *Infect Control* 1985; 6:461-465.
2. Trallero EP, Arenzana JG, Castaneda AA, et al: Unusual multiresistant *Staphylococcus aureus* in a newborn nursery. *Am J Dis Child* 1981; 135:689-692.
3. Esperson F, Nielsen PB, Lund K, et al: Hospital-acquired infections in a burn unit caused by an imposed strain of *Staphylococcus aureus* with unusual multiresistance. *J Hyg (Lond)* 1982; 88:535-541.
4. Boyce JM, White RL, Causey WA, et al: Burn units as a source of methicillin-resistant *Staphylococcus aureus* infections. *JAMA* 1983; 249:2803-2807.
5. Lentino JR: *Staphylococcus aureus* bacteremia in hospitalized patients. *Asepsis* 1983; 5:7-9.
6. Haiduven-Griffiths D: Outbreak of methicillin-resistant *Staphylococcus aureus* on a surgical service. *Am J Infect Control* 1988; 16:123-127.
7. Haley RW, Hightower AW, Khabbaz RF, et al: The emergence of methicillin-resistant *Staphylococcus aureus* infections in United States hospitals. *Ann Intern Med* 1982; 97:297-308.
8. Albert RK, Condie F: Handwashing patterns in medical intensive care units. *N Engl J Med* 1981; 304:1465-1466.

***Sue Crow, MSN, RN, CIC replies to Ms McDonald.***

I appreciate the letter from Ms McDonald. Obviously, she is as concerned as I am about the continual world-wide problem we have with implementing isolation in health care institutions. Although we think differently in regard to the solutions to this ageless dilemma, actually, there probably are no answers.

First, to explain why this article was printed in the Product Commentary section of the journal: As you know there alp many intangible products sold to institutions today that are not packaged in a bottle and brought to our attention by an attractive salesperson. Many subtle products used in institutions are "ideas" that can indeed be considered patient care products because they have an obvious effect on patient care. It is the purpose of the Product Commentary section to make our readers aware of as many

products in the health care institution as possible, obscure as they may be.

Some valid points were made by Ms McDonald, and although we may phrase it differently, we agree that there are no clear-cut answers to isolation. I believe that educational programs that stress being cautious with *all* patients is the closest answer of them all. That is also the basis for body substance isolation (BSI). As I stated in the article, my experience is that a combination of systems-universal precautions coupled with specific isolation practices-is the best answer available at this time.

I agree that it certainly depends on the situation. However, as I consult in health care institutions throughout the country I find hospitals, especially, ones who use BSI, where staff believe gloves are the panacea for all problems. They believe if they wear gloves they are "out of harm's way" no matter what they do. Even though this is not the intent of BSI, it is sometimes the final result. Glove abuse occurs with all types of isolation systems, but it seems to me to be more prevalent with BSI. This may be due to the term "body substance." The wording "body substance isolation," although not the original intent, is often interpreted by personnel as being careful with only the patient's body substances. The term itself is limiting. We must stress that gloves can help but they are not the answer; hands must still be washed after the removal of gloves.[1]

Regarding outbreaks caused by MRSA, the outcome of any isolation system is dependent on the weakest link and most hospitals have several weak links because they deal with the people issue. Besides, I am not aware of any prospective studies comparing the different isolation systems.

No matter how rational the isolation system appears, erroneous practices in isolation continue to occur. I think you will agree that when it comes to taking care of the patient in isolation—and that is what this is all about—we certainly have not come very far and must continue "searchin.'"

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**REFERENCE**

1. Doebbeling BN, Pfaller MA, Houston AK, et al: Removal of nosocomial pathogens from the contaminated glove: Implications for glove reuse and handwashing. *Ann Intern Med* 1988; 109:394-398.



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