and *Legionella* culture in-house (rather than sending them to reference laboratories). Infection control practitioners merely have to ensure that all cases of hospital-acquired pneumonia undergo testing with urinary antigen and culture on selective media. If these 6 hospitals fail to diagnose any cases in 2 to 3 years, this would support the CDC reactive approach of environmental culturing only when cases are discovered.

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The authors declined to reply.

Respiratory Syncytial Virus in a General Hospital and the Need for Extensive Measures

To the Editor:

Respiratory syncytial virus (RSV) is a major cause of morbidity and mortality in children worldwide. The incubation period of RSV ranges from 2 to 8 days. It is highly contagious. The period of viral shedding is usually 3 to 8 days, but may be longer, especially in young infants in whom shedding may continue for as long as 3 to 4 weeks.

RSV in nasal secretions from infected infants can survive for up to 6 hours on surfaces and objects, and at least for half an hour on contaminated skin (hands), gowns, or paper tissues. Transmission of RSV occurs mainly by direct or close contact with persons shedding the virus. This can lead to self-contamination (hands, eyes, nose) of healthcare workers (HCWs) and cross-contamination of objects: thus, the hands of HCWs may be contaminated during direct patient care or by contact with contaminated surfaces or objects. In this context, HCWs play a major role in the nosocomial transmission of RSV infection, mostly due to hand-to-hand contact.[1] In contrast to large-droplet spread, spread by small-particle aerosol transmission is not a major route of transmission of RSV.

Reported RSV infection control interventions include use of single patient rooms or cohorting; isolation techniques (gowns, gloves, masks, eye-nose goggles); cohorting of nurses; admission screening; and visitor restrictions. The Dutch Working Party on Infection Control recommends the following infection control measures: admission to a single room (or cohorting); wearing of gowns, gloves, and masks; and, of course, hand washing with soap and disinfection of the hands with an alcoholic solution. Visitors (eg, parents) also must wear masks and wash or disinfect their hands. Goggles are not recommended.[2,3] However, in our hospital, a 950-bed general hospital, we only use patient placement in single rooms, gowns, and careful hand washing or disinfection.

To study the effectiveness of these measures, we performed a simple retrospective analysis of a 3-year period. The data file of hospital admissions, containing 3,302 children admitted from January 1995 through December 1997, was combined with the microbiology data file containing 227 children from whom a direct immunofluorescent (DIF) test or culture for RSV was performed in the same period.

A positive DIF test or culture for RSV was found for 116 children. RSV was detected in 95 of the children in a period from 4 weeks before admission at our pediatric ward until 10 days after discharge. A further selection was made of 12 children with RSV detection in a period ranging from 2 days after admission until 10 days after discharge, because these children were suspected to have had a nosocomial infection. Five of these 12 children appeared to have been admitted with respiratory symptoms fitting with RSV diagnosis and thus were unlikely to have nosocomial RSV infection. Of the remaining 7 children with a possible nosocomial RSV infection, 1 had respiratory distress directly after birth, and 1 was transferred from another hospital. Based on the incubation period and clinical symptoms, nosocomial infection in these children seems to be unlikely. One child was admitted with respiratory symptoms. This child had a negative DIF at admission, which turned positive by discharge (12 days after admission) but without new clinical symptoms. Three children developed an RSV infection between 6 and 8 days after discharge. One child was admitted with respiratory symptoms and 3 days later developed progressive respiratory distress, with a positive DIF. Thus, in 5 (4.75%) of 95 children, nosocomial RSV infection could not be ruled out. This is even lower than the rates reported by others using extensive infection control interventions.[4,5]

We conclude that placing patients with RSV in single rooms, using gowns, and washing or disinfecting the hands is sufficient to keep the rate of nosocomial RSV infections in patients in a general hospital as low as in hospitals with extensive measures.

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Selecting Protective Apparel for the Degree of Exposure Anticipated

To the Editor:

The Occupational Safety and Health Administration's Standard on Occupational Exposure to Bloodborne Pathogens mandates that the employer provide the healthcare worker with protective apparel that is commensurate with the "task and degree of exposure anticipated."[1] In effect, and as supported by the literature, this makes the selection process procedure-oriented.[2] The question that logically arises is how the infection control professional can determine a garment's protective capability.

At the moment, there are two tests that are being used to demonstrate a barrier material's effectiveness. The methodologies were developed by the American Society for Testing and Materials (ASTM) and adopted as standards by that organization in 1995. Both tests use the same mechanical device. One of the tests assesses a material's level of resistance to liquid penetration and the other to viral penetration.[3,4] The results are expressed on a pass/fail basis, with a passing mark awarded to a material that is able to resist penetration when challenged at a level of pressure of 2 psi.

Unfortunately, expressing the test results on a pass/fail basis prevents the infection control professional from determining the performance capability of a product that could render it suitable for the "degree of exposure anticipated." By the same token, it prohibits the manufacturer from identifying material that is able to resist penetration at (for example) 3 psi.

Gowns are classified as Class II Medical Devices, and the Food and Drug Administration has included the ASTM's tests as a point of reference to be used by the manufacturer when submitting a 510(k) application for marketing approval. In addition, the agency is permitting the manufacturers of those materials that pass the tests to promote their product(s) as being "liquid-proof" or "impervious."[5] However, characterizing the performance of those materials in that manner is contrary to what has been reported in the clinical literature.

For example, one in vivo study found the level of pressures in the abdominal area of a surgical gown to be as high as 2.9 psi during surgery.[6] This may well have accounted for the earlier report of liquids having penetrated gowns made of materials that had passed the ASTM tests.[7]

Not to be overlooked as well is that, whatever the material's liquid-resistant capability, the construction of a garment, particularly in critical locations such as the glove-gown interface, can render it ineffective. A study examining that area found that some 70% to 80% of the gowns tested leaked.[8] It should be noted that the researchers proposed a solution to this problem that has yet to be pursued commercially.

More than a decade has passed since the beginning of the era of the awareness of the hazards associated with the transmission of bloodborne pathogens. What is incredible is that there is no evidence available at this time that indicates that anyone has ever acquired human immunodeficiency virus as a result of blood having penetrated a protective-type garment. Even more impressive is the fact that it is likely that an overwhelming percentage of the gowns used during this period would have failed the ASTM's tests. Nevertheless, considering the pressure to reduce costs, it would not be fiscally prudent to indiscriminately provide every employee with what the ASTM has established as being the maximum level of protection required.

Under no circumstance should this be interpreted to imply that there is no need for garments that afford both the level and extent of protection that the users deem necessary. What it does mean is that there is still a need for a test method that reports a material's resistance to liquid penetration on a graduated scale. Then and only then will the infection control community be able to intelligently assess a product's protective capability and be reasonably assured that the garment they select is suitable for the "degree of exposure anticipated."

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Using Electronic Media to Conduct an Emergency Infection Control Committee Vote

To the Editor:

Infection control committees (ICCs) have broad mandates to oversee infection control activities at hospitals. In practice, the hospital epidemiologist or medical director will direct most day-to-day activities. Occasionally, however, the ICC will need to decide an urgent matter that cannot wait until the next scheduled meeting.

On January 7, 2000, author MJW informed DS and ABK of a percutaneous blood exposure. The patient strongly refused a human immunodeficiency virus (HIV) test. The employee took HIV postexposure prophylaxis (PEP), which made her ill. The employee demanded that the patient be HIV tested so that she could stop HIV PEP if he did not have HIV.

Ohio law permits an ICC to authorize HIV testing over a patient's refusal when the ICC determines that a healthcare provider, emergency medical services worker, or peace