# Letters to the Editor

## Nosocomial Outbreak of Scabies Clinically Resistant to Lindane

**To the Editor:**

Scabies is a cutaneous parasitosis transmitted mainly by skin contact. Delayed diagnosis because of atypical presentation facilitates dissemination. Crusted (Norwegian) scabies particularly is likely to lead to epidemics, because patients are infested by thousands of mites and thus are extremely contagious.

Several nosocomial scabies outbreaks with secondary cases among the relatives of patients and staff have been noted in recent years.[1,2] Here we report such an outbreak that was very difficult to eradicate due to clinical resistance to 1% lindane, which had been our standard treatment for scabies.

In late November 1994, a patient with acquired immunodeficiency syndrome and psoriatic erythroderma with severe itching was admitted to our infectious disease unit and received topical treatment, involving frequent manipulation of the lesions and changes of dressings. When symptoms persisted, crusted scabies was suspected, proven by skin biopsy on December 14, and treated with lindane. In the following 19 weeks, six cases of scabies were diagnosed among healthcare workers, five among their family members, and five among patients with no prior contact with the index patient. Lindane treatment and prophylaxis showed no effect. An intervention program was designed by our Preventive Medicine Department and was implemented in the 20th week of 1995. All of our facilities and the fomites (including beds and wheelchairs) were cleaned intensely and fumigated, 5% permethrin was used prophylactically on every patient in the ward, all the staff, and the families of both the staff and the patients. The same day, we instituted a nurse protocol directed to pruritus. Every patient admitted to our unit was questioned systematically about itching. If pruritus was detected and it affected other relatives, appeared mainly at night, or was located in areas suggesting scabies, the patient was placed in cutaneous isolation, treated with an emulsion of 5% permethrin, and kept in cutaneous isolation until scabies had been definitely excluded. From that intervention on, no more cases of scabies were diagnosed either in the staff or in their families, and no further nosocomial transmission of scabies was observed.

Control of a scabies outbreak requires good disinfestation of fomites, paying special attention to beds and wheelchairs, and simultaneous treatment of all potentially affected individuals (patients and staff) in the facility and their families.[3] This may require treatment of over 500 people and expenditure of more than $20,000. Good coordination is essential. It is imperative that treatment be given to the entire group. The medications have to be distributed and all participants given careful directions regarding the importance of following the instructions completely.

Factors contributing to the persistence of epidemics include patients with unrecognized infestations because of atypical or minimally symptomatic lesions, patients with crusted (Norwegian) scabies, carriage of scabies mites by infested staff members before they have symptoms, treatment failure due to improper use of scabicides or bad compliance, and lindane failure.[4]

When an epidemic proves difficult to control and scabies persists as a chronic problem over a period of months or even years, this often leads to staff demoralization. Frustration and anger are common among staff, patients, and families. An accurate information policy is very useful in allaying fears and achieving the cooperation needed to resolve the outbreak.

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*Acknowledgments: To all the staff of the Infectious Diseases Unit. The bad experience of this epidemic did not affect their professionalism and loving care of the patients. That was a beautiful lesson to all of us.*

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## Does a Cheaper Mask Save Money? The Cost of Implementing a Respiratory Personal Protective Equipment Program

**To the Editor:**

In a recent article, Rivera et al[1] stated that cheaper, less durable respirators, ie, N-95 respirators, may result in a more expensive personal protective program (PPP). At our institution, we have adopted the use of N-95 respirators since 1996 and have experienced a cheaper, yet safe, effective, and user-friendly way to provide a PPP.

We used high-efficiency particulate air (HEPA) respirators from 1993 to 1995. HEPA respirators were found to be bulky and uncomfortable. They interfered with patient communication and may cause breathing difficulties for some healthcare workers (HCWs).[2] In addition, they may interfere with the field of vision, placing HCWs at risk for needlestick injury.[3] HCWs may attempt to adjust the HEPA respira-

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tor by pulling it down to see, talk, or breathe comfortably in such a way as to reduce its efficacy. Because HEPA respirators are reusable, they need to be stored for subsequent use, thus creating storage problems. Concerns and confusion about using the same HEPA respirator on different patients were raised. HCWs also find it confusing to use HEPA respirators for tuberculosis protection and masks for other types of respiratory isolation. Moreover, the safety, efficacy, and patient-care impact of HEPA respirators still remain controversial.[2,4-7]

At our 390-bed community teaching hospital, we decided to switch from the use of HEPA respirators to the N-95 respirators in 1996. Our criteria for selecting respirators were safety, efficacy, cost-effectiveness, user acceptance, and effect on patient care.

In the past, regulatory agencies and experts have not agreed on which respirator is most appropriate. They now agree that the N-95 respirator meets the Centers for Disease Control and Prevention (CDC)'s criteria for the minimum level of respiratory protection for tuberculosis.[8,9] Our policy of adapting the use of N-95 respirators meets the CDC's criteria. The switch to the N-95 respirator also resulted in an annual savings of 60% for our hospital. Compliance also is increased due to the fact that N-95 respirators are disposable, not bulky, and easier to wear. The use of one type of respirator for all types of respiratory isolation also eliminates confusion among HCWs. Rates of purified protein derivative skin-test conversions remain the same since the N-95 respirator adoption.

The switch from the use of HEPA respirators to N-95 respirators for PPP at our hospital not only meets CDC criteria for tuberculosis protection but also resulted in a 60% annual savings in purchase of respirators and increased HCW compliance.

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*The author replies.*

We find it ironic, if not a bit perverse, that we have been cast as the defenders of the high-efficiency particulate air (HEPA) respirator, because we were among the first to register our concern.[1] We thought we had spoken our piece in the "Discussion" section of our article, where we commented that "healthcare workers find the HEPA respirators difficult to wear for extended periods and often must leave the room to remove the device and 'catch their breath' before returning into respiratory isolation." We also noted that we had switched to the N-95 because of overwhelming worker preference with the more comfortable device.

However, the point and the tone of the letter from Zafar, Poropatich, and Nguyen suggest that the conclusions of our article may have been unclear. They comment that, at their hospital, the HEPA respirator was cumbersome, unpopular, and essentially unsuitable for human use. After shifting to an N-95 respirator, worker compliance with the program improved, and equipment costs decreased 60%. Without knowing the details of tuberculosis control at Columbia Arlington Hospital, such as number of cases of tuberculosis annually, number of respiratory isolation days annually, and so on, it is difficult to ascribe the savings strictly to cheaper equipment. Also, their "concerns and confusion about using the same HEPA respirators on different patients" suggests a fundamental problem in understanding how best to use these units; however, we are happy that the N-95 respirator is cheaper and seemingly as effective at their hospital.

Our article was meant to serve as a counterpoint to the claim that the cheaper N-95 devices would, as advertised,[2] save "millions" of dollars. As we showed, in our tuberculosis-heavy hospital at least, the HEPA program got progressively cheaper over time, leading us to wonder if a shift to cheaper per-unit equipment would necessarily result in money saved. Simply stated, we think that wearing one $4 HEPA respirator for a month may be cheaper than wearing 10 to 15 N-95 masks (at $0.50 per unit) a month.

For once and for all, we did not, and do not, endorse the HEPA respirator as preferable and feel, as we noted, that "the best respirator is the respirator that people will wear."

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## Susceptibility of Vancomycin-Resistant Enterococci to Environmental Disinfectants

**To the Editor:**

I read with great interest the report on four strains of *Enterococcus faceium,* two sensitive and two resistant to vancomycin, which were challenged with several classes of hospital disinfectants. There was no difference in susceptibility to disinfectants between *E faecium* sensitive or resistant to vancomycin.[1]

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