

ID CONSULT

What Will Rate in '08 as Top Concerns?

Happy New Year! It's time again for my annual prognosis of the top 10 infectious disease issues likely to have an impact on our practices in the next 12 months.

► **1. Local school-based immunization programs could become a reality.** Nationally, it will take increased vaccine production and better organization of school-based infrastructure. Still, I foresee some local initiatives coming to fruition in 2008.

We have evidence that such programs work. In a recent study, Dr. James C. King Jr. and his associates at the University of Maryland, Baltimore, identified 11 demographically similar clusters of elementary schools (24 total) in four states. One school in each cluster served as the "intervention" school, and the others as controls. Healthy children aged 5 years and older in the intervention schools were offered free nasal influenza vaccine before the 2004-2005 influenza season (N. Engl. J. Med. 2006;355:2523-32).

The investigators identified the predicted peak weeks of influenza activity for each state, then evaluated rates of illness and school absence in the respective schools by a survey of parents immediately following the predicted week of peak influenza activity. Of the 5,840 children in the intervention schools, 47% (2,717) received the vaccine.

Compared with the children in the control schools, those in vaccinated schools were significantly less likely to experience any fever or flulike illness (40% vs. 52%) or to visit a clinic or physician's office for any type of care (7 vs. 11 per 100 patients). They also received fewer prescriptions, used fewer over-the-counter medicines, and were less likely to miss school.

While we're waiting for school programs, remember that it's still not too late to have an impact personally on influenza disease by targeting your high-risk patients and offering vaccine to any child in your practice.

► **2. Community pneumonia and otitis media may become harder to treat as**

pneumococcal disease rates plateau and new strains continue to appear.

Serotype 19A will emerge as the nemesis and cause more disease associated with multidrug resistance. In the PROTEKT US study, coverage with the 7-valent conjugate pneumococcal vaccine (PCV7) and antimicrobial susceptibility among *Streptococcus pneumoniae* isolates collected from children aged 0-14 years were examined for the periods 2000-2001, 2002-2003, and 2003-2004. The most common serotypes in year 4 were the nonvaccine serotypes 19A (19% of all isolates), 6A (8%), 3 (8%), 15 (6%), and 35B (6%), along with 19F (13%), which is included in the vaccine (J. Clin. Microbiol. 2007;45:290-3).

Although the proportion of *S. pneumoniae* isolates from the U.S. pediatric population covered by PCV7 decreased substantially in the 4 years after the vaccine was introduced, there were significant increases in strains that were resistant to commonly used antibiotics, including beta-lactams and macrolides, as well as in multidrug resistant strains, particularly among respiratory tract isolates.

In a separate report, Dr. Michael E. Pichichero and Dr. Janet R. Casey identified serotype 19A pneumococcus as an otopathogen that is resistant to all antibiotics currently approved for the treatment of acute otitis media in children (JAMA 2007;298:1772-8). Will pediatricians need to be trained in tympanocentesis again? My crystal ball says maybe.

► **3. Travel-related issues will arise more often in your practice.** The number of children traveling overseas continues to increase. While curbside consultations generally target malaria prophylaxis, pediatricians also should offer counseling regarding food- and waterborne disease, other vector-borne diseases, and airborne diseases.

Such counseling should take into account the patient's age, nutritional status, and any underlying illness. All routine immunizations should be updated. The country, accommodations, and length of trip will all dictate which travel vaccines the

child will need. Other topics to cover include food and water precautions, planning for symptomatic treatment of traveler's diarrhea, protection against mosquito-borne pathogens and TB where it is endemic, and a plan for evaluation on return for those staying longer than a month. I particularly recommend an article entitled, "Germs on a plane—infectious issues and the pediatric international traveler: What pediatricians should know," by two Canadian researchers (Pediatr. Ann. 2007;36:344-51).

► **4. A new blood test for tuberculosis may supplant intradermal skin testing.** Interferon- γ release assays using whole blood may reliably determine if a child has been infected with TB. The tests require just one visit and the results are often available within 1 day. The tests provide greater specificity than tests using purified protein derivatives such as the TB antigen, with similar sensitivity.

► **5. The vaccine reimbursement issue will continue to dominate discussions among policy experts, but it's not likely we'll see a solution.** In February 2007, the American Academy of Pediatrics and the American Medical Association held a joint congress at which major proposals included setting national standards for minimal reimbursement, standardizing vaccine administration fees, and having vaccine manufacturers work with pediatricians to offset the cost for inventory of new vaccines. It's a start. I hope that working through bureaucratic channels won't take as long as I anticipate.

► **6. Infections from exotic pets will continue to rise.** Many families with young children continue to own reptiles and other unusual animals, despite AAP recommendations against it. Every well-child evaluation should include a question about pet ownership. There is cause for concern if the family has an animal other than a dog, cat, small rodent, or fish. Here is a question-based mnemonic borrowed from the Black Pine Animal Park, an exotic animal rescue organization in Indiana:

- G: How much will this animal Grow?
- O: How Old can this animal live to be?
- O: Will this animal create Odors I won't like?
- D: What kind of Diet does this animal require?

L: Can this animal be Lethal to me and others?

I: Is it Illegal for me to own this animal?

F: Just how much Fun will it really be to own this animal?

E: What are the Environmental requirements for this animal?

► **7. Rotavirus cases will decrease.** There is high hope that the rotavirus vaccine will have an impact on hospitalization and emergency visit rates for rotavirus disease. Currently 1 in 17 children infected with rotavirus becomes ill enough to visit the emergency department, and 1 in 65 is hospitalized. If, as anticipated, the vaccine eliminates 98% of such severe cases, it will be easy to appreciate its impact.

► **8. Vaccination coverage will be high, but still not high enough.** Although the 2004 numbers showed the highest rates ever recorded, about 20% of children younger than 2 years are still inadequately immunized. New strategies will be needed for 2008, but they must be designed carefully.

A court in Maryland recently ordered that parents be sent to jail if their children are not immunized. This did not go over well with the public and many physicians questioned the approach.

► **9. Methicillin-resistant *Staphylococcus aureus* cases will continue to rise.** Unfortunately, clindamycin-resistance rates will increase in 2008, making empiric treatment of invasive diseases such as osteomyelitis increasingly difficult.

► **10. Active surveillance for MRSA will become a reality for the hospitalized patient, at least for children in high-risk settings such as the intensive care unit.** Where and how often children will be cultured (nasal/axilla/rectal? weekly/while hospitalized?) will vary from institution to institution. However, all institutions will attempt to identify those patients already colonized with MRSA at the time of hospitalization and will utilize barrier precautions to prevent hospital spread. ■

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BY MARY ANNE JACKSON, M.D.

Think About *C. difficile* and Diarrhea With or Without Antibiotics

BY SHERRY BOSCHERT
San Francisco Bureau

SAN FRANCISCO — Community-onset *Clostridium difficile* infection that is not antibiotic related has emerged as a multinational problem that can be life threatening, said Dr. Sarah S. Long, chief of infectious diseases at St. Christopher's Hospital for Children, Philadelphia.

The conventional way of thinking about *C. difficile* infection considered it to be usually associated with antibiotic use, to mainly affect adults, not to be life threatening, and to seldom produce severe di-

arrheal illness when seen in children.

"Throw that [way of thinking] away. You have to start thinking and worrying about *C. difficile* as community onset without antibiotic exposure," Dr. Long said at the annual meeting of the American Academy of Pediatrics.

The more modern *C. difficile* shows antibiotic resistance—probably caused by widespread use of fluoroquinolones—and has mutated to lose a regulatory gene that normally suppresses production of toxin by the organism. The mutated *C. difficile* produces 16-20 times the amount of toxin as that of the organism without the

gene deletion. Four healthy people died recently in Philadelphia from *C. difficile* infection after failing treatment with multiple antibiotics followed by colectomies. Two of the infections were in postpartum women. "*C. difficile* in pregnant ladies and post partum can be a very severe disease," Dr. Long cautioned.

Clinicians should consider *C. difficile* infection in otherwise healthy patients with diarrhea persisting beyond 3 days, whether or not the patient has been exposed to antibiotics, especially if there's blood in the stool or the patient is feverish or toxic appearing. "You have to put that on your list

of things to worry about alongside *Salmonella*, *Shigella*, *Campylobacter*, and toxin-producing *Escherichia coli*," she said. Culture isn't helpful for diagnosis. A good diagnostic test is an enzyme immunoassay test, which can give a result in 2 hours. Specialists also may order a cytotoxin assay.

Nearly 90% of patients will respond to treatment with metronidazole for 10 days, but 20%-25% will relapse. Of those patients that relapse, half will relapse again after retreatment. There is no standard therapy for chronic recurrences, but a number of antibiotic regimens or fecal transplants have been tried. ■