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Predictions for 2010: Flu, Resistance, and More

It is time for the 2010 ID Consult predictions. Instead of starting with my usual Yogi Berra quote, this year I thought I'd tap "Dilbert" creator Scott Adams: "There are many methods for predicting the future. For example, you can read horoscopes, tea leaves, tarot cards, or crystal balls. Collectively, these methods are known as nutty methods. Or you can put well-researched facts into sophisticated computer 'models, more commonly referred to as a complete waste of time.' " Maybe this explains why pandemic influenza was not on my list last year!

Indeed, although I have almost always had something to say about influenza for the last several years in my January "predictions" column, I did not correctly predict the emergence of pandemic influenza, which came on like a sledge hammer in April 2009. One major lesson learned from this unprecedented experience was the importance of collaboration.

In our institution, our emergency department and urgent care volume peaked at levels never seen before. Finding additional space to see patients, scheduling additional providers, and streamlining documentation were major problems that required innovative solutions. The mix of the high volume of worried well with the occasional very sick patient required vigilance on everyone's part.

Subspecialty and community providers also rose to the challenge, and for now, everyone is relieved that disease rates have decreased steadily over the last 4 weeks. Still, we are seeing admissions that exceed what we would usually see for this time of year and expect this to continue through April.

Here are my predictions, with the first two based on our influenza experience:

1. All lessons learned will benefit us, if and when the next outbreak occurs (and it will not necessarily be influenza).

2. Influenza vaccine will be nationally mandated for all health care workers (HCWs). Our institution utilized a mandated policy that required that all HCWs had to have vaccine or a declination signed by Dec. 1. We were able to get 91% of our HCWs immunized, compared with 82% in the last couple years, which is great. Yet, there were still gaps in coverage in certain high-risk units and in individual physicians and nurses. Among those who declined vaccination, some said they would not get vaccine unless it was mandated. Protecting the vulnerable child within our hospitals while also keeping our colleagues well is a major motivation to utilize a mandated policy. I think next year will be the year.

BY MARY ANNE JACKSON, M.D.

3. More data will focus on the use of palivizumab. Major changes in the American Academy of Pediatrics' Red Book included standardization of a start date and maximum number of doses, as well as changes in eligibility criteria focusing on gestation and age at the start of the season. There is no question we will be revisiting some of these issues in the future.

4. Meningococcal disease will continue to decline in the United States. Meningococcal infections have steadily decreased in the United States over the last 12 years, although the reasons for this are not entirely clear. In 1997, the incidence was 1.1/100,000 population, decreasing to 0.8/100,000 in 2000 and down to 0.3/100,000 in 2008. The implementation of vaccine in and of itself does not explain this decline, because no vaccine is effective against serogroup B and its population-based rates also decreased.

5. Rotavirus cases will continue to decrease. Simpler guidelines for dosing the rotavirus vaccines will result in better coverage and a continued decrease in disease. It is still amazing to me that residents in this era may not care for a single hospitalized child with rotavirus gastroenteritis.

6. Practitioners will more proactively utilize hepatitis A vaccine for the close contacts of adopted infants arriving from high-risk countries. Several reported cases of adults who had not traveled internationally but became infected with hepatitis A within 60 days after the arrival of an international adoptee have prompted new recommendations. Practitioners should identify all who will provide care for the new arrival (including grandparents and babysitters) and ensure they receive hepatitis A immunization *before* the child arrives, preferably referring them as soon as the plan for adoption is made.

7. The 13-valent pneumococcal conjugate vaccine (PCV13/Prevnar 13) will be here by spring. The emergence of pneumococcus serotype 19A with its typical pattern of multidrug resistance fast-tracked this vaccine, and it looks like it will be ready for implementation soon. Straightforward recommendations from the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices will be available, and we hope to see the impact of this strategy within the next couple of years. Will new serotypes emerge once again?

8. Clindamycin resistance rates for *Staphylococcus aureus* will continue to rise. In our institution, 25% of pneumococcal strains and 12% of *S. aureus* are resistant. My colleague Dr. Christopher Harrison believes that if pneumococcal serotype 19A decreases with PCV 13, clindamycin resistance rates for pneumococcus in general may decrease. The level of resistance at which recommendations for treatment of staphylococcal infection will need to be changed is not clear. Some think alternative treatment should be considered at above 10%.

9. Speaking of resistance, vancomycin may no longer be the cornerstone of therapy for methicillin-resistant *S. aureus* (MRSA) infection by year's end. In the past, a typical *S. aureus* minimum inhibitory concentration (MIC) for vancomycin was 0.25-0.5 μg/mL. More recently, MICs of 1 (now 60% or so of isolates) or higher (still just 1%) have been seen, a phenomenon that has been termed "MIC creep." Data in the adult population suggest that even if dosing is pushed to 60 mg/kg per day—the dosing typically used for CNS infections—clinical failures may occur at higher MICs.

10. We will need better evidence to support the utility of newer antistaphylococcal drugs including linezolid, daptomycin, telavancin, and ceftobiprole. Linezolid remains a very expensive drug choice with predictable adverse reactions, particularly neutropenia. Dosing for daptomycin (a lipopeptide), telavancin (a lipoglycopeptide), and ceftobiprole (our first fifth generation cephalosporin) are still not set.

Lastly, I predict—or at least hope for—a happy, healthy, and productive 2010 for all PEDIATRIC NEWS readers! ■

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CA-MRSA Found Less Often in Kids With Atopic Dermatitis

BY KERRI WACHTER

PHILADELPHIA — Community-associated methicillin-resistant *Staphylococcus aureus* skin infections occur significantly less often among children with atopic dermatitis than among other outpatients with skin and soft tissue infections, based on a retrospective study of 78 children.

Children with atopic dermatitis (AD) and *Staphylococcus aureus* skin infections seen at a pediatric and adolescent dermatology clinic had a relatively low incidence (14%) of methicillin resistance, much lower than the rate noted (45.5%) in other outpatient services during the same period (2007-2008), Dr. Catalina Matiz and her colleagues wrote in a poster presented at the annual meeting of the Society for Pediatric Dermatology.

Dr. Matiz, a postdoctoral fellow at Rady Children's Hospital in San Diego, and her coinvestigators conducted a retrospective chart study of 78 children with superinfected AD seen at the Rady pediatric and adolescent dermatology clinic between June 2007 and June 2008. The children had a positive skin culture for *S. aureus*.

The investigators compared these data with all skin and soft tissue infection outpatient samples sent to the hospital's microbiology lab during the same period, and also with those sent during January 2000 through January 2001 (excluding samples from the dermatology clinic). The CA-MRSA rate for samples from all outpatient services from 2000 to 2001 was 4% (192 *S. aureus*–positive cultures).The outpatient services rates for 2000-2001 and 2007-2008 highlight the sharp increase in CA-MRSA over the last several years.

The rate of community-associated methicillin-sensitive *S. aureus* (CA-MSSA) among patients with AD in the dermatology clinic from 2007 to 2008 was 86%. In comparison, the CA-MSSA rate for other outpatient services during that period was 55%. The CA-MSSA rate for all outpatient services from 2000 to 2001 was 96%.

They found that prior history of hospitalization, eczema severity, age, sex, and prior antibiotic treatment had no impact on the risk of methicillin resistance or sensitivity in these patients. For the patients with AD, positive *S. aureus* cultures were most common among patients aged 1-4 years (26%), followed by those aged 5-9 years (24%), and those less than a year old (23%).

The findings are striking. "It's absolutely counterintuitive because if you think of patients with AD as being more at risk for infection, you would think that at the very least they would have the same rate as that occurring in the regular population," said Dr. Sheila Fallon Friedlander, a study coauthor and professor of pediatrics and medicine at the University of California, San Diego.

It may be that "because these kids are colonized already so much of the time with regular *S. aureus*, that it may exert sort of a protective effect against CA-MRSA," Dr. Friedlander said.

In addition, patients with AD tend to present more often with multiple lesions. "That may also play a role in this. It may be that our atopic patients are presenting with secondarily infected lesions that are distinct from the abscesses and the folliculitis that we are seeing in the community," she noted.

The findings "have informed the way that I prescribe medications for my patients," she said. The results suggest that more standard antibiotic drugs with fewer side effects—like cephalosporins—can be used first, especially while waiting for culture results. This could not only reduce costs but also save patients from the more serious side effects of antibiotics used for resistant pathogens. ■

Disclosures: *Dr. Matiz and Dr. Friedlander had no conflicts of interest related to this study.*