LETTERS TO THE EDITOR

Excellent article by Khaja et al,1 which Bergstrom et al also cited.

Female immigrants from countries where FGC is practiced certainly are “more than the condition of their genitals.” We agree that eliciting a narrative and attempting to truly understand these women’s experiences is an integral part of providing compassionate and culturally competent care. We chose to focus on clinical aspects of this topic because, as health care professionals, one of our first responsibilities is to also understand the potential health consequences of any patient condition. Women in focus groups have also reported frustration with physicians’ lack of knowledge. To communicate effectively with any patient, the clinician must be properly informed. We encourage interested health care professionals to read the article by Khaja et al1 and for researchers to continue to explore both the medical and communication issues in future research. Certainly excellent patient care cannot take place with just one or the other.

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Trends in Pneumonia Hospitalizations in Hennepin County, Minnesota, 1999-2010

To the Editor: The introduction of the 7-valent pneumococcal conjugate vaccine (PCV7) in 2000 led to a decline in pneumococcal disease in children and adults.1,2 Although rates of pneumonia hospitalizations decreased in children after PCV7 introduction,3 these gains were offset by an increase in pneumonias complicated by necrosis and empyema, including disease caused by serotypes not contained within the vaccine.1 We sought to describe the epidemiology of pneumonia hospitalizations in Minnesota over 12 years, before and after the introduction of conjugate vaccines.

Patients and Methods. We conducted a retrospective study of pneumonia hospitalizations from 1999 through 2010 based on hospital discharge codes in the Fairview Health Services network in Minnesota, a state with 96.7% uptake of PCV7 among children. Fairview Health Services in Minnesota encompasses 6 hospitals in the greater Twin Cities (Minneapolis and Saint Paul) of Hennepin County, serving more than 1 million patients with 175,000 emergency department visits and over 73,000 inpatient admissions per year. A case of pneumonia hospitalization was defined as a record with any of the following International Classification of Diseases, Ninth Revision (ICD-9) codes assigned as the primary diagnosis: 073.0, 481, 482.2, 482.31, 482.32, 482.39, 482.40, 482.41, 482.42, 482.49, 482.89, 482.9, 483.0, 483.1, and 486. A primary diagnosis of empyema was identified using ICD-9 codes 510, 510.0, and 510.9.

Cases were grouped by age (<2 years, 2-4 years, 5-18 years, 19-49 years, 50-64 years, and 65 years and older) and ICD-9 code. The study dates span the pre-PCV7 (1999-2000), early post-PCV7 (2001-2004), and late post-PCV7 (2005-2010) eras. Standard linear regression was used to calculate trends for 1999-2004 and 2005-2010, and a formal test of the interaction was completed to determine if the trends differed between time periods.

Results. A total of 14,807 hospitalizations were documented with a pneumonia-related ICD-9 diagnosis between 1999 and 2010. From 1999 through 2004, the pre- to early post-PCV7 periods, a significant decrease in pneumonia hospitalizations was seen for children less than 2 years of age (P=.028) and those in the 2- to 4-year age group (P=.032), as well as among adults in the 50- to 64-year age group (P=.039) and among those over 65 years (P=.008). A significant decrease in pneumonia hospitalizations was also observed from 2005 through 2010 for children less than 2 years of age (P=.013) and children between the ages of 2 and 4 (P=.033), but no significant trend was observed for older individuals. The most common pathogen-related pneumonia diagnosis was pneumococcal pneumonia, followed by staphylococcal pneumonia (Figure; data was based on ICD-9 codes, and staphylococcal pneumonia represents all relevant ICD-9 codes [482.40, 482.49, 482.41]. As stated in the limitations, the largest diagnostic entity was the general diagnosis of ‘pneumonia’ but we did not abstract the data to ascertain the pathogens involved).

Discussion. Our findings indicate that pneumonia hospitalizations decreased in both young children and older adults in the early post-PCV7 period, although the decrease was only sustained in the younger children. This finding has been noted in other studies.2 In addition, our results are similar to those in studies that have documented the effectiveness of PCV7 in reducing the incidence of pneumonia in young children,4 as well as decreasing disease in adults as a result of the “herd effect.”1 In contrast, the availability of the 23-valent pneumococcal polysaccharide vaccine, which has been effective in reducing pneumococcal bacteremia, has not reduced the risk of community-acquired pneumonia.5

An increase in methicillin-resistant Staphylococcus aureus pneumonia in the late post-PCV7 period may be a result of nasopharyngeal eradication of vaccine-related Streptococcus pneumoniae
serotypes and replacement by S. aureus. However, while all staphylococcal pneumonia diagnoses significantly increased from the pre-PCV7 era to the early post-PCV7 era (P = .049), a nonsignificant decrease was observed in the late post-PCV7 era (P = .10), which includes the 2009-2010 influenza pandemic that was associated with an increase in secondary bacterial pneumonia. We also examined whether empyema diagnoses increased during this period, which has been noted in other studies in the last post-PCV7 era, but no statistically significant trend was evident in our data.

**Study Limitations.** One must be wary of drawing too specific a conclusion from our findings because the trends were based solely on ICD-9 codes, which can be inaccurately recorded by clinicians. Furthermore, most of the ICD-9 code diagnoses were pneumonia and bacterial pneumonia and were not pathogen specific; hence, we could have potentially increased the number of confirmed pathogens if we did an in-depth chart review. We did not abstract the clinical, radiologic, and microbiological data to confirm the diagnosis. Statistically, we did not perform multiple comparison adjustment. Appropriately controlling for multiple comparisons is difficult in this case due to the correlation between end points, but none of the trends would have been significant with a conservative Bonferroni adjustment.

**Conclusion.** This study provides preliminary findings that indicate, in a state where a high percentage of children are vaccinated with PCV7, the possible impact of childhood immunization with pneumococcal conjugate vaccination on pneumonia hospitalizations of adults and children and a possible correlation with staphylococcal pneumonia hospitalizations.

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**FIGURE.** Hospitalizations during the study period for International Classification of Diseases, Ninth Revision codes for pneumococcal, staphylococcal, and methicillin-resistant Staphylococcus aureus (MRSA) pneumonia and empyema.

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**Figure Caption:**

![Hospitalizations Graph](image-url)

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**Reversal of Medical Practices**

*To the Editor:* We recently read with great interest “A Decade of Reversal: An Analysis of 146 Contradicted Medical Practices” by Prasad et al., along with the accompanying editorial by Ioannidis. The authors have done an admirable job of quantitatively analyzing the number of reversals published over a decade in one high-impact journal, of course begging the question of how many reversals might be found across the medical literature. We would like to raise 2 important points. The first is about dissemination of the finding of reversal. It is well known that a new practice or device takes years to promulgate from published evidence of effectiveness to actual routine clinical use;