Validity of using Hospital Episode Statistics data on monitoring disease trends

We read with interest the article by Koshy et al.1 The findings are important in documenting changes in admission rates of childhood pneumonia and empyema since the introduction of heptavalent pneumococcal conjugate vaccine (PCV7). We are concerned that undue emphasis has been placed on Hospital Episode Statistics (HES) data to define the aetiology of childhood pneumonia, particularly ‘bacterial pneumonia’.2

Given the magnitude of the case numbers reported, it would appear that the analyses are based on all pneumonia codes collectively. This would also (although it is not clear from the article) include ‘unspecified pneumonia’, which describes pneumonia of any aetiology. Our analysis of the national HES data on childhood pneumonia (1997–2006) showed that 91% of cases were coded as unspecified pneumonia. This may be of significance given that much unspecified pneumonia in children is likely to be viral, in routine clinical practice it can be difficult to differentiate between viral and bacterial pneumonia.3

The authors1 also assert that ‘PCV7 offers protection against the most common serotypes accounting for most of the bacterial pneumonias in children’. The references provided do not support this statement. There are international variations in serotype distributions of laboratory-confirmed pneumococcal disease.4 There are no published data on the serotype distribution of pneumococcal disease for UK children.

We have evaluated the accuracy of HES data for paediatric pneumonia in the North East of England. The incidence was previously established in a prospective study,1 and we repeated it prospectively between 2008 and 2009. Of 50 subjects identified during prospective recruitment, 14 (28%) had misattributed codes and were not identified in the coding list. These patients were coded, for example, as unspecified acute upper respiratory tract infection (J06.9), dyspnoea (R06.0) and cough (R05), despite a clinical diagnosis of pneumonia. Among those identified by HES codes, pneumonia (N=5) and lower respiratory tract infection (N=2) were coded as secondary diagnoses. These figures suggest that reliance on primary diagnostic codes on the basis of HES data could underestimate the levels of pneumonia. There are no reasons to think that levels of miscoding have changed over time.

This article does not describe trends in bacterial pneumonia as stated throughout the paper but all causes of pneumonia. We suggest that use of HES data should be limited to analysis of changes in the overall incidence of pneumonia.

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