

data for the Sundh paper were presented as those with a score of 0-3 compared to those with a score  $\geq 4$ . Using Cox regression analyses the predictive value of the DOSE index was compared to other items. The methodological processes used by both papers were sound. However, for clinical use, a measure that can be used to assess change in status over time is likely to be more helpful than a measure that assesses prognosis only at one particular moment. Stratifying the DOSE at a single cut point will limit its utility in this regard. The possibility that DOSE can be used as a continuous variable, however, is one that needs to be investigated further.

Data recently presented at the 2012 International Primary Care Respiratory Group (IPCRG) World Conference in Edinburgh showed that the DOSE index but not the ADO index was a predictor of future admissions and exacerbations.<sup>8</sup> When taking mortality as an outcome, the DOSE index has been shown to be a useful predictor of mortality in both primary and secondary care settings, yet not as strongly as the BODE and ADO indices. On the other hand, the BODE index is currently not as useful in a primary care setting where the 6-minute walk test is not routinely available. The ADO index, while simple to perform, is strongly tied to the factor 'age'. The conclusion is that the DOSE index may be the one index to meet all the criteria required of an index for use in routine primary care clinical practice, one which would provide healthcare professionals with a measure of current status and future risk in their COPD patients.

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# Pandemic influenza vaccination for healthcare workers in primary care: good progress, but higher uptake required

See linked article by Hothersall *et al.* on pg 302

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There were three global epidemics of influenza in the last century – in 1918-19, 1957-58 and 1968-69 – which resulted in considerable morbidity and mortality; the number of deaths in these pandemics has been estimated at 20 to 40 million, 1 million and 1 million, respectively. The lack of herd immunity to the novel influenza viruses implicated (i.e. H1N1, H2N2 and H3N2) is believed to have been a key factor contributing to these very high numbers of deaths.<sup>1</sup>

The World Health Organization (WHO) subsequently declared

the influenza A, subtype H1N1 virus (which emerged in Mexico in March 2009) a pandemic in June 2009.<sup>2</sup> Production of pandemic H1N1 2009 influenza monovalent vaccines began soon after confirmation of outbreaks in Europe and the USA, and in the autumn of 2009 a worldwide vaccination programme began. The pandemic vaccine was shown to be highly effective.<sup>3</sup> However, significant global numbers of cases occurred prior to the implementation of the pandemic vaccination programme. Whilst the illness severity was in the main mild, early estimates of mortality attributable to the first pandemic wave revealed an estimated 201,200 respiratory deaths, 80% of which occurred in people aged under 65.<sup>4</sup> Such estimates make no allowance for the illness burden seen from the same pandemic virus as it became part of the expected seasonal challenge encountered in the 2010/11 flu season and subsequently. In the UK, the severity of impact in the 2010/11 season was arguably worse, as gauged by the increased number of intensive care unit cases and deaths attributable to the H1N1 virus.<sup>5</sup> These findings support the argument for the offer of routine influenza vaccination to healthcare workers, largely to reduce the nosocomial transmission of influenza to colleagues and vulnerable patients.

Since 1981, recommendations that healthcare workers be immunised for influenza have been in place in the UK. However,

uptake rates of seasonal influenza vaccination have remained low, leading to a number of radical solutions being suggested such as mandatory vaccination.<sup>6</sup> During the early stages of the 2009 H1N1 influenza pandemic, uncertainty over pandemic severity and concerns for the integrity of healthcare systems and national infrastructure prompted the WHO to recommend that healthcare workers be prioritised for rapid immunisation. Internationally, there was wide variation in 2009 pandemic vaccine coverage amongst healthcare workers, ranging from 9% to 92%.<sup>7</sup>

In this issue of the *PCRJ*, a study by Hothersall and colleagues set out to determine vaccine uptake and attitudes of primary care healthcare workers to the H1N1 2009 pandemic influenza vaccine in Shropshire Primary Care Trust (PCT).<sup>8</sup> For healthcare workers willing to be vaccinated, most believed the vaccination would bring personal benefit and benefit to colleagues or patients. They were also more likely to have been vaccinated for seasonal influenza in the past, and were willing to be vaccinated in the future. The key issues for those healthcare staff unwilling to be vaccinated included uncertainty surrounding the safety of the vaccine – in particular, fears over Guillain-Barré syndrome, adjuvants, and thiomersal<sup>9</sup> – and concern over vaccine effectiveness. Furthermore, there was a lack of awareness amongst these staff of the possible health risk they posed to themselves, their patients and their colleagues, by remaining unvaccinated.<sup>7</sup>

In the UK National Health Service (NHS), front line healthcare workers and social care staff, as well as pregnant women and those with chronic diseases, were the first groups to be offered the vaccine.<sup>10</sup> For NHS healthcare organisations in England, very good data on vaccine coverage of healthcare workers were captured via the ImmForm web system.<sup>11</sup> From these data, we know that although coverage rates in 2009/10 increased considerably from the previous year's seasonal vaccination in 2008/9 (from 13.0% to 40.3%), there was low uptake found amongst nurses employed by hospitals and community health services (35% vs. 49% amongst general practitioners).<sup>12</sup> There was also wide variation in coverage amongst PCTs (lowest – 17.0%; highest – 92.0%). In order to determine what led to higher rates of coverage, qualitative studies using face-to-face and telephone interviews were conducted in organisations achieving over 50% and under 25% uptake. From the results, it was determined that on an organisational level, better uptake could be achieved if there was:

- provision of flexible and accessible delivery of vaccine to front line staff
- good leadership, with senior colleagues leading by example (being publicly vaccinated etc.)
- a culture of influenza vaccine promotion in the workplace characterised by strong pro-immunisation messages from staff physicians, supervisors, co-workers and other opinion leaders<sup>7</sup>
- and good planning, governance and project management – e.g. setting up a comprehensive implementation plan well ahead of the flu season and the use of targeted approaches underpinned by good information on uptake.<sup>12</sup>

With strong evidence to suggest that nosocomial infection with

influenza leads to more severe disease, in the event of any future influenza pandemic it is imperative that the lessons learnt from the 2009/10 pandemic are implemented to help increase coverage amongst front line staff in order to protect vulnerable patients. Misperceptions regarding vaccine safety – which are attributable, in part, to other vaccine scare stories such as MMR – remain a key barrier to uptake amongst healthcare workers.<sup>7</sup> Since there is little appetite to adopt mandatory vaccination,<sup>13</sup> the development of a national vaccination strategy for healthcare staff (and the public) is necessary. Furthermore, education programmes – delivered to those refusing the vaccine, and undergraduates undertaking health professional and clinical degrees – are necessary if myths surrounding vaccines are to be addressed and confidence increased.

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