

# Systematic review

# Evidence remains lacking that vaccinating healthcare workers prevents influenza in elderly residents in long-term care

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Correspondence to: Holly Seale Level 3, Samuels building, University of New South Wales, Sydney, Australia; h.seale@unsw.edu.au Commentary on: **Thomas RE**, Jefferson T, Lasserson TJ. Influenza vaccination for healthcare workers who work with the elderly. *Cochrane Database Syst Rev* 2010;**2**:CD005187.

# Influenza and vaccination

Seasonal influenza remains a major cause of morbidity and mortality, especially in the elderly.<sup>1</sup> Elderly residents of long-term care facilities are especially susceptible because of their frailty, increased age and the presence of multiple comorbidities. Health care workers (HCWs) can introduce influenza into health care settings, as a significant number of HCWs (10 to 30%) are infected with influenza each winter<sup>2 3</sup> and most of them continue to work, despite infection (approximately 50 to 80% of those infected).<sup>45</sup>

The USA Advisory Committee on Immunisation Practices recommends influenza vaccination to HCWs because of their contact with those at risk of complications from influenza.<sup>6</sup> Despite these recommendations, only 36% of HCWs in the United States are vaccinated against influenza annually.<sup>7</sup> Other previous studies demonstrate a range of immunization rates for overseas doctors from 38% to 82%.<sup>89</sup>

### The effects of vaccinating HCWs

In 2006, Thomas and co undertook a Cochrane systematic review to identify and summarise the literature on flu vaccination for HCWs who work with the elderly. The aim was to identify studies which assessed the effects of vaccinating HCWs on the incidence of influenza, influenza like-illness (ILI) and its complications in elderly residents in long-term facilities.<sup>10</sup> Six databases were searched including MEDLINE, EMBASE and the Cochrane Central Register of Controlled Trials (CENTRAL). The search strategy used in the review was similar to the strategies used in both the review of 'Vaccines for preventing influenza in healthy adults' conducted by Demicheli and colleagues<sup>11</sup> and also the review of 'Vaccines for preventing influenza in the elderly' by Rivetti and colleagues.<sup>12</sup>

Two cluster-sampling randomised controlled trials (C-RCT) and one cohort study were included. The authors assessed the methodological quality of these studies as per the strict criteria set out in the *Cochrane Reviewers Handbook*. In comparison to the eight outcomes used to compare the studies in the Demicheli and colleagues'<sup>11</sup>review, only one outcome could be used to compare the two RCTs in the Thomas review. In conclusion, they felt that there was no credible evidence that vaccination of healthy people, under the age of 60 (aka HCWs), who provide care for the elderly causes influenza complications in those cared for.

In 2010, an update was done on the Cochrane review. The aims remained the same, as did the methodology used. The only main difference between the two reviews was that an additional RCT was included in the updated version. As was identified previously, all of the studies were at high risk of bias, and there were no accurate data on the rates of laboratory-proven influenza in the HCWs.

The studies found that there was no effect on the key outcomes of interest (laboratory-proven influenza, pneumonia or deaths from pneumonia) if you only vaccinated the HCWs who looked after elderly patients in long-term care facilities. HCW vaccination did have an effect on rates of ILI, GP consultations for ILI and all-cause mortality in individual's  $\geq$ 60 (non-specific outcomes). However, it is difficult to interpret these non-specific outcomes because ILI includes many other respiratory pathogens.

Although it is important that more high-quality RCTs are undertaken which examine the impact of HCW vaccination on morbidity/mortality outcomes in the elderly, it is equally essential that we look at other types of interventions. Given the low uptake rates for flu vaccine among HCWs, studies investigating the effect of masks/respirators use, antivirals and/or the restriction of visitors or health care workers with ILI's should also be conducted.

Competing interests None.

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