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Flu-related absence, a small proportion of all-cause sickness absence

Editor – The recent paper by Pereira *et al* on potential for improved sickness absence following influenza vaccination in healthcare workers is interesting.[1] We wonder whether the authors conclusions are valid based on the data in their study.

Annual population influenza infection rates are reported at between 5–20%.[2] On average each flu case takes 3 days absence.[2] Not all of influenza cases result in absence from work.[3] In an average influenza season the expected contribution from influenza on total sickness absence may be 0.1–0.3%.

The vaccine is ineffective against other influenza-like illness (ILI) that are not caused by influenza. Generally the vaccine does not exactly match circulating seasonal flu strains, and other factors affect vaccine response,[4] which is at best about 60% effective.[5] Therefore, the impact of the vaccine on improvement of sickness absence can only be between 0.05 to 0.15% (average 0.1%).

The data analysis in this paper does correspond with the effect modelling outlined above. The authors' conclusion that 'A 10% increase in vaccination would be associated with a 10% fall in sickness absence rate' seems misleading based on the proportion of total sickness absence that is due to flu. In an average flu season the total proportion of influenza-related sickness absence rate is likely to be of the order of only a proportion (0.1%) of the all-cause absence rate of 4.5%. It may be that the authors intended to say that a 10% increase in vaccination would lead to a 10% fall in sickness absence in relation to influenza, but not total absence.

It may be time to review the efficacy of healthcare worker influenza vaccination against the desired objectives of public health policy. To aim to vaccinate 100% of a mostly healthy population, of whom at most about 20% may become infected, with an imperfect vaccine to improve sickness absence by 0.1% in the average flu season, seems of marginal benefit. ■

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Response

We thank the authors for their interest in our paper.[1] We analysed data from 223 healthcare trusts covered ~800,000 staff in each of four influenza seasons from 2011. Higher influenza vaccination rates were associated with reduced total sickness absence rates ($\beta = -0.425$ [95% CI −0.658, −0.192], $p<0.001$). From this, an increase of 10% in influenza vaccine uptake, such as the one observed between the 2012–13 and 2013–14 influenza seasons, would be associated with a decrease in approximately 0.43 percentage points in the absolute sickness absence rate. Considering the average sickness absence rate was 4.5% across the four influenza seasons. This reduction of 0.43 percentage points translates into a 10% relative decrease in the sickness rate, which suggests that increasing vaccine uptake can have a significant practical impact.

The most likely explanation for this is a direct effect of vaccination. A causal effect of vaccination is supported by the observation that the association between vaccination and sickness absence was only present during the flu season. In addition, the association was independent of staff satisfaction, so the explanation that a 'happy' workplace might lead independently both to higher vaccination rates and lower sickness absence cannot explain it.

Around 40% of NHS staff sickness absence is related to respiratory illness[2] and rates of healthcare worker (HCW) influenza infection are higher[3] than the range modelled in a general population.[4] Median duration of HCW sickness absence with flu is 4 days.[3] A significant proportion of HCWs have subclinical, but potentially transmissible, illness. The latter point means that the effect of vaccination will extend considerably beyond the individuals vaccinated, being multiplied by the reduction in transmission rates within the hospital environment and at home – vaccinated healthcare staff are therefore protecting their fellow workers as well as their patients,[5–9] their families and themselves.

Our data support the view that healthcare vaccination against influenza is a useful intervention and that steps to reduce unwarranted variation in vaccination rates will be worthwhile. ■

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Comment on CME Infectious diseases

Editor – The recommendations for testing for some sexually transmissible infections vary across the scenarios discussed in the CME Infectious diseases section of *Clinical Medicine*, volume 18, issue 2, April 2018.

HIV testing is recommended in pyrexia of unknown origin[1] and in acute meningitis[2] but for acute encephalitis, the advice is to establish 'risk factors for HIV infection'.[3] This may be problematic in an encephalopathic patient; even patients with intact sensoria may conceal (or be unaware of) risk factors for HIV. Encephalitis is a recognised complication of HIV seroconversion as well as advanced disease. For some years syphilis has been the fastest increasing sexually transmitted disease in the UK. No advice to test for syphilis is given even though neurological involvement, including meningitis, is a recognised complication in early and late disease. I wonder if recommendations for testing for these entities in these areas should be reconsidered? ■

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Response

We welcome this comment regarding our CME articles on encephalitis and meningitis. As we suggest on p 156 of the article about acute encephalitis, 'all patients with suspected brain infection should have an HIV test'. This view is also supported by national guidelines on encephalitis and meningitis.[1,2] We agree that testing is vital in this patient group, as not only can meningoencephalitis occur at HIV seroconversion, but HIV infection also widens the potential differential diagnosis of neurological infections. We suggest that it is also valuable to establish risk factors for HIV infection during history taking, as in the period of acute HIV infection diagnostic testing may be negative. However, we agree that this is not always possible, either due to encephalopathy or patient reticence.

We also agree that syphilis testing is indicated in selected cases of encephalitis and meningitis, particularly in those with exposure history, subacute or chronic meningitis, infarcts or cranial nerve involvement. ■

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