

# Low influenza vaccination rate among healthcare personnel: whose fault is it?

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The vaccination rate in several European countries among healthcare personnel is still less than 25% (1), despite many international health authorities widely recommend annual flu vaccination of healthcare workers as the best way to prevent the disease and to avoid the transmission of influenza from staff to patients. The cross-sectional study recently published on the Italian Journal of Public Health, which involved the Hospital of Palermo in the years 2005-2008, showed that the mean coverage in healthcare staff was approximately 11.2% (2), a value consistent with that observed in other Italian regions in 2003-2004 (3) and 2006-2007 (4). These results are confirmed in a study, conducted in 2009, where it emerged that 13.4% of the physicians interviewed had no will to get vaccinated against the pandemic flu, even knowing it was the most effective way to control the spread of influenza (5). One of the most surprisingly results of the study was that a large percentage of physicians had wrong beliefs and incorrect behaviors regarding the vaccination, with the voluntary receipt of vaccination strongly influenced by the correct knowledge of the scientific literature on the subject.

Evidence-based medicine practice involves familiarity with the methods to evaluate the efficacy of health interventions (particularly Randomized Control Trials - RCTs - and meta-analyses). A survey to assess knowledge, attitude and professional behaviors of Italian physicians toward methods to evaluate the efficacy of health interventions (6) showed that, even if they have substantial positive attitudes (believing that meta analysis, in particular, is a useful tool to select effective health interventions) the use of these methods has not been integrated into their practice to a large extent.

However, it must be underlined that, as already demonstrated (7), meta-analyses in vaccinology show frequent flaws such as non-comprehensive bibliographic search, bias in the

selection of the studies, lack of quality assessment of individual studies, absence of evaluation of heterogeneity among studies and publication bias. These limitations, that could be easily corrected, may generate no firm conclusions, and uncertainty, among final users. On the other side, it is important to note that evidence from placebo-controlled trials, which constitute the best study design to evaluate the effects of vaccines on individuals, is sometimes hard to retrieve because these studies are no longer possible on ethical grounds. As a case of point, a meta-analysis on seasonal influenza vaccination among the elderly (8) found that the vaccination was not able to provide a significantly higher protection than no intervention combining only observational studies. The evidence from the few existent RCTs was not taken into account because scant and badly reported.

It is important to note that the publication of the better evidence from experimental studies on vaccine efficacy and safety is not always up-to-date. A recent paper (9) faced the publication delay of trials on H1N1 vaccine, finding that two years after the emergence of the influenza 2009 H1N1 pandemic and well after the end of both 2009-2010 and 2010-2011 seasons only a minority of the registered RCTs was published, thus basing the choices for a global and prompt preventive response to the pandemic only on a few early-published evidence.

In conclusion, even if the concept of mandating influenza vaccination for healthcare personnel might be appealing, higher vaccination rate can be obtained with a common effort: a better level of knowledge should be reached among physicians to improve their behaviors, researchers should improve the methodological quality of their work and, finally, organizations involved in vaccines production and research should publish studies on vaccine efficacy and safety in a more timely way.

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