Recommended vaccinations for staff working in primary health care

People who work in primary health care facilities are exposed to many vaccine-preventable diseases such as influenza, pertussis and measles. Maintaining a high rate of immunity within health care populations helps to reduce personal disease risk for health care workers and, importantly, reduces health care workers risk of transmission to patients at increased risk of developing complications following infection.

Why should I be up to date with my vaccinations?

1. Unvaccinated health care workers are at increased risk of vaccine-preventable diseases

Health care workers, including both clinical and non-clinical staff, are considered to have a "substantial" risk of acquiring or transmitting vaccine-preventable diseases, such as influenza, measles, mumps, rubella, pertussis, varicella and hepatitis B, depending on the individual setting.[1]

2. Vaccination of health care workers may reduce patient morbidity

Vaccination of health care staff reduces the risk of transmission of illnesses to vulnerable patients, and is also likely to reduce the spread of disease during community outbreaks.[1]

Influenza vaccination rates in health care workers in New Zealand are historically low

All District Health Boards in New Zealand offer free influenza vaccination to staff. In 2012, approximately 48% of all employees received an influenza vaccination. This rate was a slight improvement from 2011 (46%) and 2010 (45%). Rates were highest among doctors (57%) and lowest among midwives (37%). Nurses (46%), allied staff (50%) and other employees (46%) had similar rates of influenza vaccination. Immunisation rates differed among DHBs, with the highest rates achieved in 2012 in Capital & Coast and Canterbury DHBs and the lowest rates in Taranaki and West Coast DHBs.[6]

It has been suggested that annual influenza vaccination should be compulsory for all health care workers in New Zealand, unless medically contraindicated.[7] However, compulsory approaches do not necessarily gain the highest coverage, and at present there is limited evidence to support the clinical justification of this stance.

There is mixed evidence as to whether influenza vaccination among health care staff reduces transmission of influenza to patients. Two studies in long-term care hospitals in the United Kingdom found that overall mortality was reduced amongst residents when vaccinations were offered to staff.[2,3] A Cochrane systematic review concluded that vaccinating health care workers did not reduce rates of laboratory-confirmed influenza, pneumonia or deaths from pneumonia in older people in long-term care. However, rates of influenza-like illness (which includes other viruses and bacterial infections), hospital admissions and overall mortality amongst older people were reduced.[4]

3. Lead by example

Endorsement of vaccination by health care professionals is a powerful factor in determining community vaccination rates. Numerous studies have shown that discussion with a General Practitioner or Practice Nurse can influence an individual's decision to be vaccinated, even if they did not initially want to be vaccinated.[5] Health care professionals, who have themselves been vaccinated, are better placed to encourage vaccination uptake within practice populations.

Vaccinations recommended for all staff working in primary care

The Immunisation Advisory Centre recently released guidance for vaccinations for both clinical and non-clinical staff working in primary care (Table 1, over page). Testing is also recommended for clinical staff to determine their immunity status against hepatitis B and tuberculosis.

Vaccination among a small group of general practice staff in New Zealand

The Immunisation Advisory Centre vaccination resource was developed in conjunction with Dr Dayna More, based on her General Practice Education Programme project: Vaccination of staff in primary care – Attitudes and recommendations.[8]

Although this study only included 31 primary health care workers in one geographical region, results revealed that:[8]

- All but one person had received their full set of childhood vaccinations
- 71% (22 people) had received an influenza vaccination in the last two years, which was in most cases funded by their workplace
- Of those who did not receive an influenza vaccine, reasons included; no underlying medical conditions/ healthy, fear of needles, perception that their risk of contracting influenza was low, belief that the vaccine is ineffective
- 68% (21 people) said that they would be happy to have vaccinations if they were recommended due to their employment in primary health care, although most said they would be less likely to if they were not funded by their workplace
- Of those who would not be happy to receive vaccinations, reasons given included; preferring natural products, perception of low disease risk, wish to become more "holistic" and concerns about adverse effects and the ongoing need for boosters

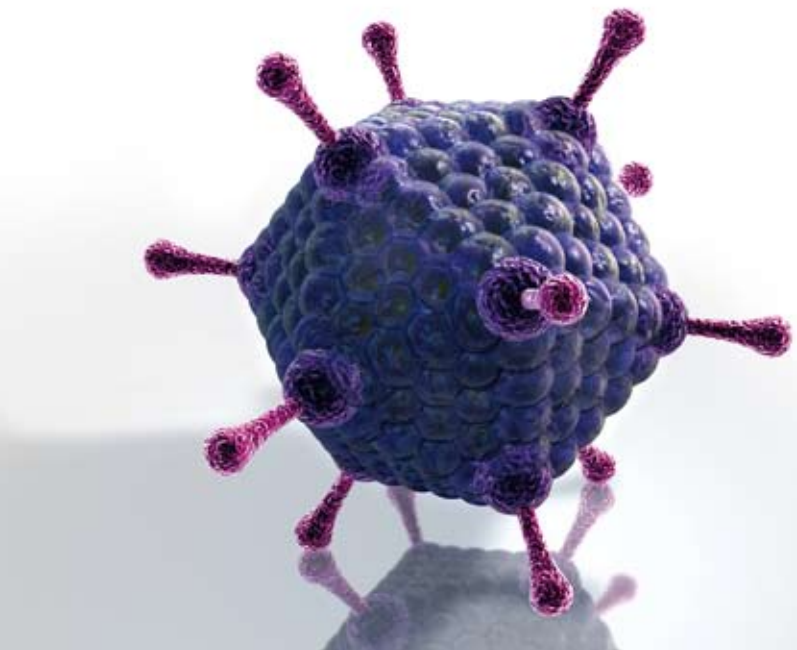

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Table 1: Vaccination recommendations for staff working in primary care (Immunistaion Advisory Centre)

Disease	Vaccine	Who to vaccinate[a]	Testing for immunity	Vaccination required[b]
Hepatitis A	Hepatitis A: Avaxim™ Havrix® Hepatitis A & B:[c] Twinrix®	Clinical and cleaning staff	▪ Serology not routinely recommended.	▪ A course of two doses 6–12 months apart.
Hepatitis B	Hepatitis B: Engerix-B® Hepatitis A & B:[c] Twinrix® HBvaxPro®	Clinical staff	▪ Check anti-HBs serology for clinical staff with a history of hepatitis B vaccination, if no previous laboratory evidence of immunity. ▪ Serology not required when there is no history of hepatitis B vaccination. ▪ An anti-HBs level of ≥10 IU/L at any time is evidence of long-term immunity, even if antibodies have subsequently waned.	▪ If not previously vaccinated: course of three doses at 0, 1 and 6 months. ▪ If previously vaccinated and anti-HBs levels <10 IU/L: give one dose of hepatitis B vaccine and repeat serology a month later. ▪ If repeat serology is <10 IU/L, give two more doses of hepatitis B vaccine one month apart to complete a second course of three hepatitis B vaccine doses and repeat serology one month after the final dose. ▪ If anti-HBs levels <10 IU/L following a second full course of hepatitis B vaccine the person should be considered a vaccine non-responder
Influenza	Fluarix®, Fluvax®, Intanza®, Vaxigrip® Influvac®	Clinical and non-clinical staff	▪ Serology not required.	▪ Annual influenza vaccination recommended.
Measles **Mumps** **Rubella**	M-M-R® II	Clinical and non-clinical staff	▪ Serology not required. ▪ Presumptive immunity when two documented doses of MMR vaccine,[d] laboratory evidence of immunity, or born in New Zealand before 1969.	If New Zealand born on/after 1 January, 1969 and does not have two documented doses of MMR vaccine or laboratory evidence of immunity: give a course of two doses of MMR vaccine administered a minimum of one month apart.
Poliomyelitis	IPV: IPOL	Clinical and cleaning staff	▪ Serology not required.	Healthcare workers with a history of a primary course of polio vaccination (three doses) who are at increased risk of exposure or in direct contact with a case of polio should have a single lifetime booster dose of IPV.
Tetanus[e] **Diphtheria**[e] **Pertussis**	Tdap: Adacel® Boostrix®	Clinical and non-clinical staff	▪ Serology not required.	▪ Single booster dose of Tdap every 10 years.

Table 1 (continued): Vaccination recommendations

Disease	Vaccine	Who to vaccinate[a]	Testing for immunity	Vaccination required[b]
Tuberculosis (TB)	BCG Vaccine SSI	Clinical staff	▪ Staff should undergo baseline screening with a risk assessment questionnaire and either two-step Tuberculin Skin Testing (TST/Mantoux test) or an interferon gamma release assay (IGRA, QuantiFERON Gold assay) when starting employment.[d]	▪ Universal BCG vaccination is not indicated for health care workers as most are at comparatively low risk of occupationally acquired TB.
Varicella	Varilrix® Varivax®	Clinical and non-clinical staff	▪ Presumptive immunity when there is a good history of varicella infection, diagnosis or verification of herpes zoster by a health professional, two documented doses of varicella vaccine,[e] or laboratory evidence of immunity or disease. ▪ Check serology if no history of varicella infection and not previously vaccinated.	▪ A course of two doses 4-8 weeks apart if non-immune.

Notes

a. Clinical Staff – General Practitioners (GPs), GP Registrars, Practice Nurses. Non-Clinical Staff – Medical Receptionists, Practice Managers

b. All staff should have received a primary course of vaccines against tetanus, diphtheria, polio, measles, mumps and rubella (funded adult catch-up vaccines) and hepatitis B (non-funded adult catch-up vaccine). If they have not received all of these, they will need to receive catch-up vaccinations (refer to the Immunisation Handbook 2011, pages 20-21 and 384).
ADT™ Booster (Td) is on the National Immunisation Schedule for adults aged 45 years and 65 years. However, if receiving 10 yearly Tdap vaccination these doses are not required.

c. Twinrix® is an alternative to the monovalent hepatitis A and hepatitis B vaccines when vaccination against both diseases is required. Give a course of three doses at 0, 1 and 6 months.

d. The QuantiFERON TB-Gold test is appropriate for employment-related screening for latent TB infection, e.g. health care workers. For all other patients, the TST/Mantoux test is the funded test for excluding respiratory TB. Note that a false-positive result is possible with TST/Mantoux in people who have received a BCG vaccination.

e. The first vaccine dose must have been administered on or after the first birthday; the second vaccine dose must have been administered no earlier than one month (i.e. a minimum of 28 days) after the first dose.[3]

References

1. Shefer A, Atkinson Q, Friedman C, et al. Immunization of health-care personnel. Recommendations of the Advisory Committee on Immunization Practices (ACIP). Centers for Disease Control and Prevention; 2011. Available from: www.cdc.gov (Accessed Dec, 2012).
2. Carman WF, Elder AG, Wallace LA, et al. Effects of influenza vaccination of health-care workers on mortality of elderly people in long-term care: a randomised controlled trial. Lancet 2000;355(9198):93–7.
3. Potter J, Stott DJ, Roberts MA, et al. Influenza vaccination of health care workers in long-term-care hospitals reduces the mortality of elderly patients. J Infect Dis 1997;175(1):1–6.
4. Thomas RE, Jefferson T, Lasserson TJ. Influenza vaccination for healthcare workers who work with the elderly. Cochrane Database Syst Rev 2010;(2):CD005187.
5. Brunton C, Weir R, Jennings L. Knowledge and attitudes about influenza vaccination amongst general practitioners, practice nurses, and people aged 65 and over. N Z Med J 2005;118(1214):U1434.
6. Ministry of Health (MoH). 2012 workforce immunisation coverage rates by District Health Board (DHB). Wellington: MoH; 2012. Available from: www.health.govt.nz (Accessed Dec, 2012).
7. McLennan S, Celi LA, Roth P. The Health and Safety in Employment Act and the influenza vaccination of healthcare workers. N Z Med J 2007;120(1250):U2442.
8. More D. Vaccination of staff in primary care – Attitudes and recommendations. Unpublished research. Lower Hutt: General Practice Education Programme (GPEP); 2012.