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LANSING

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To: Michigan Health Care Personnel

The U.S. is currently experiencing a resurgence of some vaccine-preventable diseases, most notably pertussis (whooping cough), measles, and mumps. Unfortunately, health care personnel often perpetuate transmission during these outbreaks, placing themselves and their patients at risk because they were not appropriately immunized. Health care personnel without documented evidence of immunity further disrupt health care operations when vaccine-preventable diseases are introduced because of the need to exclude potentially infected staff members and rapidly ensure immunity for others.

A Health Alert from the Centers for Disease Control and Prevention (CDC) described a drastic example of this when, in April 2008, an adult patient was hospitalized with measles and pneumonia. This hospital admission prompted verification of the measles immune status of approximately 1,800 health care personnel and vaccination of those without evidence of immunity. Through March 31, 2008, nine cases had been confirmed while hundreds of contacts remained under investigation. All but one of the cases was infected in a health care setting, one of the five adult case-patients was a health care worker, and all cases were unvaccinated at the time of exposure.

In accordance with current recommendations, health care personnel should have documented evidence of immunity to measles, mumps, rubella, varicella, tetanus, diphtheria, pertussis, varicella, hepatitis B, and influenza readily available at their work location. The disruption in health care and related expenses caused by these diseases can be largely avoided by assuring all staff and the facility has this documentation of immunity readily available. For example, during the 2005 Indiana measles outbreak, the cost incurred to a hospital with one infected employee was over $113,000 in immune status checking, containment, and infection control costs.

Are you up-to-date on the new vaccines and recommendations for health care personnel? Is everyone who shares the air with patients in your facility appropriately vaccinated? Is evidence of this immunity readily available? Now is the time to review your records, not in the midst of an outbreak. The campaign materials outlined below can be used not only for influenza vaccination campaigns but also for all the other immunizations that health care personnel need.

Reducing influenza transmission from health care personnel to patients has been a top priority both nationally and in Michigan for many years. To that end, the Michigan Department of Community Health has created a Flu Fighter Action Kit for Health Care Personnel. Available online at www.michigan.gov/flufighterkit, the kit offers a step-by-step approach to planning an influenza vaccination campaign, including ready-to-use materials such as planning templates, a campaign calendar and timeline, and educational resources to help you reach everyone in your health care organization.

This fall and every fall, take the opportunity that a flu vaccine clinic provides to offer other immunizations as needed. Use the tools in the Flu Fighter Action Kit to plan your flu campaign this year and be sure to include Tdap, MMR, hep B and varicella vaccines in your plans.

Protect yourself, your family, your colleagues, and your patients from serious diseases. Ensure that you and your colleagues receive all needed vaccines including a yearly influenza immunization. Get vaccinated, and encourage your co-workers to do the same! Visit www.michigan.gov/flufighterkit to develop a vaccination campaign in your facility today.

Sincerely,

Greg Holzman MD, MPH

Greg Holzman, MD, MPH
Chief Medical Executive
Michigan Department of Community Health

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Healthcare Personnel Vaccination Recommendations

Vaccine	Recommendations in brief
Hepatitis B	Give 3-dose series (dose #1 now, #2 in 1 month, #3 approximately 5 months after #2). Give IM. Obtain anti-HBs serologic testing 1–2 months after dose #3.
Influenza	Give 1 dose of TIV or LAIV annually. Give TIV intramuscularly or LAIV intranasally.
MMR	For healthcare personnel (HCP) born in 1957 or later without serologic evidence of immunity or prior vaccination, give 2 doses of MMR, 4 weeks apart. For HCP born prior to 1957, see below. Give SC.
Varicella (chickenpox)	For HCP who have no serologic proof of immunity, prior vaccination, or history of varicella disease, give 2 doses of varicella vaccine, 4 weeks apart. Give SC.
Tetanus, diphtheria, pertussis	Give all HCP a Td booster dose every 10 years, following the completion of the primary 3-dose series. Give a 1-time dose of Tdap to all HCP younger than age 65 years with direct patient contact. Give IM.
Meningococcal	Give 1 dose to microbiologists who are routinely exposed to isolates of *N. meningitidis*.

Hepatitis A, typhoid, and polio vaccines are not routinely recommended for HCP who may have on-the-job exposure to fecal material.

Hepatitis B

Healthcare personnel (HCP) who perform tasks that may involve exposure to blood or body fluids should receive a 3-dose series of hepatitis B vaccine at 0-, 1-, and 6-month intervals. Test for hepatitis B surface antibody (anti-HBs) to document immunity 1–2 months after dose #3.

- If anti-HBs is at least 10 mIU/mL (positive), the patient is immune. No further serologic testing or vaccination is recommended.
- If anti-HBs is less than 10 mIU/mL (negative), the patient is unprotected from hepatitis B virus (HBV) infection; revaccinate with a 3-dose series. Retest anti-HBs 1–2 months after dose #3.
  - If anti-HBs is positive, the patient is immune. No further testing or vaccination is recommended.
  - If anti-HBs is negative following 6 doses of vaccine, the patient is a non-responder.

For non-responders: HCP who are non-responders should be considered susceptible to HBV and should be counseled regarding precautions to prevent HBV infection and the need to obtain HBIG prophylaxis for any known or probable parenteral exposure to hepatitis B surface antigen (HBsAg)-positive blood.[1] It is also possible that non-responders are persons who are HBsAg positive. Testing should be considered. HCP found to be HBsAg positive should be counseled and medically evaluated.

Note: Anti-HBs testing is not recommended routinely for previously vaccinated HCP who were not tested 1–2 months after their original vaccine series. These HCP should be tested for anti-HBs when they have an exposure to blood or body fluids. If found to be anti-HBs negative, the HCP should be treated as if susceptible.[1]

Influenza

Trivalent (Inactivated) Influenza Vaccine (TIV): May give to any HCP.

Live, Attenuated Influenza Vaccine (LAIV): May give to any non-pregnant healthy HCP age 49 years and younger.

1. All HCP should receive annual influenza vaccine. Groups that should be targeted include all personnel (including volunteers) in hospitals, outpatient, and home-health settings who have any patient contact.
2. TIV is preferred over LAIV for HCP who are in close contact with severely immunosuppressed persons (e.g., stem cell transplant patients) when patients require a protective environment.

Measles, Mumps, Rubella (MMR)

HCP who work in medical facilities should be immune to measles, mumps, and rubella.

- HCP born in 1957 or later can be considered immune to measles, mumps, or rubella only if they have documentation of (a) physician-diagnosed measles or mumps disease; or (b) laboratory evidence of measles, mumps, or rubella immunity (HCP who have an "indeterminate" or "equivocal" level of immunity upon testing should be considered nonimmune); or (c) appropriate vaccination against measles, mumps, and rubella (i.e., administration on or after the first birthday of two doses of live measles and mumps vaccines separated by 28 days or more, and at least one dose of live rubella vaccine).
- Although birth before 1957 generally is considered acceptable evidence of measles, mumps, and rubella immunity, healthcare facilities should consider recommending a dose of MMR vaccine (two doses during a mumps outbreak) to unvaccinated HCP born before 1957 who are in either of the following categories: (a) do not have a history of physician-diagnosed measles and mumps disease or laboratory evidence of measles and mumps immunity and (b) do not have laboratory evidence of rubella immunity.

Varicella

It is recommended that all HCP be immune to varicella. Evidence of immunity in HCP includes documentation of 2 doses of varicella vaccine given at least 28 days apart, history of varicella or herpes zoster based on physician diagnosis, laboratory evidence of immunity, or laboratory confirmation of disease.

Tetanus/Diphtheria/Pertussis (Td/Tdap)

All adults who have completed a primary series of a tetanus/diphtheria-containing product (DTP, DTaP, DT, Td) should receive Td boosters every 10 years. As soon as feasible, HCP younger than age 65 years with direct patient contact should be given a 1-time dose of Tdap, with priority given to those having contact with infants younger than age 12 months.

Meningococcal

Vaccination is recommended for microbiologists who are routinely exposed to isolates of *N. meningitidis*. Use of MCV4 is preferred for persons younger than age 56 years; give IM. If MCV4 is unavailable, MPSV is an acceptable alternative for HCP younger than age 56 years. Use of MPSV is recommended for HCP older than age 55; give SC.

References

1. See Table 3 in "Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis," *MMWR*, June 29, 2001, Vol. 50, RR-11.

For additional specific ACIP recommendations, refer to the official ACIP statements published in *MMWR*. To obtain copies, visit CDC's website at www.cdc.gov/vaccines/pubs/ACIP-list.htm; or visit the Immunization Action Coalition (IAC) website at www.immunize.org/acip.

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