DEPARTMENT OF HEALTH

Ensuring Immunity to Varicella in Healthcare Workers

To prevent nosocomial spread of varicella zoster virus (VZV), healthcare facilities should ensure that all healthcare workers (HCWs) have evidence of immunity to varicella.

Evaluate HCWs' varicella immune status

The Advisory Committee on Immunization Practices (ACIP), with support from the Healthcare Infection Control Practices Advisory Committee (HICPAC), recommends that healthcare institutions ensure that all HCWs have evidence of immunity to varicella. Evidence of immunity includes any of the following:

- Documentation of two doses of varicella vaccine.
- Laboratory evidence of immunity or laboratory confirmation of disease; or
- Documentation of a diagnosis or verified history of varicella (chickenpox) or zoster (shingles) from a healthcare provider.

Note: Birth before 1980 is not considered evidence of immunity for HCWs.

Routine testing for varicella immunity after two doses of varicella vaccine is not recommended as commercial assays lack sensitivity to detect vaccine-induced immunity in all instances. Institutions may elect to test all unvaccinated HCWs regardless of disease history because a small proportion of persons with a positive history of disease might be susceptible.

Vaccination recommendation for HCWs

Based on current ACIP recommendations, MDH encourages two doses of varicella vaccine for HCWs without evidence of immunity. Priority should be based on risk of non-transient, face-to-face contact with varicella cases (e.g., outpatient clinics, emergency departments) and patient population served (e.g., obstetrics and immune compromised patients). Age may also be a factor in prioritization (Serologic studies have shown that nearly all U.S.-born adults born before 1977 have been infected with VZV).

Additional precautionary steps when exposed to varicella

If a HCW is exposed to varicella, they should consult with the facility's occupational health department. Even if the HCW received two doses of varicella vaccine, they should be monitored daily for 8-21 days post-exposure. They should report any symptoms to the occupational health department without delay. This is particularly important if the exposed HCW is going to care for immunocompromised individuals.

Recommendation for unvaccinated HCWs without evidence of immunity who are exposed to varicella

Unvaccinated HCWs without evidence of immunity or vaccination history are potentially infectious from days 8-21 post-exposure. They should be furloughed during this period; post-exposure vaccination is recommended within 3-5 days of exposure since it may lessen the

severity of the disease if infection occurs. If the exposure did not cause infection, vaccination more than 5 days after exposure is still indicated as it induces protection against subsequent infection. A second dose of vaccine should be administered at least 4 weeks after the first dose. Exposed HCWs who have received 1 dose of vaccine and who are exposed to VZV should receive a second dose of vaccine within 3-5 days post-exposure (provided a minimum of 4 weeks has elapsed since the first dose).

Testing after vaccination to ensure immunity not recommended

Routine testing of HCWs for varicella immunity following two doses of vaccine is not recommended. Available commercial assays are not sensitive enough to detect antibody after vaccination in all instances. Sensitive tests have indicated that 99 percent of adults develop antibodies after the second dose. However, seroconversion does not always result in full protection against disease, and no data regarding correlates of protection are available for adults.

Lab tests for immunity to varicella

The two most commonly used tests to detect varicella IgG antibody among HCWs after natural infection are latex agglutination (LA) and ELISA. Although the LA test is generally more sensitive than commercial ELISAs, a recent report indicated that the LA test can produce false-positive results, particularly when only a single concentration of serum is evaluated. Therefore, for the purpose of screening HCWs for varicella susceptibility, a less sensitive and more specific commercial ELISA should be considered.

Risk of transmitting vaccine virus to susceptible persons is low

The risk of transmission of vaccine virus from persons who develop a varicella-like rash after vaccination is low and has been documented only after exposures in households and between residents in long-term care facilities. No cases associated with vaccination of HCWs have been documented. As a safeguard, precautions should be taken for all HCWs that develop a rash after vaccination. These individuals should avoid contact with anyone without evidence of immunity who may be at risk for severe disease and complications until all lesions resolve (i.e., crusted over or faded away), or no new lesions appear within a 24-hour period - whichever is longer.

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