

Questions from the Field: December 2, 2009

Pregnancy:

- Q1. Since some miscarriages and terminations occur quite late in pregnancy, are women who have had a miscarriage or a termination at risk of serious outcomes from pH1N1 to the same degree as pregnant women who have recently delivered?
- Q2. Is it necessary to screen for pregnancy in women of childbearing age?

Eligibility:

- Q3. Can non-residents of BC get the vaccine (just generally, not related to high risk category)? If so, is there a cost? Is there this type of screening at the Immunizer level?
- Q4. We have a number of seniors who are headed to the USA within the next few days for the winter and are requesting the seasonal and pH1N1 vaccine. What is recommendation for these individuals?

Vaccine administration:

Children:

- Q5. What is the rationale for using the same vaccine for both doses in children less than 3 years old, or children with a high risk medical condition 3-9 years old?
- Q6. If a child requiring a two dose series of adjuvanted vaccine (children less than 3 years old, or children with a high risk medical condition 3-9 years old) received a 0.5ml dose of the pH1N1 adjuvanted vaccine accidentally at the first health encounter instead of a 0.25ml dose, will they still need a second dose?
- Q7. Can the vastus lateralis be used as a site for administration of pH1N1?
- Q8. Children are being immunized for influenza at mass clinics and receiving routine immunizations at Child Health Clinics at Health Units on different days or the same day. What approach should be taken? If a child has already received a seasonal influenza immunization in one deltoid, and a pH1N1 immunization in their other deltoid when can immunization with scheduled childhood vaccines be completed at the deltoid sites?
- Q9. Some children are eligible for 6 injections at one immunization visit. Should some vaccines be deferred in order to keep one thigh site free from immunization in case the child has an anaphylactic reaction?

Q10. If an individual has received IM vaccine injections in both thighs and both arms and has an anaphylactic reaction, where should the epinephrine be administered?

Q11. If there is no way of knowing which vaccine a child received for their first dose of pH1N1 vaccine, which product should be used for dose two? Is adjuvanted always 'better' because it's more immunogenic?

Q12. Will giving a medication like Tylenol (acetaminophen) reduce the efficacy of the pH1N1 vaccine in children?

Adults:

Q13. What is the recommendation when giving pH1N1 and seasonal flu at the same time if only one limb is available for immunization (i.e. post mastectomy)? Is there a specific time frame you would recommend before using the same limb for seasonal influenza?

Vaccine Handling:

Q14. Do the Arepanrix pH1N1 vaccine components need to be brought to room temperature before mixing and administration?

Q15. How long is the mixed pH1N1 adjuvanted vaccine stable once drawn up in a syringe?

Q16. Why are needle sizes larger than 20 gauge NOT to be used in drawing up the adjuvant or injecting it into the antigen vial?

Q17. If particulate matter is seen in the vaccine vial, should the immunizer continue to use vaccine from that vial?

Q18. How can the chance of coring the rubber stopper when using a 20 or 21 gauge needle to draw up the adjuvant be reduced?

Vaccine safety:

Q19. Since the squalene in the AS03 adjuvant is extracted from shark liver oil how do we reassure clients that the vaccine is safe for people with allergies to fish, fish protein or fish oil?

Q20. Are there any theoretical risks associated with using adjuvanted vaccine for children, are there any ongoing clinical trials, studies or programs?

Q21. Should persons with autoimmune disorders like rheumatoid arthritis receive the adjuvanted pH1N1 vaccine?

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General:

Q22. Are the recommendations for assessment and treatment for a person vaccinated with pH1N1 vaccine who develops flu-like symptoms after vaccination any different than for an unvaccinated person?

Q23. An issue that keeps coming up over and over is the "Canadian Effect". We have two instances already where clients have been refused seasonal flu until they can get pH1N1 vaccine. What is the current guidance?

Pregnancy:

Q1. Since some miscarriages and terminations occur quite late in pregnancy, are women who have had a miscarriage or a termination at risk of serious outcomes from pH1N1 to the same degree as pregnant women who have recently delivered?

A. A woman who has a termination or miscarriage in the first half of pregnancy should not be considered at elevated risk of complications from pH1N1 influenza due to the pregnancy or its termination. A woman who has a miscarriage or stillbirth in the second half of pregnancy is deemed to be at increased risk of complications from pH1N1 for up to 4 weeks after the end of pregnancy. Women who are no longer pregnant can be offered the adjuvanted vaccine.

Q2. Is it necessary to screen for pregnancy in women of childbearing age?

A. No. The recommendation for preferential use of non-adjuvanted vaccine during pregnancy was made because of theoretical safety considerations due to lack of safety data on human use of the adjuvanted vaccine. The Canadian guidelines have taken a cautionary approach in recommending unadjuvanted in preference to adjuvanted vaccine for women under 20 weeks pregnant. However, women not presenting as pregnant to the immunizer may be immunized with either vaccine. The World Health Organization has stated that adjuvanted vaccine is acceptable for use in pregnancy. Screening for pregnancy in women of childbearing age is not required.

Eligibility:

Q3. Can non-residents of BC get influenza vaccines (just generally, not related to high risk category)? If so, is there a cost? Is there this type of screening at the immunizer level?

A. It is not necessary to request proof of address of people presenting at mass clinics. The BC Care Card can be used as a reference to get the correct name spelling and birth date. People who are not permanent residents of BC but who are students or in longer term employment, including migrant workers, or others visiting for prolonged periods of time (e.g., 3+ weeks) may be immunized.

Q4. We have a number of seniors who are headed to the USA for the winter and are requesting the seasonal and pH1N1 vaccine. What is recommended for these individuals?

A. They should be given both pH1N1 and seasonal vaccine prior to departure.

Vaccine administration:

Children:

Q5. What is the rationale for using the same vaccine for both doses in children less than 3 years old, or children with a high risk medical condition 3-9 years old?

A. Since there are no studies demonstrating interchangeability of adjuvanted and non-adjuvanted vaccine, it is most prudent practice to administer 2 doses of the same product. If a child of this age received unadjuvanted vaccine in error for the first dose, however, and is age or risk factor eligible for a second dose, the second dose should be given with adjuvanted vaccine, which is likely to be more immunogenic in this age group.

Q6. If a child requiring a two dose series of adjuvanted vaccine (children less than 3 years old, or children with a high risk medical condition 3-9 years old) received a 0.5ml dose of the pH1N1 adjuvanted vaccine accidentally instead of a 0.25ml dose, will they still need a second dose?

A. If a child received a 0.5 ml adult dose of pH1N1 adjuvanted vaccine and that child is under 3 years old, or aged 3-9 with high risk medical conditions, they should receive a second 0.25 ml dose of adjuvanted vaccine at least 21 days later unless recommendations for a second dose change.

Q7. Can the vastus lateralis be used as a site for administration of pH1N1?

A. Yes, it may be used if multiple vaccines are being given (i.e., routine childhood immunizations). However, it is recommended that adjuvanted pH1N1 vaccine preferentially be given in the deltoid in children over one year. This is due to concerns about local reactions impacting a child's walking and the potential for swollen lymph nodes in the groin area following vaccine receipt.

Q8. Children are being immunized for influenza at mass clinics and receiving routine immunizations at Child Health Clinics at Health Units on different days or the same day. What approach should be taken? If a child has already received a seasonal influenza immunization in one deltoid, and a pH1N1 immunization in their other deltoid when can immunization with scheduled childhood vaccines be completed at the deltoid sites (or vice versa)?

A. As influenza, meningococcal C conjugate, and pneumococcal vaccines are inactivated, there are no timing considerations and the vaccines may be given at the same visit or may be given separated by any interval. Vaccine injection sites can be used for the co-administration of more vaccines than is routinely done. Assess the size of the deltoid muscle and, if deemed adequate, inject into a

different site apart from the usual site at the center of the deltoid. Try to separate the injection sites by at least 2.5 cm. If the client is assessed not to have adequate deltoid muscle mass, defer the immunization for a few days, or longer if needed to allow for an injection site reaction to abate. The anterolateral thigh has a larger muscle mass than the deltoid, so immunization on the same day with multiple injections may be more feasible. If deferring for several days, use the principles listed on page 7 of the Immunization Chapter Section IV "Vaccine Administration" before providing subsequent vaccine doses (e.g., palpate for tenderness prior to injection).

Q9. Some children are eligible for 6 injections at one immunization visit. Should some vaccines be deferred in order to keep one thigh site free from immunization for provision of epinephrine in case the child has an anaphylactic reaction?

A. It is best practice to offer every vaccine for which the child is eligible at every immunization encounter. It is not necessary to keep a thigh site free from immunization in case the child has an anaphylactic reaction as anaphylaxis is rare. Should anaphylaxis occur, other sites of injection can be used for the epinephrine; see below.

Q10. If an individual has received IM vaccine injections in both thighs and both arms and has an anaphylactic reaction, where should the epinephrine be administered?

A. Administer the epinephrine by the SC route into the upper outer triceps area of the individual's arm. This applies to an individual of any age. This recommendation will be added to the Immunization Chapter of the Communicable Disease Control Manual.

Q11. If there is no way of knowing which vaccine a child received for their first dose of pH1N1 vaccine, which product should be used for dose two? Is adjuvanted always 'better' because it's more immunogenic?

A. Yes. This is the preferred product for children under 10 years old. If the parent has no record but insists on the child receiving unadjuvanted vaccine and will not proceed with immunization if adjuvanted is the only vaccine offered, this is the only circumstance under which unadjuvanted vaccine should be administered to a child under 10

Q12. Will giving a medication like Tylenol (acetaminophen) reduce the efficacy of the pH1N1 vaccine in children?

A. No. While a study was published recently demonstrating a reduction in vaccine effectiveness of some childhood vaccines if Tylenol was routinely given before all immunizations, it cannot be generalized to current influenza immunization practice in British Columbia for two reasons. First, this study did not involve influenza vaccine. Second, current guidelines recommend giving

acetaminophen only if a child develops side effects such as fever or pain post-immunization.

Adults:

Q13. What is the recommendation when giving pH1N1 and seasonal flu at the same time if only one limb is available for immunization (i.e. post mastectomy)? Is there a specific time frame you would recommend before using the same limb for seasonal influenza?

A. The recommendation to administer the adjuvanted pH1N1 vaccine alone in a separate limb is due to the increased reactogenicity (not immunogenicity). It would be best to administer the two vaccines in the one available limb and not risk a missed opportunity for immunization with the seasonal influenza vaccine.

Vaccine Handling:

Q14. Do the Arepanrix pH1N1 vaccine components need to be brought to room temperature before mixing and administration?

A. The recommendation for bringing the vaccine to room temperature is based on patient comfort, not on mixing or any other vaccine performance parameter (such as immunogenicity).

Q15. How long is the mixed pH1N1 adjuvanted vaccine stable once drawn up in a syringe?

A. There are no data on this available from the manufacturer. Due to the lack of data the recommendation is to draw up vaccine as clients' present to each immunizer, rather than pre-drawing doses. Pre-loading syringes is also discouraged because of the risk of contamination, increased potential for administration errors, and biological product wastage. If the decision is made to draw up multiple doses of a biological product for programmatic reasons, such as a mass immunization clinic, follow the guidelines in the Immunization Chapter Section IV Vaccine Administration. Factors that mitigate the inconvenience of not pre-drawing are that mixed vaccine can continue to be withdrawn from the vial for 24 hours after mixing, and the vaccine is stable at room temperature for up to 24 hours.

Q16. Why are needles larger than a 20 gauge NOT to be used in drawing up the adjuvant or injecting it into the antigen vial?

A. Needles must not be larger than 20 gauge because these could core the rubber stopper, leading to rubber falling into the vaccine in the vial. Needles finer than 20G may be used, for example 21 or 23 gauge needles, but it will take more time and strength to pull up the adjuvant.

Q17. If particulate matter is seen in the vaccine vial, should the immunizer continue to use vaccine from that vial?

A. If there are grey flecks seen in the vaccine vial after mixing, and these disappear with shaking of the contents, use the vaccine normally. If the particulate matter does not dissipate with shaking, and appears to be rubber core, do not use the vials; return these to BCCDC pharmacy.

Q18. How can the chance of coring the rubber stopper be reduced when using a 20 or 21 gauge needle to draw up the adjuvant?

A. A recommended technique of needle insertion into a medication vial that reduces the risk of coring is inserting the needle at a 45–60° angle with the opening of the needle tip facing up (i.e., away from the stopper). Apply a small amount of pressure, gradually increasing it as the needle enters the vial. The needle should be at a 90° angle just as the needle bevel passes through the stopper.

Vaccine safety:

Q19. Since the squalene in the AS03 adjuvant is extracted from shark liver oil, how do we reassure clients that the vaccine is safe for people with allergies to fish, fish protein or fish oil?

A. There is no concern that shark derived squalene could cause an allergic reaction in people with fish allergies. The squalene is highly purified through three successive distillation steps during which the squalene is heated to more than 120°C. This process would eliminate any fish proteins that might cause a reaction. Furthermore, squalene itself is naturally occurring in the human body.

Q20. Are there any theoretical risks associated with using adjuvanted vaccine for children? Are there any ongoing clinical trials, studies or programs?

A. Clinical trials have been conducted in children aged 3-9 years using AS03 avian A/H5N1 vaccine. Local and systemic reactions were increased compared to non-adjuvanted vaccine but were predominantly mild and of short duration (resolving in 1-2 days). During the 180 day follow-up, no serious adverse events were causally attributed to the vaccine. Similar reactogenicity was observed in children as in adults 18 years of age and over (mostly 18-60 years of age but also included adults over 60 years). No serious adverse events were causally attributed to the vaccine in these subjects. Studies of children with A/H1N1 vaccine are ongoing and include children aged 6-35 months old.

Q21: Should persons with autoimmune disorders like rheumatoid arthritis receive the adjuvanted pH1N1 vaccine?

A: The adjuvant acts by producing a local inflammatory reaction which enhances the body's immune response to the vaccine. Studies on the use of adjuvant with influenza vaccine show that it has no effect when given in the opposite arm to the

vaccine, consistent with its local rather than systemic action (unpublished data). The widespread use in Europe of another oil-in-water adjuvanted seasonal influenza vaccine (Fluad™) has not shown the induction of autoimmune disease.

Vaccine preventable infections have been shown to cause increased severity of defined autoimmune diseases. The risk of developing or exacerbating an autoimmune disease is higher after actual infection than vaccination. Moreover, studies of autoimmune populations following seasonal influenza vaccination do not support a link between vaccination and increases in adverse clinical outcomes of underlying autoimmune conditions. Although a link between squalene and development of arthritis in inbred arthritis prone rat strains has been reported, the use of adjuvanted seasonal vaccine in humans has not revealed an increase in the incidence of arthritis. Adjuvanted vaccines result in improved responses to vaccination compared to unadjuvanted vaccines, which is an important consideration for those taking immunosuppressive drugs for autoimmunity. Thus while it remains a theoretical risk that vaccination with an adjuvanted vaccine could exacerbate autoimmunity, the benefits of vaccination far outweigh any theoretical risks.

General:

Q22. Are the recommendations for assessment and treatment for a person vaccinated with pH1N1 vaccine who develops flu-like symptoms after vaccination any different than for an unvaccinated person?

A. No. No vaccine is 100% effective, and it is expected that there will be some cases of vaccine failure. A person with influenza-like illness should be managed by their health care provider according to their chronic condition status and the severity of their symptoms. Such management may include testing for influenza and antiviral treatment.

Q23. An issue that keeps coming up over and over is the “Canadian Effect”. We have two instances already where clients have been refused seasonal flu until they can get pH1N1 vaccine. What is the current guidance?

A. The research demonstrating elevated risk of A/H1N1 infection in recipients of seasonal influenza vaccine in prior seasons is still pending publication. In the meantime, the recommendations issued by Dr. Perry Kendall in BC on September 28th are unchanged. Those under 65 years of age should receive pH1N1 vaccine prior to or at the same time as receiving seasonal influenza vaccine, if they are eligible for seasonal influenza vaccine. Seniors may be immunized without regard to the order of the vaccines and may receive both vaccines at the same time.