1. **What would be the MMR dosing schedule for an infant under 1 year traveling to a country with a high measles risk? How young can we start the vaccine?**
   - MMR can be given to an infant ≥ 6 months for travel for measles protection. This would not be deemed a valid dose due to interference with maternal antibodies. When the infant returns, he/she will require their 12 month old dose of MMR as well as their second dose (i.e. minimum of 2 doses after 1st birthday).

2. **Under what circumstances would post-vaccination serology be indicated (i.e. healthcare workers and varicella)?**
   - If healthcare providers have no documented records, proceed to vaccinate.
   - Serology is not routinely recommended but may be required by some workplaces.

3. **Are booster doses recommended when serology indicates no immunity?**
   - **Hepatitis B:** Even if serology indicates no immunity, the client may still be protected. Refer to Canadian Immunization Guide: Part Four: [Hepatitis B Chapter](#); specifically ‘Booster doses and re-immunization section. The patient may be a non-responder.
   - **Rubella:** Some individuals may never respond to the vaccine, but they may still be protected. Re-immunization and serology after the recommended series is not necessary or recommended (Canadian Immunization Guide: Part Four: [Rubella Chapter](#)).

4. **We are often asked by college students to demonstrate immunity through titers (MMR, Varicella) even though I have documentation of providing these vaccines in their chart. Is this not a waste of valuable OHIP money?**
   - There is a need to educate universities, as 30,000 [possibly unnecessary] serological blood tests are done per year by Public Health Ontario Laboratories. It is important for patients to document the vaccines they have had in the past. However, we also have to consider that these students have a deadline to provide their results to be able to attend their program and until changes are made to the university/college program requirements, we should fulfil their request. There is work to be done with universities and colleges.

5. **What should be done in regards to live vaccine in immunocompromised individuals that are undergoing chemotherapy?**
   - Wherever possible, these patients should be vaccinated prior to beginning chemotherapy. In situations where immunosuppression is temporary, live vaccines should be given 8-12 weeks after treatment. For prolonged treatment, live vaccines should be given prior to treatment.
6. **When someone receives live vaccine, do they have to avoid immunosuppressed individuals?**
   - There is a concern with the oral Polio vaccine (OPV), which is no longer given in Canada but is still used in other countries.
   - Canadian Immunization Guide: Part Three: [Immunization of Immunocompromised Individuals](#) provides recommendations on administering vaccines to close contacts of immunocompromised individuals.

7. **Is there a good explanation for the increased incidence of mumps?**
   - There is one cohort of children (known as the sandwich generation) that has only received one dose of the mumps vaccine and does not have natural immunity.
   - The mumps portion of the MMR vaccine does not work as well as the measles or rubella components.
   - In the recent outbreaks, most cases were vaccinated with two doses of MMR. This is an example of waning immunity after 2 doses of MMR. It is important to note that immunized cases demonstrated less severity of disease.

8. **Why is there so much pertussis?**
   - We don’t fully understand pertussis; for example, while pertussis outbreaks occurred in New Brunswick none developed in Nova Scotia.
   - The acellular pertussis vaccine used in Canada does not work as well as the whole cell pertussis vaccine. Whole cell vaccine has better protection but more side effects (local & systemic). Many countries in the world still use the whole cell vaccine (70%).
   - “Cocooning” (vaccinating all people who will care for a newborn) is a method used in the USA, as per the ACIP recommendations. NACI is considering recommendations.
   - All health care workers should receive the pertussis vaccine.
   - There is still a need for a better vaccine.

9. **When someone presents with chickenpox, should the caretaker be vaccinated post-exposure if they were never immunized and never had the disease?**
   - It would be important to consider when the caretaker was exposed to the case specifically making note if they were exposed during the infectious period. If they were exposed within the infectious period, there is a window period post exposure where the caretaker can be vaccinated. Refer to the Canadian Immunization Guide: Part Four: Chickenpox Chapter; specifically [post exposure prophylaxis](#).

10. **Tdap is publicly funded for people aged 19-64 years old, what about people over 65?**
    - The Tdap vaccine is safe to administer to individuals over the age of 65; however it is not publicly funded.

11. **Could you comment on the article that was published in the National Post regarding giving MMR at 15 months instead of at 12 months?**
    - The article refers to the Quebec measles outbreak where vaccine coverage for measles was low. Study findings demonstrated greater vaccine failure in the children vaccinated at 12 months vs. 15 months. Keep in mind that this is observational data from 1 outbreak, therefore insufficient evidence to change practice.
• We should continue to follow the publically funded schedule and give MMR at 12 months of age.

12. Given the change in the MMR schedule from 12 months and 18 months to 12 months and 4-6 years of age; if a child had 2 MMR doses at 12 and 18 months, do they need another MMR dose at 4-6 years?
• The child will not require any other doses of MMR, however will require the monovalent varicella vaccine.

The following questions were not addressed during the Question & Answer portion of the Immunization CME event. These questions have been answered by Peel Public Health.

Gardasil

13. Can other vaccines such as live and inactivated vaccines be given at the same time as Gardasil?
• HPV vaccine may be administered concomitantly with other age-appropriate vaccines at different injection sites using separate needles and syringes.

Hepatitis A and B

14. Hep A/B indication for repeat transfusion: what is considered a repeat transfusion? Would an anemic person that had 2 transfusions in their life need HepA/B? If yes, is it covered by OHIP?
• Individuals with diseases which require frequent receipt of blood products, (e.g. hemophilia) are eligible to receive 2nd and 3rd doses of Hep B only. Physicians must fill out a Hep B requisition form and submit to PPH.
• High Risk Criteria is referenced from the Ontario Publicly Funded Schedule: August 2011
• Refer to the Canadian Immunization Guide: Part Three: Immunization of Persons with Chronic Conditions: Asplenia or Hyposplenia and Hepatitis A and B Vaccines sections of this chapter.

15. Why wait for Hep B vaccine to be given in school age?
• Decisions regarding public funding and vaccine schedules are made by MOHLTC.
• Children at high risk should be vaccinated as soon as the risk is identified. High risk indications are listed in the Canadian Immunization Guide: Part Four: Hepatitis B: Table One. High Risk indications where the vaccine would be covered are outlined in the Ontario Publicly Funded Schedule; all other situations would not be publicly covered.
Influenza

16. Comment on the indication and contraindication of Flumist vaccine.  
   NACI Recommendations for Flumist®:  

   Indicated for:
   - Healthy children 2-17 years of age
   - Children 24 months and older with stable, non-severe asthma
   - Can be used in children with chronic health conditions (excluding immune compromising conditions and severe asthma)
   - Healthy adults 18 to 59 years of age

   Contraindicated for:
   - Egg-allergic individuals
   - Children and adults with immune compromising conditions
   - Children with severe asthma (as defined as currently on oral or high dose inhaled glucocorticosteroids or active wheezing)
   - Children with medically attended wheezing in the 7 days prior to vaccination

   Insufficient evidence for use in:
   - Adults with chronic health conditions

   FluMist® is NOT publicly funded.

MMR

17. In MMR non-immune individuals, should we give one injection and then check serology in 2 months or should we give 2 injections one month apart?
   - Give 2 injections one month apart

18. What happens if MMR is given before 12 months by one day?
   - The Canadian Immunization Guide: Part Four: Measles Chapter: Recommendations for Use states: “MMR vaccine may be given as early as 6 months of age; however, two additional doses of measles-containing vaccine must be administered after the child is 12 months old.” In this situation, the child would receive 3 doses of MMR.
   - The Ministry’s provincial immunization record screening system does not recognize any MMR dose given before 12 months of age. During annual immunization school screening processes, parents will receive a letter stating their child needs an MMR if their child had the MMR dose given before the first birthday.

MMRV

19. When will MMRV be available?
   - The shortage of MMRV in Ontario is still in effect. Physicians must call in to order this vaccine as it is being distributed under controlled circumstances.
**Pneumococcal**

20. When should a booster of Pneumovax 23 [PPSV 23] be given?
   - Booster doses are not recommended for healthy individuals who have received one routine dose of PPSV 23 at age 65.
   - For individuals younger than 65 years who are at high risk for pneumococcal disease, one booster dose of PPSV23 is recommended 5 years after the first dose of PPSV23. Individuals at high risk for pneumococcal disease are listed in the Canadian Immunization Guide: Part 4: Pneumococcal Chapter (Table 2).
   - For spacing between initial dose and booster based on age of client, please see the Canadian Immunization Guide: Part Four: Pneumococcal Chapter: Booster Doses and Re-Immunization.
   - High Risk Eligibility criteria for publicly funded vaccine can be found in the Publicly Funded Schedule for Ontario.

21. If a patient has had Pneumovax 23, how long should they wait to have Prevnar 13?
   - PCV13 should be given first followed 8 weeks later by PPSV23. If PPSV23 is administered first, PCV13 may be administered after 1 year (Publicly Funded Schedule for Ontario).

22. Would you please clarify the pneumococcal vaccines we should be offering children including whether we should be offering Pneumovax to all children 2 years and over, single dose, in addition to Prevnar 13?
   - As per the Publicly Funded Immunization Schedule for Ontario, children should be receiving PCV13. Only high risk children >2yrs should be offered PPSV23. See Canadian Immunization Guide: Part 4: Pneumococcal Chapter.
   - Children at high risk of pneumococcal disease who were immunized with the PCV7 or PCV10 series should receive 1 dose PCV13.

23. Please clarify the order of Prevnar and Pneumovax in the 2 year old.
   - In healthy children under 2 years of age the pneumococcal vaccine recommended for immunization is PCV13.
   - However, children 2 years of age and older who meet specific high risk eligibility criteria (defined in the Publicly Funded Schedule for Ontario) are also eligible to receive one dose of PPSV23. This recommendation is also found in the Canadian Immunization Guide: Part Four: Pneumococcal Chapter: Recommendations for Use.
   - In these high risk cases, PPSV23 should be administered at least 8 weeks after PCV13.

24. If Pneumovax was given at age 65, can you give Prevnar, or boost with Pneumovax?
   - PCV13 may be administered a minimum interval of 1 year following PPSV23. A booster dose of PPSV23 is not routinely recommended for adults 65 years and older.
   - PCV13 is not publically funded for adults.

**Tdap**

25. When Adacel is given in pregnancy, can it be given in any trimester?
26. What is the latest age acellular pertussis can be given (even off-label)?
   - There is no upper age limit to administer acellular pertussis, however Tdap is publicly funded up to 64 years of age.

27. Is the pertussis vaccination recommended in pregnancy? Is it publicly funded?
   - Refer to Canadian Immunization Guide: Part Three: Immunization in Pregnancy and Breastfeeding

Varicella

28. If an individual had the varicella vaccine prior to 2004, do they need a second dose?
   - As per the Publicly Funded Schedule for Ontario, all individuals born on or after January 1, 2000 are eligible to receive a 2nd dose (or 2 doses) of varicella publicly funded. It is recommended that all individuals receive 2 doses.

29. Is the Varicella vaccine funded in adults post-partum that are non-immune?
   - As per the Publicly Funded Schedule for Ontario, the varicella vaccine is only publicly funded for individuals born on or after January 1, 2000.

30. If an infant acquires chickenpox at 2 months from an exposure to a shingles patient, should they still get Varivax; one or two doses?
   - Varicella disease occurring before 12 months of age has been associated with an increased risk of a second episode of varicella. Routine immunization guidelines for varicella vaccination should therefore be followed in children with a history of varicella disease occurring before 12 months of age. This includes two doses of varicella-containing vaccine after 12 months of age.

31. Up to what age is Varicella funded?
   - Anyone born on or after January 1, 2000 is eligible for the second dose of varicella vaccine.

Zostavax

32. Can the shingles vaccines be given before 65 years of age?
   - Recommended for persons without contraindications 60 years of age and older and may be used in adults aged 50 years and older.

33. Is there any potential for provincial coverage of Zostavax?
   - MOHLTC makes the decisions regarding which vaccines are publicly funded in Ontario.

Other

34. Intervals between live vaccines
   - If not given during the same visit as other live virus vaccines, administration of two live vaccines should generally be separated by at least 4 weeks. Some exceptions apply for certain vaccines. See table below for interval between MMR, Varicella and MMRV scenarios.
35. What response can you provide to patients who believe that vaccination predisposes to auto-immune conditions?


36. Are there any contraindications in providing vaccines to patients with MS?

- The Canadian Immunization Guide: Part Three: *Immunization of Persons with Chronic Conditions* states: those with “pre-existing neurological disorders should receive all routinely recommended immunizations without delay.”
- The product monographs for vaccines in question may be consulted for further information on specific contraindications.

37. A mother says she will not put ‘disease and chemical poisons’ in her child’s body before one year of age. What can be said to convince her not to delay vaccines?

- Vaccines in Canada are effective and safe. Vaccines are constantly monitored and tested around the world and in Canada before they are approved for use. Canada has several systems in place to keep a watchful eye on any reports of unusual side effects following immunizations. The dangers of vaccine-preventable diseases are much greater than the risks of a serious reaction to a vaccine.
- Book entitled: Your Child’s Best Shot by Dr. Gold given out at Immunization CME event contains information to address this question. Postcard handed out with CME certificate also contains links to resources with this information such as [www.peelregion.ca/health/professionals/immunization.htm](http://www.peelregion.ca/health/professionals/immunization.htm)

38. What are your thoughts on giving half doses of vaccines to children whose parents are concerned about overwhelming the immune system?

- It is not appropriate to administer half doses as there is no evidence to support this practice.