

# Hutterite Influenza Prevention Study

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<b>Registration date</b> 16/09/2008	<b>Overall study status</b> Completed	<input type="checkbox"/> Protocol
<b>Last Edited</b> 25/02/2009	<b>Condition category</b> Infections and Infestations	<input type="checkbox"/> Statistical analysis plan
		<input type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data
		<input type="checkbox"/> Record updated in last year

**Plain English summary of protocol**  
Not provided at time of registration

## Contact information

**Type(s)**  
Scientific

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## Additional identifiers

**Protocol serial number**  
MCT- 88113

## Study information

**Scientific Title**  
Does vaccinating healthy Hutterite children against influenza prevent influenza in other Hutterite colony members? A cluster randomised controlled trial

**Acronym**  
HIPS

## **Study objectives**

Healthy children are felt to be an important source for community transmission of influenza. Immunising healthy school-aged children, who mount a robust immune response to the vaccine, has been proposed as one strategy to protect high risk individuals. By immunising children, spread of influenza is prevented and persons at high risk for complications are protected. Although observational data are supportive, a randomised controlled trial is needed to test whether such a strategy provides indirect benefit. Many challenges exist to carefully assessing the indirect benefit of influenza immunisation, including the feasibility of extensive laboratory testing in large clusters of high risk persons in towns and cities, the problem of repeated introduction of influenza in a community, and the uncertain uniformity and nature of interactions between healthy children and individuals at high risk for complications of influenza. Hutterites, along with the Mennonites, were founded as Protestant sects in the 16th century Anabaptist movement of Switzerland. The majority of Hutterites live in Alberta, Saskatchewan, and Manitoba where they practice communal farming on small colonies relatively isolated from towns and cities. Randomisation of these homogeneous, moderately sized colonies where regular influenza transmission is facilitated by a communal lifestyle, but where there is limited re-introduction of the virus because of isolation from the outside community, represents a unique opportunity to test the hypothesis of indirect benefit.

We hypothesise that if greater than or equal to 70% of healthy children in intervention colonies are immunised with inactivated vaccine, laboratory-confirmed influenza in other Hutterite colony members will be reduced. Specific objectives of the proposed cluster randomised trial are to assess whether high immunisation rates among healthy children in Hutterite colonies reduces laboratory-confirmed influenza in other colony members, high risk participants (including the elderly, individuals with chronic medical conditions, pregnant women, and young children), or healthy immunised children, as well as whether the intervention reduces the following among all participants:

1. Influenza-like illness
2. Antimicrobial prescriptions
3. Physician-diagnosed otitis media
4. School or work-related absenteeism
5. Physician visits for respiratory illness
6. Lower respiratory infection
7. Pneumonia
8. Hospitalisations
9. Death

## **Ethics approval required**

Old ethics approval format

## **Ethics approval(s)**

1. McMaster University, Health Sciences Research Ethics Board on the 20th May 2008 (ref: #:07-045)
2. University of Calgary, Office of Medical Bioethics Ethics on the 7th May 2008 (ref: 18970)
3. University of Saskatchewan, Biomedical Research Ethics Board on the 24th June 2008 (ref: 05-238)
4. University of Manitoba, Research Ethics Boards on the 2nd April 2008 (ref: B2007:097)

## **Study design**

A multi-centre, blinded, cluster randomised controlled trial

**Primary study design**

Interventional

**Study type(s)**

Treatment

**Health condition(s) or problem(s) studied**

Influenza

**Interventions**

Experimental arm:

Healthy children aged 36 months to 15 years in the intervention colonies will be immunised with inactivated influenza vaccine (VAXIGRIP vaccine). A 0.5 ml dose of the vaccine will be administered intramuscularly. Previously unvaccinated children who are less than 9 years of age at the time of immunisation will receive a second 0.5 ml dose of the influenza vaccine four weeks following the first vaccine as per influenza immunisation recommendations.

Control arm:

As a control group, healthy children aged 36 months to 15 years will be immunised with AVAXIM-Pediatric (hepatitis A vaccine) in a blinded manner such that the schedule of immunisation of influenza will be mimicked. That is, children previously unvaccinated for influenza who are less than 9 years of age in the comparison colonies will be immunised with AVAXIM-Pediatric. A 0.5 ml dose of the vaccine will be administered intramuscularly. The children will receive a second 0.5 ml injection of sterile saline 4 weeks following the first vaccine to maintain blinding for the second influenza vaccine dose. To complete the hepatitis immunisation schedule, children will receive a second 0.5 ml dose 12 months following the first vaccine. This will also serve to maintain the blinding for influenza vaccine in the second year. Children greater than or equal to 9 years will receive two doses of hepatitis A vaccine 12 months apart and in the third year will receive saline vaccine. These schedules ensure that children in the control arm of the study will be fully immunised for hepatitis A.

Principal Investigator:

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**Intervention Type**

Drug

**Phase**

Not Specified

**Drug/device/biological/vaccine name(s)**

Inactivated influenza vaccine (VAXIGRIP vaccine)

**Primary outcome(s)**

Laboratory-confirmed influenza infection among Hutterite colony members other than the healthy children immunised as part of the intervention. Laboratory-confirmed influenza will be confirmed on the basis of at least one of the following:

1. Detection of viral ribonucleic acid (RNA) on the basis of reverse transcriptase polymerase chain reaction (PCR)
2. Isolation of influenza virus from nasopharyngeal (NP) specimens or throat specimens
3. Greater than or equal to four-fold rise in serum antibodies to circulating influenza strain antigens

Serology will be taken at baseline and at the end of the flu season. NP swabs will be taken any time a participant reports two or more symptoms during in the surveillance period. Surveillance will start once there is two consecutive weeks of at least one positive flu in that health region.

### **Key secondary outcome(s)**

1. Influenza-like illness
2. Courses of antimicrobial prescriptions
3. Physician-diagnosed otitis media
4. School or work related absenteeism
5. Physician visits for respiratory illness
6. Lower respiratory infection or pneumonia
7. Hospitalisation for lower respiratory infection or pneumonia
8. All cause hospitalisations
9. Deaths due to lower respiratory infection or pneumonia
10. All-cause deaths

This information will be collected during the surveillance period when a participant reports two or more symptoms. The information will be collected on a respiratory information form by the nurse through interviewing the participants.

### **Completion date**

31/08/2011

## **Eligibility**

### **Key inclusion criteria**

There are two sets of participants in this trial:

1. Hutterites other than the healthy children who will be immunised. Although this category as a whole will be used to assess indirect benefit of the vaccine in the main analysis, Hutterites at high risk for influenza complications within this category will be assessed in a separate analysis.

These are defined as anyone in one or more of the following groups:

- 1.1. Individuals aged greater than or equal to 65 years
- 1.2. Pregnant women
- 1.3. Children 23 months of age or less
- 1.4. Anyone with greater than or equal to one of the following conditions severe enough to require regular medical follow-up or hospital care:
  - 1.4.1. Chronic cardiac or pulmonary disorders (including bronchopulmonary dysplasia, cystic fibrosis, and asthma)
  - 1.4.2. Diabetes mellitus and other metabolic diseases
  - 1.4.3. Cancer
  - 1.4.4. Immunodeficiency
  - 1.4.5. Immunosuppression (due to underlying disease and/or therapy)

1.4.6. Renal disease

1.4.7. Anaemia

1.4.8. Haemoglobinopathy

1.4.9. Any condition that can compromise respiratory function or the handling of respiratory secretions or that can increase the risk of aspiration

2. Healthy children aged 36 months to 15 years who will be immunised as part of the intervention

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Child

**Sex**

All

**Key exclusion criteria**

1. Hutterites other than the healthy children who will be immunised; there are no exclusion criteria for this category of participants

2. Healthy children aged 36 months to 15 years who will be immunised as part of the intervention:

2.1. Anaphylactic reaction to a previous dose of influenza vaccine

2.2. Anaphylactic reaction to hepatitis A vaccine

2.3. Anaphylactic reaction to neomycin

2.4. Known immunoglobulin E (IgE)-mediated hypersensitivity to eggs manifested as hives, swelling of the mouth and throat, difficulty in breathing, hypotension, or shock

2.5. Guillain-Barre syndrome within eight weeks of a previous influenza vaccine

**Date of first enrolment**

15/09/2008

**Date of final enrolment**

31/08/2011

**Locations**

**Countries of recruitment**

Canada

**Study participating centre**

1200 Main St. W

Hamilton, ON

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# Sponsor information

## Organisation

McMaster University (Canada)

## ROR

<https://ror.org/02fa3aq29>

# Funder(s)

## Funder type

Research organisation

## Funder Name

Canadian Institutes of Health Research (CIHR) (Canada) - <http://www.cihr-irsc.gc.ca> (ref: MCT-88113)

# Results and Publications

## Individual participant data (IPD) sharing plan

### IPD sharing plan summary

Not provided at time of registration