



# Influenza Vaccination in Chronically Ill Children: A Strategy to Improve Vaccination Coverage

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## Introduction

**Routine vaccination of children with chronic illnesses**, although important, is often **suboptimal**. The vaccination coverage reached is lower than in the general population even if this group is predisposed to more severe disease and complications (1).

The uptake of the **annual influenza vaccination** is particularly **problematic in this group** and strategies to improve coverage are needed (2).

As of October 2012, the province of Quebec recommended the preferential use of live-attenuated influenza vaccine (LAIV) for non-immunosuppressed children with chronic conditions (4) and **funded influenza vaccination clinics** in pediatric tertiary care hospitals.

## Objectives

1. To **evaluate** the implementation of an **influenza vaccination clinic** in a pediatric **tertiary care hospital**.
2. To **assess** differences in **preference** between **nasal live attenuated influenza vaccine** and **injectable** vaccine by the primary caregivers.

## Methods

Study population: children aged **6 months-18 years** suffering from an **illness or chronic condition**, as defined in the Protocole d'immunisation du Québec, attending their subspecialty clinic visit.

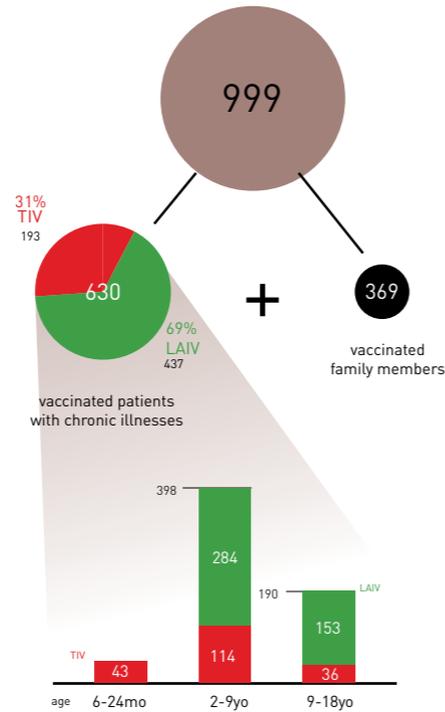
Vaccination clinic: located on same site as subspecialty clinics in a Montreal tertiary-care hospital; staffed with a nurse with expertise in vaccination; opened from 8:30-16:30 (weekdays) from Oct.15 – Dec.21 2012.

Both trivalent inactivated vaccine (TIV) and LAIV were offered without charge.

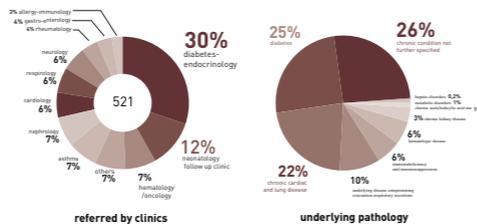
Upon vaccination, **parents** were asked to **fill** a pre-piloted **questionnaire**. Parents and patients siblings were also offered the influenza vaccine on site, if desired.

## Results

### 1. Population description



**Fig 1:** A total of 630 patients with chronic illnesses were vaccinated against influenza during the campaign; 437 (69%) with LAIV.



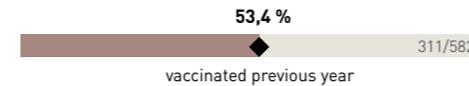
**Fig 2:** For 521 patients, the referring subspecialty clinic was known. During the study period a total of 7717 children were seen in the hospital by subspecialty clinics that follow patients with chronic conditions. 630 patients (8%) were vaccinated with the influenza vaccine on site.

## Results



**Fig 3:** Of the 600 participants for whom the information was available, 88 (14.6%) were considered immunocompromised.

### 2. Vaccination status



**Fig 4:** Of the 582 participants for whom the information was available, only 311 (53.4%) had been vaccinated against influenza in the previous year. Of 589 parents who answered, 110 (18.7%) said that their child only received their influenza vaccine because of its availability on site and that otherwise they would not have vaccinated their child.

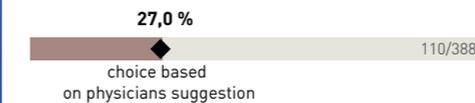
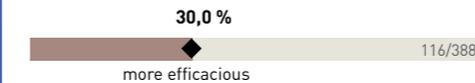
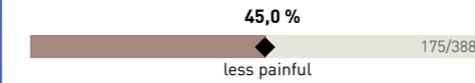
### Example of the questionnaire

## Results

### 3. LAIV vs TIV

LAIV has been recommended preferentially over TIV by the province of Quebec, for influenza vaccination for children aged 2-18 years with chronic conditions without immunosuppression and was publicly funded, given its higher relative efficacy compared to TIV.

88% (437/497) of patients eligible for LAIV received the LAIV.



**Fig 5:** Preference and reasoning behind preference given by the caregiver.

## Limitations

- Questionnaire is open to subjective impressions.
- Selected sample of patients: there is no information about the reason for visiting the subspecialty clinic: routine specialty check vs emergency visit for disease progression.
- No detailed information on underlying disease.

## Conclusion

- **Yearly influenza vaccination is recommended** for children with chronic illnesses.
- However, **vaccination is often not a priority** for their treating physicians and strategies to facilitate vaccination are necessary.
- Having an **influenza vaccination clinic on site** (where children are coming for their scheduled visits) for children and their families, is **well received** and **improves vaccination coverage**.
- The use of LAIV is preferred when indicated.

## Future research

- From October to December 2013 the vaccination clinic will re-open at the MCH hospital, with the financial support of the Quebec Ministry of Health.
- We will ask primary caregivers to fill a more complete questionnaire at the time of vaccination, aiming to better understand barriers to influenza vaccination.
- Investigate attitude of physicians towards influenza vaccination in vulnerable population and finding barriers that decrease vaccination coverage.

## References

1. Padolfi et al, Vaccine 2012
2. Daley et al. Arch Pediatr Adolesc Med. 2005
3. PIQ, Protocole d'immunisation du Québec, Edition May 2013
4. Use of Live-attenuated Influenza Virus Vaccine (LAIV), Flumist in children and adolescents aged 2-17 years of age with chronic conditions. Comité sur l'immunisation du Québec, 2012.

Funding: Quebec Ministry of Health.

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