

# Immunization Report – Public Health

## September 2013

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*Daycare, school entry and school program  
immunization enrollment rates, up to 2012*

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## **A Letter from the Chief Medical Officer of Health**

I am pleased to provide you with the New Brunswick Daycare, School Entry and School Program Immunization Report 2013. This report is a follow-up to the School Immunization Program Report, December 2009 and the Proof of Immunization for School Entry, April 2010.

Immunization is among public health's most successful and cost-effective interventions available and is a cornerstone of the healthcare system. New Brunswick laws and regulations require children to receive certain vaccines before they enter licensed daycares and/or schools. These immunization requirements play an important role in keeping children up-to-date with their immunization series. New Brunswick school-based immunization programs are also successful in reaching a high proportion of students and ensuring a high uptake. New Brunswick's immunization program strives to protect the public from illness, disability and death associated with vaccine-preventable, communicable diseases.

On behalf of the immunization team here in the Office of the Chief Medical Officer of Health (OCMOH), I would like to thank all our colleagues and partners who work together to increase awareness and educate parents, children and adults about the importance of immunization. Together, through education and promotion, children are kept up-to-date with their immunizations and many new immunization programs have been successfully implemented in New Brunswick.

## 1. Introduction

The purpose of this report is to provide a summary of daycare and school immunization program uptake statistics in New Brunswick. This report describes important trends over time, by Region and overall for New Brunswick for available immunization data on children attending daycare; children entering New Brunswick schools for the first time; and vaccine uptake of students during school-based immunization clinics (2005-2012). Coverage rates are important measures of the success of immunization programs, serving as indicators of the level of population-wide protection against vaccine-preventable diseases. Although this report does not provide coverage rates in part due to the lack of a provincial vaccine registry, it is an attempt to disseminate existing immunization data that will inform planning and program evaluation.

The New Brunswick Department of Health funds immunization programs against a wide range of vaccine preventable diseases. Publicly funded vaccines are provided through the routine childhood and adult schedules, targeted programs for high risk individuals and for communicable diseases follow-up.

These publicly funded vaccines are delivered through a network of immunization providers including physicians, pharmacists, nurse practitioners, and nurses working in various healthcare settings and private organizations. A key factor to the success of the immunization program in New Brunswick is the partnerships that have been developed with these health professionals and various partners in the schools, daycares, workplaces and private organizations. Public Health Regional Health Authorities work collaboratively with the Department of Education and Early Childhood Development to ensure compliance with the legislation and provide school-based immunization clinics. New Brunswick's immunization partners work together to increase vaccine coverage levels and deliver a quality immunization program.

## 2. Data Source

The data summarized in this report was collected from Regional Public Health through a provincial reporting system that contained aggregate-level regional data that included both the numerator and denominator (e.g. number of students enrolled in the grade or assessed at daycare). This data was collected to inform regional and provincial immunization policies and programs.

For additional details on the data elements, procedures or policies please see the New Brunswick Immunization Program Guide<sup>1</sup>.

### Daycare Proof of Immunization Data

- Data on "infants and pre-schoolers" (i.e. children up to 4 or 5 years of age ) who attend a licensed day care and meet requirements as per the *Public Health Act*, or did not and reasons why.
- The main indicator is an estimate of the percent of infants and pre-schoolers meeting immunization requirements during a calendar year in licensed daycares.
- During the first year of implementation in 2012, Regions collected data from each licensed daycare at two time points within the reporting period (6 months apart). These reports were submitted first in May 30 2012, and then in November 30, 2012.

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<sup>1</sup> [http://www2.gnb.ca/content/gnb/en/departments/ocmoh/for\\_healthprofessionals/cdc/NBImmunizationGuide.html](http://www2.gnb.ca/content/gnb/en/departments/ocmoh/for_healthprofessionals/cdc/NBImmunizationGuide.html)

- It is important to note that submission dates for daycares do not follow a school year calendar; that means that each submission reflects a different birth cohort. For instance, children entering school in 2012/13 would not be reflected in time 2 although they would have been in time 1.
- Note: Health Region 1 had implemented this program at a later time which resulted in data being available only for the second submission date (November 30, 2012).

### **School Entry Requirements Data**

- Data on children entering kindergarten (i.e. 4 or 5 years of age, but would be turning 5 by December 31, 2011) that meet requirements as per the *Public Health Act*, or did not and the reasons why.
- The main indicator is an estimate of these children entering school who met immunization requirements upon school entry.

### **School Immunization Data**

- Aggregated data with the number of children in a grade in which there is a specified Public Health School Program that have: been immunized with the complete doses required, incomplete immunization, no immunizations and the reasons why.
- The main indicator is the number of children in the specific grade that received a particular vaccine during the school year.

## **3. Limitations**

This report does not include immunization coverage<sup>2</sup> rates for specific vaccines, ages, and other categories. Immunization coverage statistics or the estimates would be based on accurate, complete and reasonably up-to-date immunization data from all providers for the population of interest (e.g. immunization registry).

It is expected that future work on assessing the feasibility of improving data and merging data that is owned by other stakeholders will take place in order to improve the ability to accurately estimate coverage statistics for the province. However, at this time, there are no such data sources that together can accurately estimate coverage rates in the province.

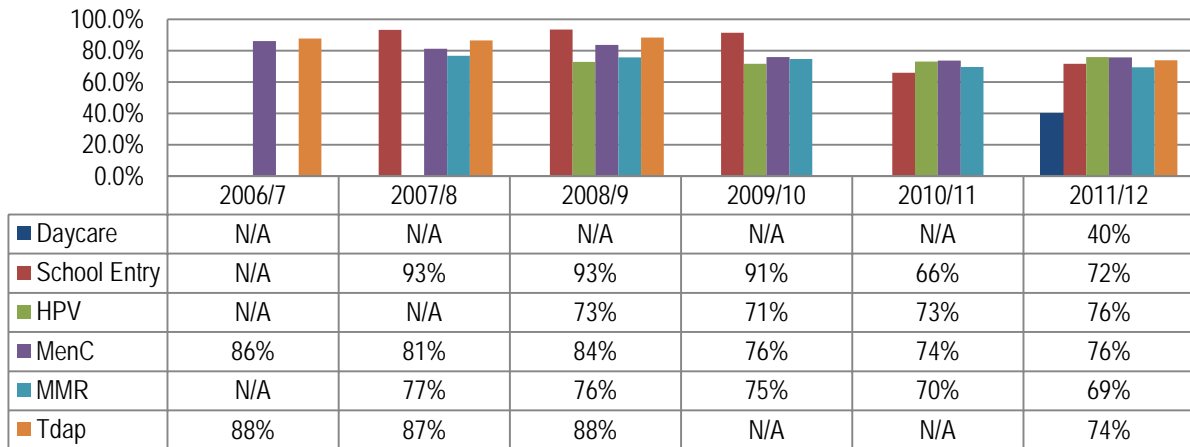
The data in this report summarizes the complete, and accurate data available for immunization- day care, school entry and school public health programs.

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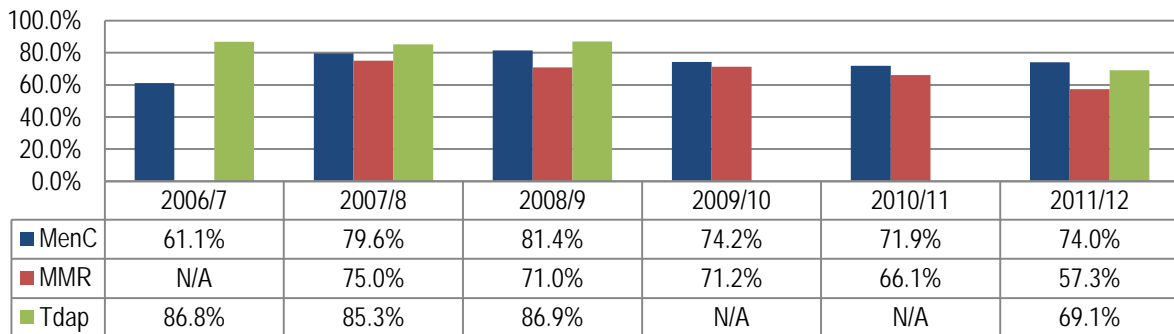
<sup>2</sup> HPV statistics are the only exception that can approximate coverage rate if population estimates are used for the denominator for age group of interest. The numerator is likely a very good estimate to the population true value as there is a solo immunizer type (Public Health) and all the records are entered in CSDS and summarized in the school spreadsheets.

#### 4. Overall Daycare, School Entry and School Data Summary

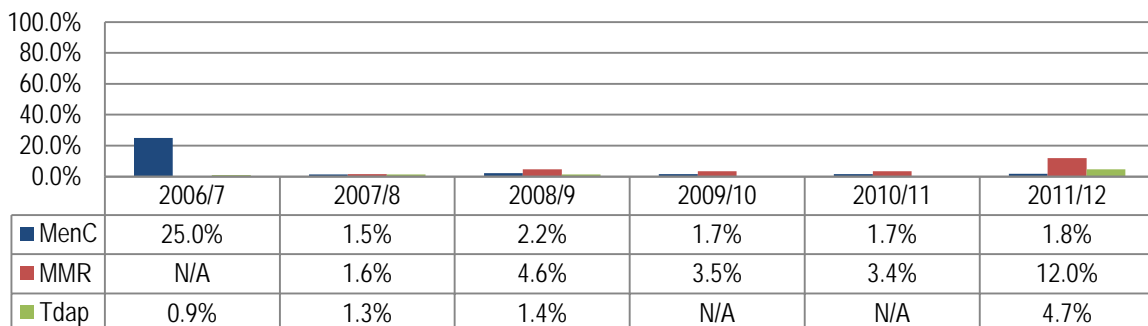
**Graph 1.** Percentage of children meeting immunization requirements for daycare attendance, school entry or immunized through various school immunization programs, New Brunswick, 2006-2012.



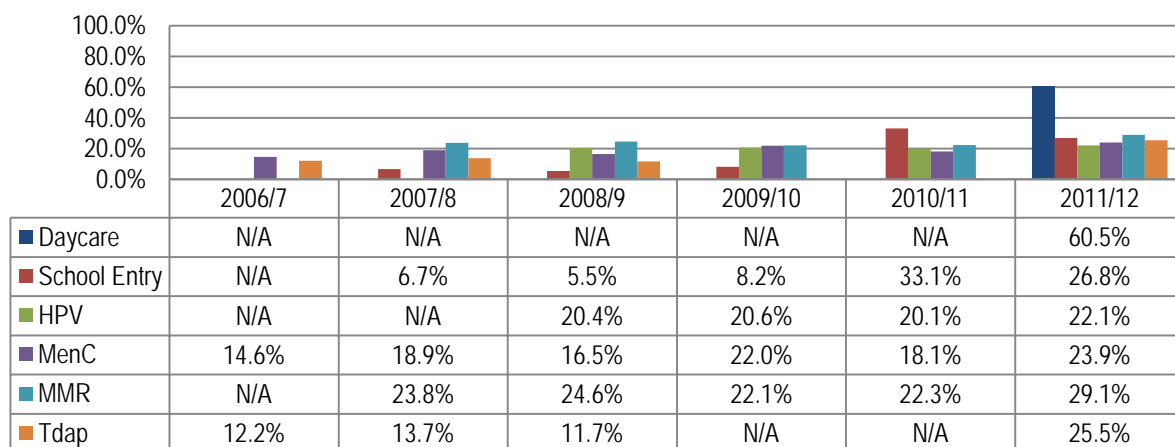
**Graph 2.** Percentage of students immunized by Public Health through various school immunization programs, New Brunswick, 2006-2012.



**Graph 3.** Percentage of students previously immunized by other vaccine providers (outside of the school immunization program), New Brunswick, 2006-2012.



**Graph 4.** Percentage of children not meeting immunization requirements for daycare attendance, school entry or not immunized through various school immunization programs, New Brunswick, 2006-2012.



## 5. Daycare - Proof of Immunization

### 5.1 Overview

In November 2009, the *Reporting and Diseases Regulation 2009-136*, under the *Public Health Act*, introduced a new requirement for children attending a licensed daycare. The legislation expanded the requirements for all children attending a licensed daycare to demonstrate proof of immunization against the following diseases: diphtheria, tetanus, polio, pertussis, measles, rubella, mumps, varicella, meningococcal infection, *Haemophilus influenzae* type B and pneumococcal infection. Under the legislation, children met requirements if they showed proof of immunization against all diseases cited in the Regulation, according to the New Brunswick Routine Immunization Schedule and to their age.

In 2011, the *Reporting and Diseases Regulation 2009-136* was communicated to the Department of Education and Early Childhood Development and daycare operators. Parents of children attending daycare were also informed of the immunization requirements. In early 2012, these regulations were implemented in most areas of the province through a collaborative approach between the Public Health Regional Health Authorities and the Department of Education and Early Childhood Development.

Daycare operators are responsible to ensure that children who attend the daycare center have proof of immunization against specific diseases or documented exemption or objection. Public Health Nurses verify compliance with the *Public Health Act regulations* and provide catch-up opportunities for all those children not meeting age-appropriate immunization requirements. During the first year of implementation in 2012, regions collected data from each licensed daycare at two time points within the reporting period (6 months apart). Data collection at each daycare served as a “snapshot” of the percent of children meeting requirements for each data collection time point during the calendar year.

## 5.2 Data Summary, 2012

Of the infants and preschoolers (i.e. children up to 4 or 5 years of age) attending a licensed daycare, an average of 39.8% did meet requirements either through immunization, exemption or parental/legal guardian objection. The majority that met requirements did so through immunization (94.7%), and the remainder did so through medical exemption or objections (5.3%). This means that most of these children had been given the correct number of applicable doses of immunization against the following diseases for their age: diphtheria, tetanus, polio, pertussis, measles, rubella, mumps, varicella, meningococcal, *Haemophilus influenza* type B and pneumococcal infection (Table 1).

In contrast, the majority did not meet requirements (60.5%). Of these children, most had information enabling them to be assessed (87.4%), and the remainder (12.6%) did not have appropriate information at the time of assessment. This means that these children attending daycare did not show proof of the correct number of applicable doses of immunization against the diseases listed above in the first year of implementation of regulations. However, there was some variation between submission #1 and #2 to make note of:

- There were a higher proportion of children that met requirements through immunization in data for submission #2.
- Some of this variation may be from implementation issues or natural fluctuation with having multiple time points for sampling. For example, children not meeting requirements at 1<sup>st</sup> time point may have received appropriate immunization and/or submitted documented proof, exemption or objection at 2<sup>nd</sup> time point.
- There may have also been bias introduced with having different sampling times corresponding to two different school years. Specifically, there may be higher immunization rates in the fall submission date than the spring for children entering school in the fall 2012. Children that were outstanding on some immunizations in the first submission time could have received these immunizations in order to comply with school entry requirements.
- For the first year of implementation, a high percentage of children attending a licensed daycare did not show proof of immunization against diseases as per legislation; however Public Health Nurses have been working with daycare staff and parents to make them aware of these new requirements. A higher proportion of children meeting requirements is expected in subsequent years.

In 2011/12:

- Limited years of data and variation with data across submission times make regional comparisons difficult.
- For the first year of implementation, regions with the highest to lowest proportion of children that met requirements through immunization are R6 (50.1%), R4 (47.1%), R7 (45%), R1 (41.6%), R5 (40.7%), R3 (31.9%), R2 (29%) (Graph 5).

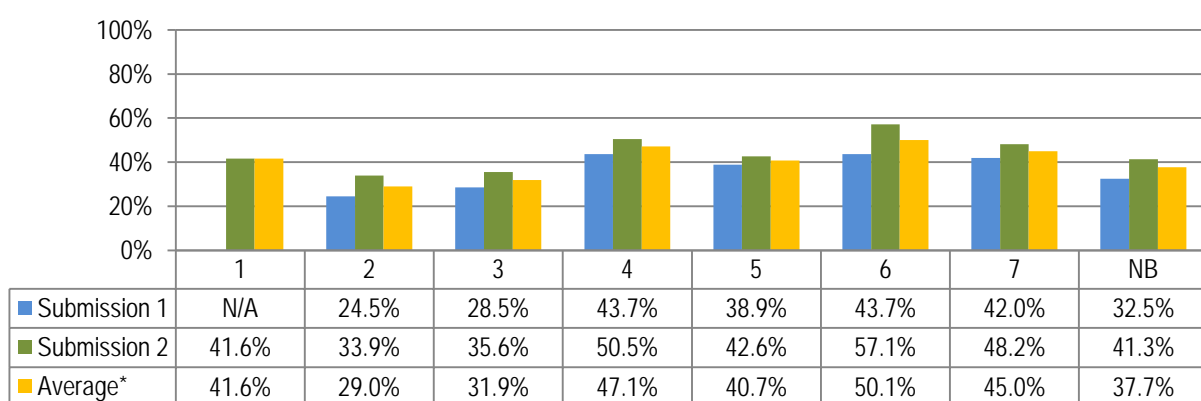


**Table 1.** Percentage of children meeting or not meeting immunization requirements for daycare attendance New Brunswick, 2012.

	Met Requirements			Not Met Requirements		
	Immunized	Exemptions or Parental/Guardian Objections	Total	Assessed	Not Assessed	Total
Submission 1	32.5%	0.1%	35.4%	56.6%	8.1%	64.6%
Submission 2	41.3%	0.1%	43.1%	49.2%	8.4%	57.6%
Average*	37.7%	0.1%	<b>39.8%</b>	52.9%	7.6%	<b>60.5%</b>

\*Except for R1, where data was available for 1 submission time.

**Graph 5.** Percentage of children meeting immunization requirements for daycare attendance, through immunization by Health Region, New Brunswick, 2012.



\*Except for R1, where data was available for 1 submission time.

## 6. School Entry - Proof of Immunization

### 6.1 Overview

Proof of immunization has been a requirement for children entering New Brunswick schools since 1982. Immunization requirements as outlined in the *Health Act, 1988* and *Education Act 1997*, included proof of immunization against vaccine preventable diseases: measles (1 dose), mumps, (1 dose), rubella (1 dose), diphtheria (3 doses), tetanus (3 doses); and poliomyelitis (3 doses).; or exemption due to medical reason or parental objection. Proof of immunization for school entry serves as a reminder for parents/legal guardians to ensure their children are up to date with their immunizations. Parents/legal guardians that do not wish to have their children immunized must provide signed documents attesting exemptions.

In November 2009, the *Reporting and Diseases Regulation 2009-136* under the *Public Health Act*, expanded the list of diseases for which proof of immunization is required to include most of the vaccines provided through the New Brunswick Routine Immunization Schedule (i.e. diphtheria, tetanus, polio, pertussis, measles, rubella, mumps, varicella and meningococcal). Under the legislation, children met requirements if they showed proof of immunization against all diseases cited in the Regulation, according to the New Brunswick Routine Immunization Schedule and to their age. In 2010, the *Reporting and Diseases Regulation 2009-136* was implemented in all areas of the province.

The Department of Education and Early Childhood Development works with Public Health Regional Health Authorities to ensure proof of immunization of all children entering New Brunswick schools for the first time. Although the proof of immunization is required for all children entering New Brunswick schools for the first time, only kindergarten statistics are submitted to the Office of the Chief Medical of Health yearly.

## 6.2 Data Summary, 2007/2008 - 2011/2012

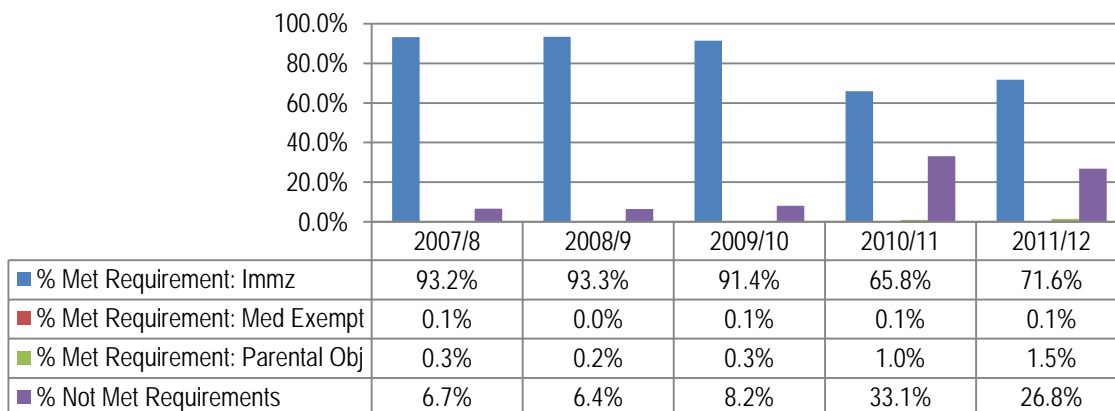
Over the past 5 years:

- On average, 83.8% of children entering school had met immunization requirements (range of 72% to 93%).
- Among the children that met requirements, the majority did so through immunization (98%), and the remainder did so through medical exemption or objections (2%).
- In 2010/11, there was sharp decrease in the proportion of children that met requirements through immunization, from 93% in 2007/8 to 66%. There was a slight improvement in the next school year to 72%; however, this was still well below the average in previous years.
- In 2010/11, Regions 1, 2 and 3 started experiencing substantial decreases in the percent of children meeting requirements through immunization. Regions 4, 5, 6 and 7 had minor decreases starting in 2010/11 but had over 90% of children meeting requirements through immunization.

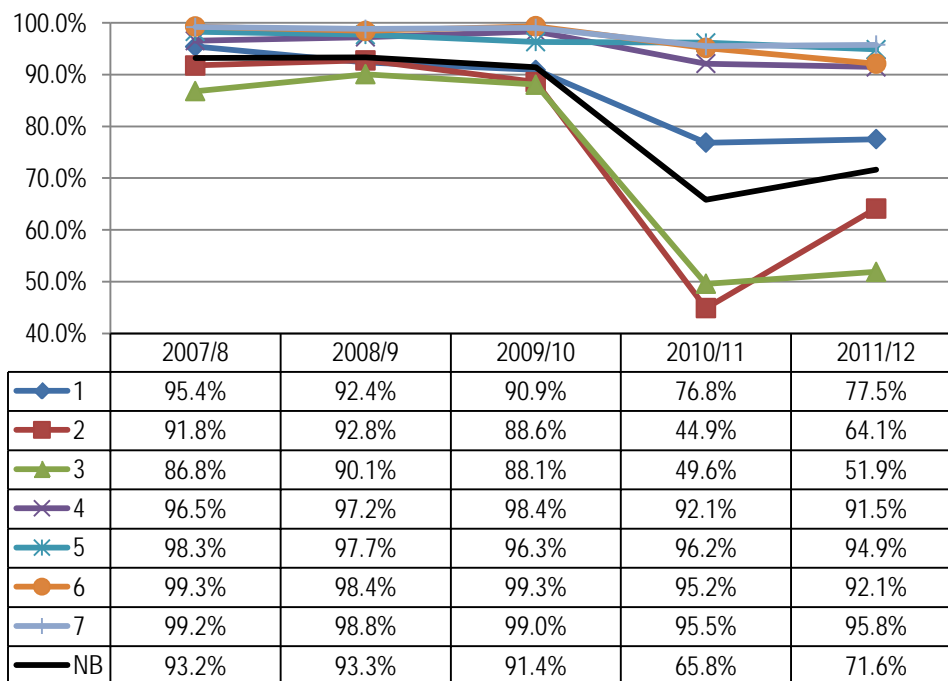
In 2011/12:

- Regions with the highest to lowest proportion that met requirements through immunization are R7 (95.8%), R5 (94.9%), R6 (92.1%), R4 (91.5%), R1 (77.5%), R2 (64.1%), R3 (51.9%). The proportion of children that 'met requirements' decreased after implementation of the *Reporting and Disease Regulation 2009-136* in 2010. Children were required to demonstrate proof of immunization against an expanded list of diseases according age.
- Prior to this new regulation, children met requirements for school entry if they received the following vaccines and corresponding doses: poliomyelitis (3); diphtheria (3); tetanus (3); measles (1); mumps (1) and rubella (1).
- The preschool booster moved from 4-6 years to age 4; many children did not meet requirements because they were missing the preschool booster.
- There was a minor but sustained trend in proportion of all children that met requirements through parental objection in Region 4 since 2009/10.

**Graph 6.** Percentage of students meeting requirements through immunization, or medical exemption, objections, or not meeting requirements, New Brunswick, 2007-2012.



**Graph 7.** Percentage of students meeting immunization requirements for school entry, through immunization, by Health Region, New Brunswick, 2007-2012.



## 7. School Immunization

### 7.1 Overview

School-based immunization programs are critical to improving the duration of protection against a number of childhood diseases as well as for providing protection against a number of new emerging infections (e.g.

human papillomavirus). Immunization in the school setting is more effective in obtaining higher coverage rates than would be achieved in other ways. Through collaboration with the Department of Education and Early Childhood Development, Public Health Nurses have successfully implemented many new school-based immunization programs throughout the province. Catch-up immunization programs have also enabled additional age groups to be immunized during these campaigns. Over the past decade, the school program targeted the following vaccine-preventable diseases:

#### Diphtheria, tetanus, pertussis:

- In 2004/05, a combined tetanus, diphtheria and acellular pertussis vaccine (Tdap) replaced the Td vaccine. The Tdap booster was moved from grade 11 to 9 with a catch-up program extended to students in grades 10 to 11.
- An increasing number of pertussis cases throughout New Brunswick since 2004, led to a 3 year catch-up immunization campaign for students in grade 6. During the period from 2006/07 to 2008/09, students in both grades 6 and 9 were offered Tdap vaccine. This was followed by a 3 year period where Tdap vaccination was not offered in the schools.
- In response to the 2012 New Brunswick pertussis outbreak, a school based-immunization campaign was initiated in the spring of 2012 (most affected Health Regions - 1 and 2) and fall (remaining Health Regions). Vaccination was offered to students in grades 6, 7, and 8 in the spring and grades 7, 8 and 9 in the fall. In the school year 2012-13, Tdap vaccine was re-introduced in the routine immunization schedule for students in grade 7.

#### Human papillomavirus-types 6, 11, 16 and 18:

- In 2008/09, New Brunswick introduced publicly funded HPV vaccine into the school immunization program for girls in Grade 7. The vaccine was also offered to girls in grade 8 (born in 1994) as part of a 1 year catch-up.

#### Meningococcal groups A, C, Y and W-135:

- In September 2004, a meningococcal C vaccine was introduced into the school immunization program for students in grade 9.
- As a result of an outbreak in the Moncton area in May 2005, a mass immunization campaign was implemented from May-June 2005 in Westmorland, Kent and Albert counties; 16,000 students in grades 5-12 and young adults up to 19 years of age were offered a meningococcal conjugate C vaccine (NeisVac C.)
- In 2005/06, the meningococcal conjugate C vaccine was offered to students in grades 10-12 in other areas of the province as part of a catch-up program.
- In 2007/08, the monovalent vaccine was replaced by a quadrivalent meningococcal vaccine. A meningococcal conjugate A, C, Y and W135 (Menactra) was offered to students in grade 9 as part of the school-based immunization program in New Brunswick.

#### Measles, mumps, rubella:

- As part of an outbreak response to mumps cases in New Brunswick in 2007, an MMR vaccine was offered to students in grade 12, healthcare workers, post-secondary students born in 1970 and later and individuals 24 years age or younger (unless they had proof of 2 doses of MMR vaccine).

- The second dose of MMR was offered to grade 12 students in subsequent years. A 6 year catch-up campaign was completed 1 year sooner than planned because of a measles outbreak in Quebec and the increasing number of cases occurring throughout Canada, United States and Europe (completed in 2011/12).

## 7.2 Data Summary: HPV vaccine 2008/2009 - 2011/2012

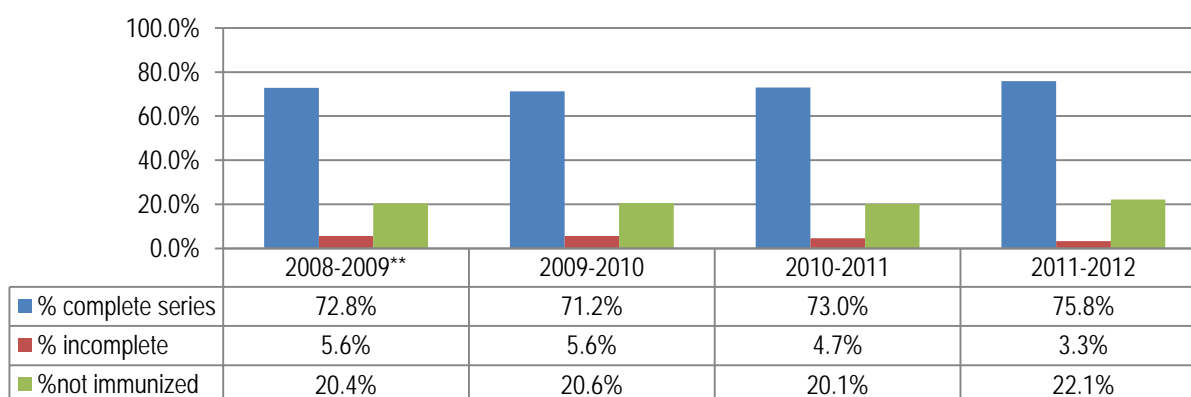
Over the past 4 years:

- On average, 73% of eligible female children received a complete series of HPV vaccines (between 72 to 76%).
- There has been a decrease in the proportion of children with incomplete series (from 6% to 3%).
- Regions 1, 2, 3 and 6 experienced either increases (between 5 to 10%) or some stability in the proportion of children with the complete series over time.
- Regions 4, 5 and 7 experienced decreasing trends between 5 to 15% in the proportion with the complete series.

In 2011/12:

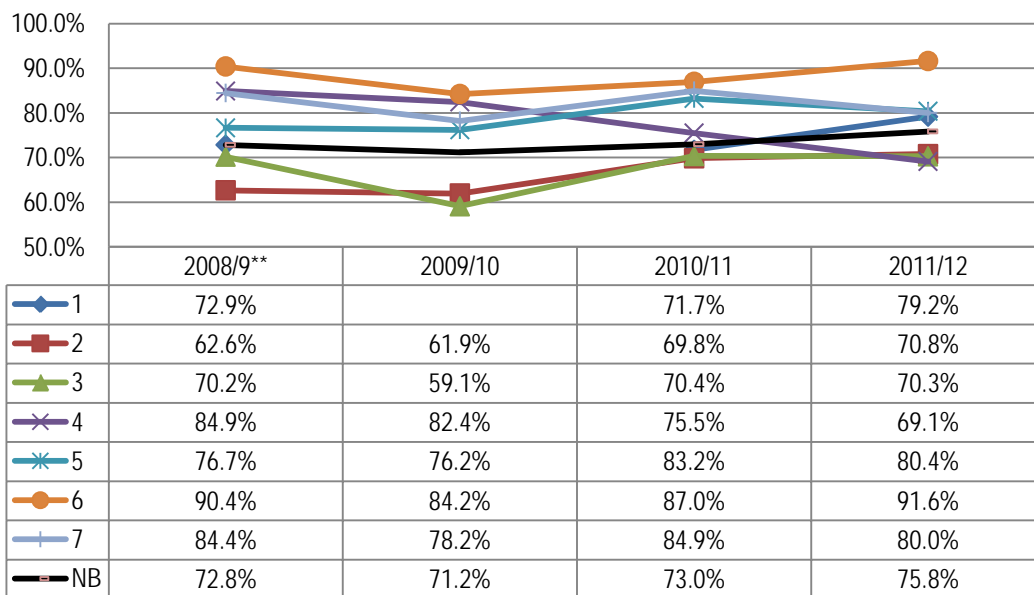
- Regions with the highest to lowest proportion with complete series are R6 (91.6%), R5 (80.4%), R7 (80%), R1 (79%), R2 (70.8%), R3 (70.3%), R4 (69.1%).
- Regions with the highest to lowest proportion with incomplete series are R5 (8%), R2 (4.9%), R3 (4.6%), R6 (3.5%), R7 (3.0%), R4 (2.1%), R1 (0.5%).
- Regions with the highest to lowest proportion that were not immunized are R5 (47.3%), R7 (26.3%), R3 (25.2%), R2 (24.3%), R1 (17.5%), R4 (15.5%), R6 (15.1%).
- Of those children not immunized (n=805), 65% did not provide a reason either because they submitted a consent form but did not note a reason (28%) or did not return the consent (37%), 11% provided reasons of religious/conscience, 2% did not show up for the appointment even with consent and 22% had "other reasons".
- Reasons for incomplete series (n=121), 60% didn't show up to the appointment even with consent, 30% had "other reasons", and 10% had consent withdrawn.

**Graph 8.** Percentage of female students with complete or incomplete HPV vaccine series, or not immunized, New Brunswick, 2008-2012.



\*\* In 2008-2009, the HPV vaccine was offered to female students in grade 7 as part of the school-based immunization program in NB. The vaccine was also offered to female students in grade 8 as part of a 1 year catch-up program.

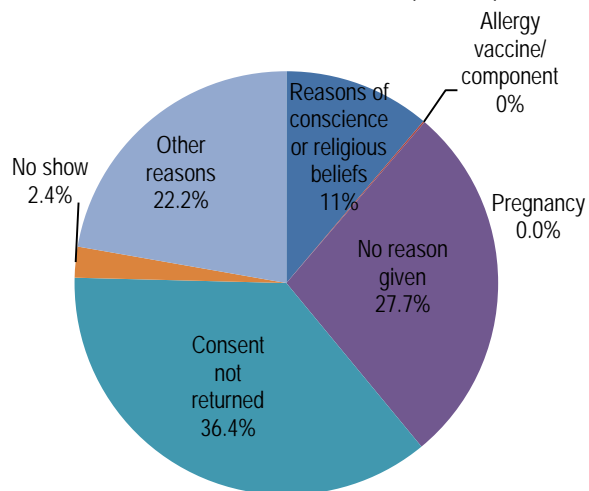
**Graph 9.** Percentage of female students with complete HPV vaccine series, by Health Region, New Brunswick, 2008 - 2012.



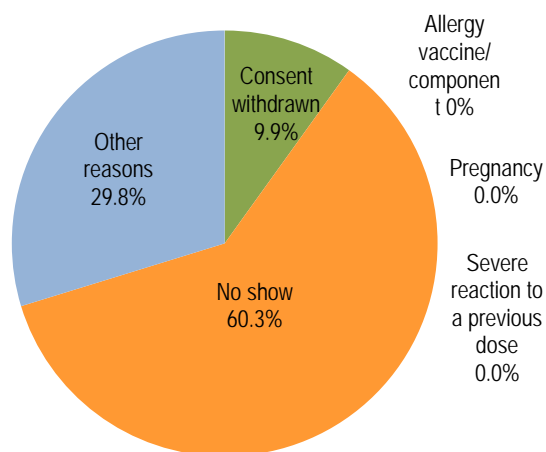
\*\* 2008-2009, the HPV vaccine was offered to female students in grade 7 as part of the school-based immunization program in NB. The vaccine was also offered to female students in grade 8 as part of a 1 year catch-up program.

**Graph 10.** Reasons for no or incomplete immunization with HPV vaccine among grade 7 female students, New Brunswick, 2011-2012.

Reasons students not immunized, (N=805).



Reasons for students with incomplete series, (N=121).



### 7.3 Data Summary: Tdap vaccine 2004/2005 - 2008/2009, 2011/2012 - 2012/2013<sup>3 4</sup>

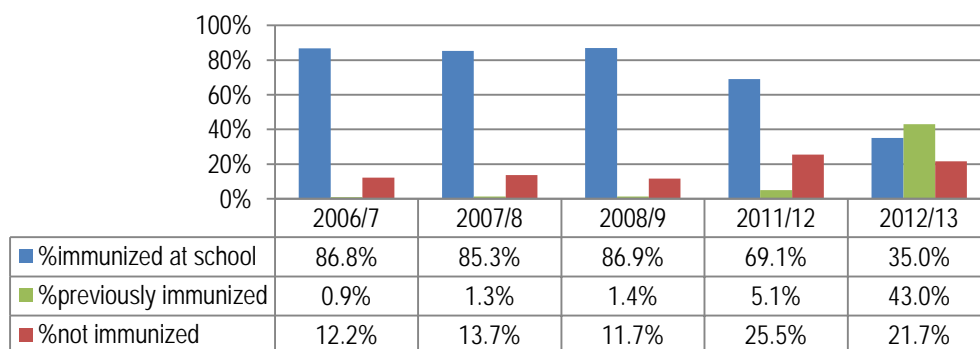
Over the past 5 years:

- On average, 82.8% of students were immunized with the adolescent dose of Tdap vaccine (between 74.2% to 88.3%). Most of the students were immunized during the school year (88%), and the rest were immunized previously (12%).
- The pertussis school-based outbreak campaign in 2011/12 had a significant effect on the 2012/13 proportion of those immunized in school versus previously. From May to June 2011/12, there was a targeted pertussis outbreak campaign for students in grades 6, 7, 8 in R1 and R2. In 2012/13, Tdap vaccine was re-introduced in the routine immunization schedule for students in grade 7 and a catch-up program targeted grades 8 and 9. As a result, the students who were immunized in 2011/12 are counted as 'previously' immunized in the 2012/13 data.
- When considering the outbreak campaign and re-introduction as a single period:
  - There was a decrease in the percent of students immunized for all regions, especially with the percent immunized at school. The decrease ranges from less than 1% to over 19% in specific regions.
  - There is a total of 78% students immunized (n=17,549) and 22% students not immunized. (n=4881).
  - The majority of students were immunized at school (92%) and the remainders were previously immunized. Of those students not immunized, 67% did not return their consent, 20% provided no reason, 9% did not show at the appointment, and the remaining 4% were exempt because of religious beliefs or allergies, or had provided "other reasons".
  - Of those students not immunized the proportion of the reasons varied by region. For example, in R1, R2, R3 and R7, the majority of those not immunized did not return consent. Generally, in most regions, the older grades had a higher proportion of students not returning consent.

For 2012/13:

- Regions with the highest to lowest proportion immunized: R5 and R6 (~93%), R4 (87.6%), R7 (85.4%), R1 (74.8%), R2 and R3 (72.7%).

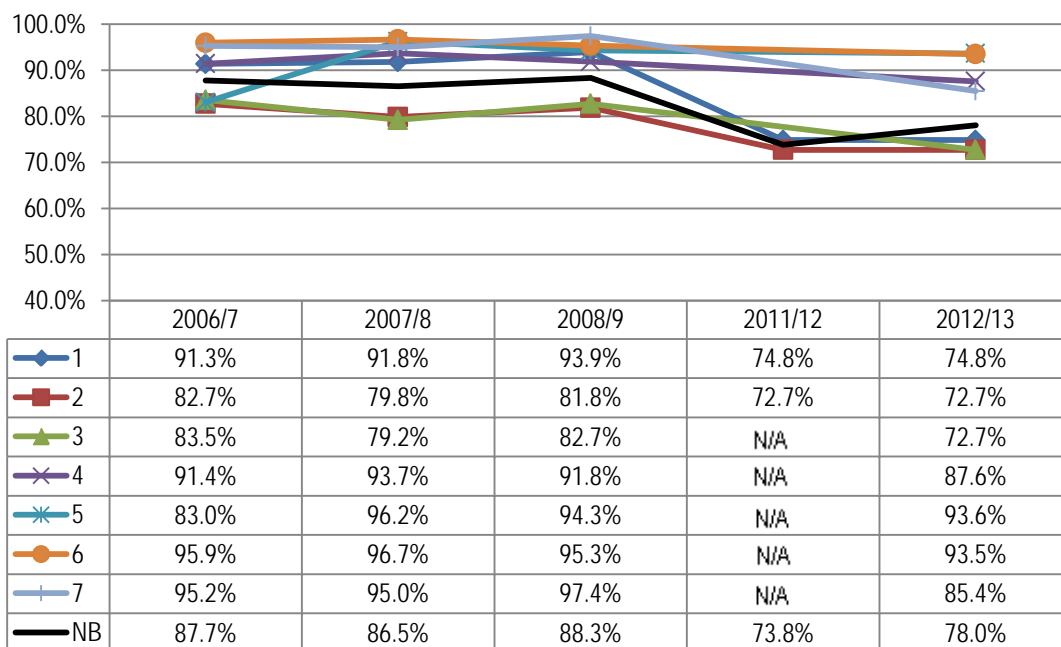
**Graph 11.** Percentage of students immunized with Tdap vaccine at school, previously immunized, or not immunized, New Brunswick, 2006-2013.



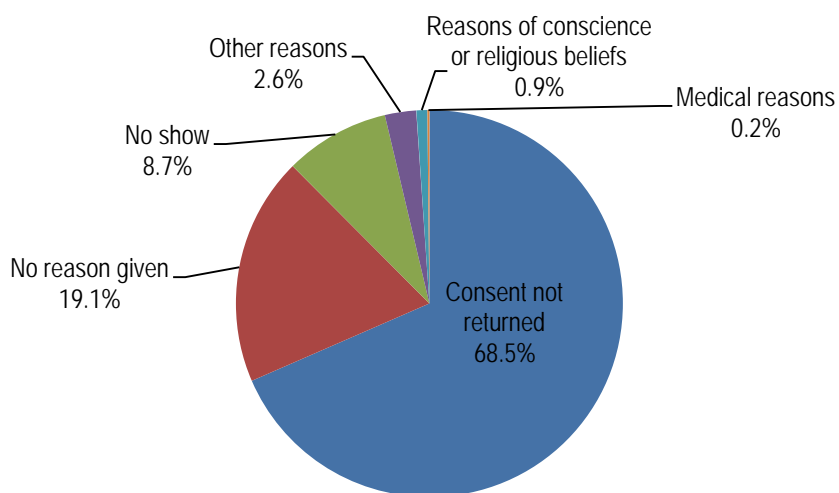
<sup>3</sup> Although the program started in 2004/5, there was no data available at CDC Branch on the program for 2004/5, 2005/6.

<sup>4</sup> Data for 2012/13 was available earlier than required (as specified in the applicable policy) as Regions have completed all the planned Tdap school immunization clinics in early 2013.

**Graph 12.** Percentage of students immunized with Tdap vaccine at school, or previously immunized, by Health Region, New Brunswick, 2006-2013.



**Graph 13.** Reasons for no immunization with Tdap vaccine among grade 7, 8 and 9 students, New Brunswick, 2011/12 (N=4881).





## 7.4 Data Summary: Men C / Men C - ACYW135 vaccines, 2006/2007 - 2011/2012 <sup>5</sup>

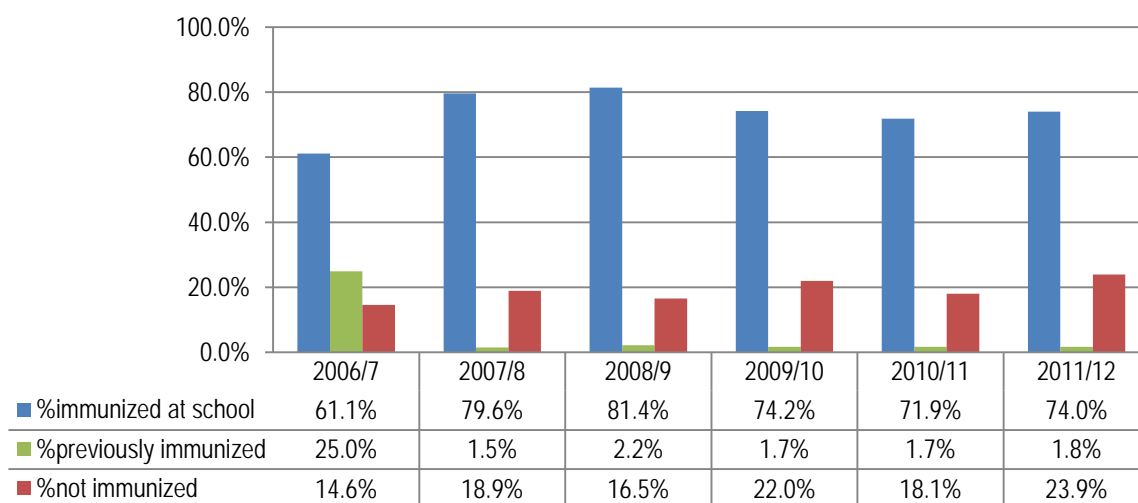
Over the past 6 years:

- On average, 80.5% of students were immunized with Men C or Men C-ACYW135 (from 75.8% to 86.1%). Most of the students were immunized during the school year (92%), and the rest were immunized previously (8.4%).
- There has been a decrease in the proportion of children immunized since the start of the program in 2006/7. However, R5 had an increasing trend (10%) for the past 3 years in the percent of students immunized.

For 2011/12:

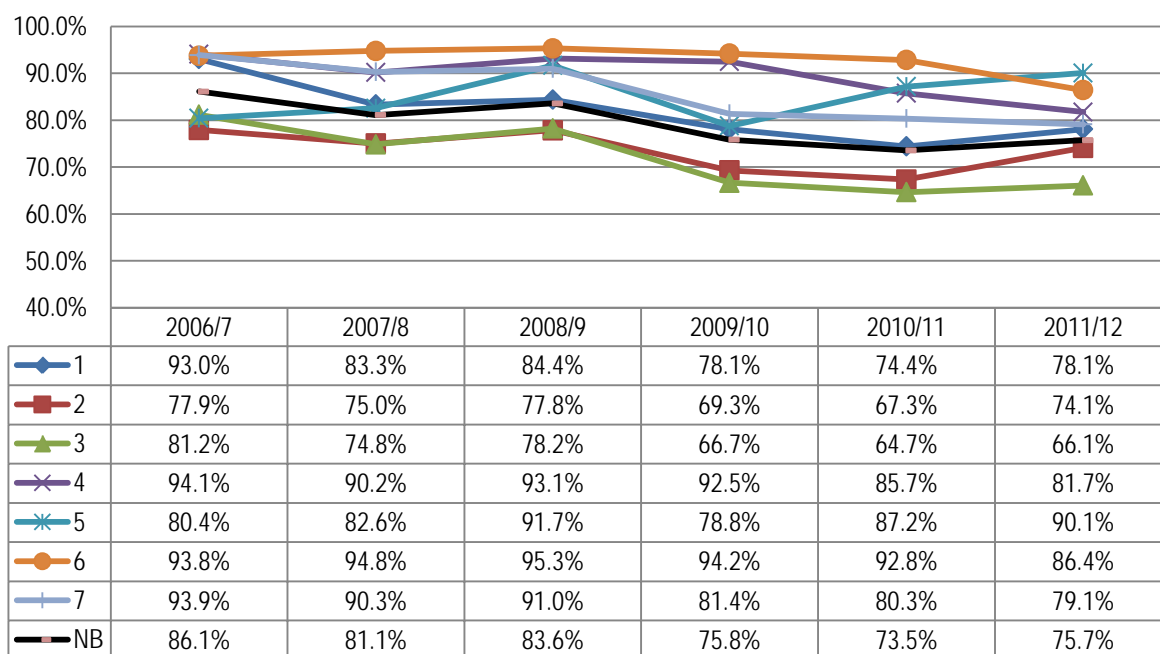
- Regions with the highest to lowest proportion of students immunized are R6 (90.1%), R7 (86.4%), R4 (81.7%), R7 (79.1%), R1 (78.1%), R2 (74.1%) and R3 (66.1%).
- Compared with the previous year, there was a sharp increase in R2 (74% increase) in proportion of students not immunized that did not return a consent form.

**Graph 14.** Percentage of students immunized with Men C or Men C-ACYW135 vaccines at school, previously immunized, or not immunized, New Brunswick, 2006-2012.

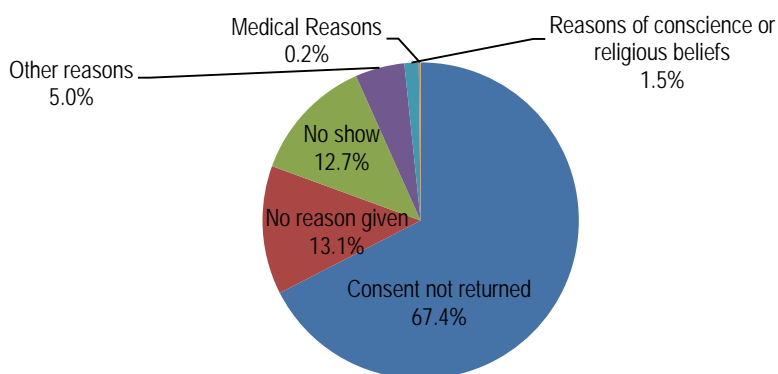


<sup>5</sup> Percentages do not add to 100% for R1 and R2. R1 percentages are off for 2006/7 (110.4%), 2009/10 (88.9%). For R2, they are off for 2006/7 (93%), 2010/11 (68.5%)

**Graph 15.** Percentage of students immunized with Men C or Men C-ACYW135 vaccines at school, or previously immunized, by Health Region, New Brunswick, 2006-2012.



**Graph 16.** Reasons for no immunization with Men C or Men C - ACYW135 vaccines among grade 9 students, New Brunswick, 2011/12 (N=2061).



### 7.5 Data Summary: MMR vaccine 2007/2008 - 2010/2011

Over the past 5 years:

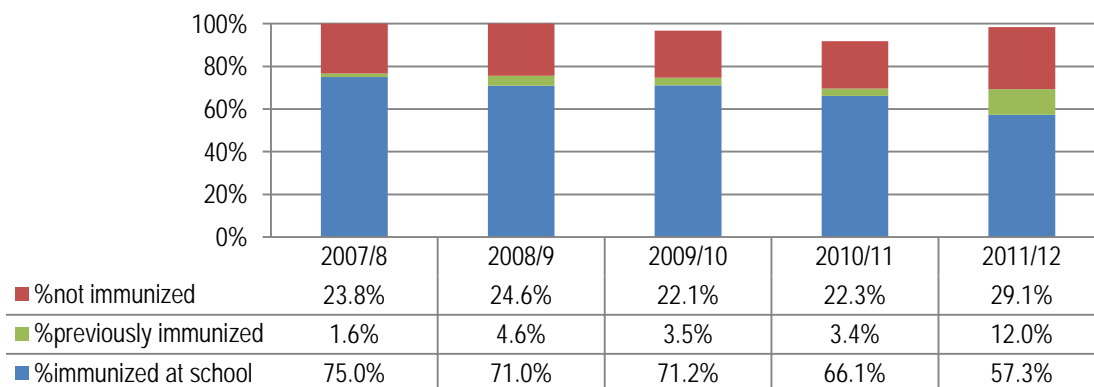
- On average, 73.1% of students were immunized with the MMR vaccine.
- There has been a decreasing trend of the % of students immunized, and a 7% drop from 76.6% in 2007/8 to 69.3% in 2011/12.

- The majority of students were immunized at school (93%), and the remaining (6.8%) were previously immunized.
- Of those students not immunized, approximately 60% did not return consent; between 20 to 30% did not show up for appointments and the remaining provided no reason on the form.

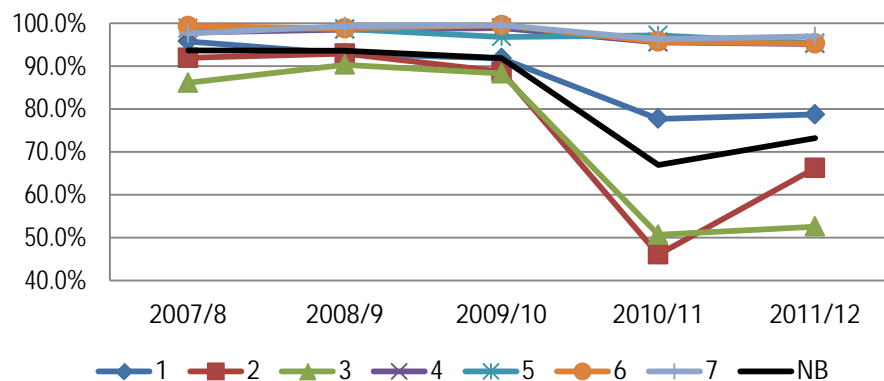
In 2011/12

- There was a marked increase in the % of students immunized in R6 (73% to 80%), and R5 (74% to 85%) from the previous year.

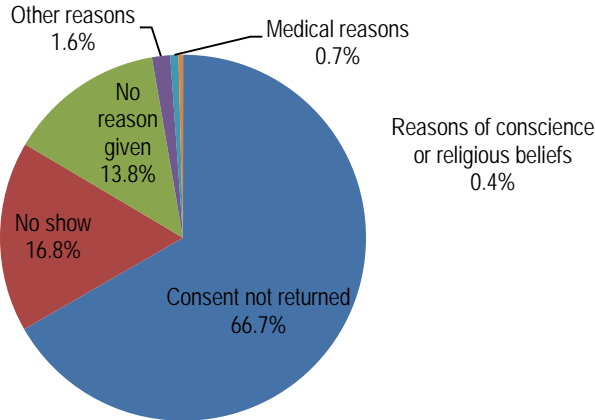
**Graph 17.** Percentage of students immunized with MMR vaccine at school, previously immunized, or not immunized, New Brunswick, 2007-2012.



**Graph 18.** Percentage of students immunized with MMR vaccine at school, or previously immunized, by Health Region, New Brunswick, 2007-2012.



**Graph 19.** Reasons for no immunization with MMR vaccine among grade 11 and 12 students, New Brunswick, 2011/12 (N=5311)



## Appendices

**Table 1.** History of the New Brunswick school immunization program - Tdap vaccine, as of December 2013.

	School Year								
	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13
Grade 6									
Grade 7									
Grade 8									
Grade 9									
Grade 10									
Grade 11									
Grade 12									
	Routine Immunization Schedule								
	Targeted/Catch-up Campaign								
	Outbreak Campaign								

### Summary

- **2003 and earlier:** A tetanus, diphtheria vaccine (Td) was offered to students in grade 11 as part of the school-based immunization program in NB.
- **2004/5:** A combined tetanus, diphtheria and acellular pertussis vaccine (Tdap) replaced the Td vaccine. The Tdap booster was moved from grade 11 to 9 with a catch-up program extended to students in grades 10 to 11.
- **2005/6:** Tdap vaccine was offered to students in grade 9.
- **2006/7, 2007/8 and 2008/9:** Tdap vaccine was offered to students in grade 6 as part of a three year catch-up program. This vaccine was also offered to students in grade 9.
- **2009/10, 2010/11 and 2011/12 :** Tdap vaccine offered to students in grade 9 was on hold due to the completion of a three year catch-up program in grade 6.
- **Spring 2012:** From May to mid-June 2012, a school-based immunization campaign was implemented to prevent the continued rise of pertussis in school age children. Students in grades 6, 7 and 8 in the most affected areas (Health Regions 1 & 2) received Tdap vaccine.
- **2012/13:** Students in grades 7, 8, 9 in less affected areas (Health Regions 3,4,5,6, & 7) were offered immunization in the fall of 2012. The adolescent Tdap booster was re-introduced in grade 7 (instead of Grade 9) with a catch-up program extended to students in grades 8 and 9.

**Table 2.** History of the New Brunswick school immunization program - HPV vaccine, as of September 2013.

	School Year								
	2004/5*	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13
Grade 5									
Grade 6									
Grade 7						*			
Grade 8							*		
Grade 9									
Grade 10									
Grade 11									
Grade 12									
	Routine Immunization Schedule								
	Targeted/Catch-up Campaign								
	Outbreak Campaign								

### Summary

- **2008/09, 2009/10, 2010/11, 2011/12, 2012/13:** A human papillomavirus quadrivalent vaccine (HPV4) was offered to female students in grade 7 as part of the school-based immunization program in NB. The vaccine was also offered to female students in grade 8 as part of a 1 year catch-up program.
- **2009/10:** \* The HPV4 vaccine was delayed in some areas of the province because of the H1N1 mass immunization campaign.
- **2010/11:** \* The HPV4 vaccine was offered to female students in grade 8 where delays occurred because of the H1N1 campaign (catch-up program).

**Table 3.** History of the New Brunswick school immunization program – Meningococcal vaccine, as of September 2013.

	School Year								
	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13
Grade 5	*								
Grade 6	*								
Grade 7	*								
Grade 8	*								
Grade 9									
Grade 10	*								
Grade 11	*								
Grade 12	*								
	Men C- C (2004/05 - 2005/06)			Men C - ACYW-135 (2007/08 - 2012/13)					
	Routine Immunization Schedule								
	Targeted/Catch-up Campaign								
	Outbreak Campaign								

### Summary

- **2004/05, 2005/06, 2006/07:** A meningococcal conjugate C vaccine (Men-C-C) was offered to students in grade 9 as part of the school-based immunization program in NB.
- **2005:** \* A mass immunization campaign was implemented from May-June 2005 in Westmorland, Kent and Albert counties; 16,000 students in grades 5-12 and young adults up to 19 years of age were offered a meningococcal conjugate C vaccine (NeisVac C.)
- **2005/06:** The meningococcal conjugate C vaccine was offered to students in grades 10-12 in other areas of the province as part of a catch-up program.
- **2007/08 - 2012/13:** The monovalent meningococcal conjugate vaccine (Men-C-C) was replaced by the quadrivalent meningococcal vaccine (Men-C-ACW135). Men-C-ACW135 vaccine was offered to students in grade 9 as part of the school-based immunization program in NB.

**Table 4.** History of the New Brunswick school immunization program - MMR vaccine, as of September 2013.

	School Year								
	2004/5*	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13
Grade 5									
Grade 6									
Grade 7									
Grade 8									
Grade 9									
Grade 10									
Grade 11									
Grade 12									
	Routine Immunization Schedule								
	Targeted/Catch-up Campaign								
	Outbreak Campaign								

### Summary

- **2007/08:** A MMR vaccine was offered to students in grade 12 as part of an outbreak response to mumps cases in New Brunswick. Students who had not previously received 2 doses of MMR vaccine were offered 1 dose of MMR vaccine.
- **2008/09- 2011/12:** Students in grade 12 were offered a second dose of MMR vaccine as part of a six year catch-up campaign. In school year 2011/12, students in Grade 11-12 were offered MMR vaccine. The catch-up campaign was completed 1 year sooner than planned because of a measles outbreak in Quebec and the increasing number of cases occurring throughout Canada, United States and Europe.

### \*NOTE

The MMR vaccine was also offered to young adults 24 years of younger and post secondary students born in 1970 or later who had not previously received 2 doses of MMR vaccine