

Issue 41 Spring 2016
Anniversary Edition-25 years

IMPACT

Canadian Immunization Monitoring Program, ACTive
Programme canadien de surveillance active de l'immunisation



The Canadian Immunization Monitoring Program, ACTIVE (IMPACT), is a national surveillance initiative managed by the Canadian Paediatric Society (CPS) and carried out by the IMPACT network of Infectious Disease specialists and nurse monitors. Surveillance is supported primarily by the Public Health Agency of Canada (PHAC). The information collected complements existing national surveillance systems, supports public health action, informs policy dialogue with federal, provincial and territorial governments and other national stakeholders, and assists in meeting Canada's international immunization commitments. Please share this newsletter. You can also subscribe at: www.cps.ca/en/impact

This issue is dedicated to the memory of Debbe Heayn who passed away March 29, 2014. Debbe worked as IMPACT data (nurse) scrutineer for 15 years. She embodied humor and patience for life which continues to remind us to be grateful for things we tend to take for granted every day. She is greatly missed.

In this issue

25 years of surveillance – a look back in time	2
Significant data findings	6
IMPACT case numbers: then and now	6
Current surveillance update	7
Resources	7
Current team contacts	8



Public Health
Agency of Canada

Agence de la santé
publique du Canada



Société
canadienne
de pédiatrie

IMPACT turns 25 years old!

Congratulations to the IMPACT team, current and “alumni” team members, for a quarter of a century of successful surveillance. This newsletter issue is meant to give you a look back at IMPACT surveillance from the initial key players, surveillance targets and significant data findings. An appropriate addition to this issue on page 6 is from Dr. David Scheifele, showing the comparison of IMPACT “then and now” case numbers which, as he states, is “an interesting mix of big wins and lesser gains, showing work still needs to be done!” Finally the current IMPACT surveillance targets and team members are included in this issue.

25 years of surveillance—a look back in time

The idea for IMPACT started back in the late 1980s, when concerns arose about the safety of a specific mumps vaccine, highlighting the need for enhanced vaccine safety surveillance in Canada. In 1990, the Infectious Diseases and Immunization Committee of the Canadian Paediatric Society (CPS) was asked to pilot a vaccine safety surveillance project in select children’s hospitals—and IMPACT was born.

The following individuals were the initial key players involved with IMPACT:

Co-Principal Investigators (then called Western and Eastern Coordinators):

Dr. David Scheifele, Vancouver and Dr. Ron Gold, Toronto

Vancouver coordinators: Suzanne Drinnan, replaced by Candice Glover

Data management: Kim Marty

CPS members: Dr. Victor Marchessault (deceased), Executive VP

Nicole Menzies, Business Administrator and Project Manager

Dr. Gilles Delage, CPS scientific liaison

PHAC liaisons: Dr. Phillippe Duclos, Dr. Robert Pless

This following information shows the development of the network:

1991 Initial Pilot – 5 centres

IMPACT site	Site investigator	Nurse monitors
Halifax	Dr. Scott Halperin	Kate (Nunn) Mackintosh/Joanne Mitchell
Quebec City	Dr. Pierre Déry	Joanne Gagnon
Toronto	Dr. Ron Gold	Helen Heurter
Winnipeg	Dr. Barbara Law	Maureen Hutmacher
Vancouver	Dr. David Scheifele	Erica Nugent

1993 Expansion of 5 new centres

Ottawa	Dr. Noni MacDonald	Carolyn Kennelly
Calgary	Dr. Taj Jadavji	Lindsay Thompson
Montreal Children’s	Dr. Elaine Mills	Deirdre McCormack/Lorraine Piché
St. John’s	Dr. Robert Morris	Marian Yetman
CHU Sainte Justine’s	Dr. Marc Lebel	Marie-France Gagnon

1995 Addition of the 11th centre (funded by Alberta Health 1991-1998)

Dr. John Waters (deceased) was instrumental in securing funding for this Edmonton centre, until it was later included in the next contract renewal with PHAC in 1999.

Edmonton	Dr. Wendy Vaudry	Ann Roth
----------	------------------	----------

1999 Addition of the 12th centre with the new contract renewal

Saskatoon	Dr. Ben Tan	Brenda Andreychuk
-----------	-------------	-------------------

Some notable and impressive years of service

Dr. Scheifele has been the longest-serving IMPACT member (25 years plus) serving many roles: as “founding father,” local Vancouver Investigator, Co-Principal Investigator, and Data Centre Chief.

Dr. Scott Halperin sets the record for the longest serving local Investigator at an IMPACT centre (25 years), followed by Dr. Taj Jadavji (23 years) and Dr. Marc Lebel (23 years).

IMPACT has also been very fortunate to have Kim Marty with the data centre management team since the very start of the organization!

Lynn Poirier (Quebec City) is the longest-serving current monitor since 1997 (19 years), followed by Brenda Andreychuk (Saskatoon) at 17 years. Heather Samson served as a nurse monitor from 1994-1997 (3 years) in Halifax, and then as the monitor liaison from 1998 to the present day (18 years).

Photos over the years:



Photos over the years continued:



Surveillance in the initial years

<p style="text-align: center;">CPSP surveillance</p> <p>Acute Flaccid Paralysis</p> <p>Congenital Rubella Syndrome (1991-1998)</p>	<p style="text-align: center;">Post Immunization Adverse events</p> <ul style="list-style-type: none">• Seizures (afebrile & febrile, infantile spasms)• Hypotonic Hypo responsive episodes (HHE)• Encephalitis, encephalopathy, aseptic meningitis• AE other: Miscellaneous events
<p style="text-align: center;">Additional case studies</p> <p>Rotavirus 1997-1998</p> <p>Varicella economic analysis of the years 1991-1996</p> <p>Pertussis deaths in infants for the years 1991-2001</p>	<p style="text-align: center;">Vaccine-preventable diseases</p> <ul style="list-style-type: none">• Group B streptococcal infections (pilot phase only—early years)• Pertussis under 2 years of age (all ages added since 1999)• <i>Haemophilus influenzae</i> type b infections (all types added since 2007)• Varicella/Zoster• Invasive meningococcal disease (6 centres 1991-1993)• Invasive pneumococcal disease

Additional changes over the years

2002—Meningococcal surveillance added

2003—Influenza surveillance pilot at 9 centres

2004—Influenza surveillance incorporated at all 12 centres

2005— Influenza vaccine effectiveness case-control study (to 2008)

2007—Rotavirus surveillance added (retrospective to 2005 and prospective to current date)

2008—Web based platform started for selected data collection

2016—All vaccine-preventable diseases targets reported electronic

IMPACT surveillance data continues to help inform public health policy decisions regarding the use of new vaccines. The following data findings listed below are just a small snapshot of the significance of this data which to date includes over 112 presentations, 75 peer-reviewed publications and countless other knowledge translation activities since IMPACT's very first presentation at a national scientific conference in 1992.

All publications and presentations can be found in the current list posted at the following link:

<http://www.cps.ca/en/impact>

Significant data findings

- Demonstrated the first nationwide evidence of the decline in *Haemophilus influenzae* type b cases with vaccine use, well before the national notifiable disease data were able to confirm this.
- Recognition of multiple cases of disseminated BCG infection prompted a review of the routine use of the BCG vaccine in select populations in Canada.
- Demonstrated a 79% decrease in the number of febrile seizures that were admitted to IMPACT centres after the acellular pertussis vaccine replaced the whole cell vaccine: a true decrease in risk.
- Review of hospitalized cases showed not a single instance of acute encephalitis was attributed to pertussis vaccination between 1993 and 2001.
- Reported on fatal and complicated varicella infections and predictors of death in infants hospitalized with pertussis.
- Reported on invasive pneumococcal disease burden and serotype distribution pre- and post-vaccine introduction.
- Demonstrated a quick response to incorporate surveillance of the 2009 pandemic influenza season and to report the features of illness in children.
- Published one of the largest case series of post-immunization thrombocytopenia (at the time of publication), which confirmed that while it does occur the outcome is usually benign and resolves within a month for most children.
- Reported on the hidden costs of childhood emergency room visits for rotavirus, the cost effectiveness of the rotavirus vaccine, the morbidity of hospitalized children with community and hospital acquired rotavirus infections.
- Continued demonstration of the importance and strength of IMPACT surveillance of invasive meningococcal disease (IMD) to understand the effects of vaccination programs on the evolution of IMD in Canada.

IMPACT CASE NUMBERS: THEN AND NOW Contributed by Dr. David Scheifele

Target Infection	Pre-vaccine Peak (Year)	IMPACT 2014 (% Reduction)
<i>H. influenzae</i> b	485 ¹ (1985)	12 (98%) (Historic low 4 in 2000) (>99%)
Invasive Pneumococcal	331 (2002)	152 (54%)
Meningococcal	96 (2002)	30 (69%)
Varicella	328 (2000)	71 (78%)
Zoster	86 (2000)	18 (79%)
Pertussis	154 ² (1991-7)	60 (61%)

¹ Retrospective review, 10 centres

² Period mean, whole cell pertussis vacc

Current IMPACT surveillance activities

IMPACT continues to conduct surveillance as follows:

1. **Adverse events following immunization (AEFIs):** Selected AEFIs within defined intervals (temporal association following an immunization) and any adverse events that the nurse monitors become aware of in their centre are reported to the Public Health Agency of Canada for collation into the Canadian Adverse Events Following Immunization Surveillance System (CAEFISS).
<http://www.phac-aspc.gc.ca/im/vs-sv/index-eng.php>
 2. **Vaccine Preventable Diseases:** The following cases are reported to the IMPACT data centre in Vancouver: Varicella, Zoster, Pertussis, Rotavirus, Invasive disease with *Haemophilus influenzae (HI) all types*, *Invasive disease (Streptococcus pneumoniae)* and *Neisseria meningitidis (NM)* This NM surveillance includes all ages with the disease admitted to hospitals in a defined population area of the IMPACT centres hospital.
 3. **Influenza:** Reports of influenza admissions, as well as deaths and ICU visits contribute to the Canadian Flu Watch surveillance system. (<http://www.phac-aspc.gc.ca/fluwatch/>)
 4. **Cases of Acute Flaccid Paralysis,** regardless of recent immunization, are reported to the Canadian Paediatric Surveillance Program. <http://www.cpsp.cps.ca/>
-

Resources

Canadian

IMPACT	www.cps.ca/en/impact
Public Health Agency of Canada (PHAC)	www.phac-aspc.gc.ca
Canadian Paediatric Society (CPS)	www.cps.ca
Canadian Paediatric Surveillance Program (CPSP)	www.cpsp.cps.ca
Immunize Canada	www.immunize.ca
Canadian Association for Immunization Research and Evaluation (CAIRE)	www.caire.ca
Canadian Immunization Conference (CIC) 2014	www.cic-cci.ca
Canadian Immunization Research Network	www.cirnetwork.ca
Vaccine safety quarterly reports	www.phac-aspc.gc.ca/im/safety-securite-eng.php

International

Centers for Disease Control and Protection	www.cdc.gov
Immunization Action Coalition	www.immunize.org
Global Alliance for Vaccines and Immunization	www.gavi.org

Current Team *IMPACT* contacts

Centre	Lead/Backup Nurse Monitor	Investigator
IWK Health Centre Halifax, N.S.	Andrea Hudgin/Karen Branscombe Trish Smith	Dr. Karina Top
Le Centre Mère-Enfant Soleil Québec City, Que.	Lynn Poirier /Louise Gosselin	Dr. Roseline Thibeault
The Hospital for Sick Children Toronto, Ont.	Suganya Lee/Kim Simpson	Dr. Dat Tran
Health Sciences Centre Winnipeg, Man.	Debbie Côté/Michelle Breton	Dr. Joanne Embree
B.C. Children’s Hospital Vancouver, B.C.	Karen Kroeker/Ivor Chee	Dr. Laura Sauvé
Children’s Hospital of Eastern Ontario, Ottawa Ont.	Chantal Bergeron/Jennifer Bowes	Dr. Nicole Le Saux
Alberta Children’s Hospital Calgary, Alta.	Shannon Pyra/Eileen Pyra	Dr. Taj Jadavji
The Montreal Children’s Hospital, Montreal, Que.	Annick Audet/Lina Moisan Teena Marie Johns	Dr. Dorothy Moore
Eastern Health Janeway St. John’s, NL	Daisy Gibbons	Dr. Natalie Bridger
CHU Sainte-Justine Montreal, Que.	Sophie Bouchard/Marie-Hélène Lavergne	Dr. Marc Lebel
Stollery Children’s Hospital Edmonton, Alta.	Barb Neufeld/Chris Bon	Dr. Wendy Vaudry (Co-PI)
Royal University Hospital Saskatoon, Sask.	Chris Cadman/Brenda Andreychuk	Dr. Ben Tan Dr. Athena McConnell

Other contacts:

Public Health Agency of Canada (PHAC)

Jennifer Pennock (Director, Vaccine and Immunization Program Surveillance Division); Christina Bancej (Chief Vaccine Safety & Influenza); Nooshin Ahmadipour (Head of CAEFISS); Susan Squires (Acting Chief Vaccine-Preventable Diseases); Nadine Abboud (Senior Program Officer)

Canadian Paediatric Society (CPS): Marie Adèle Davis (Executive Director); Melanie Laffin Thibodeau (Manager, Surveillance); Dominique Paré (French translator)

IMPACT Data Centre: Dr. Julie Bettinger (Epidemiologist & Data Centre Chief); Kim Marty (Data Manager); Engy Grove (Data Coordinator Assistant); Sarah McCann (Data Nurse Scrutineer)

Canadian Center for Vaccinology (CCfV): Natalie Giorgis (newsletter formatting); Heather Samson (Nurse Monitor Liaison); Dr. Scott Halperin (Co-PI)

To connect with an *IMPACT* centre please contact Heather Samson by email, at heather.samson@iwk.nshealth.ca



Public Health
Agency of Canada

Agence de la santé
publique du Canada



Canadian
Paediatric
Society

Société
canadienne
de pédiatrie