

A harmonized immunization schedule for Canada: A call to action

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In Canada, the National Advisory Committee on Immunization systematically reviews the evidence for the effectiveness and safety of new and old vaccines, and sets a 'minimum' recommended schedule. However, in contrast to other industrialized countries where single, harmonized countrywide immunization schedules are de rigeur, Canada has a confusing system, with each province and territory defining its own schedule – and none are the same. The time has come to rectify this decades-old patient equity and safety problem. The Canadian Paediatric Society calls for a harmonized schedule to improve the health and safety of Canadian children and youth.

Key Words: Adolescent; Canada; Children; Immunization; Vaccine schedule

The development of effective vaccines has been called the most significant advance in human health of all time! Within the past 50 years, we have witnessed the control of tetanus, diphtheria, measles and polio, and the complete eradication of smallpox. These magnificent achievements can be attributed both to fundamental research and to national and international collaboration. For example, fundamental research made it possible to develop vaccines against measles, polio and hepatitis, but a strategy coordinated by the WHO was necessary to eradicate smallpox.

In Canada, the National Advisory Committee on Immunization (NACI) regularly and systematically reviews the evidence for effectiveness and safety for new and old vaccines, and sets a 'minimum' recommended schedule (1). However, in contrast to other industrialized countries such as the United States, Australia and the United Kingdom, where single, harmonized countrywide immunization schedules are de rigeur, Canada has a confusing system, with each province and territory defining its own schedule – and none are the same (Table 1) (2). Note the complexity that this system introduces.

The Canadian Paediatric Society has called for a national harmonized immunization schedule for more than a decade (3). The current need is critical because of increasing schedule complexity due to the addition of many new NACI-recommended vaccines, as well as increasing rates of migration within the country. Canada's children and youth are at potential risk for vaccine-preventable infections because of disharmony of

Un calendrier de vaccination harmonisé au Canada : un appel à l'action

Au Canada, le Comité consultatif national d'immunisation analyse systématiquement les données probantes relatives à l'efficacité et à l'innocuité des nouveaux et des anciens vaccins et établit un calendrier recommandé « minimal ». Cependant, contrairement à d'autres pays industrialisés où un seul calendrier de vaccination harmonisé s'applique à l'ensemble du pays, le Canada est doté d'un système qui prête à confusion. En effet, chaque province et chaque territoire définissent leur propre calendrier, et chacun d'eux est différent. Le temps est venu de rectifier ce problème d'équité et de sécurité qui perdure depuis des décennies. La Société canadienne de pédiatrie demande un calendrier harmonisé afin d'améliorer la santé et la sécurité des enfants et des adolescents canadiens.

schedules. In addition to confusing parents and health care providers, the patchwork of vaccine schedules creates access inequities and added safety (reliability) issues in our system.

PROBLEMS

The present system is not equitable. Access to vaccines for children or youth should be determined on the basis of evidence (as done for NACI-recommended schedules), and not on the basis of residence in Canada. Why, for instance, is there a catch-up program for human papilloma virus vaccine for adolescent girls in some provinces but not in others? Why were infants in one province not protected against meningococcal C infection until recently, while those in other provinces were offered the vaccine when NACI first recommended it several years earlier?

The present system is not safe. More and more Canadians are on the move within our country. Internal migration is increasing, with almost 400,000 Canadians moving interprovincially in 2007/2008 (4). Moving from one province to another can create risks for inadequate immunization because vaccine schedules differ significantly. For example, the second dose of the measles, mumps and rubella (MMR) vaccine is given at 18 months in 10 provinces and territories, and at four to six years in three others. Moving at the 'wrong' age may mean a missed second dose and vulnerability to these infections later in life. An infant born in Prince Edward Island who moves to Nova Scotia, Alberta or Manitoba at 13 months of age might not receive his or her MMR vaccine until

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TABLE 1
Routine schedule for infants and children (including special programs and catch-up programs) (2): Excerpts from the publicly funded immunization programs in Canada illustrating discrepancies in vaccine use and vaccination schedules

Province/territory	Vaccination schedule		
	Hepatitis B	Measles, mumps and rubella	Menactra* (meningococcal groups A, C, Y and W-135 conjugate)
NACI recommendation	Infancy (3 doses) OR preteen/teen (2–3 doses)	12 months AND 18 months OR 4–6 years	Preteen (1 dose) [†]
British Columbia	2, 4 and 6 months (DTaP-HB-IPV-Hib); catch-up: grade 6 (hepatitis B)	12 and 18 months	
Alberta	Grade 5 (3 doses)	12 months and 4–6 years	
Saskatchewan	Grade 6 (3 doses)	12 and 18 months; catch-up: grades 8 and 12	
Manitoba	Grade 4 (3 doses)	12 months and 4–6 years	
Ontario	Grade 7 (2 doses)	12 and 18 months	Grade 7 (3 doses) (started in September 2009)
Quebec	Grade 4 (2 doses – hepatitis A and B)	12 and 18 months	
New Brunswick	0, 2 and 6 months	12 and 18 months; catch-up: grade 12 (2007–2014)	Grade 9
Nova Scotia	Grade 8 (3 doses) (program restarted in 2010)	12 months and 4–6 years	
Prince Edward Island	2, 4 and 15 months	15 and 18 months	Grade 9
Newfoundland and Labrador	Grade 4 (3 doses)	12 and 18 months	Grade 4 (2009–2012); used in outbreak situations
Northwest Territories	0, 1 and 6 months	12 and 18 months; postsecondary students attending schools outside Northwest Territories	Postsecondary students attending schools outside Northwest Territories
Nunavut	0, 1 and 9 months	12 and 18 months; grade 12	
Yukon	2, 4 and 12 months; catch-up: ≥19 years of age	12 and 18 months	

*sanofi pasteur Ltd (Canada); [†]Data from reference 1. DTaP-HB-IPV-Hib Diphtheria, Tetanus, Pertussis, Hepatitis B, Polio and Haemophilus influenzae type b; NACI National Advisory Committee on Immunization

four to six years of age. This is because Prince Edward Island gives the first MMR vaccine at 15 months of age, while the others give it at 12 months and only offer the second dose at four to six years of age. With hepatitis B vaccines, the potential for missed vaccines with a move is even higher because provincial and territorial programs vary widely by age.

While the Public Health Agency of Canada provides helpful information on provincial and territorial vaccine programs for health care providers on its website, it does not provide information on previous or catch-up programs, nor does it provide information on when a new vaccine program was introduced. Thus, parents are left to find this information on their own. Health care providers are often equally confounded by the lack of information on how to fill gaps created by mismatched schedules. The goal should be to make it easy for parents and health care providers to know if they are on track with an immunization schedule, not to make it difficult to determine whether a child is 'up to date'. Clearly, a system problem exists in Canada. A harmonized schedule would not only be safer but also less costly for the system:

- Larger bulk purchases of vaccines, possibly at better prices, would create more savings and better security for access during times of vaccine shortages.
- Educational immunization information would be simplified and accessible across the country. Given the large number of languages spoken across the land, more cost-effective translation could be done.
- New programs could be introduced in a coordinated fashion instead of each province and territory reinventing the wheel as they roll out a new program.

- Health care providers across the country could be educated about one schedule instead of having to be re-educated when they move.
- Most importantly, all children and youth would have equal access to all NACI-recommended vaccines.

A harmonized core schedule would not preclude a province or territory from enhancing its program for a vaccine not yet universally recommended by the NACI. Similarly, provinces or territories could research a novel vaccine schedule. Then, once the data are assessed, the NACI would be able to recommend the best schedule across the country.

The most often cited objections to a harmonized schedule are that health is a provincial and territorial responsibility; harmonization might lead to a decrease in immunization rates as the change is underway; and so much work would be needed to change this that it is not worth it.

Although provinces and territories may have the right to determine their own vaccine schedules, this does not impede them from implementing a national harmonized schedule that reduces confusion and offers equal protection to all children and youth no matter where they live in Canada. In fact, the British North America Act actually does not cover immunization health services, focusing instead on institutions: "The Establishment, Maintenance, and Management of Hospitals, Asylums, Charities, and Eleemosynary Institutions in and for the Province, other than Marine Hospitals" (5). Therefore, the responsibility concern is not a valid objection. While work and money would indeed be needed to minimize missed immunizations during the shift to a harmonized schedule, this is a feeble argument given the current equitable access problem and the system safety risks.

CALL FOR ACTION

For many, a harmonized schedule is one of the dreams yet to be realized under the National Immunization Strategy of 2003 (6). However, it is neither too late nor too daunting a task. Targeted federal monies for the National Immunization Strategy, with a harmonized schedule based on NACI recommendations and a national immunization registry, could reap many benefits for children and youth across this country. Continuing our disharmonious pathways only compounds the costs, and leaves many of our children and youth at unnecessary risk. The time has come for Canada to grow up and join the other developed nations with a uniform national immunization schedule across the country.

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