Point, counterpoint

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Childhood immunization is one of the best things we do in modern medicine. Judging from recent assessments of series completion rates by age 2, most parents agree. Nevertheless, the din of criticism directed at routine immunization has seldom been louder than in the past few years. This results in part from the demotivating effect of great success: threats unseen become unreal to parents. For lack of familiarity with the target illnesses and their hazards, parents may dwell excessively on the minor hazards of vaccination. An excellent new immunization guidebook for parents[1] puts such issues into perspective.

A key concern has been the side effects of the standard pertussis vaccine. The vaccine commonly caused fever and crying from injection-site pain and occasionally triggered seizures or ragdoll reactions. However, fears about neurological damage were rooted in myth, not in established fact.[2] In 1997 this demon was exorcised: every province and territory abandoned whole-cell pertussis vaccine in favour of a newly licensed acellular pertussis-based combination vaccine. This new vaccine causes minor adverse reactions much less often and should help to restore public confidence in the safety of childhood vaccines. It may also be more effective in controlling pertussis. In an efficacy trial conducted in Sweden,[3] this vaccine was 85% effective in preventing pertussis in young children. It was not compared with the whole-cell vaccine previously used in Canada, but case–control studies during recent outbreaks in Quebec estimated the latter's efficacy at about 55% after 4 doses. The new vaccine is a particular boon for preschoolers, in whom the old vaccine caused large local reactions almost 70% of the time.

O Canada: variations on a theme

Province/territory	Age at which second dose of MMR vaccine is recommended	Grade in which school-based hepatitis B program is conducted
British Columbia	18 mo	6
Alberta	4–6 yr	5
Saskatchewan	18 mo (MR)	6
Manitoba	5 yr	–
Ontario	4–6 yr	7
Quebec	18 mo	4
New Brunswick	18 mo	4*
Nova Scotia	4–6 yr	4
Prince Edward Island	4–6 yr	3*
Newfoundland	18 mo	4
Yukon Territory	18 mo	4
Northwest Territories	18 mo	4*

*Program also targets infants.
Adapted from MacDonald.[4]

The improved safety profile of the new vaccine may permit booster immunization of adolescents and young adults, extending protection beyond childhood. Continuing transmission of pertussis among adults is believed to be a major impediment to disease control and a significant source of morbidity, particularly prolonged cough. Provinces and territories deserve credit for organizing the switch-over so rapidly after product licensure, despite the greater cost of the new vaccine.

Although the unanimity among provinces in using the new pertussis vaccine is impressive, such harmony does not extend to other routinely recommended childhood vaccines.[4] Provinces differ in the recommended age for second doses of measles–mumps–rubella (MMR) vaccine, some preferring 18 months and others 4–6 years (see table). Still greater disharmony is evident for school-based hepatitis B vaccine programs, which scatter from grades 3 to 7 (see table). Three provinces also routinely target infants for hepatitis B vaccine, but none uses the same immunization schedule. Although each province made justifiable choices, the differences in their programs cause confusion. Children who move between provinces can miss out on these vaccines, particularly when immunization records are not kept centrally or are not readily available. A sincere effort should be made to harmonize schedules between provinces. In the longer view, some differences between programs can be advantageous. The long-standing preference of some provinces for inactive polio vaccine (IPV) when most were using oral polio vaccine ensured that IPV-containing combination products were developed and licensed in Canada, without which the move to IPV-based programs in 1992 would not have been so easy.

The challenges of measles control have provided an interesting insight into Canadian public health policy under economic constraints. The credo has been "It's not a problem until it happens in my backyard." Years earlier, US health officials observed that measles outbreaks occurred in groups with virtually 100% immunization rates, prompting a recommendation to give children a second dose of measles vaccine routinely. Wary of doubling the program costs, provinces held out until large outbreaks in Ontario and Quebec in 1994–95 made it obvious that Canadian children also needed a second vaccine dose for more certain protection. To their credit, all provinces have now adopted 2-dose programs. Many included older children in catch-up programs, and now about 80% of Canadian children have received 2 doses of measles-containing vaccines. Years ago, large measles outbreaks in several US colleges, with some deaths, prompted most to require students to show proof of receiving 2 doses of measles vaccine. This policy had no counterpart in Canada. In 1997 the first campus-based outbreak in Canada hit Simon Fraser University in BC and rapidly spread to campuses in Alberta. Over 240 cases were recorded in BC alone. BC health authorities responded aggressively, offering vaccine to students and staff of all 26 postsecondary institutions in the province. How many other provinces will learn from this experience and take appropriate action?

Our children deserve the best.

Two important infrastructure issues surfaced in 1997. First, the fate of the Bureau of Biologics, the federal vaccine watchdog, is uncertain as Health Canada reorganizes the Drugs Directorate. Vaccine issues differ so much from drug issues that the bureau risks becoming an orphan adrift in the wrong bureaucracy. Senior officials seem not to appreciate the public's special trust in government to ensure that vaccines are safe and effective. If the bureau is not given the wherewithal to make such assurances, how can we expect the public to adhere to our programs? Finally, guidelines for vaccine providers will be unveiled in the coming months, with the endorsement of many professional organizations. These are timely: the societal investment in childhood vaccines has become substantial and warrants some safeguards. The guidelines are also reasonable, posing little concern for conscientious providers. It is a good thing we do, but we must do it well: our children deserve the best.

References

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