

Transition to a three-dose rotavirus vaccine in BC

Beginning April 2018, BC and other Canadian provinces and territories will begin to use the pentavalent rotavirus vaccine (RV5, RotaTeq, Merck Canada) in their immunization programs for infants, replacing the use of the monovalent live attenuated vaccine (RV1, ROTARIX, GlaxoSmithKline), which has been used in BC since the program started in January 2012. This change is a result of a federally coordinated bulk-purchasing process in which all Canadian jurisdictions participate, and the term for the new contract will be for up to 3 years.

As is RV1, the RV5 is a live orally administered vaccine with similar contraindications. Both rotavirus vaccines are recommended for use by the National Advisory Committee on Immunization, without a preferential recommendation for one or the other. Both have been used globally in national immunization programs. Comparable vaccine effectiveness (VE) for the two has been observed in postmarketing surveillance evaluation for outcomes of hospitalization, emergency department visits, and outpatient visits. In low rotavirus mortality countries such as Canada, for RV1, median VE was 84% (range, 19%–97%) in 13 studies, and for RV5, median VE was 90% (range, 63%–100%) in 20 studies.¹

The main difference for the BC program will be the schedule of immunization: for RotaTeq, it is *three* doses, at 2, 4, and 6 months of age, whereas for ROTARIX, it was *two* doses at 2 and 4 months of age. The series can be started as early as 6 weeks of age, but Canadian recom-

mendations are for series completion by 8 months and 0 days of age; these parameters are common to both products and are based on potential association with intussusception. Based on BC immunization registry data for participating health authorities (all but Vancouver Coastal), rotavirus vaccine 2-dose series completion rates have increased by 12% since the first year of the program. By year of birth, these rates are 70% for 2012, 75% for 2013, 79% for 2014, and 81.8% for 2016.² In moving to the RotaTeq product, however, providers will need to increase their efforts to achieve on-time immunization through use of reminders and recalls based on current completion rates for the coadministered DPT-containing vaccine. For infants born in 2016, while 87.6% received 2 doses of DPT-containing vaccine by 8 months of age, only 76.6% have completed 3 doses of DPT-containing vaccine by this milestone; 14.3% never started a series of rotavirus vaccine.

BC health units will be working with physician providers as they transition from RV1 to RV5, as the timing of this change will vary depending on remaining RV1 inventory at the local level. The two vaccines are not considered interchangeable and, ideally, infants who commence a series with RV1 should complete the second dose with that product. Those who must transition to RV5 after starting RV1 should receive a total of 3 doses of rotavirus vaccine.

In several prior surveys of BC parents, concern about vaccine safety has been the most frequently cited reason for refusal of vaccines. Both approved rotavirus vaccines have demonstrated high levels of safety and are well tolerated. While intussusception had been observed at a rate of about 1 in 10 000 recipients with a prior rotavirus vac-

cine approved in the USA in the 90s, this adverse event has not been consistently observed in all countries and studies using the RV1 and RV5 vaccines. At present and based on a large number of studies in different global settings, the generally accepted excess risk of intussusception is 1 to 2 cases per 100 000 vaccine recipients, mainly associated with the first dose.³ This risk, however, has not been detectable in the Canadian population using administrative data on hospitalized intussusception among infants, and in that study there was no increase in the rate of intussusception following introduction of rotavirus vaccine.⁴

Finally, it is important for providers to be aware that administering the rotavirus vaccine prior to injectable vaccines given at the same visit has been demonstrated to provide comparable analgesic effect to that of orally administered sucrose solutions.⁵ Both rotavirus vaccines contain similar quantities of sucrose^{6,7} and this analgesic effect is expected with use of RV5 given prior to injectable vaccines, of which up to three injections are recommended for coadministration at the 2, 4, and 6 month visits, respectively.

BC resources for the use of vaccines including rotavirus are online.^{8,9}

—**Monika Naus, MD, MHSc, FRCPC, FACPM**
Medical Director, Immunization Programs and Vaccine Preventable Diseases Service
BC Centre for Disease Control

References

1. Jonesteller CL, Burnett E, Yen C, Tate JE, Parashar UD. Effectiveness of rotavirus vaccination: A systematic review of the first decade of global postlicensure data, 2006-2016. *Clin Infect Dis* 2017;65:840-850.

Continued on page 224

This article is the opinion of the BC Centre for Disease Control and has not been peer reviewed by the BCMJ Editorial Board.

Dr W.R.J. (Bill) Martin 1927–2017



It is with much sadness I write of the passing of my friend, a long-time colleague, Dr W.R.J. (Bill) Martin on 26 December 2017. Bill passed away peacefully in his home on Galiano Island surrounded by his beloved family. He was predeceased by his wife, Gwen, and leaves his four children, Shelley, Sandy, Craig, and Scott and their families. He also leaves two surviving siblings and numerous nieces and nephews.

Bill practised ophthalmology in Burnaby for over 30 years in conjunc-

tion with a long-term partnership with Drs Jack Siddall, Sam Gibson, Don Matheson, and later Drs Bill Pratt and Larry Daitz. Bill always put the interest of his patients first and practised medicine with a high degree of skill and integrity. Bill and Gwen were active in the medical community in Burnaby, and Bill was given a long-term service medal by Burnaby Hospital in recognition of his many years of service to that institution and the community.

Bill was born and raised in Burnaby. He and his siblings grew up during the Great Depression when money and work was scarce. Nevertheless, after the war, Bill attended the University of Oregon and UBC where he met and married the love of his life, Gwen, a romance that lasted over 60 years.

Bill was a member of the first graduating class of the medical school at UBC in 1954. He did a few years of practice with his boyhood friend, Dr Hugh Pontifex, mostly in Merritt. He loved the challenges of bringing modern medicine to what was then an isolated community.

Bill took his eye training at Vancouver General in the late 1950s, and during his residency, he was instrumental in assisting the new professor of ophthalmology, Dr AJ Elliot, in modernizing and expanding the department at Vancouver General Hospital and UBC.

Bill and Gwen retired to Galiano Island in 1991 and quickly adapted to island life. Bill spent a few years as a consultant in ophthalmology for the Workers' Compensation Board. He and Gwen traveled widely, and Bill indulged in his lifelong passion of woodworking producing many beautiful grandfather clocks and guitars, which are now family treasures.

Bill lost his beloved Gwen in 2011. His health began a slow decline and he left us gently in the last days of 2017 in his 91st year.

Bill was a man of high intelligence, great kindness, and integrity. He adored his family, and his family adored him. His was a life well lived.

Rest in peace, my friend.

—D.C. Matheson, MD, FRCSC
North Vancouver

bccdc

Continued from page 223

2. BC Centre for Disease Control. Immunization uptake in children by the second birthday 2007-2016. Accessed 27 March 2018. www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Research/Statistics%20and%20Reports/Immunization/Coverage/2_Year_Old_Coverage_2005-2014_Birth_Cohorts.pdf.
3. Burnett E, Parashar U, Tate J. Rotavirus vaccines: Effectiveness, safety, and future directions. *Paediatr Drugs* 2018 Jan 31. [Epub ahead of print].
4. Hawken S, Ducharme R, Rosella LC, et al. Assessing the risk of intussusception and rotavirus vaccine safety in Canada. *Hum Vaccin Immunother* 2017;13:703-710.
5. Taddio A, Flanders D, Weinberg E, et al. A randomized trial of rotavirus vaccine versus sucrose solution for vaccine injection pain. *Vaccine* 2015;33:2939-2943.
6. Product monograph. RotaTeq. Merck Canada Inc. Accessed 27 March 2018. https://pdf.hres.ca/dpd_pm/00041450.PDF.
7. Product monograph. ROTARIX. GlaxoSmithKline Inc. Accessed 27 March 2018. <http://ca.gsk.com/en-ca/products/rotarix>.
8. BC Centre for Disease Control. Communicable disease control manual, Chapter 2: Immunization, Part 4: Biological products – vaccines and immune globulins. Accessed 27 March 2018. www.bccdc.ca/health-professionals/clinical-resources/communicable-disease-control-manual/immunization.
9. BC Centre for Disease Control. Immunization: Clinical resources. New immunization program updates and Q&As. Accessed 27 March 2018. www.bccdc.ca/health-professionals/clinical-resources/immunization#Clinical—Resources.