Measles vaccination: a shot of common sense

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In the past few years, North America and Europe have reported increasing and alarming numbers of measles outbreaks. With France having experienced 10 deaths as a result of its 2008–2011 measles outbreak,[1] falling rates of childhood vaccination have become a rising concern. So, how is Canada doing with childhood vaccination rates, you ask? Well, we don't know.

Measles has a case fatality rate of one to three per thousand cases in the developed world.[2] It is a highly contagious epithelial disease; more than 90% of unvaccinated people who are exposed to the virus will contract the disease.[3] Measles can lead to corneal ulceration, making it one of the leading causes of blindness in the developing world. Uncommon but severe complications of measles include pneumonia, meningitis and encephalitis. People with weakened immune systems are particularly vulnerable.

Before the availability of the measles–mumps–rubella (MMR) vaccine, measles was widespread in Canada, and epidemics occurred every two to three years. Many organizations and countries introduced vaccination and eradication campaigns in the 1980s and 1990s with great success. In 1998, Canada declared its last case of endemic measles, and in 2000, the Centers for Disease Control and Prevention announced that measles had been effectively eliminated from the United States.

The World Health Organization suggests a necessary minimum immunization rate of 95% to eliminate measles. The most recent Canadian national data,[4] which unfortunately are 10 years old, suggest a trend of decreasing immunizations. Seventy-nine percent of children receive their second dose of measles vaccine by their seventh birthday. Coverage for a second dose of measles is lowest in the 17-year-old group, at 62%. Results of the 2013 Childhood National Immunization Coverage Survey are not yet available and will not include comprehensive data from all regions.

The fall in uptake rates has likely contributed to Canada recently placing 28th of 29 of the richest countries with respect to childhood vaccination rates.[5] Among the complex reasons for vaccine hesitancy is that some people believe that diseases that have been prevented by common vaccinations no longer pose a true threat. This fallacy is easily propagated when the disfiguring and paralyzing ravages of conditions such as measles are not routinely seen in Canada.

But complacency is not the only factor. The Internet can also be credited as a source of dangerous, incomplete information and misinformation. The Internet is a haven for unsubstantiated antivaccine opinion, which perpetuates concerns about vaccine safety. Unfortunately, this has further opened the door to many medically unsound decisions to forgo vaccination.[6]

No one is legally obligated to be vaccinated, but physicians have an ethical obligation to advocate for their patients, which includes counselling vaccine-hesitant parents on the potential complications of vaccine-preventable diseases. We must emphasize that there is absolutely no scientific controversy about the effectiveness or safety of childhood vaccines, particularly the MMR vaccine. Clear, open communication with parents about vaccinations should take place early to allow an opportunity for accurate information to be presented and discussed.

All physicians should actively promote disease prevention. In the past 50 years, vaccinations have saved more Canadian lives than any other health measure. The simple fact is that low vaccination rates are contributing to preventable disease outbreaks. As evidenced with the recent measles outbreaks in Canada, the US and France, one unimmunized person puts the well-being of greater society at risk.

This problem must also be addressed from a system-wide perspective. We require strong federal and public health leadership as well as the proper infrastructure to establish an appropriately funded national vaccination strategy. Though certain illnesses might respect geographic boundaries, measles will not remain within provincial borders, because it has such a high transmissibility. It must be managed and monitored with a national solution.

Promptly and accurately identifying children (and adults) who are due or overdue for vaccinations is crucial to more efficiently contain vaccine-preventable outbreaks. Harmonization of the vaccine schedules across the country would simplify public health messaging, education and programming.[7] We also need a national vaccination registry, as well as an overseeing body that will work with the National Advisory Committee on Immunization to address vaccine hesitancy. This would help to fill Canada's information gap by improving disease surveillance and prevention processes, and help health officials and policy-makers target specific groups and geographic regions for education campaigns.

Unless these measures are put in place, Canadians can expect to see more measles outbreaks.

For references, see Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.140587/-/DC1

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