

The Doctors of Prince Edward County urge every adult to get the Covid-19 vaccine when available.

To the citizens of PEC,

Recently there has been a debate in the pages of this newspaper regarding the safety and effectiveness of vaccines in general and of the Covid-19 vaccine in particular. We, as a group of physicians with nearly 900 years of collective clinical experience, having given many tens of thousands of various vaccines over the decades, felt it our duty to share the facts about the Covid-19 vaccine with our patients and everyone else living in this area.

First, some history - vaccinations have been around since the first Smallpox vaccine was developed in 1796. Since then, and during some of our lifetimes, we have:

- seen the worldwide eradication of Smallpox.
- seen the elimination of Polio from all but 3 countries in the world.
- seen huge drops in incidence of common but possibly fatal infections such as Influenza, Pneumonia, Diphtheria, Tetanus, Pertussis (whooping cough), Measles, Mumps, German measles, Meningitis, Epiglottitis, Chickenpox, Shingles, Hepatitis A & B, and others.

Due to vaccines, many doctors have never seen a case of some of these once common and often fatal diseases.

Now, along comes the Coronavirus, or officially the SARS-CoV-2 virus, which causes the infection known as **Covid-19**. Just over a year ago we began hearing reports of thousands of cases of this virus from Wuhan, China, with worrying news of its contagiousness and severity. As country after country experienced outbreaks of Covid-19 and scenes of packed intensive care units (ICUs) were shown on the news, a sense of dread came across many of us, especially those of us in health care. Knowing that even without a new, serious infectious disease to contend with, our hospitals and ICUs are often full to capacity. How were we going to cope with this anticipated onslaught?

Most countries, including Canada, initially coped by shutting down all but essential services, cancelling all but emergency surgery and treatments. We started avoiding other people and began wearing masks in more and more situations. People waiting for elective surgery such as cataract surgery, joint replacements, etc. were put on indefinite hold. Cancer and cardiac surgeries were done in emergencies only, leaving patients with growing tumours or clogged arteries in their hearts hoping they would survive until the lockdown was over. Some did not. The lockdown mostly worked, and Canada's infection rates remained quite low. Unfortunately, many of our most vulnerable citizens in long term care homes were infected and succumbed prior to the widespread lockdown. Who will ever forget the reports of the deaths of over half of the residents of the Pinecrest Nursing Home in Bobcaygeon, ON in March and April 2020?

While Covid-19 infections in the GTA and other larger cities increased, in Hastings and Prince Edward Counties and surrounding counties we did very well in comparison, with "only" 366 cases and 5 deaths as of this writing. We can be proud of this achievement, but over the past few months the number of cases has increased dramatically. From the first reported infected patient on March 18, 2020, it took until September 4, 2020 to record our 50th case - 316 more in the 4 months since then. We all know the challenges of lockdowns, social distancing, inability to

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travel, wearing masks, etc. but relief is hopefully on the horizon in the form of Covid-19 vaccines.

As soon as the world public health leaders became aware of the severity of the Covid-19 pandemic, unprecedented effort, resources, expertise, and money has been poured into the development of multiple Covid-19 vaccination possibilities. 2 of these vaccines are now approved in Canada and the US, and numerous others may soon become available. Let us focus on the vaccines currently approved in Canada, from the companies **Pfizer-BioNTech** and **Moderna**.

The Pfizer-BioNTech and Moderna vaccines, like some others in development. are messenger RNA vaccines, which contain snippets of genetic instructions that coax our immune cells to manufacture antibodies to the "Spike" protein on the surface of the coronavirus to combat the virus and prevent Covid-19. These vaccines were developed, tested, and approved in less than a year after the Covid-19 virus was identified! Other virus vaccines have taken much longer, often up to 10 years. This raises questions in many people's minds:

- how did these vaccines get developed so quickly?
- how effective are they?
- how safe are they?
- how long does immunity last?

We will attempt to answer these questions.

Firstly, the world's scientists were able to develop COVID-19 vaccines so quickly because of:

- decades of research on other strains of coronavirus prior to Covid-19, such as Middle East Respiratory Syndrome (MERS) and Sars-CoV (SARS).
- advances in science and technology.
- international collaboration among scientists, health professionals, researchers, industry, and governments.
- increased dedicated funding.

Secondly, between them the Pfizer-BioNTech and Moderna companies were able to recruit over 76,750 volunteers who had not previously contracted Covid-19 to enter randomized, double-blinded clinical trials of the effectiveness and safety of their vaccines. These are enormous numbers compared to most clinical trials, because large numbers of healthy people were anticipated to need vaccinating and because understanding effectiveness and safety were paramount.

These trials were done between July 2020 and January 2021 by randomly dividing the volunteers into 2 very similar groups by gender, age, ethnicity, and medical conditions. Half of each group received 2 doses of the active vaccine and the other half received 2 doses of an identical looking placebo vaccine. Then the participants were observed for many months and tested for Covid-19 if they developed any symptoms. Finally, around the beginning of December 2020 the results were analyzed and published in major medical journals.

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The effectiveness of both vaccines was demonstrated by nearly identical results, with an almost 95% reduction in the incidence of Covid-19 infections among the group who received the vaccine compared to the placebo recipients. Between the two studies, only 19 vaccinated patients were infected with Covid-19, compared to 347 people who received the placebo shot. More strikingly, while 39 of the placebo recipients developed a severe case of the infection requiring hospitalization, only 1 of the actual vaccine recipients developed severe disease. While there was only 1 death among the participants in both studies, it occurred in a person who received the placebo vaccine. These are very impressive results for any vaccination trial!

The vaccines both seemed to be very safe. Safety has been maintained because before any vaccines are available in Ontario they must:

- undergo rigorous clinical trials to ensure they are safe and effective.
- be evaluated and authorized for use by Health Canada using rigorous standards.

While many people develop minor side effects after receiving the vaccine such as a sore arm, mild fever, aches and pains, and fatigue, these are felt to be signs that the immune system is being activated by the vaccine and are similar to what occurs with most vaccines. Severe reactions were rare (usually allergic reactions), similar in number to other vaccines, and were generally easily treatable.

At this point the experts don't know how long the immunity triggered by the vaccine will last. But recent encouraging reports have been published showing that there are some recipients who were vaccinated over 8 months ago who still have evidence of immunity to the Covid-19 virus.

New, more contagious virus variants have developed and spread over the past few months that so far seem equally susceptible to the original vaccines. If the new strains are not susceptible, these vaccines can be readily adapted by the manufacturers to new mutations in the virus, which is a great asset in our battle against the pandemic.

<https://covid-19.ontario.ca/covid-19-vaccines-ontario> is an excellent website that explains all this information in more detail.

So what do we recommend? **We universally recommend getting the Covid-19 vaccines (2 doses, weeks apart) as soon as it becomes available to you.** In Hastings-Prince Edward the Public Health Unit is working on a plan to provide vaccination clinics to get vaccines into the arms of everyone who wants one, even if they don't have a family physician or other primary care provider. Without mass vaccinations, it will probably take years for natural immunity to build up in the community and the ongoing infections and deaths will continue to put enormous pressure on our health care system.

Currently, the vaccines are in limited supply. For now, in our area vaccines are only being given to residents and staff of long-term care homes. Next, the plan will be to vaccinate front line health care workers and then move on to independently living seniors, and then to the general population as more of the vaccines are delivered. Since the harm caused by the Covid-

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Covid-19 virus is generally much worse in the older population, the plan is to go from oldest to youngest in prioritizing vaccinating everyone. Talk to your primary health care provider about whether you should get the Covid-19 vaccine before your turn (by age) comes up.

It is anticipated that by the end of this year enough of the vaccines will have been delivered to Canada to provide a vaccination to everyone who wants one. Both of the currently available vaccines will be used, and everyone should get two doses of the same vaccine a few weeks apart. At this point the vaccines are not approved for people under the age of 16 years, but that may change with more research.

Once we reach about 70-80% of citizens who have developed immunity either by being infected with the virus or by getting immunized, then we will achieve herd immunity and Covid-19 will gradually disappear. Then, hopefully, life can return to normal. Unmasked social gatherings and travel can resume, and the risk of having our hospitals overwhelmed by sick patients will be much reduced.

Almost everyone should get vaccinated to protect themselves and also as a civic duty to protect the most vulnerable in our society from this devastating infection.

Sincerely,

The Doctors of Prince Edward County