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Vaccines remain one of the greatest medical advances in human history

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The current U.S. administration's denigration of vaccines is a completely unfounded and extremely dangerous antiscientific stance that risks serious consequences for the health of the global population, particularly among children and adolescents.

In Canada, as in all industrialized countries, the life expectancy of a child born today is approximately 80 years; almost double that of 150 years ago. The main factor explaining this phenomenal increase in longevity is the remarkable decrease in premature mortality caused by infections during childhood and early adulthood.

For example, in Montreal in 1899, there were 2,071 deaths for every 7,715 births, a mortality rate of 27%, whereas today it is less than 1%. Infant mortality was a daily occurrence for families during this era because young children were particularly vulnerable to the many pathogens present in the environment: smallpox, polio, diphtheria, whooping cough, tetanus, measles, and tuberculosis, to name a few, all pose enormous health risks to children and can lead to their death.

VACCINES THAT SAVE LIVES

In addition to improved hygiene conditions and the discovery of antibiotics, this significant reduction in infant mortality is due in large part to the development of highly effective vaccines, which radically reduce the risk of contracting these infections and, in some cases, have even led to the complete (smallpox) or near-complete (polio) eradication of the viruses responsible for these serious diseases. In all cases, without exception, the administration of a vaccine against a given disease causes a significant and very rapid drop in the incidence of that disease and the associated mortality.

These effects of vaccination on reducing premature mortality are still relevant today, with the recent development of vaccines against several serious diseases such as pneumococcal infections, shingles, hepatitis B, syncytial virus, meningitis caused by serogroup C meningococcus, and cervical cancer caused by HPV. In the latter case, recent data indicate that vaccination is completely eradicating this cancer! And that's not even counting the COVID-19 vaccine, developed in record time using revolutionary mRNA biochemistry, which has saved approximately 2.5 million lives worldwide, particularly among people over 60 (1).

VACCINE EFFICACY AND SAFETY

Given the dramatic positive effects of vaccination on longevity, it is astonishing, to say the least, to see their efficacy and/or safety being questioned by some, perhaps most famously the current U.S. Secretary of Health and Human Services. Although he has no medical training (much less in biochemistry or virology), he recently questioned the usefulness of several vaccines and, in the process, sparked a major crisis at the Centers for Disease Control and Prevention (CDC), leading to the resignation of several senior infectious disease experts.

The primary rationale for limiting vaccination is the myth that the increased incidence of autism in children is linked to vaccines, particularly the MMR (measles-mumps-rubella) vaccine. It cannot be emphasized enough that this is false: the initial study on which this belief is based was proven fraudulent and retracted (the lead author was even struck off the medical register in 2010), while, conversely, a very large number of serious and rigorous studies, involving hundreds of thousands of vaccinated individuals, have unequivocally shown that vaccines, and the stabilizing and preservative ingredients they contain, have no impact on the development of this neurological disorder.

In all this climate of deliberately provoked confusion, it is essential to reiterate: vaccines are effective, safe, and save countless lives. They undergo an extremely rigorous evaluation process and must pass multiple stages to prove their efficacy and lack of side effects before being approved for vaccination campaigns.

It is therefore tragic that unfounded beliefs could call into question the usefulness of vaccines, undoubtedly one of the most important scientific revolutions in human history, and thus expose the world's population to deadly infections. We must fight with the utmost energy this frontal assault on science and its achievements, which is reviving unfounded beliefs worthy of the Middle Ages. This step backward is unacceptable, because it is thanks to science that we have learned to better understand the world around us and to combat the diseases that afflict us. Vaccines are the concrete expression of the success of this scientific approach and its extraordinary impact on improving the human condition and on its survival.

(1) Ioannidis JPA et al. Global estimates of lives and life-years saved by COVID-19 vaccination during 2020-2024. JAMA Health Forum 2025; 6: e252223.

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