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Can mathematics change the world? Insights into policy changes using HPV modelling as an example

We use a mathematical model to investigate the influence of quadrivalent vaccine programs, which differ by the grade of vaccination and number of doses given, on the prevalence of HPV 6, 11, 16 and 18. We address the following research questions: 1. Does the grade at which the girls are vaccinated significantly affect the outcome of the program? 2. What coverage rate must the provinces reach in order to reduce the impact of HPV on the Canadian population? 3. What are the implications of vaccinating with two vs. three doses? In addition, we offer insights into how mathematical models can make their way into policy and contribute to real-world changes, such as the Quebec policy change of the recommended HPV doses.