
Ministry of Health and Health Authorities
Influenza Immunization Coverage
Notes

Influenza Immunization for 12-64 Year Olds with Select High Risk Medical Conditions

DATA SOURCE

Public Use Microdata File for the Canadian Community Health Survey, 2003 and 2005

YEAR

2003 and 2005

NOTES

1. Survey Methods

The Canadian Community Health Survey (CCHS) is a cross-sectional survey that collects information related to the health status, health care utilization and health determinants of the Canadian population. The target population is persons aged 12 years or older, living in private dwellings.

The CCHS used three sampling frames to select the sample of households: 48-49% of the sample came from an area frame, 50% came from a list frame of telephone numbers and 1-2% came from a Random Digit Dialing sampling frame. Sample units selected from the telephone list frame were interviewed from centralized call centres. Units selected from the area frame were interviewed by decentralized field interviewers. In some situations, field interviewers completed some interviews or part of an interview by telephone.

2. Weights

The CCHS was not a census of all Canadians, rather a probability sample was used to obtain a representative sample of Canadians. Each individual in the probability sample "represents", besides himself or herself, several other persons not in the sample. Each respondent was assigned a sampling weight indicating the number of individuals they represent. For estimates produced from the survey data to be representative of the covered population and not just the sample, estimates using CCHS data are derived by identifying the records of individuals in the sample with the specific characteristic(s) of interest and summing the weights entered in those records.

3. Numerator

Respondents of the Canadian Community Health Survey (CCHS) who lived in British Columbia, were under 65 years of age, indicated that they had one or more select high-risk condition and indicated that they received the flu shot less than 1 year ago.

4. Denominator

Respondents of the CCHS who lived in British Columbia, were under 65 years of age, indicated that they had one or more select high-risk condition and answered the question "Have you ever had a flu shot?"

5. Calculation of Influenza Immunization Coverage

Weighted Numerator ÷ Weighted Denominator x 100%

6. Data Quality

In 2005, the combined response rate in British Columbia was 77.3% and in the Health Service Delivery Areas ranged from 68.3% to 86.2%. In 2003, the combined response rate in British Columbia was 81.2% and in the Health Service Delivery Areas ranged from 76.5% to 90.2%.

The sampling error of the estimates from the CCHS can be quantified by the coefficient of variation. Approximate coefficients of variation for the influenza vaccine coverage results were calculated using the CCHS Microdata File's Approximate Sampling Variability Tables.

95% Confidence intervals for the immunization coverage estimates were calculated using the coefficients of variation as outlined in the CCHS 2003 User Guide for the Public Use Microdata File.

In 2005, the coefficient of variation for influenza immunization coverage for individuals under the age of 65 with cancer was 20.9%, indicating that the estimate had high sampling variability. In 2003, the coefficient of variation for influenza immunization coverage for individuals under the age of 65 with emphysema or COPD was 16.6%, indicating that the estimate had high sampling variability. All other coefficients of variation were between 0.0 and 16.5%, indicating that estimates of influenza immunization vaccine coverage for individuals with other high-risk conditions had acceptable degrees of variability.

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7. Exclusions from the Sampling Frame

Individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Armed Forces and residents of certain remote regions were excluded from the CCHS sampling frame. The CCHS covers approximately 98% of the Canadian population aged 12 years and over.

Due to the exclusion of individuals living on Reserves and residents in certain remote regions, estimates for the Northern Health Authority may not be as representative of the Health Authority's population as estimates for other Health Authorities.

8. For Further Information about the CCHS

For further information about the CCHS methods or limitations, please see the Canadian Community Health Survey 2003/2005 User Guide for the Public Use Microdata File.

9. High Risk Conditions

Influenza immunization is recommended for individuals who have conditions that place them at a higher risk of severe morbidity or mortality if infected with influenza. These conditions include:

- Anatomic or functional asplenia
- Sickle cell disease
- Immunosuppressant related to disease or therapy
- HIV positive adult
- Hematopoietic stem cell transplant recipient
- Solid organ transplant recipient or awaiting transplant
- Chronic cardio-respiratory disease
- Chronic liver disease
- Chronic hepatitis B
- Chronic hepatitis C
- Chronic renal disease
- Diabetes
- Cystic fibrosis

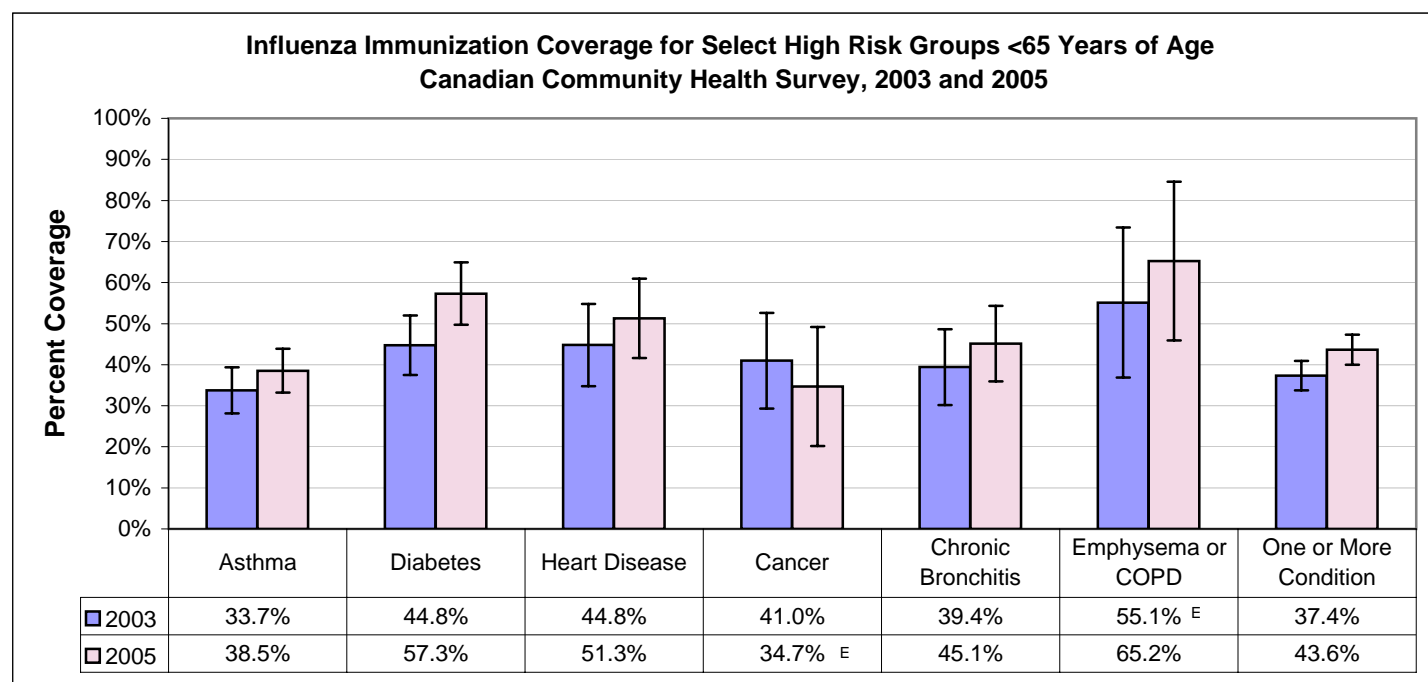
The CCHS did not include questions about all of these conditions. These analyses are limited to conditions included in the CCHS. Relevant conditions included in the CCHS are:

- | | |
|------------------------------------|---|
| Asthma requiring medical attention | Answered yes to: "In the past 12 months, have you taken any medicine for asthma such as inhalers, nebulizers, pills, liquids or injections?" |
| Diabetes | Answered yes to: "Do you have diabetes?" |
| Heart disease | Answered yes to: "Do you have heart disease?" |
| Cancer | Answered yes to: "Do you have cancer?" |
| Chronic bronchitis | Answered yes to: "Do you have chronic bronchitis?" |
| Emphysema or COPD | In 2005, answered yes to "Do you have emphysema?" and/or answered yes to "Do you have chronic obstructive pulmonary disease (COPD)?" In 2003, answered yes to: "Do you have emphysema or chronic obstructive pulmonary disease (COPD)?" |

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High-Risk Condition	2003		2005	
	% Coverage	95% CI	% Coverage	95% CI
Asthma requiring medical attention	33.7%	28.1% - 39.4%	38.5%	33.2% - 43.8%
Diabetes	44.8%	37.5% - 52.0%	57.3%	49.8% - 64.9%
Heart Disease	44.8%	34.8% - 54.8%	51.3%	41.7% - 60.9%
Cancer	41.0%	29.3% - 52.6%	34.7% ^E	20.2% - 49.1%
Chronic bronchitis	39.4%	30.2% - 48.6%	45.1%	35.9% - 54.3%
Emphysema or chronic obstructive pulmonary disease	55.1% ^E	36.8% - 73.5%	65.2%	45.9% - 84.5%
One or more of the above conditions	37.4%	33.8% - 41.0%	43.6%	40.0% - 47.3%

E - The user is advised that this estimate has high sampling variability.



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See data sources and notes on accompanying cover pages.