Supplemental materials for:

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Author Contributions: Dr Naimer, Mr Campitelli, Dr Kwong, Mr Bhatia, and Dr Moineddin had access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. These datasets were linked using unique encoded identifiers and analyzed at the Institute for Clinical Evaluative Sciences. Additional analyses of aggregated data were conducted at the Department of Family and Community Medicine, University of Toronto.

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Appendix

Table A1: Ontario Health Insurance Plan (OHIP) billing codes used to identify cervical cancer screening and chlamydia testing

Procedure or Test	**OHIP billing code**
Papanicolaou smear	G365, G394, E430
Interpretation of cervicovaginal specimens	L713, L733, L812
Chlamydia isolation	L622

Methodological Details

A: Calculation of age- and sex-specific outcome rates

The age- and sex-specific outcome rates were calculated as follows:

Given that the policy change occurred in May 2012, we aimed to separate the months preceding the policy change with the months including the policy change. Thus, we divided the study period into the following 3-month quarters:

a. February, March, April
b. May, June, July
c. August, September, October
d. November, December, January

We obtained monthly counts of chlamydia testing, Pap testing, and chlamydia incidence during the study period. We used the yearly census population estimates, which are dated to July 1st of each year, and interpolated the population between each dated Census estimate.

We averaged the monthly interpolated populations for each period, and summed the monthly counts to arrive at the rate for each age group/sex/outcome using the following formula:

$$R = 1000 * \frac{\sum_i^{i+3} c_i}{\sum_i^{i+3} N_i/3}$$

Where *R* is the rate per 1,000 individuals, c is the number of occurrences of an outcome for a given 5-year age group and sex, N is the number of individuals according to the Census estimates, for that given age group and sex, and *i* is the first month of a given period.

B: Modelling

The segmented regression function was of the form:

$$X_t = \beta_0 + \beta_1 time + \beta_2 I_t + \beta_3 Time\_after + u_t,$$

Where I_t was a dummy variable set at zero for the period before the intervention and one for periods after the intervention. Time_after was zero before the intervention and counted the number of periods after the intervention, whereas u_t was an ARIMA(p,q) process.

The rational function was of the form:

$$X_t = \beta_0 + \beta_1 season + \beta_2 time + \frac{w_0}{1-\delta B} I_t + u_t,$$

Where season was a dummy variable set to one for quarters containing months November, December, and January, and zero otherwise, and B was a backward shift operator.

The variance *v(.)* for the absolute change $A = X_j - X_i$ was calculated using the formula:

$$v(A) = v(X_j) + v(X_i) - 2 * Cov(X_j, X_i)$$

The variance *v(.)* for the relative change: $Z = \frac{X_j - X_i}{X_i} * 100$ was calculated using the Delta method, with the formula:

$$v(Z) = \left[v(X_j) * \frac{1}{X_i^2} + v(X_i) * \frac{X_j^2}{X_i^4} - \frac{2X_j}{X_i^3} * cov(X_j, X_i) \right] * 100^2$$

The calculated variances were used to construct 95% confidence intervals.

Table A2. Parameter estimates for the rational function model

Outcome	Age Group	Sex	Parameter	Estimate	StdErr	tValue	Probt	p	q
Chlamydia testing	15-19	F	β_0	52.542869	1.07696801	48.79	<.0001	0	0
Chlamydia testing	15-19	F	β_1	-0.8443857	0.63560673	-1.33	0.184	0	0
Chlamydia testing	15-19	F	β_2	-0.1377642	0.18939474	-0.73	0.467	0	0
Chlamydia testing	15-19	F	w_0	-4.2965486	0.7487639	-5.74	<.0001	0	0
Chlamydia testing	15-19	F	δ	0.64462978	0.06676299	9.66	<.0001	0	0
Chlamydia testing	20-24	F	β_0	96.5764512	2.29258813	42.13	<.0001	0	0
Chlamydia testing	20-24	F	β_1	-1.8730702	1.33325652	-1.4	0.1601	0	0
Chlamydia testing	20-24	F	β_2	0.49646427	0.40433013	1.23	0.2195	0	0
Chlamydia testing	20-24	F	w_0	-6.7667557	1.46551478	-4.62	<.0001	0	0
Chlamydia testing	20-24	F	δ	0.71018826	0.06763022	10.5	<.0001	0	0
Chlamydia testing	25-29	F	β_0	82.7960575	2.10750393	39.29	<.0001	0	0
Chlamydia testing	25-29	F	β_1	-1.0703348	1.22003219	-0.88	0.3803	0	0
Chlamydia testing	25-29	F	β_2	1.01703711	0.37191356	2.73	0.0062	0	0
Chlamydia testing	25-29	F	w_0	-6.5025174	1.29728489	-5.01	<.0001	0	0
Chlamydia testing	25-29	F	δ	0.74118232	0.05661886	13.09	<.0001	0	0
Pap testing	15-19	F	β_0	103.187771	3.79244382	27.21	<.0001	0	0
Pap testing	15-19	F	β_1	-1.3536453	2.22703517	-0.61	0.5433	0	0
Pap testing	15-19	F	β_2	-2.5333709	0.66763537	-3.79	0.0001	0	0
Pap testing	15-19	F	w_0	-18.867732	2.57138866	-7.34	<.0001	0	0
Pap testing	15-19	F	δ	0.6636226	0.04923998	13.48	<.0001	0	0
Pap testing	20-24	F	β_0	247.025492	7.41244637	33.33	<.0001	0	0
Pap testing	20-24	F	β_1	-0.6358139	4.27965468	-0.15	0.8819	0	0
Pap testing	20-24	F	β_2	-3.8229274	1.30825577	-2.92	0.0035	0	0
Pap testing	20-24	F	w_0	-25.133008	4.42986755	-5.67	<.0001	0	0
Pap testing	20-24	F	δ	0.76574054	0.04650503	16.47	<.0001	0	0
Pap testing	25-29	F	β_0	282.15491	6.78635618	41.58	<.0001	0	0
Pap testing	25-29	F	β_1	1.17850758	3.90708585	0.3	0.7629	0	0
Pap testing	25-29	F	β_2	-3.1507391	1.19714773	-2.63	0.0085	0	0
Pap testing	25-29	F	w_0	-26.579745	3.85470536	-6.9	<.0001	0	0
Pap testing	25-29	F	δ	0.80765465	0.03412742	23.67	<.0001	0	0
Chlamydia incidence	15-19	F	β_0	4.04080033	0.09041486	44.69	<.0001	1	0
Chlamydia incidence	15-19	F	β_1	-0.0630161	0.09837497	-0.64	0.5218	1	0
Chlamydia incidence	15-19	F	β_2	-0.0479234	0.01281318	-3.74	0.0002	1	0
Chlamydia incidence	15-19	F	w_0	-0.2980636	0.17346663	-1.72	0.0857	1	0
Chlamydia incidence	15-19	F	δ	-0.7305386	0.32314765	-2.26	0.0238	1	0
Chlamydia incidence	20-24	F	β_0	4.61815686	0.15471674	29.85	<.0001	0	0
Chlamydia incidence	20-24	F	β_1	-0.1326287	0.08901287	-1.49	0.1362	0	0
Chlamydia incidence	20-24	F	β_2	0.05568986	0.02727653	2.04	0.0412	0	0
Chlamydia incidence	20-24	F	w_0	-0.2585449	0.08567494	-3.02	0.0025	0	0
Chlamydia incidence	20-24	F	δ	0.82829974	0.07417075	11.17	<.0001	0	0

Chlamydia incidence	25-29	F	β_0	1.96772162	0.0678745	28.99	<.0001	1	0
Chlamydia incidence	25-29	F	β_1	0.0094316	0.07974531	0.12	0.9059	1	0
Chlamydia incidence	25-29	F	β_2	0.0256932	0.01081633	2.38	0.0175	1	0
Chlamydia incidence	25-29	F	w_0	-0.1062223	0.03609894	-2.94	0.0033	1	0
Chlamydia incidence	25-29	F	δ	0.75929588	0.09165885	8.28	<.0001	1	0
Chlamydia incidence	15-19	M	β_0	0.88203023	0.02981005	29.59	<.0001	1	0
Chlamydia incidence	15-19	M	β_1	0.04791197	0.02448469	1.96	0.0504	1	0
Chlamydia incidence	15-19	M	β_2	0.0120056	0.00498177	2.41	0.016	1	0
Chlamydia incidence	15-19	M	w_0	-0.0328329	0.01437479	-2.28	0.0224	1	0
Chlamydia incidence	15-19	M	δ	0.88518392	0.08858112	9.99	<.0001	1	0
Chlamydia incidence	20-24	M	β_0	2.38416845	0.09990258	23.86	<.0001	0	0
Chlamydia incidence	20-24	M	β_1	-0.017603	0.05750488	-0.31	0.7595	0	0
Chlamydia incidence	20-24	M	β_2	0.01667044	0.0176212	0.95	0.3441	0	0
Chlamydia incidence	20-24	M	w_0	-0.0615318	0.05640606	-1.09	0.2753	0	0
Chlamydia incidence	20-24	M	δ	0.81251653	0.2131026	3.81	0.0001	0	0
Chlamydia incidence	25-29	M	β_0	1.40741	0.0660003	21.32	<.0001	0	0
Chlamydia incidence	25-29	M	β_1	0.00296607	0.03815876	0.08	0.938	0	0
Chlamydia incidence	25-29	M	β_2	0.03269736	0.01164828	2.81	0.005	0	0
Chlamydia incidence	25-29	M	w_0	-0.0751855	0.040098	-1.88	0.0608	0	0
Chlamydia incidence	25-29	M	δ	0.75203595	0.14651018	5.13	<.0001	0	0

Table A3. Parameter estimates for the segmented regression model

Outcome	Age Group	Sex	Variable	Estimate	StdErr	tValue	Probt
Chlamydia testing	15-19	M	Intercept	6.9617	0.1567	44.43	<.0001
Chlamydia testing	15-19	M	time	0.1917	0.0313	6.12	<.0001
Chlamydia testing	15-19	M	intervention	-0.7712	0.2004	-3.85	0.0027
Chlamydia testing	15-19	M	time_after	-0.0952	0.0383	-2.49	0.0302
Chlamydia testing	20-24	M	Intercept	18.2424	0.1881	96.97	<.0001
Chlamydia testing	20-24	M	time	0.5219	0.0376	13.86	<.0001
Chlamydia testing	20-24	M	intervention	-1.332	0.2412	-5.52	0.0002
Chlamydia testing	20-24	M	time_after	-0.1974	0.0451	-4.38	0.0011
Chlamydia testing	25-29	M	Intercept	15.9756	0.1716	93.09	<.0001
Chlamydia testing	25-29	M	time	0.6062	0.0344	17.64	<.0001
Chlamydia testing	25-29	M	intervention	-1.3203	0.2197	-6.01	<.0001
Chlamydia testing	25-29	M	time_after	-0.2131	0.0405	-5.26	0.0003