Cervical Cancer- Guideline Presentation

Speaker deck

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BACKGROUND

- This guideline (2013) updates previous CTFPHC cervical cancer screening guidelines (1994).
- 1994:

	20 to 69 years	70+ years
Annual screening with cervical cytology following initiation of sexual activity, or at age	After 2 normal Pap smears, screening recommended every 3 years (frequency may be increased in presence of risk	Routine screening not recommended.

	20 to 69 years	70+ years
18 years.	factors).	

- Much of the profession continued annual screening

GOAL OF THE 2013 GUIDELINE

- To provide recommendations for the prevention of cervical cancer related morbidity and mortality.
- To clarify the age of screening initiation, cessation and the optimum screening interval.
- To form the recommendations on an *updated* systematic review of the literature and the *current* epidemiology and diagnosis of the disease in Canada.

EVIDENCE SEARCH

Searched for studies of Cancer *incidence* and *mortality reduction*

NOT intermediate outcomes

- LSIL, HSIL
- CIN2, 3
- HPV infection
- Unclear (but high) proportion regress
- Small proportion progress, unclear time scale

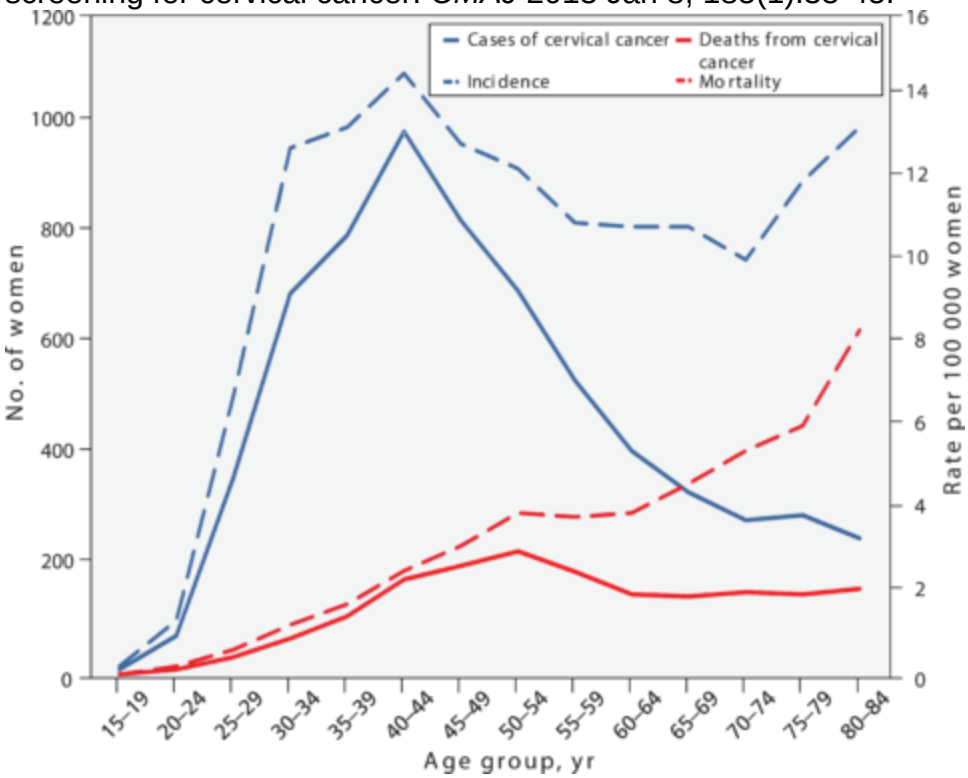
NEW UNDERSTANDING OF CERVICAL CANCER

- Biology
- Balance of harms/benefits
- Canadian changes in epidemiology
- Life time probability of death or incidence

	1952	1972	2002
Mortality	0.94	0.66	0.22
Incidence	Not known	1.54	0.66

CURRENT EPIDEMIOLOGY OF CERVICAL CANCER

From: Canadian Task Force on Preventive Health Care. Recommendations on screening for cervical cancer. *CMAJ* 2013 Jan 8; 185(1):35-45.



Cases of and deaths from cervical cancer, with associated incidence and mortality (rates per 100,000 women), among Canadian women (2002–2006) by age group. Data are from the Canadian Cancer Registry and the vital statistics databases at Statistics Canada.

In 2011, an estimated 1300 new cases of cervical cancer were diagnosed in Canada, with about 350[1] deaths. The number of cases of diagnosed cervical cancer increases among women aged 25 years and older, peaking during the fifth decade of life. The incidence of and mortality due to cervical cancer in Canada have decreased substantially in the past 50 years[2,3] and long-term survival rates after treatment are high. Lifetime incidence was 1.5% in 1972, and is now 0.7%; risk of death from cervical cancer is now 0.2%.[3] Most advanced cervical cancer (and associated mortality) occurs among women who have never undergone screening or who have had a long interval between Papanicolaou (Pap) tests.[2]

THE NATURAL HISTORY OF HPV INFECTION AND CERVICAL CANCER

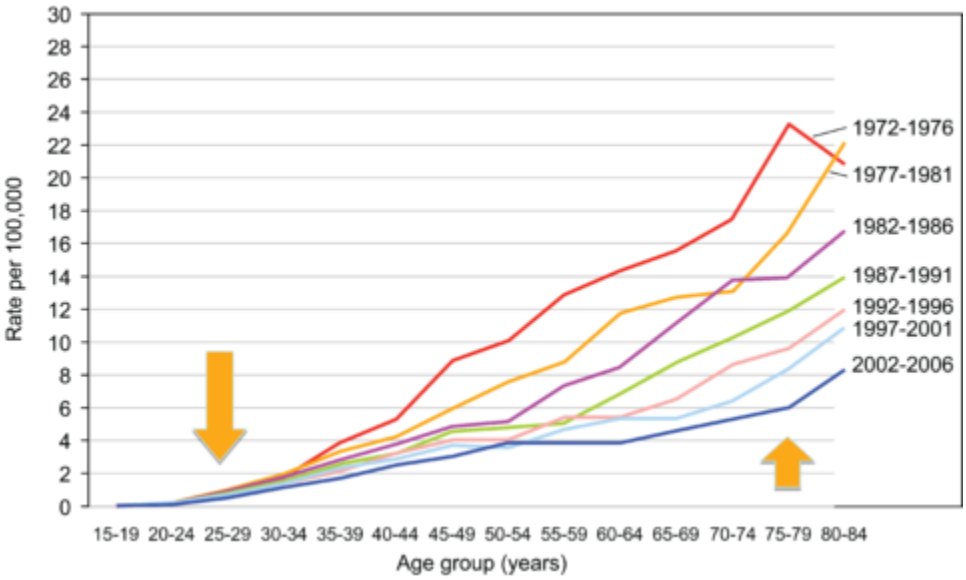
ABNORMAL SMEARS BY AGE: PERCENT (%)

	20–29	30–39	40–49	50–59	60–69

	20–29	30–39	40–49	50–59	60–69
Abnormal	9.8	4.5	3.5	2.4	1.6
ASC-H	0.4	0.2	0.1	0.1	0.1
HSIL+	1.1	0.6	0.3	0.2	0.1

2006–2008 From *Cervical Cancer Screening in Canada Monitoring Program Performance—Report*

MORTALITY FROM INVASIVE CERVICAL CANCER IN CANADA IN PERIODS FROM 1972 TO 2006



DIFFERENT APPROACH TO ASSESSMENT

- From: Is preventive maneuver effective?
- To: Is it a good decision for the person?

More patient-centered approach

CHANGE IN APPROACH

GRADE method: GRading of Assessment Development and Evaluation system

DECISION BALANCE

Benefits

- Reduced risk of death
- Reduced morbidity

Harms

- Complication of treatment
- Over-diagnosis
- Anxiety

EMERGING EVIDENCE OF HARMS

- Cone biopsy/treatment
- Cervical incompetence: double risk
    - Early pregnancy loss
    - Premature labour
- Cervical scarring: cannot dilate
- Affect young → completed families

GRADE OUTCOME

Strength of evidence

- Based on quality of study design, implementation
- Strength of effect
- Consistency
- External validity

How confident that evidence correctly reflects true effect of service?

Then…

Strength of recommendation

- Balance of evidence for harm vs benefit
- Uncertainty or variability in values and preferences
- Use of resources

GRADES OF RECOMMENDATION

Strong recommendations

- Most individuals in this situation would want the recommended course of action.
- Most individuals should receive the intervention
- Adopt as policy

Weak Recommendations

- The majority of individuals in this situation would want the suggested course of action,
- Different choices will be appropriate for individual patients and clinicians must help each patient arrive at a management decision
- Policy-making will require substantial debate

CERVICAL SCREENING

- Change in recommendations
- GRADE approach
- Decisions reflect continuous change in evidence with age

SCREENING FOR CERVICAL CANCER: RECOMMENDATIONS

Considerations

These recommendations apply to women who:

- are 15+ years of age;
- are asymptomatic for cervical cancer; and who
- are or have been sexually active.

These recommendations do not apply to women:

- who do not have a cervix (due to hysterectomy) [No screening needed]
- who have limited life expectancy such that they would not benefit from screening.
- with symptoms of cervical cancer (e.g., abnormal cervical bleeding)
- who are immunosuppressed (e.g., organ transplantation)

Summary of the recommendations

- For a balance of potential benefits and harms, the CTFPHC recommends screening asymptomatic women aged 25–69 with cytology (Pap test) every 3 years.
- Cytology screening is recommended (conventional or liquid-based, manual or computer-assisted).
- We decided to make no recommendation on Human Papillomavirus (HPV) testing (alone or in combination with Pap).
- Evidence was summarized, and recommendations made, for age groups:
    - < 20 yrs;
    - 20 to 24 yrs;
    - 25 to 29 yrs;
    - 30 to 69 yrs;
    - 70+ yrs

Findings: women < 20 years

Evidence of screening effectiveness

- No evidence found for effectiveness in women < 20 years.
    - Used epidemiological estimates to determine potential benefit of screening.
    - Incidence is very low with no deaths from cervical cancer in Canada from 2002–2006.
    - Therefore cannot reduce it further!

Evidence of harms of screening

- No *national* data on prevalence of abnormal findings in this age group.
- Data from AB show that 10% of women screening < 20 years referred for colposcopy (potential for harms)[^4].

Recommendation: women < 20 years

- For women aged < 20 years, we recommend *not routinely* screening for cervical cancer (strong recommendation; high quality evidence)
- This recommendation is based on:
    - Very low incidence of cervical cancer and no deaths due to cervical cancer
    - No studies addressing effectiveness in this age group; and
    - Evidence of minor harms to 10% of those screened
    - Some may develop more severe harms later:
        - Potential pregnancy losses subsequent to cervical treatment.
- Strong recommendation reflects judgment of the CTFPHC that the potential harms outweigh the benefits.

Findings: women 20 to 24 years, and 25 to 29 years

Evidence of screening effectiveness

- No evidence on effectiveness of screening on mortality.
- UK study found incidence of cervical cancer in women up to age 30 was not affected by screening women aged 20–24[5].
- No reduction in mortality in Canada among women 20–24 years since 1970s[6].

Evidence of harms of screening

- Specificity for pre-cancer lesions lower & risk of false-positives higher for < 30 years.
- High incidence of minor harms[7] and pregnancy-related harms.
- Potential for early pregnancy loss or premature labour (after cervical treatment).

Recommendation: women 20 to 24 years

- For women aged 20 to 24 we recommend *not routinely* screening for cervical cancer (Weak recommendation; moderate quality evidence)
- This recommendation is based on:
    - low incidence and mortality of cervical cancer among this age group;
    - uncertain benefit of screening among this age group;
    - lack of benefit found in older ages from screening at this age;
    - higher risk of false positive tests (and associated harms) among women < 30 compared to older women.
- The CTFPHC conclude that the harms outweigh the benefits, but assign a weak recommendation given the uncertainty of the evidence.

Recommendation: women 25 to 29 years

- For women aged 25 to 29 we recommend *routine screening* for cervical cancer every 3 years (Weak recommendation; moderate quality evidence)
- This recommendation is based on:
    - higher incidence and mortality of cervical cancer in this age group;
    - however, the limitations to Pap testing are similar to those among 20–24 year olds
- Weak recommendation reflects concerns about:
    - the rate of false positives; and
    - the harms of overtreatment

Findings: women 30 to 69 years

Evidence of screening effectiveness

- Strong association between introduction of screening and reduced incidence of cervical cancer *(cohort studies)*.
- RCT in rural India showed that 1-time screening found non-significant impact on 8-year mortality and incidence *(external validity?)*.
- Screening associated with decrease in incidence *(cohort study, 3-yr follow-up)*.
- Odds of having 1+ Pap tests were lower among women with invasive cancer*(meta-analysis of 12 case-control studies)*.

Evidence of harms of screening

- Abnormal findings and high grade lesions declined with age[8].
- Rate of biopsy/treatment decrease with age.
- Pregnancy-related harms become less important.

Recommendations: women 30 to 69 years

- For women aged 30 to 69 we recommend *routine screening* for cervical cancer every 3 years (Strong recommendation; high quality evidence)
- This recommendation is based on:
    - evidence for the positive effect of screening;
    - higher cervical cancer incidence and mortality in this age group; and
    - lower rates of potential harms, compared to younger women.
- Strong recommendation based on the CTFPHC's confidence that desirable effects of screening outweigh the undesirable effects.

Findings: women 70+ years

Evidence of screening effectiveness

- Limited evidence re: when to stop screening.
- Limited evidence suggests protective effect of screening in women 70+[^9][^10]
- Mortality and incidence rates of cervical cancer remain high in this age group (Canada).
- Possible benefit in screening if not adequately screened previously.

Recommendations: women 70+ years

- For women aged ≥ 70 adequately screened (i.e. 3 successive negative Pap tests in last 10 years), we recommend that *routine screening may cease* (Weak recommendation: low quality evidence)
- Recommendation based on:
    - Limited evidence that screening up to this age prevents cervical cancer development therafter; fewer harms in this age range, but speculum exam may be uncomfortable/difficult.

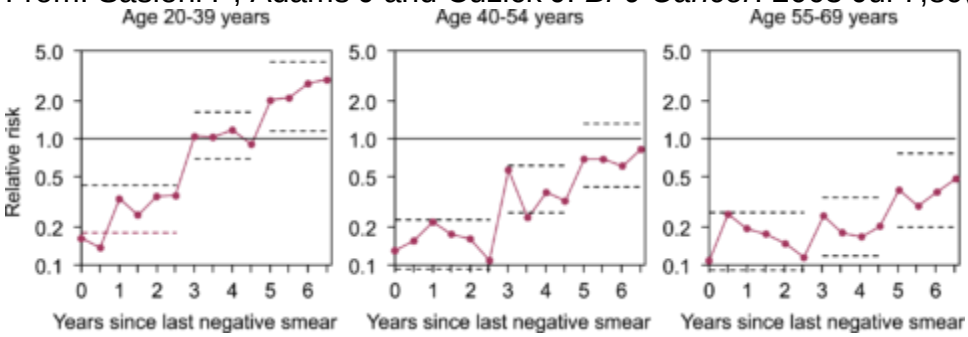
- For women aged ≥ 70 not adequately screened, we recommend *continued screening until 3 negative test results have been obtained* (Weak recommendation: low quality evidence)
- Recommendation places high value on:
    - Limited evidence for screening effectiveness; and potential to detect and treat cervical cancer in this age group

Recommended screening interval: 3 years

- Screening intervals ≤ 5 years offer protection
    - 13 case-control, 2 cohort studies
- Greater benefit seen in shorter intervals in some of the studies.
- CTFPHC recommends 3 year interval;
    - balances potential for benefit from smaller intervals, with
    - greater potential for harm from more frequent screening
- Most countries outside North America use 3–5 year intervals

PROTECTIVE EFFICACY BY DURATION SINCE LAST SMEAR

From: Sasieni P, Adams J and Cuzick J. *Br J Cancer*. 2003 Jul 7;89(1):88–93



Relative risk of cervical cancer as a function of time since last operationally negative smear. The risks are calculated in 6-monthly intervals. The horizontal dotted lines mark the 95% confidence bands on the relative risks for 0–3, 3–5 and 5+ years. All estimates are relative to the risk in women who have never had a negative smear.

SUMMARY OF THE RECOMMENDATIONS

Cytology (conventional or liquid-based, manual or computer-assisted)

- For women aged < 20, we recommend *not routinely screening* for cervical cancer (Strong recommendation; high quality evidence)
- For women aged 20 to 24, we recommend *not routinely screening* for cervical cancer (Weak recommendation; moderate quality evidence)
- For women aged 25 to 29, we recommend *routine screening* for cervical cancer every 3 years (Weak recommendation; moderate quality evidence)

- For women aged 30 to 69, we recommend *routine screening* for cervical cancer every 3 years (Strong recommendation; high quality evidence)
- For women aged ≥ 70 who have been adequately screened (i.e. 3 successive negative Pap tests in the last 10 years), we recommend that *routine screening may cease* (Weak recommendation; low quality evidence)
- For women aged 70 or over who have not been adequately screened, we recommend *continued screening until 3 negative test results have been obtained* (Weak recommendation; low quality evidence)

OTHER CONSIDERATIONS

Special risk groups?

- Many suggested high risk groups
  - Start sexual activity young
  - Multiple partners
  - Aboriginal
  - Attending STI clinics
- Minimal evidence: no specific recommendations
- Women sex with women
  - Limited evidence that they are at risk

Duration from onset of sexual activity

No evidence

"Jade Goody" effect

Starting screening early?

- Rapidly advancing cancer among young women
- Screening works for *chronic, common* disease
  - Must be treatable: criteria for screening
- Little effect for patients under 25:
  - Rapidly advancing but rare
- Adenocarcinoma: unclear whether increasing

Response to anecdotes re young women

Women whose "lives were saved" by a pap test in teenage or young 20s

- Cancer very rare at these ages, but possible
- Majority likely to have been high grade abnormalities, not cancer
- Most would have regressed if left alone:

    - "HPV infection defeated by immune system"
    - High grade abnormality rate much higher than lifetime cancer risk
- Small, if any, preventive effect for young
- Some rapidly advancing cancers:
    - screening and treatment ineffective
- Balance of very small benefit against harms of treatment
- GRADE approach recognizes different opinions about balance

"Yes but…" questions.

What about: Chlamydia screening? Vaginal examinations? Teaching annual physicals?

- Chlamydia screening by urine testing
- Vaginal exams poor screening test for ovarian, uterine cancer
- Should not do annual physicals:
    - periodic health assessment

WHAT ABOUT HPV TESTING?

The CTFPHC Position on HPV Testing

- Search for studies showing lower incidence/mortality of cancer
- The CTFPHC felt it premature to make a recommendation on HPV testing alone (primary testing), or in combination with cytology (co-testing or as a secondary reflex triage test).
- Canadian Partnership Against Cancer (CPAC):
    - HPV Testing for Cervical Cancer Screening
    - Expert panel: summary of evidence
    - 29 March 2012
- Summarized that the evidence is still unclear and to proceed cautiously

HPV testing: Canada

- Ontario
    - Primary HPV screening is recommended and implementation is being considered.
        - May 2012 cervical screening guideline, initiated by the Ontario Cervical Screening Program in conjunction with the Program in Evidence-based Care, an initiative of Cancer Care Ontario.
    - For the interim, cytology recommendations are in place including an additional HPV testing (triage) as an optional test for women 30 years and older with certain abnormal Pap test results.
- Alberta, Quebec and NWT recommend triage testing

HPV testing: International

- Australia and Scotland: No recommendation on HPV testing
- US Task Force on Preventive Health Care (USPSTF)
    - For women ages 30 to 65 years who want to lengthen the screening interval, screening with a combination of cytology and human papillomavirus (HPV) testing every 5 years (co-testing with Pap)
    - Needs further evaluation in long-term trials
        - Whitlock et al. *Ann Int Med* 2011; 155:687–97
- England: Triage testing for 25 years and older.
- Netherlands: recommendation for primary HPV testing, but as a triage test if cytology is used.

CONSIDERATIONS FOR IMPLEMENTATION OF RECOMMENDATIONS

- Emphasis should be placed on strong vs. weak recommendations
- Women who:
    - place relatively higher value on avoiding cervical cancer, and
    - relatively lower value on potential harms/benefits Are more likely to choose screening
- There should be increased/decreased screening by risk profile.
- Values, preferences and beliefs
    - Should be discussed in context of potential benefits/harms of screening process
    - Clinicians should help patient make a decision consistent with her values, preferences and risk exposure
- Current recommendations vary by P/T. Most currently begin screening at age 21, cease at age 70, and have a 1–3 year screening interval.
    - Some P/T have recently updated their guidelines
    - Some P/T make recommendations on HPV testing

GUIDELINE COMPARISON: INTERNATIONAL

CTFPHC vs. International Guidelines						
Organization		20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]
Task Force (2012, Canada)[ii]	Recommend against routine	Recommend against routine	Recommend routine screening	Recommend routine screening	Recommend routine screening every three	No recommendation made. Will revisit

CTFPHC vs. International Guidelines						
Organization		20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]
	screening	screening	every three years with cervical cytology	every three years with cervical cytology	years with cervical cytology if inadequately screened. Otherwise screening may cease.	the issue of HPVtesting as new data becomes available.
Previous Task Force (1994, Canada)	Annual screening with cervical cytology following initiation of sexual activity or at age 18	After 2 normal Pap tests, screening then recommended every three years to age 69. Frequency of screening may be increased in the presence of risk factors	After 2 normal Pap tests, screening then recommended every three years to age 69. Frequency of screening may be increased in the presence of risk factors	After 2 normal Pap tests, screening then recommended every three years to age 69. Frequency of screening may be increased in the presence of risk factors	Screening not recommended	Not applicable
USPSTF 2012 (United States)	Recommend against routine screening under the age of 21	Recommend against routine screening under the age of 21	Recommend screening for cervical cancer in women ages 21 to 65	Recommend against screening for cervical cancer in women older	Recommend against screening for cervical cancer in women older than age 65 years who have had	For women ages 30 to 65 years who want to lengthen the screening interval, screening with a

CTFPHC vs. International Guidelines						
Organization		20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]
			years with Pap test every 3 years	than age 65 years who have had adequate prior screening and are not otherwise at high risk for cervical cancer	adequate prior screening and are not otherwise at high risk for cervical cancer	combination of cytology and human papillomavirus (HPV) testing every 5 years (co-testing)
Australian Government (May 2011, Australia)	First Pap test around age 18 to 20, or a year or two after first having sex, whichever is the later	Regular Pap tests recommended every two years	Regular Pap tests recommended every two years	Regular Pap tests recommended every two years	Practitioner may advise that it is safe to stop having Pap tests if previous tests have been normal	No recommendation made
NHS Cervical Screening Program (August 2011, England)	Not invited to screen	Not invited to screen	Women aged 25–49 invited to screen every three years with cervical cytology	Women aged 25–49 invited to screen every three years with cervical cytology. Women	Women aged 65+ screened only if not screened since age 50 or have had recent abnormal tests	Additional (triage) HPVtesting is recommended for women 25 years and older with abnormal Pap test results in

CTFPHC vs. International Guidelines						
Organization		20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]
				aged 50–64 invited to screen every 5 years with cervical cytology. Women aged 65+ screened only if not screened since age 50 or have had recent abnormal tests.		some circumstances
Health Council of the Netherlands (May 2011, Netherlands)	Not invited to screen	Not invited to screen | Not invited to screen	Women aged 30–40 invited to screen every 5 years. Women aged 50–60 invited to screen every 10 years. (Women would be tested at the ages of 30, 35, 40, 50 and 60.)	Not invited to screen	Recommendation that HPV testing should replace cytology as the primary screening method. If cytology testing, additional (triage)HPV testing is recommended for women 30 years and older with abnormal	

CTFPHC vs. International Guidelines						
Organization		20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]
					Pap test results in some circumstances	
National Cancer Screening Service (2011, Ireland)	Not invited to screen	Not invited to screen	Women aged 25 to 44 invited to screen every 3 years	Women aged 25 to 44 invited to screen every 3 years. Women aged 45 to 60 invited every 5 years. Regardless of the age of a woman when she has her first screen, she needs to have two normal results—3 years apart, before moving to a 5 year screening interval.	Not invited to screen	No recommendation made

CTFPHC vs. International Guidelines						
Organization		20–24 years	25–29 years	30–69 years	70+ years	HPV testing[iii]
NHS Scotland (2010, Scotland)	Not invited to screen	Women aged 20–60 invited to screen every 3 years	Women aged 20–60 invited to screen every 3 years	Women aged 20–60 invited to screen every 3 years	Not invited to screen	No recommendation made

GUIDELINE AND PROGRAM COMPARISON: CANADA

Draft tables: Pending review by provincial/territorial representatives on the Pan-Canadian Cervical Screening Initiative (partner in the Task Force cervical cancer screening guideline).

CTFPHC vs Provincial/Territorial Programs							
Organization	< 20 years	20–24 years	25–29 years	30–69 years	70+ years	HPV testing[iii]	Differences Task Force vs P/T
Task Force (2012, Canada)[ii]	Recommend against routine screening	Recommend against routine screening	Recommend routine screening every 3 years	Recommend routine screening every 3 years	Recommend routine screening every 3 years if there was no previous screening. Otherwise stop screening.	No recommendation made	

CTFPHC vs Provincial/Territorial Programs							
Organization	< 20 years	20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]	Differences Task Force vs P/T
British Columbia (June 2010 guideline)	Initiation of routine screening recommended 3 years after first sexual contact	Recommend initiation of routine screening at age 21. Women not sexually active by age 21 should delay screening until sexually active. Screen every 12 months until there are 3 consecutive negative results, then screen every 24 months.	Recommend initiation of routine screening at age 21. Women not sexually active by age 21 should delay screening until sexually active. Screen every 12 months until there are 3 consecutive negative results, then screen every 24 months.	Recommend initiation of routine screening at age 21. Women not sexually active by age 21 should delay screening until sexually active. Screen every 12 months until there are 3 consecutive negative results, then screen every 24 months.	Discontinue if 3 negative tests in past 10 years. If inadequately screened—conduct 3 annual pap tests. If results are negative screening may stop.	No recommendation made. Randomized control trial began in 2007 to evaluate HPV testing as primary screening tool (FOCAL study).	Screening start: BC—3 yrs after first sexual contact, or age 21; CTFPHC—at age 25. How often to screen: BC—annually for first 3 years, if tests are normal then every 2 years; CTFPHC—every 3 yrs. Screening cessation: No difference
Alberta	Do not	Recom	Recom	Recom	Women	Additional	Screeni

CTFPHC vs Provincial/Territorial Programs							
Organization	< 20 years	20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]	Differences Task Force vs P/T
(November 2011 guideline)	recommend routine screening	mend initiation of routine screening at age 21 or 3 years after first intimate sexual activity, whichever occurs later. Within 5 years screen with 3 negative Pap tests at least 12 months apart then extend screening interval to every 3 years.	mend initiation of routine screening at age 21 or 3 years after first intimate sexual activity, whichever occurs later. Within 5 years screen with 3 negative Pap tests at least 12 months apart then extend screening interval to every 3 years.	mend initiation of routine screening at age 21 or 3 years after first intimate sexual activity, whichever occurs later. Within 5 years screen with 3 negative Pap tests at least 12 months apart then extend screening interval to every 3 years.	who have never been screened, screen with 3 annual Pap tests. If results are negative and satisfactory, discontinue screening. If last 3 tests done within the past 10 years were normal, discontinue screening.	(triage) HPV testing is recommended for women 30 years and older with abnormal Pap test results in some circumstances.	ng start: AB—at age 21; CTFPHC—at age 25 yrs. How often to screen: AB—3 normal results within 5 years then every 3 yrs; CTFPHC—every 3 years. Screening cessation: No difference.
Saskatchewan	Do not recomm	Recom mend	Recom mend	Recom mend	Women who	No recomme	Screening start:

CTFPHC vs Provincial/Territorial Programs							
Organization	< 20 years	20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]	Differences Task Force vs P/T
(January 2012 guideline)	end routine screening	initiation of routine screening at age 21 or 3 years after first intimate sexual activity, whichever occurs later. Screen every 2 years until 3 consecutive normal results then extend screening to every 3 years.	initiation of routine screening at age 21 or 3 years after first intimate sexual activity, whichever occurs later. Screen every 2 years until 3 consecutive normal results then extend screening to every 3 years.	initiation of routine screening at age 21 or 3 years after first intimate sexual activity, whichever occurs later. Screen every 2 years until 3 consecutive normal results then extend screening to every 3 years.	have never been screened, screen with 3 annual Pap tests. If results are negative and satisfactory, discontinue screening. If last 3 tests done within the past 10 years were normal, discontinue screening.	ndation made	SK—at age 21; CTFPHC—at age 25 yrs. How often to screen: SK—every 2 yrs until 3 normal then every 3 yrs; CTFPHC—every 3 years. Screening cessation: No difference
Manitoba (May 2012	Recommend screenin	Recommend screenin	Recommend screenin	Recommend screenin	Cessation of screeni	No recommendation	Screening start: MB—3

CTFPHC vs Provincial/Territorial Programs							
Organization	< 20 years	20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]	Differences Task Force vs P/T
guideline)	g initiated 3 years after onset of sexual activity regardless of age. Screen every 2 years.	g initiated 3 years after onset of sexual activity regardless of age. Screen every 2 years.	g initiated 3 years after onset of sexual activity regardless of age. Screen every 2 years.	g initiated 3 years after onset of sexual activity regardless of age. Screen every 2 years.	ng at age 70 with history of 3 negative pap test results within the previous 10 years and no change in partner.	made	yrs after first sexual contact; CTFPHC—age 25. How often to screen: MB—every 2 yrs; CTFPHC—every 3 years; Screening cessation: No differences
Ontario (May 2012 guideline) |OBJ|Do not recommend routine screening	Recommend initiation of routine screening at age 21.	Recommend initiation of routine screening at age 21.	Recommend initiation of routine screening at age 21.	Screen every 3 years.	Cessation of screening at age 70 with history of 3 negative pap test results within the	Additional HPV testing (triage) is an optional test for women 30 years and older with abnormal Pap test results in some	Screening start: ON—at age 21; CTFPHC—at age 25 yrs. How often to screen: No differences.

CTFPHC vs Provincial/Territorial Programs							
Organization	< 20 years	20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]	Differences Task Force vs P/T
					previous 10 years.	circumstances. Primary HPV screening with cytology triage is recommended and implementation is being considered.	Screening cessation: No differences.
New Brunswick (June 2011 guideline)	Do not recommend routine screening	Recommend initiation of routine screening at age 21 or 3 years after first intimate sexual activity, whichever occurs later. Screen annually until there	Recommend initiation of routine screening at age 21 or 3 years after first intimate sexual activity, whichever occurs later. Screen annually until there	Recommend initiation of routine screening at age 21 or 3 years after first intimate sexual activity, whichever occurs later. Screen annually until there	Cessation of screening at age 70 with history of adequate negative pap test results history in the previous 10 years. Women who	Where available, additional HPV testing (triage) is an optional test for women 30 years and older with abnormal Pap test results in some circumstances. Recognize role of HPV	Screening start: NB—at age 21; CTFPHC—at age 25 yrs. How often to screen: NB—annually until 3 normal then every 3 yrs; CTFPHC—every 3

CTFPHC vs Provincial/Territorial Programs							
Organization	< 20 years	20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]	Differences Task Force vs P/T
		are 3 consecutive negative results, then screen every 24–36 months.	are 3 consecutive negative results, then screen every 24–36 months.	are 3 consecutive negative results, then screen every 24–36 months.	have never been screened, screen with 3 annual Pap tests. If results are negative and satisfactory, discontinue screening.	testing, but advise evidence is still not strong enough to recommend it as the optimal primary screening tool.	yrs. Screening cessation: NB—cease if adequate normal test results in past 10 years; CTFPHC—screen every 3 yrs until 3 normal pap tests then stop screening
Quebec (June 2011 guideline)	Do not recommend routine screening	Recommend initiation of routine screening at age 21. Screenin	Recommend initiation of routine screening at age 21. Screenin	Recommend initiation of routine screening at age 21. Screenin	Among women who have had screening tests regularly,	Additional (triage) HPV testing is recommended for women 30 years and older with	Screening start: QC—at age 21; CTFPHC—at age 25 yrs. How

CTFPHC vs Provincial/Territorial Programs							
Organization	< 20 years	20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]	Differences Task Force vs P/T
		g is recommended every 2 to 3 years.	g is recommended every 2 to 3 years.	g is recommended every 2 to 3 years.	screening may cease at the age of 65 if the results of the last 2 tests conducted in the previous 10 years were negative.	abnormal Pap test results in some circumstances.	often to screen: QC—every 2–3 years; CTFPHC—every 3 years. Screening cessation: QC—Stop screening at age 65 yrs; CTFPHC—stop screening at 70 yrs
Nova Scotia (2009 guideline)	Do not recommend routine screening	Cervical cytology screening should be initiated within 3 years of first vaginal sexual activity	Cervical cytology screening should be initiated within 3 years of first vaginal sexual activity	Cervical cytology screening should be initiated within 3 years of first vaginal sexual activity	Screening may be discontinued after the age of 75 *only* if there is an adequat	No recommendation made	Screening start: NS—3 yrs after first sexual contact; CTFPHC—age 25. How often to screen:

CTFPHC vs Provincial/Territorial Programs							
Organization	< 20 years	20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]	Differences Task Force vs P/T
		or at age 21. Screen every 12 months until there are 3 consecutive negative results, then screen every 2 years.	or at age 21. Screen every 12 months until there are 3 consecutive negative results, then screen every 2 years.	or at age 21. Screen every 12 months until there are 3 consecutive negative results, then screen every 2 years.	e negative screening history in the previous ten years (i.e. 3 or more negative tests).		NS—annually until 3 normal then every 2 yrs; CTFPHC—every 3 yrs. Screening cessation: NS—Stop screening at age 75 yrs; CTFPHC—stop screening at 70 yrs
Prince Edward Island (current Health PEI website, guidelines to be reviewed in 2013	Recommend initiation of routine screening at age 18 or as soon as sexually active.	Recommend initiation of routine screening at age 18 or as soon as sexually active.	Recommend initiation of routine screening at age 18 or as soon as sexually active.	Recommend initiation of routine screening at age 18 or as soon as sexually active.	Screening may be discontinued at age 70 years.	No recommendation made	Screening start: PE—18 years; CTFPHC—age 25. How often to screen: PE—every 2

CTFPHC vs Provincial/Territorial Programs							
Organization	< 20 years	20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]	Differences Task Force vs P/T
	Screen every 2 years until age 69 years.	Screen every 2 years until age 69 years.	Screen every 2 years until age 69 years.	Screen every 2 years until age 69 years.			yrs; CTFPHC—every 3 yrs. Screening Cessation: PE—discontinued at 70 years; CTFPHC—discontinued at 70 years if 3 negative tests in past 10 years.
Newfoundland and Labrador (2011 guideline)	Do not recommend routine screening	Recommend initiation of routine screening at age 20, with annual screenin	Recommend initiation of routine screening at age 20, with annual screenin	Recommend initiation of routine screening at age 20, with annual screenin	Screening may discontinue if there are 3 negative Pap tests within	Additional (triage) HPV testing is recommended for women 30 years and older with abnormal	Screening start: NL—20 years; CTFPHC—age 25. How often to screen: NL—

CTFPHC vs Provincial/Territorial Programs							
Organization	< 20 years	20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]	Differences Task Force vs P/T
		g until 3 consecutive negative Pap tests are obtained. Then extend interval to 3 years.	g until 3 consecutive negative Pap tests are obtained. Then extend interval to 3 years.	g until 3 consecutive negative Pap tests are obtained. Then extend interval to 3 years.	last 10 years. Women with little/no screening history should have 3 consecutive normal tests before cessation.	Pap test results in some circumstances.	annual, then every 3 years; CTFPHC—every 3 yrs. Screening Cessation: No difference
Northwest Territories (March 2010 guideline)	Recommend initiation of routine screening 3 years after start of intimate sexual activity, or at age 21 years, whichever is earlier.	Recommend initiation of routine screening 3 years after start of intimate sexual activity, or at age 21 years, whichever is earlier.	Recommend initiation of routine screening 3 years after start of intimate sexual activity, or at age 21 years, whichever is earlier.	Recommend initiation of routine screening 3 years after start of intimate sexual activity, or at age 21 years, whichever is earlier.	Women age 69 and older should cease screening if 3 or more normal smears in the last ten years.	In some circumstances, when there is an abnormal Pap test result, an additional HPV test is recommended for women 21-29 years (co-testing with	Screening start: NT—3 years after first sexual activity, or age 21 (whichever is first); CTFPHC—age 25. How often to screen: NT—

CTFPHC vs Provincial/Territorial Programs							
Organization	< 20 years	20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]	Differences Task Force vs P/T
	Screen every 1 to 2 years (frequency depends on previous test results).	Screen every 1 to 2 years (frequency depends on previous test results).	Screen every 1 to 2 years (frequency depends on previous test results).	Screen every 1 to 2 years (frequency depends on previous test results).		additional Pap test), and for women 30 years and older (triage).	every 1–2 years; CTFPHC—every 3 yrs. Screening Cessation: NT—stop screening at 69 years; CTFPHC—stop screening at 70 years
Yukon Territory	No guidelines found. The Pan-Canadian Cervical Cancer Screening Initiative "Cervical Cancer	No guidelines found. The Pan-Canadian Cervical Cancer Screening Initiative "Cervical Cancer	No guidelines found. The Pan-Canadian Cervical Cancer Screening Initiative "Cervical Cancer	No guidelines found. The Pan-Canadian Cervical Cancer Screening Initiative "Cervical Cancer	No guidelines found. The Pan-Canadian Cervical Cancer Screening Initiative "Cervical Cancer	No guidelines found. The Pan-Canadian Cervical Cancer Screening Initiative "Cervical Cancer Screening in Canada—Monitorin	No guidelines found. The Pan-Canadian Cervical Cancer Screening Initiative "Cervical Cancer

CTFPHC vs Provincial/Territorial Programs							
Organization	< 20 years	20–24 years	25–29 years	30–69 years	70+ years	HPV testing[ii]	Differences Task Force vs P/T
	Screening in Canada — Monitoring and Program Performance" report (December 2011) notes the Yukon follows BC guidelines.	Screening in Canada — Monitoring and Program Performance" report (December 2011) notes the Yukon follows BC guidelines.	Screening in Canada — Monitoring and Program Performance" report (December 2011) notes the Yukon follows BC guidelines.	Screening in Canada — Monitoring and Program Performance" report (December 2011) notes the Yukon follows BC guidelines.	Screening in Canada — Monitoring and Program Performance" report (December 2011) notes the Yukon follows BC guidelines.	g and Program Performance" report (December 2011) notes the Yukon follows BC guidelines.	Screening in Canada — Monitoring and Program Performance" report (December 2011) notes the Yukon follows BC guidelines.
Nunavut	No guidelines found.	No guidelines found.	No guidelines found.	No guidelines found.	No guidelines found.	No guidelines found.	No guidelines found.

CONCLUSIONS

- This guideline encourages practitioners to help women understand the potential benefits and harms of cervical cancer screening and make informed decisions in collaboration with their health practitioner.
- Recommendations are in line with those of several other countries.
- The greatest reduction in cervical cancer will be achieved by screening eligible women who have not been previously screened, not by screening women earlier or more often.

Providers role

- Must understand guidelines and reasons behind
- Must explain to patients, especially controversies
- Controversial components:
    - When to start
    - Interval
    - Stopping
- Help women to make their own decisions
- Provide service, and assist reminder process
- Promote service to underserved groups
    - Where greatest gains possible

Resources

- Clinician algorithm
- Clinician FAQ
- Patient algorithm
- Patient FAQ

NOTES

i. Non-voting member
ii. Recommendations for primary (HPV testing alone), co-testing (with Pap test), or triage/reflex testing (after abnormal Pap test) were considered