Preventive health care

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PRA-BC Orientation

About me

- Graduated from physics and mathematics (honours) at UBC, 2002
- MD from Northwestern University (Chicago), 2006
- Family Practice residency at University of Alberta (Edmonton), 2008
- MPH from UBC, 2011
- Public Health Residency from UBC, 2012
- Family practice in Richmond/WSBC Medical Advisor
- Site faculty for Research and Evidence-based Medicine at Vancouver Fraser
- Co-Lead faculty for Research and Scholarship at the UBC Dept of Family Practice
- Co-Lead for EBM theme in the MDUP
- Medical Advisor II, WorkSafeBC

Disclosure

- I am an employee and paid by WorkSafe BC.
- I will not be discussing WorkSafe BC in this presentation but will be in the following one.
- I own shares in my clinic, Aberdeen Health Centre.
- I bill the Medical Services Plan of British Columbia.

Objectives

- To review preventive health care with particular emphasis on the following
  - Screening tests (mammography, PSA, FIT testing/colonoscopies, PAP)
  - Vaccinations
  - Chronic disease management
  - The periodic health exam (PHE) and preventive health exams at different stages of life

Group exercise

- Break out into groups of 4-5. Discuss what you would do in each of the following scenarios:
  - A 41 year old healthy female (no family history of breast cancer) comes to you asking about “cancer testing”. What do you recommend?
  - A 20 year old healthy sexually active female asks about “preventive health care”. What do you recommend?
  - A 55 year old male comes to you asking what tests he should do to look for cancer? What do you recommend?
  - A 60 year old healthy female asks about mammography screening. What do you recommend?
  - A 40 year old healthy male asks about doing a routine CXR, UA, blood tests and a full body MRI (excluding the chest, since the MRI doesn’t look at the chest too well). He has no symptoms. What do you recommend?

So how do we decide?

- Consider this example:
- Joan is a 40 year old lady of average breast cancer risk (1/1000). She has a screening mammogram which was reported as “positive and needing further testing”. A screening mammogram has a sensitivity of 70% and a specificity of 75%. She is anxious about having breast cancer.
- What is the probability that she has breast cancer after screening positive?

Example

- Her “pre-test probability” is 1/1000.
- Her “post-test probability” is 3/1000.
- The likelihood of her having disease is still much much lower than the likelihood of her not having disease.
- So what do you tell Joan? She is anxious that she has breast cancer.

GRADE

- Strong recommendations
- “Conditional” or weak recommendations
- Strong evidence
- Weak evidence
- What do they mean?
- https://canadiantaskforce.ca/methods/grade/

Breast cancer recommendations

- The CTFPHC recently updated (2018) their breast cancer screening recommendations:
- *For women aged 40 to 49 years, we recommend not screening with mammography; the decision to undergo screening is conditional on the relative value a woman places on possible benefits and harms from screening. (Conditional recommendation; low-certainty evidence)*
  - Some women aged 40 to 49 years may wish to be screened based on their values and preferences; in this circumstance, care providers should engage in shared decision-making with women who express an interest in being screened.
- *For women aged 50 to 69 years, we recommend screening with mammography every two to three years; the decision to undergo screening is conditional on the relative value that a woman places on possible benefits and harms from screening. (Conditional recommendation; very low-certainty evidence)*
  - Care providers should engage in shared decision-making with women aged 50 to 74 as those who place a higher value on avoiding harms as compared to a modest absolute reduction in breast cancer mortality may choose to not undergo screening.
- *For women aged 70 to 74 years, we recommend screening with mammography every two to three years; the decision to undergo screening is conditional on the relative value that a woman places on possible benefits and harms from screening. (Conditional recommendation; very low-certainty evidence)*
  - Care providers should engage in shared decision-making with women aged 70 to 74 as those who place a higher value on avoiding harms as compared to a modest absolute reduction in breast cancer mortality may choose to not undergo screening.

Breast cancer screening

- *We recommend not using* magnetic resonance imaging *(MRI), tomosynthesis or ultrasound to screen for breast cancer in women not at increased risk. (Strong recommendation; no evidence)*
- *We recommend not performing clinical breast examinations to screen for breast cancer. (Conditional recommendation; no evidence)*
- *We recommend not advising women to practice breast self-examination to screen for breast cancer. (Conditional recommendation; low-certainty evidence)*
- *Note that Draft Recommendations (2024) are currently available from the CTFPHC for public comment but final recommendations have not yet been published.*

Breast cancer screening

- In BC, however, the government has traditionally funded screening mammograms for women age 40 – 74.
- They continue to do so but have changed their recommendations for women aged 40-49 to "mammography is *available*".

Other organizations

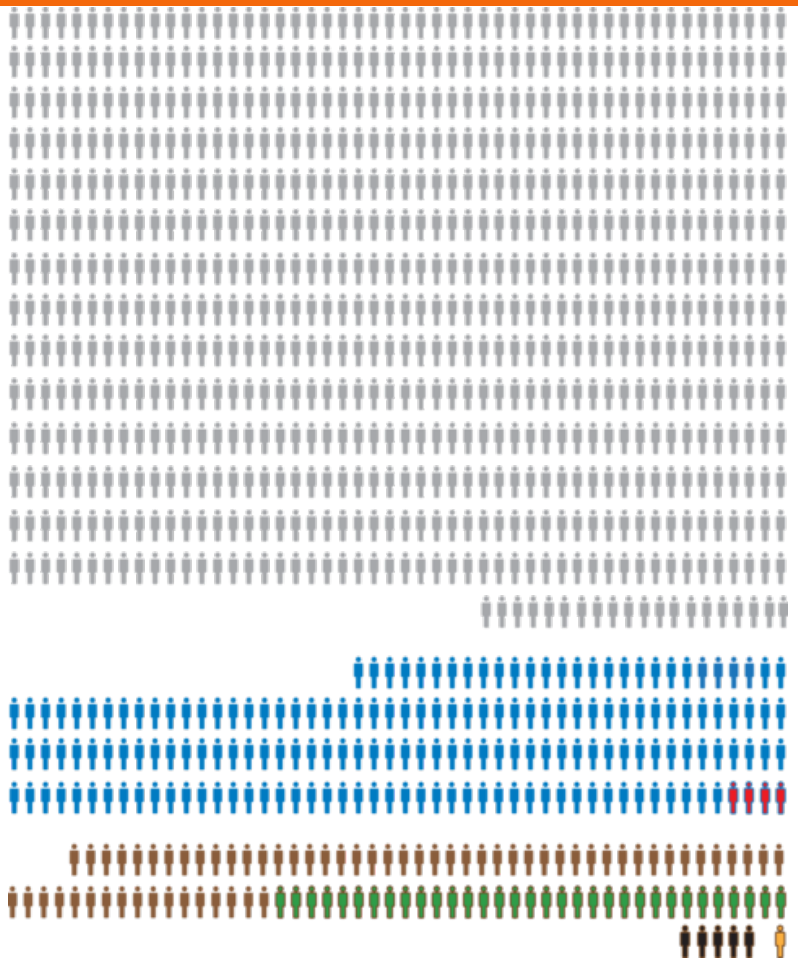
- USPSTF (draft):
  - 40–74: Biennial screening recommended (Grade B, Moderate certainty).
  - ≥75: Evidence insufficient (Grade I).
  - High risk: Follow specialist protocols.
- CCS: similar to CTFPHC
- ACS:
  - 40–44: Optional annual screening (Qualified recommendation).
  - 45–54: Annual screening (Strong, High-quality evidence).
  - ≥55: Every 1–2 years while healthy (Strong).
  - ≥75: Continue if life expectancy ≥10 years (Strong).

PSA testing

- PSA testing has always been controversial.
- Studies have been conflicting as to whether PSA actually saves lives.
- The CTFPHC recommends:
  - For men aged less than 55 years, we recommend not screening for prostate cancer with the prostate-specific antigen test. *(Strong recommendation; low quality evidence)*
  - For men aged 55-69 years, we recommend not screening for prostate cancer with the prostate-specific antigen test. *(Weak recommendation; moderate quality evidence)*
  - For men 70 years of age and older, we recommend not screening for prostate cancer with the prostate-specific antigen test. *(Strong recommendation; low quality evidence).*

PSA screening

- Results of screening 1000 men with the PSA
- 720 men will have a negative PSA test.
- 178 men with a positive PSA in whom follow-up testing does not identify prostate cancer.
  - 4 of these 178 will experience biopsy complications such as infection and bleeding severe enough to require hospitalization.
- 102 men will be diagnosed with prostate cancer.
  - 33 of these 102 prostate cancers would not have caused illness or death. Because of uncertainty about whether their cancer will progress, most men will choose treatment and may experience complications of treatment.
  - 5 men will die from prostate cancer despite undergoing PSA screening.
  - 1 man will escape death from prostate cancer because he underwent PSA screening.
- age 55–69 years, screened over a 13-year period, and with a PSA screening threshold of 3.0 ng/ml



Source: CTFPHC

PSA screening

- Among men who *are screened* with the PSA test, the risk of dying from prostate cancer is 5 in 1,000
- Among men who *are not screened* with the PSA test, the risk of dying from prostate cancer is 6 in 1,000
- For every 1,000 men who receive treatment for prostate cancer:
  - 114–214 will have short-term complications such as infections, additional surgeries, and blood transfusions
  - 127–442 will experience long-term erectile dysfunction
  - up to 178 will experience urinary incontinence
  - 4–5 **will die** from complications of prostate cancer treatment

Source: CTFPHC

PSA screening

- The BC government does NOT cover routine PSA testing on asymptomatic men.
- Men who wish to be screened have to pay 45 dollars.
- The government does cover PSA testing with biopsy diagnosed prostate cancer or for those with symptoms of prostatism.
- Different organizations (AUA, BCCA, etc) have different recommendations.
- So what should you do?

AUA

- American Urological Association / Society of Urologic Oncology (AUA/SUO, 2023)
  - **Test of choice:** Use **PSA** as the first screening test; repeat a newly elevated PSA before moving to biomarkers/imaging/biopsy. DRE is **optional** (may be used alongside PSA). AUPA
  - **When to start (average risk):** May offer **baseline PSA at 45–50** (conditional). Routine screening **50–69**. AUPA+1
  - **High-risk (e.g., Black ancestry, pathogenic germline mutation, strong family history):** Offer screening **starting 40–45**. AUPA
  - **Interval: Every 2–4 years** for ages **50–69**; personalize (shorter/longer) by PSA level and risk. AUPA
  - **De-escalation/stop:** Personalize discontinuation based on age, PSA, risk, life expectancy, preferences (shared decision-making). AUPA
  - **Biopsy pathway:** Don't use **PSA velocity** alone; consider **risk calculators**; **mpMRI** can be used before biopsy; target suspicious MRI lesions.

CUA

- Who to offer: Offer PSA screening to men with >10-year life expectancy, using shared decision-making.
- When to start: If electing to screen, start age 50 (average risk) or age 45 (increased risk). Level of evidence ≈ 3, Grade of recommendation C.
- Intervals (PSA-based):PSA <1 ng/mL: repeat every 4 years.PSA 1–3 ng/mL: repeat every 2 years.PSA >3 ng/mL: consider shorter interval and further work-up.
- When to stop: Consider stopping if life expectancy <10 years; many summaries note little value beyond ~70 unless PSA/risk remains high and patient preference favors continuing.

FIT testing

- CTFPHC recommendations:
  - Normal risk individuals: There is good evidence to support the inclusion of annual or biennial fecal occult blood testing *(A recommendation)* and fair evidence to include flexible sigmoidoscopy *(B recommendation)* in the periodic health examinations of asymptomatic individuals over age 50 years.
  - Normal risk individuals: There is insufficient evidence to make recommendations about whether only 1 or both of FOBT and sigmoidoscopy should be performed. (*C recommendation*)
  - Normal risk individuals: There is insufficient evidence to include or exclude colonoscopy as an initial screen in the periodic health examination. (*C recommendation*)
  - Above average risk individuals: There is fair evidence to support either genetic testing or flexible sigmoidoscopy of at risk individuals in FAP kindreds and screening with colonoscopy of patients in kindreds with the cancer family syndrome HNPCC. (*B recommendation*)
  - Above average risk individuals: There is insufficient evidence to recommend colonoscopy for individuals who have a family history of colorectal polyps or cancer but do not fit the criteria for HNPCC.(*C recommendation*)

FIT testing

- Much less controversy surrounding FIT testing
- BC government covers FIT testing every two years from age 50-74.
- A positive FIT test is sent to the BCCA colon cancer screening program where the patient is automatically sent for colonoscopy.
- You will be sent a copy of the report.

PAP testing

- **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.

PAP testing

- **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.

PAP testing

- **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

PAP testing

- **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.

PAP testing

- **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

HPV Primary Screening

- Now available in BC (as of February 2024).
- Self collected OR provider collected swab.
- If negative for high risk HPV, rescreen with PAP or HPV swab in 5 years.
- If positive, either proceed to PAP or colposcopy. Will be arranged by BCCA.
- If prior abnormalities on PAP, NOT appropriate for HPV screening—needs PAP.

BCCA recommendations

- Population:
  - People with a cervix, sexually active, age 25–69.
  - No routine screening <25 years.
  - Screening may continue after 69 if immunocompromised or recent abnormal history.
- Screening method and interval:
  - Primary HPV testing preferred (self- or provider-collected vaginal swab).
  - Liquid-based cytology (LBC) or co-test acceptable if indicated.
  - HPV negative: every 5 years.
  - If cytology-based: every 3 years.
- Special considerations:
  - Symptomatic patients: immediate speculum exam + HPV/cytology, refer colposcopy if abnormal.
  - Pregnancy: defer if up to date; if screening needed, provider sample only (no self-swab).
  - Self-screening acceptable and effective for barriers to care.
- When to stop:
  - Stop after age 69 if adequate prior screening and average risk.
  - Continue if immunocompromised, inadequate history, or recent abnormal results.
- Notes:
  - HPV vaccination recommended but does not change screening schedule.
  - Use trauma-informed and culturally safe approach for vulnerable populations
  - No screening for patients who have never had sexual activity.

Lung cancer screening

- Recently, the BC Government has started funding a lung cancer screening program.
- Eligibility criteria:
  - 55 to 74 years of age;
  - Currently smoking or have smoked in the past; and,
  - Have a smoking history of 20 years or more.
- Have patients call 1-877-717-5864 to complete a consultation and risk assessment over the phone.

Vaccinations

- In BC, depending on where you work, you may or may not be involved in vaccinations of children.
- Some doctors choose not to be involved in vaccinations and instead refer to the local health units.
- Regardless, you will be asked about vaccines.

Vaccinations

- Ms. Xu is a 30 year old mother who just immigrated to Canada with her 2 year old son and 33 year old husband from China.
- You review her son's immunization records and realize that her son has not received the Rotavirus oral vaccine and the Men-C vaccine.
- What do you do? Where do you go to find information?

BCCDC

- The BC Centre for Disease Control's website is very useful for finding information pertaining to any public health issues, or in particular, vaccines.
- http://www.bccdc.ca/dis-cond/comm-manual/CDManualChap2.htm
- Usually there is a "minimum interval" that you will need to use when giving a vaccine.
- The Rotavirus vaccine is only for younger infants so would not be given.
- According to the BCCDC Immunization Guide, give the Men C vaccines a minimum of 8 weeks apart.

3.1 Minimum Intervals between Vaccine Doses Table

Use "minimum intervals" when a child or adolescent starts an immunization series at a later date, or falls behind the routine immunization schedule **by one month** or more. **When the client is up-to-date for age, return to the routine age-appropriate schedule.** NOTE: Refer to 1.3 HIB Schedule When The Basic Schedule Has Been Delayed for minimum intervals for a three dose primary Hib series.

Vaccine (Dose 1 minimum age)	Minimum Spacing Between Doses❶			
	Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
DTaP-IPV-Hib (6 weeks)	4 weeks	4 weeks	24 weeks ❷	24 weeks AND minimum age for this dose is 4 years ❸
DTaP-HB-IPV-Hib INFANRIX hexa® (6 weeks)	4 weeks	16 weeks after dose 1 AND 8 weeks after dose 2 AND minimum age for dose 3 is 24 weeks		
Pneumococcal conjugate **4 doses** (6 weeks) ❹	4 weeks	4 weeks	8 weeks ❺	
Pneumococcal conjugate **3 doses** (8 weeks) ❹	4 weeks	8 weeks ❺		
Meningococcal C conjugate NeisVac-C (8 weeks)	8 weeks ❻			
MMR (12 months) ❼	4 weeks			
MMRV (4 years)	12 weeks			
Rotavirus (6 weeks) ❽	4 weeks ❽			
Varicella (12 months)	12 weeks or 6 weeks ❾			
Td (7 years)	4 weeks	24 weeks	10 years	
HPV-quadrivalent Gardasil® **3 doses** (9 years)	4 weeks	12 weeks after dose 2 and 24 weeks after dose 1		
HPV-quadrivalent Gardasil® **2 doses** (9 years)❿	5 months (or 150 days)			
HPV-bivalent Cervarix® (9 years)	4 weeks	12 weeks after dose 2 AND 20 weeks after dose 1		
Hepatitis A (24 weeks)	24 weeks			

❶ Minimum intervals are calculated in weeks up to 12 months and then calculated in years.

Annual Health Exams

- Mr. Wong is a 25 year old healthy man who comes to you asking for a “check-up”. How do you proceed?
- Mr. Smith is a 55 year old man with diabetes who presents for his annual “check-up”. How do you proceed?

Annual Health Exams

- Periodic Health Exams or “check-ups” are not covered by MSP.
- You can bill a 101 only if the patient presents for a medical condition that necessitates you to take a **FULL** history and physical, including a thorough review of systems.
- Many docs still bill a 101 for a “check-up” but if they get audited, they will pay a big fine.
- Do NOT bill a 101 for “check-ups” and if you do bill a 101, make sure your documentation is clear and complete.

Rourke Baby Record

- You can use the Rourke Baby Record to track a baby's developmental milestones, height/weight/HC, and give counseling.
- I use it in my practice whenever a patient presents for their immunizations.
- It is a template in most EMRs.
- http://www.rourkebabyrecord.ca/

Summary

- The BCCDC Immunization Manual is helpful in determining how to vaccinate people who have fallen behind in their schedule.
- Only certain screening tests are recommended and available in BC.