

# Low Value Tests: ECG

## What is the Choosing Wisely recommendation on ECG testing?

It is estimated that 30 percent of tests performed in Canada are unnecessary<sup>i</sup>. While electrocardiogram (ECG) testing can be useful in trying to find the cause of unexplained chest pain, shortness of breath or palpitations, ECGs are not recommended in the following situations:

- Annual ECG testing for low-risk patients without symptoms. Evidence demonstrates that asymptomatic individuals at low risk for coronary heart disease, screening for coronary heart disease with ECGs does not improve patient outcomes.
- To predict future risk of heart attack, ECGs should not be done routinely as part of regular check-ups<sup>ii</sup>.
- Pre-operatively before a non-cardiac surgery or during routine follow-ups<sup>ii,iii</sup>. CIHI reports 18-35 per cent of low risk patients had pre-operative tests that were likely not needed<sup>i</sup>.

Also, testing for minor abnormalities may result in unnecessary worry or further testing called “testing cascade” which could end up being harmful<sup>ii</sup>. These recommendations are based on Choosing Wisely Canada.

## Issue and Scope

The Cardiovascular Health and Stroke Strategic Clinical Network (SCN) and its partners are exploring low value cardiac investigations in Alberta. Lessons from reducing low value ECG testing will be transferrable to other cardiac investigations such as echocardiography, stress testing and nuclear imaging. In order to develop a plan of action to tackle low value ECG testing, it is necessary to consult with stakeholders and seek baseline data including the volume of ECGs performed in each of the zones in Alberta and related costs. Testing volume in various clinical settings and insight into the top diagnoses for ECG testing may help uncover any potential low value use. Once data is obtained, consultations with an advisory group will provide guidance to:

- Determine the most appropriate settings to initiate the ECG reduction project
- Develop interventions for implementation, measurement and evaluation
- Plan the provincial spread and scale, based on the learnings from the initial ECG pilot project



## What is the opportunity for better patient care?

- Ensure appropriate access to high value cardiovascular testing in a timely manner and improve patient health outcomes and experience
- Decrease patient exposure to potential harms from initial testing and future tests as a result of ECG findings
- Decrease in indirect costs to patients (i.e. time off work, parking, costs for child minding, stress of going for a test, etc.,)

## What is the opportunity for health system improvement?

- Ensure appropriate access to high value cardiovascular testing in a timely manner and improve patient health outcomes and experience
- Improve clinic work flows and efficiency and provide opportunities for reinvestment in prevention and treatment
- Reduced physician visits for ECG consults and follow-ups
- Achieve increased compliance with uptake of appropriateness criteria for ECG ordering

## The Way Forward / Plan

Multipronged approaches and collaboration with partners will be required to tackle this complex issue to accomplish the following:

- Feasibility and current state analysis
- Care pathway development (algorithm) and it's spread using knowledge translation and education materials
- Physician education, audit and feedback sessions
- Health Information Management (HIM) Connect Care/decision support tools
- Patient engagement strategy
- Changes in policy where required
- Spread of evidence-based messages through community partnerships

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<sup>i</sup> Cih.ca. 2017. Unnecessary Care in Canada. [online] Available at: <https://www.cih.ca/sites/default/files/document/choosing-wisely-baseline-report-en-web.pdf>

<sup>ii</sup> Choosing Wisely Canada. 2021. *Five tests and treatments physicians and patients should question in cardiology*. [online] Available at: <<https://choosingwiselycanada.org/cardiology/>> [Accessed 31 March 2021].

<sup>iii</sup> Hepner, D., 2009. The role of testing in the preoperative evaluation. *Cleveland Clinic Journal of Medicine*, [online] 76(10 suppl 4), pp.S22-S27. Available at: <[https://www.researchgate.net/profile/David-Hepner/publication/38059069\\_The\\_role\\_of\\_testing\\_in\\_the\\_preoperative\\_evaluation/links/5499f5580cf2d6581ab15748/The-role-of-testing-in-the-preoperative-evaluation.pdf](https://www.researchgate.net/profile/David-Hepner/publication/38059069_The_role_of_testing_in_the_preoperative_evaluation/links/5499f5580cf2d6581ab15748/The-role-of-testing-in-the-preoperative-evaluation.pdf)> [Accessed 31 March 2021].