

## Long-Term Continuous Ambulatory ECG Monitors and External Cardiac Loop Recorders for Cardiac Arrhythmia: OHTAC Recommendation

### ONTARIO HEALTH TECHNOLOGY ADVISORY COMMITTEE RECOMMENDATIONS

- The Ontario Health Technology Advisory Committee recommends continuing to publicly fund (1) long-term continuous ambulatory electrocardiography (ECG) monitors and (2) external cardiac loop recorders that can detect abnormal heart rhythm without the patient initiating the recording of the event
- The Ontario Health Technology Advisory Committee recommends discontinuing public funding for external cardiac loop recorders that rely solely on patient-initiated recording of the event

### RATIONALE FOR THE RECOMMENDATION

The Ontario Health Technology Advisory Committee (OHTAC) accepted the findings of the health technology assessment.<sup>1</sup> The committee's recommendations were based on several factors.

First, empirical evidence does not suggest that long-term continuous ambulatory ECG monitors and external cardiac loop recorders differ in their ability to detect symptomatic arrhythmia.

Second, continuous ECG monitors have a distinct advantage over conventional external cardiac loop recorders: they can store information for the entire time the patient wears the device.

Third, some external cardiac loop recorders often have the capability to store multiple events without needing patient initiation, similar to long-term continuous ECG monitors.

In addition, some OHTAC members suggested that a suitable grace period ought to be considered for phasing out conventional external cardiac loop recorders that need patient initiation.

## Decision Determinants for Long-Term Continuous Ambulatory ECG Monitors and External Cardiac Loop Recorders for Cardiac Arrhythmia

Decision Criteria	Subcriteria	Decision Determinants Considerations
<b>Overall clinical benefit</b> How likely is the health technology/intervention to result in high, moderate, or low overall benefit?	<b>Effectiveness/Accuracy</b> How effective is the health technology/intervention likely to be (taking into account any variability)?  <b>Safety</b> How safe is the health technology/intervention likely to be?  <b>Burden of illness</b> What is the likely size of the burden of illness pertaining to this health technology/intervention?  <b>Need</b> How large is the need for this health technology/intervention?	Both long-term continuous ambulatory ECG monitors and external cardiac loop recorders are more effective than 24-hour ambulatory ECG monitors (Holter monitors) in detecting symptomatic arrhythmia. However, the evidence does not suggest that the two classes of long-term devices differ in effectiveness to detect symptomatic cardiac arrhythmias (risk difference 0.01; 95% CI -0.18, 0.20).  Long-term continuous ambulatory ECG monitors and external cardiac loop recorders are known to be very safe.  Cardiac arrhythmia is a risk factor for sudden cardiac death, which kills 40,000 Canadians annually.  The combined volume of publicly funded (Ontario Health Insurance Plan) claims in 2014 for use of long-term continuous ambulatory ECG monitors and external cardiac loop recorders for cardiac arrhythmia was 85,000. Claims for long-term continuous ambulatory ECG monitors increased from 638 in 2006 to 37,191 in 2014. In the same period, claims for external cardiac loop recorders increased from 20,398 to 47,437.
<b>Consistency with expected societal and ethical values</b> How likely is adoption of the health technology/intervention to be congruent with societal and ethical values?	<b>Societal values</b> How likely is the adoption of the health technology/intervention to be congruent with expected societal values?  <b>Ethical values</b> How likely is the adoption of the health technology/intervention to be congruent with expected ethical values?	Very likely   Very likely
<b>Value for money</b> How efficient is the health technology/intervention likely to be?	<b>Economic evaluation</b> How efficient is the health technology/intervention likely to be?	Because of a lack of studies with direct evidence on the comparative effectiveness of long-term continuous ambulatory ECG monitors and external cardiac loop recorders for cardiac arrhythmias, Health Quality Ontario did not undertake a primary economic evaluation.
<b>Feasibility of adoption into health system</b> How feasible is it to adopt the health technology/intervention into the Ontario health care system?	<b>Economic feasibility</b> How economically feasible is the health technology/intervention?  <b>Organizational feasibility</b> How organizationally feasible is it to implement the health technology/intervention?	The current estimated cost, for 2016, of using long-term continuous ambulatory ECG monitors and external cardiac loop recorders in Ontario is \$29.1 million. Expected net budget impact of increased use of long-term continuous ambulatory monitors is small, ranging from \$0.13 million to \$0.37 million per year over the next 5 years. However, this estimate relies on several assumptions, including that there will be no change in the fees associated with the use of each test.  Health care providers currently using external loop cardiac recorders may require some time to switch to long-term continuous monitors.

Abbreviations: CI, confidence interval; ECG, electrocardiography.

<sup>a</sup>The anticipated or assumed common ethical and societal values held in regard to the target condition, target population, and/or treatment options. Unless there is evidence from scientific sources to corroborate the true nature of the ethical and societal values, the expected values are considered.

## REFERENCES

- (1) Health Quality Ontario. Long-term continuous ambulatory ECG monitors and external cardiac loop recorders for cardiac arrhythmia: a health technology assessment. Ont Health Technol Assess Ser [Internet]. 2017 January;17(1):1-56. Available from: <http://www.hqontario.ca/evidence-to-improve-care/journal-ontario-health-technology-assessment-series>

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