Health Quality Ontario: Optimizing the Utilization of Laboratory Tests

Leslie Levin MD, FRCP (Lon), FRCPC
Vice President
Evidence Development and Standards,
Health Quality Ontario
Chief Scientific Officer, MaRS EXCITE

Laura Park-Wyllie PharmD, PhD
Manager, Implementation Planning, Funding & Standards
Evidence Development and Standards
Health Quality Ontario
Laboratory tests are examined as part of Health Quality Ontario’s ‘Appropriateness’ Initiative

Appropriateness Initiative

• Increasing recognition that inappropriate care: defined as overuse, underuse and misuse of health care, is widespread and associated with high costs to the health system.

• To prioritize and support the appropriate use of health care interventions in Ontario, Health Quality Ontario (HQO) formed the Appropriateness Working Group as a subcommittee of the Ontario Health Technology Advisory Committee (OHTAC) in April 2012.
Appropriateness Working Group of OHTAC

- Assists OHTAC by identifying, prioritizing, and assessing interventions where there is potential for improved appropriate use.
- ~20 members including Ontario Medical Association (OMA), the Ontario Hospital Association (OHA), the Council of Academic Hospitals of Ontario (CAHO), Ontario College of Family Physicians (OCFP), Local Health Integration Network (LHIN), academic, senior health administrators, and the Ministry of Health and Long-Term Care.
- Reports to OHTAC.

OHTAC

- A health technology assessment body that makes recommendations about health interventions in Ontario, and serves as a standing advisory subcommittee of HQO’s Board of Directors.
Laboratory test topics are considered through HQO/OHTAC’s Appropriateness Framework

1. Identification of potential topics
2. Prioritization tool
3. Validation of prioritized candidate topics with experts
4. Evidence Review and Economic Analysis (as needed)
5. OHTAC Recommendations
Laboratory topics were considered against 10 Prioritization Criteria

OHTAC Appropriateness Working Group Prioritization Tool

- Disease burden
- Rate of diffusion
- Volume
- Cost Burden
- Comparative Effectiveness
- Safety Concerns – Current Use
- Safety Concerns – Delisting
- Societal / Ethical
- Alignment
- Feasibility of Implementation
Laboratory tests selected for further examination to improve appropriate utilization

- Creatine Kinase
- Ferritin
- Vitamin B12
- Folate
- Liver Function (AST)
- Chloride
Considerations for Role of Evidence when examining Laboratory test utilization

• Body of evidence: A relatively smaller body of published scientific literature generally available to support evidence reviews of lab tests
• Type of Evidence Review: Health Quality Ontario Rapid Review
• Review Ontario utilization data
• Contextualize evidence with Expert Consultation
• OHTAC review and draft OHTAC Recommendation
• OHTAC Public Consultation Process
• Final OHTAC Recommendation submitted to Board of Health Quality Ontario
Health Quality Ontario

Rapid Review Methodology

1. Research Question
2. Literature Search
3. Systematic Review (SR)?
   - Yes
   - No
     - Expand to review of RCTs and guidelines adjusting selection criteria as necessary
4. Did SR use GRADE?
   - Yes
   - No
     - Obtain primary studies from SR with outcomes of interest
5. Did SR GRADE outcomes of interest for RR?
   - Yes
   - No
     - Summarize results
8. Report Results

Scoping
PICO
Study Selection Criteria
5 years
Medline, EMBASE, Cochrane, CRD SR, HTA, MA

Obtain primary studies from SR with outcomes of interest
GRADE Outcome(s) Max 2
Report Results

Did SR use GRADE?
Creatine kinase (CK) testing in Ontario

Creatine kinase test added to lab requisition form in 2007
Ferritin Testing in Ontario

Ferritin test added to lab requisition form in 2007

Volume of ferritin tests in Ontario

Fiscal Year

2005 2006 2007 2008 2009 2010

Hospital
Community
Total

www.HQOntario.ca
Vitamin B12 Testing in Ontario

Volume of vitamin B12 tests in Ontario

- Hospital
- Community
- Total

Fiscal Year

2005 2006 2007 2008 2009 2010
Folate Community Lab Testing in Ontario

Years

[Bar chart showing the number of tests from 2005 to 2011, with a decline over the years.]

www.HQOntario.ca
## Liver Function Tests – AST & ALT

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Community Laboratory Volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SGOT (AST)</td>
</tr>
<tr>
<td>2011/2012*</td>
<td>2,162,042</td>
</tr>
<tr>
<td>2010/2011</td>
<td>2,216,747</td>
</tr>
<tr>
<td>2009/2010</td>
<td>2,326,974</td>
</tr>
<tr>
<td>2008/2009</td>
<td>2,511,450</td>
</tr>
<tr>
<td>2007/2008</td>
<td>4,272,413</td>
</tr>
<tr>
<td>2006/2007</td>
<td>4,826,475</td>
</tr>
<tr>
<td>2005/2006</td>
<td>4,711,135</td>
</tr>
</tbody>
</table>

*M3 projected to M7
## Chloride Testing in Ontario

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Community Lab Volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/2012*</td>
<td>4,297,147</td>
</tr>
<tr>
<td>2010/2011</td>
<td>4,095,207</td>
</tr>
<tr>
<td>2009/2010</td>
<td>4,136,870</td>
</tr>
<tr>
<td>2008/2009</td>
<td>3,933,021</td>
</tr>
<tr>
<td>2007/2008</td>
<td>3,623,732</td>
</tr>
<tr>
<td>2006/2007</td>
<td>3,420,510</td>
</tr>
<tr>
<td>2005/2006</td>
<td>3,268,050</td>
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</tbody>
</table>

*M3 projected to M7
<table>
<thead>
<tr>
<th>Topic</th>
<th>Evidence Review</th>
<th>Expert Panel</th>
<th>Draft OHTAC Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creatine Kinase</td>
<td>Rapid Review</td>
<td>✓</td>
<td>Remove from laboratory requisition</td>
</tr>
<tr>
<td>Ferritin</td>
<td>Rapid Review</td>
<td>✓</td>
<td>Remove from laboratory requisition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Add to antenatal form 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Restrict ferritin testing to certain indications</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>Rapid Review</td>
<td>✓ ✓</td>
<td>Remove from laboratory requisition</td>
</tr>
<tr>
<td></td>
<td>Evidence-based Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folate</td>
<td>Expert Consultation</td>
<td>✓</td>
<td>Restrict folate testing to certain indications</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Red blood cell folate should be used</td>
</tr>
<tr>
<td>AST</td>
<td>Expert Consultation</td>
<td>-</td>
<td>Restrict to specialized physicians</td>
</tr>
<tr>
<td>Chloride</td>
<td>Expert Consultation</td>
<td>-</td>
<td>Remove from laboratory requisition</td>
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</table>
## Ministry Actions

<table>
<thead>
<tr>
<th>Topic</th>
<th>Implementation (Ministry is monitoring volumes)</th>
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<tbody>
<tr>
<td>Creatine Kinase</td>
<td>Remove from laboratory requisition</td>
</tr>
<tr>
<td>January 2013</td>
<td>Available as OHIP-insured with written request in the “Other Tests” section of form</td>
</tr>
<tr>
<td>Ferritin</td>
<td>Removed from laboratory requisition form</td>
</tr>
<tr>
<td>November 2012</td>
<td>Available as OHIP-insured with written request in the “Other Tests” section of form</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>Removed from laboratory requisition form</td>
</tr>
<tr>
<td>November 2012</td>
<td>Available as OHIP-insured with written request in the “Other Tests” section of form</td>
</tr>
<tr>
<td>Folate</td>
<td>Serum folate is only insured when ordered by physician with expertise in hematological or gastrointestinal disorders</td>
</tr>
<tr>
<td>January 2013</td>
<td>Red Blood Cell is insured for subset of patients</td>
</tr>
<tr>
<td>AST</td>
<td>AST is only insured when ordered by physician with expertise in hepatic disorders.</td>
</tr>
<tr>
<td>January 2013</td>
<td></td>
</tr>
<tr>
<td>Chloride</td>
<td>Remove from laboratory requisition</td>
</tr>
<tr>
<td>January 2013</td>
<td>Available as OHIP-insured with written request in the “Other Tests” section of form</td>
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Acknowledgements

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Dr. Les Levin, Vice-President, Health Quality Ontario

OHTAC
OHTAC Appropriateness Working Group
Evidence Development & Standards