A Proposed Minimum Set of Outcomes for Coronary Artery Disease Management

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Central Adelaide Local Health Network, SA Health
Outline

- Health Outcomes
- ICHOM
- Coronary Artery Disease
- CADOSA
Quality Health Care

Institute of Medicine – to improve quality of care

- Safe
- Effective
- Timely
- Efficient
- Equitable
- Patient centered
Health status is the impact of disease on patient function as reported by the patient.

The Range of Health Status Outcomes

Health Status

Disease
Heart attack
Coronary Disease

Symptoms
Chest pain
Fatigue
Dyspnea

Functional Limitation
Physical
Emotional
Mental
Social

Quality of Life
Living as Desired
Re-defining Health Care: Measure Value with Patient Health Outcomes

Transform health care = Improving Value

The Value is in patient health outcomes

Patient health outcomes multi-dimensional, revealed over time

Good patient health outcomes? Need to measure
Healthcare systems must be redesigned to deliver better value for patients.

Value = 

Patient health outcomes achieved

Cost of delivering the outcomes

Improve outcomes

Starting point is to focus on improving health results that matter most for a patient's condition

Reduce overall costs

Better quality of care is often less expensive over the long-term

Increase value

Better quality care at equal or lower cost leads to higher value in the system
ICHOM
International Consortium for Health Outcomes Measurement

- nonprofit dedicated to accelerating development and impact of outcomes measurement

ICHOM's three founders with the desire to unlock the potential of VBHC...

...launched ICHOM as a nonprofit
+ Independent 501(c)3 organization
+ Idealistic and ambitious goals
+ Global focus
+ Engages diverse stakeholders

Our mission:

To define a **global standard set of outcome measures that really matter to patients** for the most relevant medical conditions...and drive adoption of these measures worldwide to unlock the potential of value-based health care
ICHOM Working Group goal: Define a minimum standard set of outcomes we recommend all providers track.
Teleconferences and surveys used for discussion and decision making, ensuring credibility of final product.
ICHOM Coronary Artery Disease Working Group brings together international leaders to agree on set of outcomes.
Active Members of Coronary Artery Disease Working Group

Tomas Jernberg, Swedeheart (Sweden)

Clive Weston, National Institute for Cardiovascular Outcomes Research (UK)

Bishnu Panigrahi, Fortis Healthcare (India)

Alba Rosas Ruiz, STEMI registry (Catalonia, Spain)
Ricardo Tresserras Gaju, STEMI registry (Catalonia, Spain)

Terrance Chua Siang Jin, National Heart Centre Singapore (Singapore)

John Beltrame, University of Adelaide (Australia)

Jack Lewin, Formerly of the American College of Cardiology (US)
Mark Schoebel, American Heart Association (US)
Paul Heidenreich, American Heart Association (US)
Bob McNamara, Yale (US)
Louise Morgan, American Heart Association (US)
David Shahian, Massachusetts General Hospital, Society of Thoracic Surgeons (US)
John Rumsfeld, Veteran’s Health Administration, American College of Cardiology (US)
Robert Yeh, Massachusetts General Hospital (US)
Larry Sadwin*, American Heart Association (US)

*Patient representative

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The CAD Set covers three conditions and four treatment approaches

| Conditions                  | Asymptomatic coronary artery disease  |
|                            | Stable angina                         |
|                            | Acute myocardial infarction           |

| Treatment Approaches       | Lifestyle modification                |
|                            | Drug therapy                          |
|                            | Percutaneous Coronary Intervention (PCI)|
|                            | Coronary Artery Bypass Grafting (CABG) |

Measurement begins at the patient’s first contact with hospital services.
The ICHOM standard set for Coronary Artery Disease

<table>
<thead>
<tr>
<th>Patient Population</th>
<th>Risk Factors</th>
<th>Data Time Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographic Factors</strong></td>
<td></td>
<td></td>
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<tr>
<td>All patients*</td>
<td>Age</td>
<td>Outpatient clinic*/ index hospitalisation*</td>
</tr>
<tr>
<td></td>
<td>Sex</td>
<td></td>
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<tr>
<td><strong>Baseline Health Status</strong></td>
<td></td>
<td>Outpatient clinic*/ index hospitalisation*</td>
</tr>
<tr>
<td>All patients</td>
<td>Previous AMI</td>
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<tr>
<td></td>
<td>Heart failure</td>
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<td></td>
<td>Hypertension</td>
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<td></td>
<td>Stroke</td>
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<td>Diabetes</td>
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<td></td>
<td>Insulin dependence</td>
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<td></td>
<td>Peripheral arterial disease</td>
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<td></td>
<td>Dialysis dependence</td>
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<td></td>
<td>Baseline creatinine</td>
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<td></td>
<td>Chronic lung disease</td>
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<td></td>
<td>Liver cirrhosis</td>
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<td></td>
<td>Dementia</td>
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<tr>
<td>AMI patients</td>
<td>Peak troponin elevation</td>
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<tr>
<td></td>
<td>Presenting heart rate</td>
<td></td>
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<td></td>
<td>Presenting systolic blood pressure</td>
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<tr>
<td></td>
<td>Type of AMI</td>
<td></td>
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<tr>
<td>AMI patients</td>
<td>Cardiogenic shock at first medical contact</td>
<td>Index hospitalisation*</td>
</tr>
<tr>
<td>PCI &amp; CABG patients</td>
<td>Cardiac arrest</td>
<td></td>
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<td></td>
<td>Acute renal failure</td>
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<td></td>
<td>Presenting creatinine</td>
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<tr>
<td>PCI &amp; CABG patients</td>
<td>Status</td>
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<tr>
<td></td>
<td>Height</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weight</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Left main disease</td>
<td></td>
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<tr>
<td></td>
<td>Number of diseased vessels</td>
<td></td>
</tr>
<tr>
<td><strong>Prior Treatments</strong></td>
<td></td>
<td>Index hospitalisation*</td>
</tr>
<tr>
<td>AMI patients</td>
<td>Previous CABG</td>
<td></td>
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<tr>
<td>PCI &amp; CABG patients</td>
<td>Previous PCI</td>
<td></td>
</tr>
</tbody>
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The ICHOM standard set for Coronary Artery Disease
Coronary Angiogram Database Of South Australia

South Australian Cardiovascular Research Development Program

Heart Foundation

Government of South Australia
SA Health
Program Overview

Coronary Angiography (Diagnostic or PCI)

CADOSA-Quality Assurance Program
(Case Report Form)

Selection Criteria

CADOSA-Follow-up
In Hospital (SAQ, PHQ-9, EQ5D, SF-36)

Cardiology Clinical Network
Data & Information Workgp

1 & 12mth phone call

12 month Cardiac Event Follow-up
(All-cause Mortality, MI, All-cause Readmission)

1 & 12-mth Phone Follow-up
(SAQ, PHQ-9, EQ5D, SF-36)
• 4 hospitals
• State-based (Sth Australia)
• Commenced 2012
• All SA public angiograms
• CathPCI® Elements (Australia)
• In-hospital outcomes & treatments
• Linkage with administrative sets

• 1448 hospitals
• National collection
• Commenced 1997
• Voluntary participation
• CathPCI® (version 4.4)
• In-hospital outcomes & treatments
• Linkage with CMS
ICHOM's ultimate ambition is to drive learning and change globally by comparing outcomes and sharing best practices across providers.
The ICHOM standard set for Coronary Artery Disease

Outcomes: Includes occurrence of strokes, acute renal failure, prolonged ventilation, deep sternal wound infection, and other causes of reoperations.

Complications: Includes occurrence of strokes, acute renal failure, significant dissection, perforation, vascular complications requiring intervention, bleeding event within 72 hours, and emergent CABG for failed PCI.

Patient Reported Health Measures:
- Tracked via the Seattle Angina Questionnaire (SAQ-7)
- Tracked via the Rose Dyspnea Scale
- Tracked via the Patient Health Questionnaire (PHQ-2)

Administrative & clinical data
- Claims data
- Procedural coding
- Deaths registers Data abstraction
- Physician report

Patient Reported Data
- QoL Questionnaires
- SAQ
- Rose
- PHQ
The ICHOM standard set for Coronary Artery Disease

**Example 1:** Patient diagnosed with asymptomatic CAD and treated conservatively.

**Example 2:** Patient diagnosed with AMI and treated with PCI 2 years later.
## PCI Cases: Outcomes

<table>
<thead>
<tr>
<th>Intra &amp; Post Procedure Events</th>
<th>CathPCI Registry</th>
<th>CADOSA Registry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedural Success</td>
<td>97%</td>
<td>98%</td>
</tr>
<tr>
<td>Significant Dissection</td>
<td>1.1%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Perforation</td>
<td>0.4%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Bleeding Event within 72 hrs</td>
<td>1.6%</td>
<td>1.8%</td>
</tr>
<tr>
<td>Other Vascular Complications</td>
<td>0.4%</td>
<td>0.5%</td>
</tr>
<tr>
<td>CVA/Stroke</td>
<td>0.2%</td>
<td>0.4%</td>
</tr>
<tr>
<td>In-hospital Mortality</td>
<td>1.3%</td>
<td>2.0%</td>
</tr>
</tbody>
</table>