



# Appropriate Use of Medical Resources

## Elective Percutaneous Coronary Intervention Toolkit

Developed with resources from:



**AMERICAN  
COLLEGE of  
CARDIOLOGY**



**American  
Heart  
Association®**  
life is why™



The Society for Cardiovascular  
Angiography and Interventions

# Elective Percutaneous Coronary Intervention Toolkit

To access the toolkit, visit [www.aha.org/appropriateuse](http://www.aha.org/appropriateuse).

Developed with resources from:

American College of Cardiology (ACC)

American Heart Association

The Society for Cardiovascular Angiography and Interventions (SCAI)

## User Guide

The toolkit is composed of three sections:

**Hospital and Health System Resources** – for senior management, senior leaders for quality, clinic managers, nurse managers, key physician leaders and risk managers this section includes quality improvement resources and links to the National Cardiovascular Data Registry®.

**Clinician Resources** – for clinicians, this section includes mobile applications, guidelines and clinical evidence supporting the appropriate use of elective percutaneous coronary interventions.

**Patient Resources** – for patients, this section includes resources to understand the best use of angioplasty and how to obtain the right tests and treatments.

## Hospital and Health System Resources

### *American Heart Association's Get With The Guidelines® and Mission: Lifeline®*

Get With The Guidelines®, a suite of hospital-based quality improvement programs and registries, offers online tools to provide patient-specific guidelines and track their adherence. Get With The Guidelines® helps hospitals follow the most up-to-date, research-based treatment guidelines, reducing gaps and disparities in the delivery of quality care, while supporting high value registries for cardiovascular research. To access, go to <http://bit.ly/1HjsLQ0>.

### *SCAI's 2016 Quality Improvement Toolkit*

This toolkit includes information on guidelines, peer review conferences, national database participation, pre-procedure checklists, data collection and inventory management. The toolkit assists hospitals and health systems in identifying strengths as well as opportunities for improvement. To view, go to <http://bit.ly/1DrZdve>.

### *National Cardiovascular Data Registry® (NCDR) CathPCI Registry®*

An ACC initiative, with SCAI partnering support, the CathPCI Registry® “assesses the characteristics, treatments and outcomes of cardiac disease patients who receive diagnostic catheterization and/or percutaneous coronary intervention (PCI) procedures. This powerful tool captures the data that measure adherence to ACC/American Heart Association clinical practice guideline recommendations, procedure performance standards and appropriate use criteria for coronary revascularization.” To access, go to <http://bit.ly/1baOeND>.

### *Understanding the Reporting of Appropriateness Use Criteria in the CathPCI Registry®*

This guide explains how to interpret the Institutional Feedback Report organizational self-assessments of the appropriateness of PCI procedures at the hospital level. Each report includes the institution's rate of appropriate, uncertain and inappropriate procedures for PCIs in patients with acute coronary syndromes and non-acute presentations of coronary artery disease allowing participating hospitals to become more informed about their use of PCI and determine whether there are opportunities to improve the patients selected for coronary revascularization. To download, go to <http://bit.ly/1CVJfV>.

## ACC Quality Improvement for Institutions Program

The ACC Quality Improvement for Institutions program gives health care institutions a comprehensive suite of cardiovascular registries and service solutions that supports quality clinical care and improves patient outcomes. To view, go to <http://bit.ly/1cDEbAU>.

## Expert Consensus Document: 2014 Update on PCI without On-Site Surgical Backup

This study updates work on the performance of PCI without onsite surgery, recommendations and best practices for facilities engaged in PCI without on-site surgery. To download, go to <http://bit.ly/1Df6DBZ>.

## What Each Registry Collects

A summary of the data collected by the National Cardiovascular Data Registry®, including patient demographics, provider and facility characteristics, history and risk factors appropriate use criteria and compliance with clinical guideline recommendations. To view, go to <http://bit.ly/1DfBY4g>.

## Clinician Resources

### ACC's Guideline Clinical Mobile Application

In addition to clinical guideline content, the application includes interactive tools for clinicians caring for patients with cardiovascular disease, such as risk scores, dosing calculators and algorithms. The application also includes features such as customizable bookmarks, note-taking and email compatible PDFs. To download, go to <http://apple.co/1yAgtfF>.

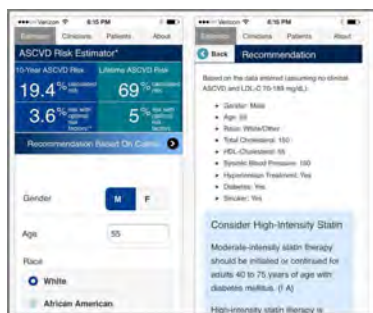


### SCAI PCI Risk Calculator Application

SCAI teamed up with the Blue Cross Blue Shield of Michigan Cardiovascular Consortium Registry to create the SCAI PCI Risk Calculator that allows clinical users to use one common tool to make a pre-procedure assessment of post-PCI risks including mortality, acute kidney injury and transfusion. To download, go to <http://bit.ly/2aOJ8Zf> or <http://apple.co/2ayeFRi>.

### SCAI PCI Appropriateness Calculator

Online calculator offered by SCAI that allows determination of the appropriate use score for individual PCI procedures based on individual patient clinical characteristics. To access, go to <http://bit.ly/2aspQWS> or <http://bit.ly/2alqKhS>.



### Atherosclerotic Cardiovascular Disease (ASCVD) Risk Estimator

A companion tool to the 2013 ACC/American Heart Association Guideline on the Assessment of Cardiovascular Risk, the ASCVD risk calculator enables health care providers and patients to estimate 10-year and lifetime risks for ASCVD. To access, go to <http://bit.ly/2aHgK9e>.

## *The NCDR CathPCI Registry® Physician Dashboard Guide for Physicians*

This guide provides complete information about accessing and using the dashboard, including appropriate use criteria scores. To download, go to <http://bit.ly/1ynVGyY>.

### **PowerPoint Presentation**

This presentation explains how the physician dashboard of the NCDR CathPCI Registry® can be used to ensure data is being accurately documented and abstracted, assess quality of care being provided and identify opportunities for improvement. To download, go to <http://bit.ly/1FQWMmC>.

### *Coronary Revascularization Pocket Card*

Developed by the ACC, this pocket card answers key questions and lists key decision variables about appropriate revascularization, as well as identifies reasons for which revascularization is rarely appropriate. To download, go to <http://bit.ly/1Mry79j>.

## **Guidelines and Appropriate Use Criteria**

### *2012 Appropriate Use Criteria for Coronary Revascularization Focused Update*

The ACC, in collaboration with SCAI, Society of Thoracic Surgeons, American Association for Thoracic Surgery, American Heart Association, American Society of Nuclear Cardiology, Heart Failure Society of America and the Society of Cardiovascular Computed Tomography published this focused update of the 2009 document to include new literature published since the original document and gaps noted during implementation. To download, go to <http://bit.ly/166KuKs>.

### *2011 ACC/American Heart Association/SCAI Guideline for Percutaneous Coronary Intervention: Executive Summary*

Since 1980, the ACC and the American Heart Association have jointly produced guidelines in the area of cardiovascular disease. This guideline provides recommendations for CAD revascularization, pre-procedural, procedural, post-procedural and quality and performance considerations. To download, go to <http://bit.ly/1tGwd17>.

## **Clinical Articles**

### *Variation in Patients' Perceptions of Elective Percutaneous Coronary Intervention in Stable Coronary Artery Disease: Cross Sectional Study*

Kureshi F., Jones P.G., Buchanan D.M., Abdallah M.S., & Spertus J.A. (2014). Variation in patients' perceptions of elective percutaneous coronary intervention in stable coronary artery disease: cross sectional study. *BMJ*, 349:g5309. To download, go to <http://bmj.co/1OOKwaA>.

## **CASE EXAMPLE:**

### **Blue Cross Blue Shield of Michigan Cardiovascular Consortium PCI Quality Improvement Initiative (BMC2-PCI)**

Established in 1997, BMC2-PCI is a collaborative effort to improve care and outcomes for patients with coronary disease who undergo angioplasty. According to the [2015 Fact Sheet](#), participants include 33 Michigan hospitals and 484 physicians. Approximately 342,420 cases have been entered into the NCDR® since 1997. To learn more, go to <https://bmc2.org/pci>.



### *Initial Coronary Stent Implantation with Medical Therapy vs Medical Therapy Alone for Stable Coronary Artery Disease: Meta-Analysis of Randomized Controlled Trials*

Stergiopoulos K, Brown D.L. (2012). Initial coronary stent implantation with medical therapy vs medical therapy alone for stable coronary artery disease: meta-analysis of randomized controlled trials. *Arch Intern Med*, 172(4):312-319. To download, go to <http://bit.ly/1In2op4>.

### *Patterns and Intensity of Medical Therapy In Patients Undergoing Percutaneous Coronary Intervention*

Borden W.B., Redberg R.F., Mushlin A.I., Dai D, Kaltenbach L.A., & Spertus J.A. (2011). Patterns and intensity of medical therapy in patients undergoing percutaneous coronary intervention. *JAMA*, 305(18):1882-1889. To download, go to <http://bit.ly/1ESpkNX>.

### *Appropriateness of Percutaneous Coronary Intervention*

Chan P.S., Patel M.R., Klein L.W., et al. (2011). Appropriateness of percutaneous coronary intervention. *JAMA*, 306(1):53-61. To download, go to <http://bit.ly/1y6YfVX>.

### *Meta-Analysis: Effects of Percutaneous Coronary Intervention versus Medical Therapy on Angina Relief*

Wijesundera, H. C., Nallamotheu, B. K., Krumholz, H. M., Tu, J. V., & Ko, D. T. (2010). Meta-analysis: effects of percutaneous coronary intervention versus medical therapy on angina relief. *Annals of Internal Medicine*, 152(6), 370-379. To download, go to <http://1.usa.gov/1GUnmyt>.

### *A Meta-Analysis of 17 Randomized Trials of a Percutaneous Coronary Intervention-Based Strategy in Patients with Stable Coronary Artery Disease*

Schömig A., Mehilli J., de Waha A., Seyfarth M., Pache J., & Kastrati A. (2008). A meta-analysis of 17 randomized trials of a percutaneous coronary intervention-based strategy in patients with stable coronary artery disease. *J Am Coll Cardiol*. 52(11):894-904. To download, go to <http://bit.ly/1JbWGXn>.

### *Effect of PCI on Quality of Life in Patients with Stable Coronary Disease*

Weintraub, W. S., Spertus, J. A., Kolm, P., Maron, D. J., Zhang, Z., Jurkowitz, C., & Boden, W. E. (2008). Effect of PCI on quality of life in patients with stable coronary disease. *New England Journal of Medicine*, 359(7), 677-687. To download, go to <http://bit.ly/1DQwcdZ>.

### *Optimal Medical Therapy with or without PCI for Stable Coronary Disease*

Boden, W. E., O'Rourke, R. A., Teo, K. K., Hartigan, P. M., Maron, D. J., Kostuk, W. J., & Weintraub, W. S. (2007). Optimal medical therapy with or without PCI for stable coronary disease. *New England Journal of Medicine*, 356(15), 1503-1516. To download, go to <http://bit.ly/1HgoJGj>.

### *Percutaneous Coronary Intervention versus Optimal Medical Therapy for Prevention of Spontaneous Myocardial Infarction in Subjects with Stable Ischemic Heart Disease*

Bangalore, S., Pursnani, S., Kumar, S., & Bagos, P.G. (2013). Percutaneous coronary intervention versus optimal medical therapy for prevention of spontaneous myocardial infarction in subjects with stable ischemic heart disease / clinical perspective. *Circulation*, 127(7). 769-781. To download, to go <http://bit.ly/1JLqZop>.

### *Coronary Artery Bypass Graft Surgery versus Percutaneous Coronary Intervention with First-Generation Drug-Eluting Stents: A Meta-Analysis of Randomized Controlled Trials*

Al-Ali, J., Franck, C., Fillion, K.B., & Eisenberg, M.J. (2014). Coronary artery bypass graft surgery versus percutaneous coronary intervention with first-generation drug-eluting stents: a meta-analysis of randomized controlled trials. *JACC Cardiovasc Interv.* 7(5), 497-506. To download, go to <http://1.usa.gov/1KO9XpH>.

### *Causes of Short-Term Readmission after Percutaneous Coronary Intervention*

Wasfy, J.H., Strom, J.B., O'Brien, C., Zai, A.H., Luttrell, J., Kennedy, K.F., Spertus, J.A., Zelevinsky, K., Normand, S.T., Mauri, L., & Yeh, R.W. (2014). Causes of short-term readmission after percutaneous coronary intervention. *Circ Cardiovasc Interv.* 7(1), 97-103. To download, to go <http://bit.ly/1H5KJA4>.

## **Patient Resources**

### *PCI Choice*

Materials from Mayo Clinic that visually illustrate the probabilities of risk versus benefit from PCI for stable ischemic heart disease in order to help patients make decisions that best fit their values and preferences. To view, go to <http://mayocl.in/1aE3kdb>.

### *What Can Angioplasty Do For You?*

This *Harvard Health Publications* article discusses the benefits and risks of angioplasty for stable angina and the outcomes of the Clinical Outcomes Utilizing Revascularization and Aggressive Drug Evaluation (COURAGE) trial. To view, go to <http://bit.ly/1Ds34bH>.

### *SecondsCount.org*

This website, hosted by SCAI, aims to better prepare patients and their families to navigate the medical system and actively participate in care. Resources include explanations about what Coronary Artery Disease (CAD) is, common tests and treatments involved as well as worksheets to assist in understanding medication and questions to ask physicians. To view, go to <http://bit.ly/1Hq3v87>.

### *Five Things Physicians and Patients Should Question*

This Choosing Wisely list, identifying practices commonly used within critical care whose necessity should be questioned and discussed, was prepared as an initiative of the Society of Cardiovascular Angiography and Interventions. To download, go to <http://bit.ly/2b8YMxH>.