Treatments for Coronary Artery Disease
Decision Quality Instrument User Guide

I. Purpose:
To measure the extent to which patients are informed, involved in the decision making process and receive treatments that match their goals and preferences.

II. Versions:
Coronary Artery Disease Decision Quality Instrument v1.0, ©2010
Elective Stent Decision Quality Instrument v1.0 ©2013
Elective Bypass Decision Quality Instrument v1.0 ©2013
Decision Quality Worksheet: Treatments for Coronary Artery Disease v1.0, ©2010

III. Timing
The decision quality instrument version is designed to be administered <u>after</u> a decision has been made. The elective stent and elective bypass versions are adapted for use in samples where the treatment is known. Modifications are required (e.g. to instructions and tenses of items) if it is to be used before a decision has been made.

The shorter worksheet version is worded to be used <u>during</u> the decision making process. The knowledge items and goals can be administered at any time, e.g. before or after a visit, before or after a decision aid. The decision process items need to be administered <u>after</u> a provider consult.

IV. Scoring:
The survey contains three sets of items and results in three scores, a total knowledge score, a concordance score and a decision process score.

1. Knowledge Score: The items are located in "Section 2: Facts About Carotid Artery Disease." For each fact, a correct response receives one point (see Table 1). Missing responses receive 0 points. A total score is calculated for all patients who complete at least half of the items. Total scores are scaled from 0-100%.

Table 1: Facts (# indicates items in the brief version)

Question	Correct response
#1. On average, which group of people with heart disease will live longer?	There is little or no difference in expected length of life between the groups
#2. After one year, which type of treatment provides the most relief for heart disease symptoms?	Bypass operation and medicines
#3. After a **bypass operation**, about how long does it take most people to get back to doing their usual activities?	1 to 3 months
#4. Out of 100 people who have a **bypass operation**, about	8

how many will have a stroke, heart attack, or die within 30 days after the surgery?	
#5. After a **stent procedure**, about how long does it take most people to get back to doing their usual activities?	Less than 1 week
#6. Out of 100 people who have a **stent procedure**, about how many will have a stroke, heart attack, or die within 30 days after the procedure?	4
#7. Which treatment has the highest chance of causing stroke, heart attack or death?	Bypass operation

2. Concordance score: In "Section 1: What Matters Most To You," patients rate their goals and concerns on an 11-point importance scale from 0 (not important at all) to 10 (extremely important). These questions and one question about patient's treatment preference can be used to calculate a concordance score. There are multiple approaches to calculate a concordance score, we describe two below. Note: for those who use the worksheet version, there must be some way to track the treatment that patients received to complete this calculation.

The first is a simple match, and in this direct approach, we use patients' preferred treatment (assessed with a single item, "Which treatment do you want to do to treat your heart disease?") and then compare with treatment received to determine whether they match. Patients who are unsure are not considered to have treatment that matches. A summary score (0-100%) indicating the percentage of patients who received treatment that matched their stated preference can be generated.

The second approach uses patients' ratings of the importance of salient goals and concerns on a 0 to 10 scale in a multiple logistic regression model to generate a predicted probability of treatment. The dependent variable is binary and often collapsed to: Surgery versus Non Surgical options and the independent variables are the individual goals. Patients with a predicted probability >0.5 and who had surgery for heart disease or those with a predicted probability $\leq$ 0.5 and who did not have surgery, were classified as having treatments matching their goals. A summary score (0-100%) can be generated to reflect the percentage of patients in the sample who received treatments that matched their goals.

3. Decision Process Score: These questions are located in the Decision Quality Instrument in "Section 3: Talking with your Health Care Providers" and in the Decision Quality Worksheet in "Section 3: Making Choices." Patients are asked about whether they were offered a choice, how much the pros and cons were discussed, and whether the health care provider asked for their preferences. Participants receive 1 point for a response of "yes" or "a lot/some." The total points are summed and then divided by the total number of items to result in scores from 0-100%, with higher scores indicated a more shared decision making process.

V. Development Process:
This has been described in detail in Sepucha et al (2008), briefly to generate the survey we:
- Conducted a review of the clinical evidence & of focus groups and interviews with patients to generate a candidate set of facts and goals salient to the decision
- Surveyed a convenience sample of patients with coronary artery disease (n=32) and a multidisciplinary group of clinical experts (n=19) to rate the facts and goals for importance, completeness, and accuracy.
- Drafted the instrument and conducted cognitive interviews with patients diagnosed with coronary artery disease (n=5) to evaluate items for acceptability and comprehension

VI. Psychometric Properties:
Versions of the elective bypass and elective stent DQIs were used in a national study of Medicare beneficiaries (Fowler FJ et al, 2012).

To date there have been no formal studies to evaluate the psychometric properties. Other instruments that have followed the same development process have been shown to be acceptable and feasible, with good reliability and validity.

VII. Appropriate Use
The DQIs are protected by copyright. They are available to use at no cost, provided that you:
- Cite the reference in any questionnaires or publications
- Do not charge for or profit from them
- Do not alter them except for customization for a specific condition and reformatting

Suggested Citations for the DQIs:
Sepucha KR. Coronary Artery Disease Decision Quality Instrument v.1.0. ©Massachusetts General Hospital, 2010.

Sepucha KR. Decision Quality Worksheet: Treatments for Coronary Artery Disease. v.1.0. ©Massachusetts General Hospital, 2010. Downloaded from: http://www.massgeneral.org/decisionsciences/research/DQ_Instrument_List.aspx.

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VIII. Selected References

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Sepucha K, Levin C, Uzogara E, Barry M, O'Connor A, Mulley A. Developing instruments to measure the quality of decisions: Early results for a set of symptom-driven decisions. *Patient Education and Counseling* 2008 73:504-510.

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Sepucha K, Feibelmann S, Abdu WA, Clay CF, Cosenza C, Kearing S, Levin CA, Atlas SJ. Psychometric Evaluation of a Decision Quality Instrument for Treatment of Lumbar Herniated Disc. *Spine*. 2012; 37(18):1609-1616.

IX. Questions or comments? Please contact us at decisions@partners.org or visit our website at http://www.massgeneral.org/decisionsciences/research/.