Literature Review Process for Category I CPT Codes

CPT Editorial Panel Meeting
February 2016
Why This Session?

- Supporting literature is a key component of a Code Change Application
- Concerns and discomfort about the literature requirement frequently expressed by Editorial Panel members
- There are resources available that can assist Advisors and Panel members with their literature review
- At the February 2015 Panel meeting (tab 92), the Panel designated literature review as a strategic session topic for the next Annual CPT Advisory Committee meeting
The Category I Literature Requirements

- **Specific Category I Criterion:**
  
  “The *clinical efficacy* of *the procedure or service* is documented in literature that meets the requirements set forth in the CPT code change application.”

- **The CCA requirements (items 25 and 26) are:**
  
  - Furnish electronic versions (PDF or Word) of the peer-reviewed articles
  - Identify Level of Evidence, journal origin (US or foreign), and Impact Factor
  - Identify study duration, design type, and total patients (US- or non-) studied
  - Write a brief description of study’s relevance
  - Identify articles with conflicting data/opinions (item 26)
Ideally:

- Level of Evidence
  - Clearly stated
- Impact Factor
  - Journal is indexed in Thomson Reuters’ *Journal Citation Reports*
- Duration, design type, and total patients studied
  - A structured abstract or “Methods” section of the article includes all of these elements, AND
  - The study duration and patient count is sufficient to demonstrate the **clinical efficacy** of the procedure/service
- Brief description of study’s relevance to the CCA
  - Submitter accurately summarizes its clinical relevance to the reviewer’s satisfaction
- Articles with conflicting data/opinions
  - None exist
But What If the Cited Literature Is Not Ideal? Or Accurately Described? Or Raises *Clinical Concerns* in your Mind?

If so, first separate the quantitative from the qualitative factors.
Quantitative vs. Qualitative Factors in the Category I Literature Requirements

Quantitative Factors

- Number of peer-reviewed publications
- Minimum # with US patient populations
- Minimum # with different patient populations
- Minimal Level of Evidence (in at least one article)

Requires mathematics (OK, just counting); results are absolute
<table>
<thead>
<tr>
<th>Category I Literature Requirements</th>
<th>Typical</th>
<th>Typical</th>
<th>Limited, Specialized or Humanitarian</th>
<th>Limited, Specialized or Humanitarian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>New</td>
<td>Existing or Non-Contributory</td>
<td>New</td>
<td>Existing or Non-Contributory</td>
</tr>
<tr>
<td># of Peer-Reviewed Publications:</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3-5</td>
</tr>
<tr>
<td>Minimum # with U.S. Patient Populations:</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Minimum # with Different Patient Populations:</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Minimum Level of Evidence for at least One Article</td>
<td>Ila</td>
<td>IIIa/IIIb</td>
<td>Iib</td>
<td>IV</td>
</tr>
</tbody>
</table>
# Level of Evidence Table

<table>
<thead>
<tr>
<th>Level</th>
<th>Short Description (based on Oxford Centre 2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ia</td>
<td>Evidence obtained from systematic review of randomized controlled trials</td>
</tr>
<tr>
<td>Ib</td>
<td>Evidence obtained from an individual randomized controlled trial</td>
</tr>
<tr>
<td>IIa</td>
<td>Evidence obtained from systematic review of cohort studies</td>
</tr>
<tr>
<td>IIb</td>
<td>Evidence obtained from an individual cohort study</td>
</tr>
<tr>
<td>IIIa</td>
<td>Evidence obtained from systematic review of case control studies</td>
</tr>
<tr>
<td>IIIb</td>
<td>Evidence obtained from a case control study</td>
</tr>
<tr>
<td>IV</td>
<td>Evidence obtained from case series</td>
</tr>
<tr>
<td>V</td>
<td>Evidence obtained from expert opinion without explicit critical appraisal</td>
</tr>
</tbody>
</table>
Quantitative vs. **Qualitative** Factors in the Category I Literature Requirements

<table>
<thead>
<tr>
<th>Quantitative Factors</th>
<th>Qualitative Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of peer-reviewed publications</td>
<td>Impact Factor of journal (or alternative, if not in <em>JCR</em>)</td>
</tr>
<tr>
<td>Minimum # with US patient populations</td>
<td>Duration of study (long enough?)</td>
</tr>
<tr>
<td>Minimum # with different patient populations</td>
<td>Total patients studied (sufficient?)</td>
</tr>
<tr>
<td>Minimal Level of Evidence (in at least one article)</td>
<td>Relevance of article</td>
</tr>
<tr>
<td>Requires mathematics (OK, just counting); results are absolute</td>
<td>Significance of conflicting publications</td>
</tr>
</tbody>
</table>

Requires judgment; conclusions may vary among Panel members/Advisors
Panel Member/Advisor Judgments Applied to the Qualitative Factors

1. Impact Factor
   - No minimum standard
   - The existence of an Impact Factor is, in itself, a quality indicator.
   - If the journal does not have an Impact Factor, an alternative metric (“altmetric”) could be a substitute to determine if the journal has credibility in the scholarly world.
Alternatives to Impact Factor

• Journal-level metrics:
  – Eigenfactor (citations from highly-rated journals count more)
  – IPP (Impact per Publication)
  – SCImago Journal Rank (PageRank-like metric)
  – Google Scholar h5-index

• Author-level metrics:
  – $h$-Index (measures both productivity and impact) [also called Hirsch Index]

• Article-level metrics:
  – SNIP (Source Normalized Impact per Paper)
  – Download and times-cited statistics
Where to Find Altmetrics

• Eigenfactor:  

• IPP and SCImago:  http://www.journalmetrics.com/

• Google Scholar h5-index:  
  https://scholar.google.com/citations?view_op=top_venues

• h-Index:  http://apps.webofknowledge.com/

• SNIP:  http://www.journalmetrics.com/

• Download and times-cited statistics: journal websites
Association Between Bariatric Surgery and Long-term Survival

David E. Arterburn, MD, MPH,1,2 Maren K. Olsen, PhD3,4 Valerie A. Smith, MS5; Edward H. Livingston, MD, MS5,6,7,8; Lynn Van Scyoc5; William S. Yancy Jr, MD, MHSc,3,9 George Eid, MD10,11 Hollis Weidenbacher, PhD3; Matthew L. Maciejewski, PhD3,9


ABSTRACT

Importance: Accumulating evidence suggests that bariatric surgery improves survival among patients with severe obesity, but research among veterans has shown no evidence of benefit.

Objective: To examine long-term survival in a large multisite cohort of patients who underwent bariatric surgery compared with matched control patients.

Design, Setting, and Participants: In a retrospective cohort study, we identified 2,500 patients (74% female) aged 21-77 years, who underwent bariatric surgery between 1996 and 2011 at 1 of 11 VA centers. The study included 2,500 patients matched 1:1 on age, sex, race, and year of surgery to 2,500 patients who did not undergo bariatric surgery.

Results: The overall mortality rate was 10.4% at 10 years. In adjusted analyses, bariatric surgery was associated with a 33% (hazard ratio, 0.67; 95% CI, 0.55-0.82) lower risk of death compared with standard of care. The risk of death was lower for patients who underwent Roux-en-Y gastric bypass (hazard ratio, 0.49; 95% CI, 0.33-0.73) compared with other bariatric surgeries. Subgroup analysis showed that the benefit of bariatric surgery was greater for patients who were male (hazard ratio, 0.46; 95% CI, 0.28-0.75) and non-Hispanic white (hazard ratio, 0.52; 95% CI, 0.37-0.75).

Conclusions and Relevance: Bariatric surgery is associated with a lower risk of death compared with standard of care among patients with severe obesity. The results of this study provide evidence to support the routine implementation of bariatric surgery for patients with severe obesity who are referred to VA centers.

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TREATMENT OF ADULT OBESITY WITH BARIATRIC SURGERY

By: Schroeder, Robin; Harrison, T. Daniel; McGraw, Shanqua L.
AMERICAN FAMILY PHYSICIAN Volume: 93 Issue: 1 Pages: 31-37 Published: JAN 1 2016

View Abstract

Times Cited: 1
(from Web of Science Core Collection)
Association Between Bariatric Surgery and Long-term Survival

Overview of attention for article published in JAMA: Journal of the American Medical Association, January 2015

**SUMMARY**

- **Title**: Association Between Bariatric Surgery and Long-term Survival
- **Published in**: JAMA: Journal of the American Medical Association, January 2015
- **DOI**: 10.1001/jama.2014.16968
- **Pubmed ID**: 25562267
- **Authors**: David E. Arterburn, Maren K. Olsen, Valerie A. Smith, Edward H. Livingston, Lynn Van Scoyoc...
- **Abstract**: Accumulating evidence suggests that bariatric surgery improves survival among patients with severe...

**TWITTER DEMOGRAPHICS**

**SCORE IN CONTEXT**

The data shown below were collected from the profiles of **126** tweeters who shared this research output. Click here to find out more about how the information was compiled.
Panel Member/Advisor Judgments Applied to the Qualitative Factors

1. Impact Factor
   - If journal does not have an Impact Factor, an Altmetric could be a substitute to determine if the journal has standing in the scholarly world.

2. Duration and total number of patients studied
   - No single standard is possible.
     - Relates to Category I Criterion #2: “The procedure or service is performed with frequency consistent with the intended clinical use (i.e., a service for a common condition should have high volume, whereas a service commonly performed for a rare condition may have low volume).”
   - Adequacy of the duration and sufficiency of the patient count requires a Panel Member’s/Advisor’s clinical judgment.
Panel Member/Advisor Judgments Applied to the Qualitative Factors

1. Impact Factor
   - If journal is not indexed in Thomson Reuters’ *Journal Citation Reports*, an *Altmetric* could be a substitute to determine if the journal has standing in the scholarly world.

2. Duration and total number of patients studied
   - No single standard is possible. Duration and patient count sufficiency requires a Panel Member’s/Advisor’s clinical judgment about the procedure/service.

3. Brief description of study’s relevance to the CCA
   - Whether the article is clinically relevant and focused sufficiently on the procedure/service under consideration is subject to the Panel Member’s/Advisor’s judgment.
Panel Member/Advisor Judgments Applied to the Qualitative Factors

1. Impact Factor
   - If journal is not indexed in Thomson Reuters’ *Journal Citation Reports*, an Altmetric could be used to determine if the journal has standing in the scholarly world.

2. Duration and total number of patients studied
   - No single standard is possible. Duration and patient count sufficiency requires a panel member’s clinical judgment about the procedure/service.

3. Brief description of study’s relevance to the CCA
   - Whether the article is clinically relevant and focused sufficiently on the procedure/service under consideration IS subject to the Panel Member’s/Advisor’s judgment.

4. Articles with conflicting data/opinions (item 26)
   - Are significant issues raised in other scholarly publications that call the submitted article’s conclusions about clinical efficacy into question?
If Your Qualitative/Clinical Judgment Is Negative

• Such a judgment is well within your discretion as a CPT Reviewer, if it is based on faithful application of the CPT Category I Criteria

• In such a circumstance you might appreciate techniques to help validate (or overturn) your judgment:

  1. Look for “post-publication peer review” for other physicians’/scholars’ views of the article and its science. If an article does not meet scholarly standards, the scientific community will likely provide negative feedback!
“Post-Publication Peer Review”

- Letters to the Editor
- Reader Comments
- Editorials
- Commentaries
- Citing Articles

- Most of these are readily discoverable at high-quality journal websites
Stenting and Medical Therapy for Atherosclerotic Renal-Artery Stenosis


Comments open through January 8, 2014

BACKGROUND
Atherosclerotic renal-artery stenosis is a common problem in the elderly. Despite two randomized trials that did not show a benefit of renal-artery stenting with respect to kidney function, the usefulness of stenting for the prevention of major adverse renal and cardiovascular events is uncertain.

METHODS
We randomly assigned 947 participants who had atherosclerotic renal-artery stenosis and other systolic hypertension while taking two or more antihypertensive medications to one of three therapies: no stenting, percutaneous renal artery stenting, or continued medical therapy. The primary outcome was the mean change in the terminal slope of the curve relating systolic blood pressure to renal function over 5 years.
If Your Qualitative/Clinical Judgment Is Negative

- That view is well within your discretion as a CPT Editorial Panel member.

- If you need resources to help validate (or overturn) that view:
  1. Look for post-publication peer review for other physicians’/scholars’ views of the article and its science. If the article does not meet scholarly standards, the community will likely provide negative feedback!
  2. Look at the standards used by journal editors to assess submitted manuscripts to determine if important elements are missing.
Standards (Checklists) Used by Journal Editors to Assess Submitted Manuscripts

- EQUATOR Network (Enhancing the QUality and Transparency Of health Research)
- CONSORT standards for randomized trials
- STROBE standards for consort (observational) studies
- PRISMA standards for systematic reviews and meta-analyses

- Flawed articles are unlikely to conform to these standards
- The checklists will help you identify missing elements and evaluate articles
It’s a Challenging Job, but AMA Support Is Available to Help Panel Members/Advisors Upon Request

- Librarian support to gain access to the online versions of submitted articles, providing “post-publication peer review” access
- Librarian support to locate altmetrics in the absence of an Impact Factor
- Access to the *JAMA Evidence* website:
  - Fully searchable *Users’ Guides to the Medical Literature*
- Access to the *JAMA Guide to Statistics and Methods* series
- Presentations re CONSORT, PROBE, PRISMA
- Improvements to the CCA form and the process, as needed
How to Read a Systematic Review and Meta-analysis and Apply the Results to Patient Care

Users’ Guides to the Medical Literature

Mohammad Hassan Murad, MD, MPH; Victor M. Montori, MD, MSc; John P. A. Ioannidis, MD, DSc; Roman Jaeschke, MD, MSc; F. J. Devereaux, MD, PhD; Kaneshwar Pusuluri, MD, DM, FACP, FCCP; Ignacio Neumann, MD, MSc; Alonso Carrasco-Lastra, DDS, MSc; Thomas Aggenbach, MSc; Rose Mataia, MD, MSc; Maureen O. Meade, MD, MSc; Peter Wyer, MD; Deborah J. Cook, MD, MSc; Gordon Guyatt, MD, MSc

Author Affiliations


ABSTRACT

Clinical decisions should be based on the totality of the best evidence and not the results of individual studies. When clinicians apply the results of a systematic review or meta-analysis to patient care, they should start by evaluating the credibility of the methods of the systematic review, i.e., the extent to which these methods have likely protected against misleading results. Credibility depends on whether the review addressed a sensible clinical question; included an exhaustive literature search; demonstrated reproducibility of the selection and assessment of studies; and presented results in a useful manner. For reviews that are sufficiently credible, clinicians must decide on the degree of confidence in the estimates that the evidence warrants (quality of evidence). Confidence depends on the risk of bias in the body of evidence; the precision and consistency of the results; whether the results directly apply to the patient of interest; and the likelihood of reporting bias. Shared decision making requires understanding of the estimates of magnitude of beneficial and harmful effects, and confidence in those estimates.
It’s a Challenging Job, but AMA Support Is Available to Help Panel Members/Advisors Upon Request

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  – Fully searchable Users’ Guides to the Medical Literature
• Access to the JAMA Guide to Statistics and Methods series
• Presentations re CONSORT, PROBE, PRISMA
• Improvements to the CCA form and the process, as needed
In Summary…

• Literature is a critical component of a Code Change Application
• Panel Members and Advisors must ensure that the literature supports the *clinical efficacy* claim in the Code Change Application
• The quantitative decisions about are straightforward
• The qualitative decisions are less daunting when you use the full toolset (staff and resources) available to you as Panel Members and Advisors
• The result of this thoughtful work is a better CPT code set