



# Not the Last Word

## Not the Last Word: Choosing Wisely

Joseph Bernstein MD

### Introduction

In 2012, the American Board of Internal Medicine (ABIM) Foundation initiated the “Choosing Wisely” campaign [4]. The ABIM challenged all physician organizations to identify medical services that are “overused in their specialty and did not provide meaningful benefit for patients.”

---

The author certifies that he, or any member of his immediate family, has no funding or commercial associations (eg, consultancies, stock ownership, equity interest, patent/licensing arrangements, etc) that might pose a conflict of interest in connection with the submitted article.

All ICMJE Conflict of Interest Forms for authors and *Clinical Orthopaedics and Related Research*® editors and board members are on file with the publication and can be viewed on request.

The opinions expressed are those of the writers, and do not reflect the opinion or policy of *Clinical Orthopaedics and Related Research*® or The Association of Bone and Joint Surgeons®.

---

J. Bernstein MD (✉)

Department of Orthopaedic Surgery,  
University of Pennsylvania, 424  
Stemmler Hall, Philadelphia, PA 19104,  
USA

e-mail: orthodoc@uphs.upenn.edu

The American Academy of Orthopaedic Surgeons (AAOS) responded to this challenge, and came up with its list [1]. You may have missed it when it came out; I know I did.

The list certainly did not escape the eyes of its detractors. Critics lambasted the AAOS for targeting heel wedges for knee arthritis, braces for postop carpal tunnel care, ultrasonography screening after arthroplasty, and using needle lavage, glucosamine, or chondroitin to treat osteoarthritis of the knee. “These choices share one thing,” one critic [34] said. “None would significantly affect a surgeon’s income.”

Although there is little denying the AAOS list is lacking big-ticket items, I am having a hard time coming up with a better one. To start, the AAOS was tasked to find medical services where the evidence is strong, but strong evidence is not our strong suit: There are just not many high level studies in orthopaedic surgery [8]. Further, the charge was to find medical services that should almost always be shunned, but that is a small set. When we discover a treatment that needs to be avoided, we avoid it—without a nudge from the ABIM. (Chemoneucleolysis for lumbar disc disease comes to mind).

The larger problem is that many of our purportedly overused procedures still play a substantial role in patient care. Many orthopaedic interventions are invoked because of variable patient preferences [7] and not absolute physiological data. It is therefore not surprising to discover that certain procedures are likewise indicated for some, but not all, seemingly similar patients.

Nevertheless, while the methods of the ABIM—finding things to avoid routinely—are poorly suited to orthopaedics, its aims are laudable, and we should embrace them. To that end, we might serve our patients better not by listing things to reject, but by providing those tidbits of insider information that can encourage wiser choices.

Here is a list of statements with insider information that we could share with our patients:

- “Total knee replacement has helped millions of people around the world feel better. Nonetheless, about two in ten patients receiving knee replacements are dissatisfied with their outcome [10] and about one in 300 die following the surgery [9]. Choose wisely.”

# Not the Last Word

- “Arthroscopy of an arthritic knee may improve catching and clicking and the like. But did you know that a randomized controlled trial [32] suggested that this surgery is no better than a sham operation? Choose wisely.”
- “Spinal fusion, when it works, is a wonderful operation, but when it does not, it can be horrid. In fact, there is an entire diagnostic category, “failed back surgery syndrome” [17], to describe patients who are substantially worse after spinal surgery. Choose wisely.”
- “Rotator cuff tears can cause pain and lost function. Surgical treatment may help on both counts. Nevertheless, three out of four patients with degenerative tears do well without surgery [27]. Choose wisely.”
- “Today, with surgery, some patients can walk out of the hospital a day or two after breaking their femur and avoid months of bedrest and traction. Those patients’ small steps represent a giant leap in medical progress. Still, many other fractures commonly treated with surgery may do better with a simple cast [21]. Choose wisely.”

As the list above suggests, there are probably instances where back surgery or knee replacement, say, would not be chosen by the wise—and fully informed—patient. Nevertheless, it is

downright silly to suggest that these operations should never be done. It would be equally silly to attempt to describe the narrow circumstances under which a popular operation should be invariably avoided. (We are not edified by a proclamation, “Avoid knee arthroscopy in a 75-year-old patient with bone-on-bone contact, pain at rest, and no mechanical symptoms” for that operation, one hopes, is avoided already).

The spirit of the ABIM program is worthy of praise and adoption. Our fee-for-service system, to say nothing of (perhaps even stronger) professional norms, can “push ... surgeons towards the knife” [28] all too easily. But the correct response is not a blanket rejection of certain procedures, but rather wise choices at the margin: Matching operations of potentially high value to the appropriate patient, and selecting something else when the fit is poor. Sharing insider information, not boycott lists, will help us get there.

**Sohail K. Mirza MD, MPH**

**Professor, Geisel School of Medicine at Dartmouth College**

**Medical Director, The Center for Surgical Innovation**

I was recently in clinic, going through risk-benefit tradeoffs for lumbar decompression surgery with an elderly patient, when she mentioned to

me that her daughter had already checked our hospital’s infection rate for back surgery. She was reassured that it was lower than the national average. I was delighted that the patient had discussed options with her family, and together they had explored publicly available data on my surgical outcomes, before even visiting with me. Even though I had to spend extra time correcting some details (our infection rate may be higher based on internal data, our patient mix may partially account for it, and our institution is working on reducing it), the fact remains that the patient’s knowledge of publicly available surgical outcomes led to a more in-depth conversation with her surgeon.

The information age has finally arrived in orthopaedics, and patients will know much more going forward. Ernest Amory Codman’s “End Result Idea” is becoming reality [19]. As Dr. Bernstein suggests, providing patients insider information will encourage wiser choices, but I am not sure our profession is ready.

The mission of the AAOS is “serving our profession ...” [2]; it is not about serving patients. It may be difficult for us to see common big-ticket items as potentially unnecessary, such as lumbar fusion for disc degeneration or spinal stenosis, or complex fusion for spondylolisthesis, because these procedures pay well. In 1915,

# Not the Last Word

Codman was ostracized for bluntly declaring that surgeons and hospitals cared more about catching golden eggs than medical science, while patients had their heads buried in the sand, feeding on humbugs [19]. Strong evidence is not our strong suit because it has not always aligned with the economic interests of hospitals and surgeons. Procedures have been paid on relative value units, a complex metric based on the required work, expense, risk and geographic factors rather than the benefits or harms experienced by patients. Cycling through more patients in clinic and more surgeries in the operating room pays well, while outcomes that matter to patients, such as patient dissatisfaction, poor functional gain, residual pain, infection, reoperation, and readmission, do not factor into our payments. Lack of reliable “end results” also offers an advantage for the professional membership in other ways: All hospitals and surgeons can claim to be above average. Winners are determined by image and brand rather than sorting, ranking, and thresholding of outcomes achieved.

Surgeons frequently call their friends to find the best surgeon to see when they themselves or their family members need care, but patients lack access to this insider information. Codman’s personal investment in transparently reporting outcomes for

an “End Result Hospital” in Boston was a financial failure [18]. In the nearly 100 years since, the medical profession has been unwilling to do so [31], but the federal government is taking steps to report patient experience and outcomes, and link different data sources together. The CMS Hospital Compare website compares hospitals on patient experience, cost, and safety, including infection, reoperation, readmission, death [29]. Data for individual physicians will become public in 2016 [30]. CMS also reports the amount of money paid annually to each physician by the agency [15] and by drug and device makers [16]. Knee and hip replacement procedures will offer payment incentives for measuring patient-reported outcomes [13]. In addition, mandatory bundle payments for hip and knee replacement will require cost of complications to be borne by hospitals and surgeons [14]. Once measurement becomes routine, it will be a small further step to link payment to outcomes achieved.

Dr. Bernstein’s insider information statements can initiate helpful conversations with patients, but there may not be enough time for an orthopaedic surgeon to discuss them during the 9 to 20 minutes for the entire office visit [20]. Maybe that is why the federal government is encouraging technology development to help make health information more directly accessible

and meaningful for patients and their families. Patients will benefit from patient-driven research networks [33] and patient-focused tools that personalize shared decision making, such as calculators that predict outcomes for back pain surgery [6] and apps that provide instant feedback with benchmarked pain and function scores. Although these initial efforts lack rich clinical details, even slow progress in the right direction gets us closer to Codman’s End Result Idea.

**Augusto Sarmiento MD**

**Professor and Chairman Emeritus  
University of Miami**

Although Dr. Bernstein’s ideas expressed in his column are sound and superior to those espousing contrary views, I suspect they will not provide the necessary answers to the problems created by the “overuse of treatments that do not provide benefit to patients.”

Giving patients more information from the medical literature that either support, demean, or condone the medical or surgical treatment being discussed with their physicians ignores the fact that the most likely reason for the use of inappropriate treatments is not insufficient information given to patients, but the dishonesty and greed that infects some members of our profession. These unethical individuals will offer their patients convincing

# Not the Last Word

arguments to debunk a critic's idea in order to further support their own.

Our profession has more-than-adequate avenues to educate physicians on the merits or demerits of virtually every treatment currently in vogue. Large numbers of journals, books, and educational courses inundate the life of the physician. To assume that offering more detailed information to patients will assuage the crisis is simply an unrealizable dream. If a solution is possible, the logical target of the intervention should be the physicians themselves, by inculcating in them from the onset of their medical education, and during subsequent years, the moral and ethical tenets that successfully made the medical profession the noblest of them all. Even if successful, the dictatorial approach will not prevail for a very long time because the system runs contrary to our traditional freedoms of individual thinking and functioning in society.

Since the dishonest practices are frequently motivated by greed and hunger for higher financial benefits, the temptations at this junction abound. Some industrial concerns are known to give major perks to physicians and organizations willing to sponsor and advertise their products. The fabrication or embellishment of data even by influential individuals is well known [12, 35]. An effective method to expose guilty parties

through existing medical organizations could be structured, and in that manner, more effectively confront the crisis.

I commend Dr. Bernstein for addressing an important issue, if left unchallenged, will eventually damage in a major way the whole of medicine.

**James Rickert MD**

**President and Founder**

**The Society for Patient Centered Orthopedic Surgery**

In 2012, the ABIM Foundation, along with *Consumer Reports* and leading medical societies, launched the “Choosing Wisely” campaign with a simple goal: To encourage clinicians and patients to engage in conversations about avoiding unnecessary care. To date, more than 70 medical societies have joined the campaign, and more than 430 recommendations of “things clinicians and patients should question” [5] have been published. The lists are, therefore, not lists of so-called never events such as wrong site surgery; rather, they should be lists of commonly used procedures or tests where our best evidence implies that patients, or subsets of patients, will likely enjoy no benefit—despite the medical treatment's morbidity, costs, and inherent risks.

Within the field of orthopedics, we have several candidates for such a list.

Vertebroplasty, for instance, is an obvious example. The AAOS has issued a clinical practice guideline with a strong recommendation against the procedure [3]. Not one, but two, randomized controlled clinical trials [11, 24] have studied vertebroplasty compared to a sham procedure and found no evidence of efficacy. While lower quality studies on the procedure yield mixed results, the fact remains that our best medical evidence shows that vertebroplasty exposes patients to procedural pain, cost, and risks without offering any benefit. Therefore, it is an excellent candidate for a “Choosing Wisely” list.

Dr. Bernstein alludes to the question of arthroscopic partial meniscectomy in patients with degenerative meniscal tears. Here, too, our best evidence indicates that such surgery is ineffective. A randomized, double-blind, sham-controlled trial of partial meniscectomy for degenerative meniscal tears showed no better outcomes after partial meniscectomy than those after sham surgery [36]. This result confirms the findings of previous randomized controlled trials of patients with varying degrees of knee osteoarthritis and degenerative meniscal tears. These trials showed that combined arthroscopic surgery and exercise therapy is not more effective than exercise therapy alone [22, 23, 25, 37]. These results are further backed up by a

# Not the Last Word

subgroup analysis of patients with mechanical symptoms of catching or locking in a randomized trial of arthroscopic surgery for osteoarthritis of the knee by Kirkley and colleagues [26]. Therefore, based on this evidence, a recommendation for the “Choosing Wisely” campaign against knee arthroscopy for degenerative changes, including degenerative meniscal tears, would be invaluable for the many patients suffering with this common condition.

Any meaningful additions to an orthopaedic “Choosing Wisely” list will have its critics, as there is no unassailable body of medical evidence. However, to put matters into perspective, let us stand the argument against inclusion of procedures on a musculoskeletal “Choosing Wisely” list on its head. If a new, exciting, and potentially lucrative procedure were introduced with the same body of medical evidence supporting the inefficacy of vertebroplasty or knee arthroscopy in degenerative knees, we would have AAOS courses teaching about it, surgical skills workshops, and a general clamor to perform the procedure within the orthopaedic community. This is entirely appropriate. Of course we should disseminate the healing capabilities of our effective treatments as widely and quickly as possible. However, for the sake of both our patients and our profession, we

should apply that same urgency to curtailing ineffective medical care—hence, the need for a patient centered and meaningful orthopaedic “Choosing Wisely” list.

## References

1. American Academy of Orthopaedic Surgeons. AAOS release choosing wisely list. Available at: <http://www.aaos.org/news/aaosnow/oct13/cover3.asp>. Accessed July 13, 2015.
2. American Academy of Orthopaedic Surgeons. Mission statement. Available at: <http://www.aaos.org/about/mission.asp>. Accessed July 28, 2015.
3. American Board of Internal Medicine. Choosing wisely. About us. Available at: <http://www.choosingwisely.org/about-us/>. Accessed July 24, 2015.
4. American Board of Internal Medicine Foundation. Choosing wisely. History. Available at: <http://www.choosingwisely.org/about-us/history/>. Accessed July 13, 2015.
5. American Board of Internal Medicine. Choosing wisely. Lists. Available at: <http://www.choosingwisely.org/doctor-patient-lists/>. Accessed July 24, 2015.
6. Back pain treatment calculator. Available at: [http://caligari.dartmouth.edu/BackPainCalc/get\\_started.html](http://caligari.dartmouth.edu/BackPainCalc/get_started.html). Accessed July 28, 2015.
7. Bernstein J. The variability of patient preferences. *Clin Orthop Relat Res*. 2012;470:1966–1972.
8. Bernstein J, Kenniston JA, Nydick JA, Zgonis MH, Beredjiklian PK. Levels of evidence are low for clinical management questions on the orthopaedic in-training examination. *J Bone Joint Surg Am*. 2010;92:508–511.
9. Bhattacharyya T, Iorio R, Healy WL. Rate of and risk factors for acute inpatient mortality after orthopaedic surgery. *J Bone Joint Surg Am*. 2002;84-A:562–572.
10. Bourne RB, Chesworth BM, Davis AM, Mahomed NN, Charron KD. Patient satisfaction after total knee arthroplasty: Who is satisfied and who is not? *Clin Orthop Relat Res*. 2010;468:57–63.
11. Buchbinder R, Osborne RH, Ebeling PR, Wark JD, Mitchell P, Wriedt C, Graves S, Staples MP, Murphy B. A randomized trial of vertebroplasty for painful osteoporotic vertebral fractures. *N Engl J Med*. 2009;361:557–568.
12. Carr AJ. Which research is to be believed? The ethics of industrial funding of orthopaedic research. *J Bone Joint Surg Br*. 2006;87B:1452–1453.
13. Centers for Medicare & Medicaid Services. Comprehensive care for joint replacement model. Available at: <http://innovation.cms.gov/initiatives/ccjr/>. Accessed July 28, 2015.
14. Centers for Medicare & Medicaid Services. Clinical quality measures for 2014 CMS EHR incentive programs for eligible professionals. Available at: [http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/EP\\_MeasuresTable\\_Posting\\_CQMs.pdf](http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/EP_MeasuresTable_Posting_CQMs.pdf). Accessed July 28, 2015.
15. Centers for Medicare & Medicaid Services. Medicare provider utilization and payment data. Available at:

# Not the Last Word

- <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Provider-Charge-Data/>. Accessed July 28, 2015.
16. Centers for Medicare & Medicaid Services. Open payments. Available at: <http://www.cms.gov/openpayments/>. Accessed July 28, 2015.
  17. Chan CW, Peng P. Failed back surgery syndrome. *Pain Med.* 2011;12:577–606.
  18. Codman EA. *A Study in Hospital Efficiency: As Demonstrated by the Case Report of the First Five Years of a Private Hospital*. Boston, MA: Thomas Todd Co; 1918.
  19. Codman EA. *The Shoulder: Rupture of the Supraspinatus Tendon and Other Lesions In or About the Subacromial Bursa*. Boston, MA: Thomas Todd Co; 1934.
  20. Dyrda L. 16 statistics on orthopedic surgeon patient visits vs. paperwork. Available at: <http://www.beckersspine.com/orthopedic-spine-practices-improving-profits/item/21116-16-statistics-on-orthopedic-surgeon-patient-visits-vs-paperwork.html>. Accessed July 28, 2015.
  21. Griffin D, Parsons N, Shaw E, Kulikov Y, Hutchinson C, Thorogood M, Lamb SE; UK Heel Fracture Trial Investigators. Operative versus non-operative treatment for closed, displaced, intra-articular fractures of the calcaneus: Randomized controlled trial. *BMJ.* 2014;349:g4483.
  22. Herrlin SV, Hållander M, Wange P, Weidenhielm L, Werner S. Arthroscopic or conservative treatment of degenerative medial meniscal tears: A prospect randomized trial. *Knee Surg Sports Traumatol Arthrosc.* 2007;15:393–401.
  23. Herrlin SV, Wange PO, Lapidus G, Hållander M, Werner S, Weidenhielm L. Is arthroscopic surgery beneficial in treating non-traumatic, degenerative medial meniscal tears? A five year follow-up. *Knee Surg Sports Traumatol Arthrosc.* 2013;21:358–364.
  24. Kallmes DF, Comstock BA, Heagerty PJ, Turner JA, Wilson DJ, Diamond TH, Edwards R, Gray LA, Stout L, Owen S, Hollingworth W, Ghdoke B, Annesley-Williams DJ, Ralston SH, Jarvik JG. A randomized trial of vertebroplasty for osteoporotic spinal fractures. *N Engl J Med.* 2009;361:569–579.
  25. Katz JN, Brophy RH, Chaisson CE, de Chaves L, Cole BJ, Dahm DL, Donnell-Fink LA, Guermazi A, Haas AK, Jones MH, Levy BA, Mandl LA, Martin SD, Marx RG, Miniaci A, Matava MJ, Palmisano J, Reinke EK, Richardson BE, Rome BN, Safran-Norton CE, Skoniecki DJ, Solomon DH, Smith MV, Spindler KP, Stuart MJ, Wright J, Wright RW, Losina E. Surgery versus physical therapy for a meniscal tear and osteoarthritis. *N Engl J Med.* 2013;368:1675–1684.
  26. Kirkley A, Birmingham TB, Litchfield RB, Giffin JR, Willits KR, Wong CJ, Feagan BG, Donner A, Griffin SH, D’Ascanio LM, Pope JE, Fowler PJ. A randomized trial of arthroscopic surgery for osteoarthritis of the knee. *N Engl J Med.* 2008;359:1097–1107.
  27. Kuhn JE, Dunn WR, Sanders R, An Q, Baumgarten KM, Bishop JY, Brophy RH, Carey JL, Holloway BG, Jones GL, Ma CB, Marx RG, McCarty EC, Poddar SK, Smith MV, Spencer EE, Vidal AF, Wolf BR, Wright RW; MOON Shoulder Group. Effectiveness of physical therapy in treating atraumatic full-thickness rotator cuff tears: A multicenter prospective cohort study. *J Shoulder Elbow Surg.* 2013;22:1371–1379.
  28. Leopold SS. Editorial: What makes young surgeons tick (or cut)? *Clin Orthop Relat Res.* 2015;473:1853–1855.
  29. Medicare.gov. Hospital compare. Available at: <http://www.medicare.gov/hospitalcompare/search.html>. Accessed July 28, 2015.
  30. Medicare.gov. Physician compare. Available at: <http://www.medicare.gov/physiciancompare/search.html>. Accessed July 28, 2015.
  31. Millenson ML. *Demanding Medical Excellence*. Chicago, IL: University of Chicago Press; 1997.
  32. Moseley JB, O’Malley K, Petersen NJ, Menke TJ, Brody BA, Kuykendall DH, Hollingsworth JC, Ashton CM, Wray NP. A controlled trial of arthroscopic surgery for osteoarthritis of the knee. *N Engl J Med.* 2002;347:81–88.
  33. Patient-Centered Outcomes Research Institute. PCORnet: The national patient-centered clinical research network. Available at: <http://www.pcori.org/research-results/pcornet-national-patient-centered-clinical-research-network>. Accessed July 28, 2015.

# Not the Last Word

34. Rau J. Are docs “choosing wisely.” Available at: <http://www.chicagotribune.com/lifestyles/health/ct-overused-procedures-nw-20140415-story.html>. Accessed July 13, 2015.
35. Sarmiento A. Infringing on freedom of speech. *J Bone Joint Surg Am.* 2011;93A:222.
36. Sihvonen R, Paavola M, Malmivaara A, Itälä A, Joukainen A, Nurmi H, Kalske J, Järvinen TL; Finnish Degenerative Meniscal Lesion Study (FIDELITY) Group. Arthroscopic partial meniscectomy versus sham surgery for a degenerative meniscal tear. *N Engl J Med.* 369:2515–2524.
37. Yim JH, Seon JK, Song EK, Choi JI, Kim MC, Lee KB, Seo HY. A comparative study of meniscectomy and nonoperative treatment for degenerative horizontal tears of the medial meniscus. *Am J Sports Med.* 2013;41:1565–1570.