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# Demand Matching: Balancing Cost and Quality to Maximize Greatest Postoperative Outcomes

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Demand matching is an appropriate method of orthopedic implant management, focusing on ensuring the patient receives the most suitable implant and costs are aggressively monitored. In the demand matching process, the patient, surgeon, and facility play the most prominent roles. *Key words: demand matching, Medicare, orthopedic implants, reimbursement, cost containment.*

**O**RTHOPEDIC hip and knee implant costs have increased 8.5 percent in the past year and 95 percent since 1991. Although this increase is rather staggering, the problem would not be as significant if reimbursement rates could compete with these increases. Medicare reimbursement has only increased by 6.7 percent in the same time period. Health care professionals may not be able to change reimbursement methodologies, but can offer cost-saving ideas to help balance out the equation. The primary purpose of demand matching is to improve implant selection based upon patient needs, but it can also be used to help contain costs.<sup>1</sup>

Demand matching is a focused effort used to better determine the most appropriate implant for the patient. The clinical factors generally taken into consideration are: age, weight, activity levels, health, and bone stock.<sup>2</sup> Demand matching has proven to be an appropriate method of orthopedic implant management, focusing on ensuring that the patient receives the most suitable implant and that costs are being aggressively monitored. In the demand matching process, the patient, surgeon, and facility play the most prominent roles.

## Implant Description and Recent Improvements

Many total hip replacement options are available to the surgeon, as is the actual design of the implant. In some instances, a specific implant is necessary because of bone deformity. In other circumstances, many implants could do the job quite effectively. This is where the idea of demand matching comes into play, with the patient, surgeon, and facility as the drivers. A typical hip prosthesis consists of steel components: socket, ball, and stem. The outer shell of the socket is usually made of metal; the inner shell consists of plastic.

Implants have been on the steady path to change for quite a while now. In the past, traditional metal-on-polyethylene implants were much more susceptible to "wear down particles" released as time elapsed and as the joint wore down. One can compare this to

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the way in which a tire wears down over time. Thus, with newer and improved implants, significantly less wear down particles are released into the body.

### **The Patient Perspective**

Most orthopedic implant vendors are acutely aware that no two patients are alike; therefore, they may tend to engineer some implants for patients with relatively long life expectancies and others for patients with lesser life expectancies. This approach may seem insensitive, but is commonly used to differentiate products in a dense market. With information more accessible via the Internet, patients are becoming more educated and informed as to how their health care needs should be met. Consequently, in many instances, these well-informed consumers (patients) question the type and quality of health care services and products they are offered. Today, many patients go to their physicians with a sophisticated understanding and a high level of information. In this day and age, patients can be armed with information and expect certain postoperative outcomes. Although this change may look like a blessing to many health care providers, patients can also have too much knowledge or misconstrued facts, which could jeopardize care.

With the population living longer and the baby boomer generation approaching their sixties, there will be a continued increased need for orthopedic implants to last a longer period of time. Individual patients want the best quality outcomes. As a result, it is important for the patient and the surgeon to have open communication regarding all potential outcomes from surgery. Enhanced communication will be key moving forward.

Many patient evaluations have been developed so the surgeon can determine the most appropriate implant for the patient; however, the patient may have a different perspective. For example, Mr. Jones, an 82-year-old man who currently plays golf three times a week, swims, and rides his bicycle regularly. After serving his country in World War II and paying taxes his entire life, he wants what will best serve him in the future. This patient believes he should receive the implant that is the most expensive and will last beyond his natural life span instead of the implant that is most appropriate for his age, bone density, weight, expected activity, and health. Many patients similar to Mr. Jones may have their own definition of what is best for themselves and their future. For instance, an Olympic athlete will have higher expectations and different needs from orthopedic surgery than will this 82-year-old man.

Theoretically, functional activity levels should not increase postoperatively in patients with preoperative low demand levels. On a more technical level, demand matching is also an effective way to predict patient activity post a total hip arthroplasty (THA). In one study involving preoperative demand matching, 518 patients underwent a THA. Patient ages ranged from 26 to 92 years, with an average age of 67 years old. They were broken up into four preoperative categories, going from high to low demand. Preoperatively, the individual demand categories showed notable correlations to postoperative patient activity. Consequently, it was determined that proper implant selection and preoperative demand matching could be used to identify patients with high and low postoperative demand, respectively.<sup>3</sup>

### **The Surgeon Perspective**

When looking at total reimbursement for a typical hip replacement procedure for a Medicare patient, approximately 70 percent of the hospital's reimbursement is consumed by the cost of the actual implant. That leaves quite a thin margin, in fact, somewhat of an impossible margin with which to work.

Now, picture all this from the surgeon's point of view. Surgeons have the monumental responsibility of having an individual's life in their fingertips. Because of that obvious responsibility, they typically focus on surgical technique, not price, because the most important goal is positive patient outcomes. Cost issues might be of interest to surgeons as well. One could argue that surgeons might benefit from the demand matching process if they played more of a decisive role while working in collaboration with administration and the vendor community. This partnership might lead to a better understanding of pricing, resulting in more informed decisions along with facility leadership to decide what implant is most appropriate for each patient.

Physician engagement is key. They are the ones responsible for choosing what is best for their patient. With an increased amount of transparency between clinicians and administrators, many things can be learned on both sides. Administrators will be able to get a better grasp on clinician's priorities, such as patient care and simply using their most preferred product. Also, physicians can better understand the "financial crunch" with which administrators are constantly dealing. By standardizing to fewer vendors, a hospital will have more purchasing power, thus enabling them to negotiate improved pricing on their implants. Unfortunately, obtaining optimum pricing is not a given: It is hard

work and requires sacrifice and flexibility on all fronts.

As a result of standardization, the surgeon can focus on his or her task at hand, providing the highest quality of care to the patient, and the institution can focus on budgeting more accurately because a specific dollar amount is associated with each implant used in a case.

One may argue that by having more transparency between clinical and administrative staff, patient care is in jeopardy because that is less time the physician has with his or her patient; however, before selecting your vendor, you will go to greater lengths to ensure the quality and reliability of their services and products. Also, using this model, you will be creating a more standardized method, which one might say is the best way to eliminate unnecessary health care expenditures.

### **The Facility Perspective**

Because just about every hospital in the country offers orthopedic procedures, many of these institutions share the same problems. Approximately two-thirds of patients who require hip and knee replacements are over the age of 65 and on Medicare. The "more profitable" cases involving younger patients are slowly moving away from the traditional hospital OR.<sup>4</sup> Ultimately, balancing cost and quality of care will prove to be the most influential factors that will determine how the health care industry evolves. How do health care facilities curtail spending while still continuing to provide a high quality grade of services? This is the definitive question in health care to date. One solution is through the successful execution of demand matching. Assuming the US health care system continues to operate in the manner at which it is currently, reimbursement

and the financial aspects associated will always be a topic of intense discussion.

Demand matching for orthopedic implants is one of the most effective ways to drive down costs, but one must recognize that the "different strokes for different folks" principle holds true for demand matching as well. For instance, some facilities with excellent pricing may benefit from demand matching protocols. Some hospitals have seen a 25 percent reduction in total cost by assuring that all patients do not receive the most appropriate implant.<sup>5</sup>

Take a closer look at hip implants, for example. A typical total hip implant price can range anywhere from \$4,000 to \$6,000. This includes major implant components such as the acetabular shell, polyethylene liner, femoral head, and the hip implant. Hospitals are in a difficult situation in that they have to pay for these costly hip implants as well as other implants. Hospital administrators are not always the ones making the decisions with regard to demand matching principles: The surgeons in many instances solely determine what implant is used. But how economically accountable are they for which implant is chosen?

This is where there is room for improvement. It will be essential for facilities to create an open environment in which administration and surgeons can communicate effectively in collaboration with the ultimate goal in mind of providing a high level of care

while driving down costs. Most important for achieving sustainment capability will be recruiting both executive leadership and clinical staff to buy into the benefits that demand matching offers.

### Conclusion

When demand matching is used most effectively, implant costs are negotiated outside the clinical arena such as the business office or the boardroom as opposed to in the operating room. This will continue to be a challenge, as implant vendors have traditionally fostered strong relationships with surgeons, making it difficult for hospital administrators and material management personnel to influence the negotiation of the implant price. As facilities continue to utilize the principle of demand matching, they will realize how important the planning process will be. This process must include the physician as well as the hospital, keeping in mind never to lose sight of the patient.

Often clinicians and administrators have different agendas, physicians wanting the most representative product for their surgical procedures and administrators wanting to dismiss any avoidable expenses. To be financially successful, hospitals must find a way to bridge the gap with their orthopedic surgeons, encouraging greater cost sensitivity while supporting clinical quality.

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### REFERENCES

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1. *Premier Orthopedics Report*, 2005.
2. "Hip Replacement; Demand Matching Useful for Predicting Post-THA Patient Activity," *Medical Devices & Surgical Technology Week* (January 9, 2005).
3. *Id.*
4. C. Becker, "Hospitals Seek Creative Solutions to Grapple with the Unbending Costs of Orthopedic Implants," *Modern Healthcare* (July 25) 35 no. 30 (2005): 24, 26, 28-31.
5. *Premier Ortho Focus Knee Report*, 2005.