Unleashing the Power of Outcome Measurements

Medical science has done wonders, extending life expectancy and improving health for all ages. But in many industrialized countries, the healthcare system itself is ailing. *Medical Solutions* sat down with Dereesa Reid and Jens Deerberg-Wittram to discuss the use of value-based outcome measurements as a way to fix the system.

Text: **Peter Jaret** Photos: **Ye Rin Mok**

Unprecedented advances in medical science come at a price. Around the world, governments and health professionals are struggling to control the rising costs of healthcare without jeopardizing quality. Experts in the new field of value-based care believe that models developed for businesses in other industries can enable the healthcare industry to manage costs and dramatically improve care. At Hoag Orthopedic Institute (HOI) in Irvine, California, Jens Deerberg-Wittram, MD, president of the International Consortium for Health Outcomes Measurement, and Dereesa Reid, chief executive officer for HOI, sat down to talk with *Medical Solutions* about how the new value model could go a long way toward solving today's healthcare crisis.

Dr. Deerberg-Wittram, you trained as a molecular oncologist. You are now president of the newly formed International Consortium for Health Outcome Measurement. How did you first become interested in outcome metrics?

Deerberg-Wittram: I started my career as a hospital manager in 2002. I loved the job because I worked with management but also felt very much part of the clinical team. I knew what was happening throughout the hospital. Then I was promoted to the executive board, and I lost touch with what was happening in the wards and the clinics. I realized that healthcare was one of the few industries where the rule seemed to be that the people leading the institution had no idea about the product. That was when I began to think about instituting a system to measure health outcomes. At our institution, we already had some doctors with an interest in outcome measurement. We put together expert groups to define meaningful outcome measures for the medical conditions we were treating. We ended up with a very comprehensive system that tracked 3,300 different outcome measures. It wasn't perfect, but it gave us a good idea about how well we were doing and what needed improvement. In 2009, I met Harvard Business School professor Michael Porter, the author of the book "Redefining Healthcare." Three years later he founded, together with the Boston Consulting Group and the Karolinska Institute, the International Consortium for Health Outcomes Measurement (ICHOM), and I became the first president of this non-profit institution.

What is its mission?

Deerberg-Wittram: We believe that we can revolutionize healthcare by basing competition on patient outcomes. This may seem like common sense, but it is almost never done. In the U.S., healthcare is typically ▸

Jens Deerberg-Wittram, MD

Jens Deerberg-Wittram, MD, who began his career as a molecular oncologist, was recently named president of the International Consortium for Health Outcomes Measurement (ICHOM). He is also a senior fellow and faculty member of the Harvard Business School, where he lectures on delivering value in healthcare. Between 2004 and 2012, Dr. Deerberg-Wittram served as chief executive officer for a 15-hospital, 4,800-bed healthcare organization in Germany. There, he developed and implemented a value-based corporate strategy based on outcome reporting. Dr. Deerberg-Wittram works closely with Harvard Business School professors Michael E. Porter and Robert Kaplan on value-based care issues.

"The way to create value is to focus on outcomes that are relevant to patients."

measured on the basis of process – did a physician prescribe a beta-blocker to patient X or order an X-ray for patient Y? In Germany, the tendency is to measure structures. We love to count MRI machines and how many nurses have this or that certificate. Yet, what matters most is the patient's outcome. At ICHOM, we are developing the first standardized set of outcome measurements based on medical conditions.

Healthcare is far more complex than making and selling a car or a computer. How can you establish standard outcome measurements that take this complexity into account?

Deerberg-Wittram: First, it's important to focus on medical conditions. This is actually quite a new concept. So far, healthcare has been organized around doctors. We have departments for urology, neurology, pediatrics, gynecology, and so forth. Often, only doctors understand what these distinctions mean. The patient says, "I don't know about neurology. My problem is my back pain." So instead, we focus on specific conditions. Next, we choose outcomes that are meaningful to patients. Again, common sense, but it hasn't been done. Doctors tend to focus on clinical indicators: things like blood pressure, blood sugar levels, or PSA. In contrast, we think the way to create value is to

Hoag Orthopedic Institute

Located in Orange County, California, Hoag Orthopedic Institute combines a 70-bed hospital with two freestanding surgery centers. The Institute, which began operation in November 2010, is part of Hoag Memorial Hospital Presbyterian, the leading healthcare system in Orange County. With a staff of more than 320 medical specialists and 80 board-certified orthopedic surgeons, HOI is one of the highest volume specialty hospitals in the U.S. It exemplifies the integrated practice unit, or IPU, a facility dedicated to excellence in one specialty area. In 2012, HOI was named one of the top orthopedic hospitals in the nation by *U.S. News & World Report* and by *Becker's Orthopedic, Spine and Pain Management Review*.

focus on outcomes that are relevant to patients. In the case of prostate cancer, for example, how well did the patient recover from surgery or radiation? Did he experience incontinence or erectile dysfunction from the surgery? What was the five- or ten-year survival rate?

Treating something as complex as cancer can take years. How do you decide on the time frame of your metrics?

Deerberg-Wittram: We establish a hierarchy. The first tier represents the result achieved from treatment, survival, and return to function and quality of life. The second tier involves the process of recovery: In other words, were there complications and other problems, such as infection, bleeding, fistulas, and so forth? We also measure how long it takes for a patient to return to health or function. The third tier measures sustainability of health. For example, if a patient receives an artificial hip, and after seven years this is already worn out, necessitating a new one, this is not a good outcome.

Every patient is different. A 50-year-old patient getting a knee replacement is likely to be up and walking faster than, say, an 80-year-old. Can outcome measurements address those differences?

Deerberg-Wittram: Our model also includes what we call risk adjustors. We look at the age of patients and whether they have other health problems, or comorbidities. Do they smoke? Do they have a very high body mass index? All of these are taken into account to make sure we are not comparing apples with pears.

Isn't there a risk that your outcome metrics could become so complex that they are unwieldy and difficult to use?

Deerberg-Wittram: Our goal is to keep things as simple as possible, while still providing useful data. Ideally, we will come up with 10 or 15 outcomes, and maybe 10 risk adjustors, depending on the condition. As it turns out, it's often sufficient just to differentiate between patients with relevant comorbidities and those without. It isn't necessary to categorize patients into 150 subgroups.

Are you finding that outcomes vary significantly between hospitals or doctors?

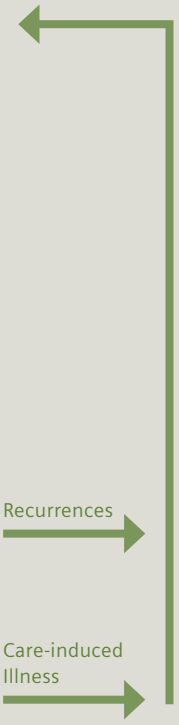
Deerberg-Wittram: It's amazing how much they vary. In Germany, the average incontinence rate after prostate cancer is about 45 percent; however, the best providers achieve rates of only 10 percent. Such outcome data enables us to ask why some providers get much better results. What can the worst performing hospitals do to improve? In Germany, the average hospital stay for hip replacement is 10 days, with 21 days inpatient rehabilitation. Meanwhile, over the border in Denmark, in a hospital only two hours away from Germany, the inpatient stay is less than two days and rehabilitation is done outpatient. But outcomes in the Danish hospital are better than those in most of Germany. Using outcome measures, we can begin to understand why. In Germany, if you ask doctors why they are keeping patients so long in hospital, they might say this is because of the risk of dislocation. But very often they have no data for that. With outcome measures, we can show that dislocation rates aren't higher. Then, there are risks of infection associated with being in the hospital. By reducing hospital stays, we can save money and improve outcomes. That's the power of measuring outcomes.

We're here at the Hoag Orthopedic Institute (HOI), with its chief executive officer Dereesa Reid who has led the Institute's value-based care efforts. Dereesa, how has HOI employed outcome measures? ▶

Measuring Outcomes

Medical care is a complex process that takes place over time. Experts in the field of value-based healthcare have developed a three-part hierarchy of measurable outcomes that can be used to assess quality of care across a wide spectrum of medical conditions. This example, based on Harvard Business School professor Michael E. Porter's work, shows how the hierarchy would be used to measure specific outcomes for knee replacement surgery.*

Outcome Measures Hierarchy	Examples of Measurable Outcomes for Knee Replacement Surgery
Tier 1: Health Status Achieved or Retained	• Survival • Degree of functional level achieved • Pain level achieved • Extent of return to physical activities • Ability to return to work
Tier 2: Process of Recovery	• Length of hospital stay • Infection • Other complications, such as pulmonary embolism, deep vein thrombosis, or heart attack • Need for immediate revision or additional surgery • Time required to return to activities and/or work
Tier 3: Sustainability of Health	• Ability to maintain functional level over time • Ability to live independently • Need for revision or reoperation • Loss of mobility due to inadequate rehabilitation • Long-term susceptibility to infection • Stiffness due to unrecognized complications • Lingering pain



***See also "What Is Value in Health Care?" Michael E. Porter**, The New England Journal of Medicine, 2010; 363: 2477-2481.

Reid: HOI opened in November 2010 and from the beginning the doctors were passionate about quality and about measuring outcomes. By early 2012, we were beginning to see really good quality outcome data. And again, right from the start, everyone was totally aligned with the idea that we needed to put the results out there.

How did you decide which outcomes to measure?

Reid: There are standard metrics that we collect as part of the Centers for Medicare and Medicaid value-based purchasing program – measures like infection rates and readmissions – but we also drill deeper into the data. Very few of our patients need to be readmitted later because of problems. Nevertheless, we still want to know the root cause on occasions when patients do have to be readmitted. Was it a result of the surgery or the medical care afterwards? We drill down to the physician level, so our doctors can compare their results with those of their peers, and against national averages. We let our physicians know who is achieving the best outcomes in terms

"We feed data back to our medical staff at all levels, so they understand that they are making an important contribution to value."

of cost and quality of care. In fact, our surgeons specifically asked us to put their names on the data so they could learn from one another how to deliver the best value. We feed data back to our medical staff at all levels, so they understand that they are making an important contribution to value. If you work in a sterile process, for example, you should know what the infection rate is. That way, if there are problems, we know right away and can address them. And if we're doing very well, the people involved know that they make a real impact on the value we provide.

Are health professionals generally receptive to the idea of outcome measures?

Deerberg-Wittram: Doctors are by nature competitive, curious, excited. They want to know how they can improve costs and outcomes. Measuring outcomes that matter to patients gives them the means to do that. I know of one organization where they get together every six months and review more than 80 pages of outcome data, down to the tiniest aspect. The rule is that the surgeons who are not doing so well have to assist their better-performing colleagues for the next five operations. Once, the medical director with the longest experience had some deviations in outcome, so he had to assist one of the young doctors. I think that is marvelous. ▸

Dereesa Purtell Reid

Dereesa Reid is chief executive officer of Hoag Orthopedic Institute, based in Orange County, California. Before joining HOI, Ms. Reid was principal of CareInfinity, a healthcare consulting company, and assistant vice president of Covenant Health System, where she directed operations and finance. A graduate of Texas Tech University, she has served in a variety of senior and executive level roles during her varied career, including hospital operations, managed care, physician practice management, and network development and operations. In 2008, she received the Texas Tech University Rawls College of Business Professor Whitehead Award for Leadership Excellence in Health Organization Management.

International Consortium for Health Outcomes Measurement

The International Consortium for Health Outcomes Measurement (ICHOM), founded in 2012, is a not-for-profit organization dedicated to developing universal standards for measuring health outcomes. By bringing medical experts, patient advocacy groups and other healthcare professionals together to identify key outcomes for specific conditions, ICHOM hopes to address the most urgent challenge facing healthcare today: controlling costs while maintaining quality. Jointly founded by The Boston Consulting Group, the Karolinska Institutet, and Harvard Business School professor Michael E. Porter, ICHOM held its inaugural meeting in October 2012, welcoming more than 80 healthcare leaders from five contintents.

ICHOM's early efforts in standardization are focused on four high impact medical conditions: coronary artery disease, prostate cancer, low back pain, and cataracts. ICHOM has also made available a publicly accessible data-base of over 50 registries from more than 40 organizations, covering 16 of the world's most burdensome conditions.

Boston-based Jens Deerberg-Wittram came to visit Dereesa Reid at HOI to have a discussion about outcome measurements, led by journalist Peter Jaret.

Studies find that the biggest impact of outcome measures is internal.

Can outcome data also help healthcare organizations compete?

Reid: Absolutely. By making the data public, we show that patient-based outcomes matter to us. The results allow us to show that we're doing a great job on things like helping people get back to work, or reducing the risk of infections and other complications.

Deerberg-Wittram: Some people may shop around and say, "HOI is better, so I want to go there." But as Dereesa points out, by making your outcomes public, you are saying that this is an institute that cares about quality. You are enriching your brand as an organization.

ICHOM is in the process of creating standardized sets of outcome measurements that can be used internationally. Why is this important? How would established outcomes add to HOI's efforts?

Deerberg-Wittram: Hoag is doing a great job. What we hope to do is to expand on those efforts. We are currently setting up a working group looking at hip and knee osteoarthritis. We are involving experts as well as patient advocacy groups. We're looking at the instruments that are used to measure outcomes to see if they are as good as they can be: Some of the measurement instruments being used are out of date, for instance. Today, people live longer productive lives than ever before. So one important question to ask is how soon patients can go back to work. That's meaningful to patients and to society. Outcome data might show that an institution like HOI could offer more value by involving specialists dedicated to helping hip or knee replacement patients get back to work.

Reid: Let me add that having a standard set of outcome measures would help us avoid duplication and lower our costs. We wouldn't have to use one outcome instrument for this insurer and another instrument for that regulator, for example.

What role could standardized outcome measures play in medical research?

Deerberg-Wittram: The old model is the randomized controlled trial, which is usually a small study with carefully chosen research subjects. But increasingly, regulatory groups are beginning to ask for registry data. Registries collect outcome metrics from very large groups of patients. In a very short time, you can get data from thousands and thousands of patients. Using them, you can very quickly spot problems or test hypotheses. Hoag has been chosen as one of three institutions to set up the California Joint Registry. That's a good measure of its commitment to outcomes.

Medical standards are constantly evolving, as new treatments and new medical devices come along. How can standardized outcome measures deal with evolutionary or revolutionary changes in medicine?

Deerberg-Wittram: That's the magic of using patient-based outcomes.

Medical treatments may change, but what matters to patients remains the same. If patients have osteoarthritis, they want relief from pain and a return to function. If a new artificial joint or a new surgical approach makes that happen faster or with fewer complications, that's wonderful. And we can see that by measuring outcomes.

HOI is an integrated practice unit – a facility dedicated to treating orthopedic problems. How does the concept of an IPU fit into value-based healthcare?

Reid: From the beginning, our strategy was to keep costs down and quality up. One way we do this is by being a focus shop. We embody the idea that if you focus on a limited number of things, you can do them very well and very efficiently. We also embody the idea of a cycle of care. We don't just perform surgery. We treat patients through the entire cycle of care for their condition, which means preparing them if they need surgery, following them through rehabilitation, and then measuring how well they are doing three, six, nine months later and beyond. Too often, outcome measures only follow patients from hospital admission to discharge.

It's important for us to see how patients are doing one year, two years out. That's when we know if we really provided value. We have begun offering bundled payment, so the price includes the full episode of care. And now we are looking at ways to expand the episode of care across a longer continuum.

Deerberg-Wittram: Exactly. We believe IPUs are very important to delivering value. Hoag is the perfect example. This is a facility devoted entirely to musculoskeletal disorders. In the cafeteria, you see chairs designed for people with hip or knee problems, to make it easier for them to sit. You see a center that brings together experts from different backgrounds – orthopedic surgeons, pain experts, nurses who know how to mobilize hip and knee replacement patients – all dedicated to dealing with this one area.

Quality care depends on recruiting and keeping top-flight staff. Do outcome measures help or hinder that?

Deerberg-Wittram: The strongest incentive for keeping doctors and nurses is very high patient satisfaction. That's true in most service industries. If your customers are happy, your employees are happy. In a hospital like this, if you want to recruit and keep the best professional staff, it's important that you create opportunities for them to add value. If a nurse has a particular ability to care for wounds, for example, you make him or her a wound care expert. You improve morale. You improve patient outcomes. It's a win-win.

Reid: In the end, healthcare is a calling. People get into this business because they want to care for patients. Outcome measures allow them to know how they're doing, and the ways in which they can improve the quality of care. In our experience, that turns out to be incredibly powerful and inspiring. ■

Peter Jaret is a frequent contributor to the *New York Times* and other publications. He is the author of several books, including "Nurse: A World of Care" (Emory Press), and "Impact: From the Frontlines of Global Health" (National Geographic).

More to See on Health Outcomes Measurements

Our interview partners both met at Hoag Orthopedic Institute for a conversation. *Medical Solutions* also visited them separately for video productions and further insights.

To watch the videos, scan the QR codes using the reader app on your smartphone or paste the URL into your browser.

www.siemens.com/video-hoi

What matters at HOI: Dereesa Reid on healthcare quality, costs, and values.

www.siemens.com/video-ichom

Healthcare Outcome Measurements up close: Jens Deerberg-Wittram at work.

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