

UMass Memorial Medical Center:  
Providing comprehensive orthopedic care  
with the DYNHA® SF-36® Health Survey



### Background

UMass Memorial Medical Center, located in Worcester, Massachusetts, is part of a five-hospital health system that provides treatment through numerous primary care and specialty clinics. Among these are the Spine Center and the Arthritis and Total Joint Replacement Center, both integral components of the UMass Memorial Musculoskeletal Center of Excellence.

UMass Memorial averages more than 1,000 total joint surgeries per year. "Total joint surgery is the number one most common and costly procedure in the Medicare budget. And it's only growing," says Dr. Patricia Franklin, Director, Clinical and Outcomes Research, Department of Orthopedics and Physical Rehabilitation at UMass Memorial. "Measuring patient outcomes of these surgeries is an important priority for us."

## Challenge

Physicians at the Department of Orthopedics and Physical Rehabilitation wanted to create a comprehensive program for the Spine and Arthritis and Total Joint Replacement Centers, with an emphasis on assessing patient quality of life. Franklin and Dr. David Ayers, Arthur C. Pappas Chair and Professor, Department of Orthopedics and Physical Rehabilitation at UMass, had used the SF-36® Health Survey early in their careers, and were impressed with its effectiveness. In 2005, they reached out to its developer QualityMetric Incorporated, now part of Optum™, and after further research selected the DYNHA® SF-36® Health Survey.

The DYNHA SF-36 is a computerized adaptive testing (CAT) version of the SF-36, long regarded as the world standard for patient-reported outcome (PRO) assessment. UMass Memorial chose to integrate the survey into disease management registry software, along with several joint-specific outcome measurement tools. This integration allows access to the DYNHA SF-36 via the Optum Smart Measurement® System with Trusted Partner™ interface, which provides direct communication between the Optum [www.amihealthy.com](http://www.amihealthy.com) and UMass Memorial's website.

A total of six orthopedic surgeons administer the survey, to patients who range in age from 40 to 86. The average age is 68. By placing survey rooms adjacent to the waiting areas of both the Spine and Arthritis and Total Joint Replacement Centers, UMass Memorial is able to survey approximately 95 percent of the orthopedic population immediately after they arrive in the clinic.

Designated data clerks supervise the survey rooms, which contain three computers for patients to take the DYNHA SF-36 online. "We do a baseline for all new patients and then again before surgery and after surgery at three months, six months, one year and then yearly thereafter," says Ayers.

How long a patient is monitored depends on his or her specific condition and progress. Individual results are scored immediately. A report is generated in real time and is waiting outside the examination room when the doctor arrives. According to Ayers, having the report ready before he examines the patient is very beneficial. "I know fairly quickly what's happened since the last time I saw the patient — his or her score has changed or hasn't changed; it's improved a lot or it's gotten worse." In addition, the results are stored in a large patient database with other clinical and demographic measures.

## Results

The surgeons utilize the survey data in a variety of ways. For general care, Ayers reviews the survey along with the physical exam, medical history data and other information to fully assess patient function. Ayers compares patient survey scores to national norms, and based on the results, he then discusses potential treatment options with the patient. Disease management is also possible through the DYNHA SF-36's ability to track improvement over time with treatment.

One other essential use is for orthopedic outcomes assessment and research. "With Institutional Review Board approval, aggregate UMass Memorial patient scores can be analyzed to answer outcome and research questions," says Franklin. This information ultimately helps to advance the field.

Ayers often shares the survey report with patients in an effort to help them understand their condition and their progress. "It allows me to show them some quantitative information in a graphic, visual way — how their arthritis affects their daily life, what they can do, what they can't do, their limitations. I'm impressed with how helpful the numbers are for me in terms of supporting clinical decisions. They summarize the patient's physical and mental health, including potential areas of anxiety and depression."



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—Dr. David Ayers, Arthur C. Pappas Chair and Professor, Department of Orthopedics and Physical Rehabilitation, UMass Memorial Medical Center

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## Why it works

The DYNHA SF-36 couples modern measurement methods with computerized adaptive testing (CAT) to create technology that makes health status measurement short, precise and valid for use in risk screening and health outcomes monitoring. CAT technology captures reliable PRO data by selecting and scoring only those items required to calculate a precise score for an individual. With web-based delivery, the DYNHA SF-36 is a practical way to obtain important health outcomes data in a variety of settings, and measures eight domains of health:

- Physical functioning
- Role limitations due to physical health (role-physical)
- Bodily pain
- General health perceptions
- Vitality
- Social functioning
- Role limitations due to emotional problems (role-emotional)
- Mental health

For screening, stratification and monitoring of patients and populations over time, the DYNHA SF-36 delivers vital data that can be collected, scored, interpreted and reported on more efficiently and cost effectively than other survey tools. "I rely on this in terms of clinical decision-making more and more," says Ayers. "Once you gain comfort with it and understand it, I think it actually saves some time in the clinic as well. It's a very, very useful tool."

## Moving forward

Since integrating the DYNHA SF-36 into the clinic, UMass Memorial has proved that its program works. The staff is committed to continued use of the survey in an effort to keep providing the best possible care. "The hospital is invested in this," says Franklin. "It's an important service. The musculoskeletal program is a center of excellence and wants to have all the important data." UMass Memorial is planning to expand the use of the survey to other physicians and specialty clinics. In addition, UMass Memorial is working with us on survey and IT development, with the mutual goal of designing for the present while thinking of the future. "We welcome this collaboration," says Franklin, "We look forward to learning with QualityMetric and testing new things."

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