



TRANSFORMING HEALTHCARE THROUGH TECHNOLOGY

A CASE STUDY APPROACH

To unlock the potential of value-based care, there must be an easy and accurate way to employ it. Ideal technologies inform decisions and best practices in a way that enhances the patient and provider experiences. ICHOM has partnered with OutcomeMD to make this a reality.

But how does this work?

Learn more about how OutcomeMD can improve the health of your patients and your business.

Watch this case study presentation.

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In this case study, Dr. Justin Saliman, orthopedic surgeon and founder of OutcomeMD, explains how leveraging

technology to implement the ICHOM standard sets in the clinical setting can profoundly enhance both the provider and patient experience and inform care at every level.

To demonstrate how OutcomeMD can be leveraged to implement the ICHOM standard sets, we'll explore the story of two patients with Knee Osteoarthritis.

Case #1

Patient A loves and trusts his physicians. He books a visit with his orthopedist, and, upon viewing of the x-ray, his orthopedist is shocked and concerned; there are clear signs of end-stage medial knee arthritis. The orthopedist recommends a knee replacement. Patient A trusts his doctor and is concerned that the arthritis might spread to his other joints or result in his leg locking up or falling off, so he eagerly asks the doctor when he can book the surgery. Three months post-op, Patient A is in even more pain than he was before the procedure. The orthopedist takes another x-ray, but everything looks as it should be, so the orthopedist refers Patient A for



Figure 1: Patient A's knee post-replacement.

more physical therapy. Six months post-op, the pain continues for Patient A, so he goes to see a different orthopedic surgeon who recommends a revision surgery. Unfortunately, even this revision surgery provides little reprieve for Patient A. The revision surgery postop pain is even more severe than after the original surgery, requiring a lot of narcotics, which suppress his breathing, contributing to pneumonia. Inactivity results in Patient A also developing a deep vein thrombosis, for which he is prescribed an anticoagulant. Patient A unfortunately has a minor fall and hits his head which causes a hemorrhage in his brain that triggers a stroke.

What a disaster! What happened here? The orthopedic medical literature is very clear that many patients with end stage arthritis don't actually hurt! This patient likely went to see the doctor due to mild knee stiffness and the sensation of pressure but was without much pain. The doctor unfortunately in this case treated the Xray instead of treating the patient. It's entirely possible that this patient never had pain to begin with, which is why they had so much postop pain, leading to catastrophic complications.



Figure 2: Patient B's knee.

Case #2

Patient B differs from Patient A in that she does not inherently love or trust physicians. She is nervous, skeptical, and distrusting when interacting with doctors, sometimes avoiding them altogether. She books a visit with an orthopedist because her knee has been bothering her. Upon viewing of the x-ray, Patient B's orthopedist is shocked and concerned; there are clear signs of end-stage medial knee arthritis. The orthopedist recommends a knee replacement, but Patient B declines the recommendation stating that she was just there to check-in. She goes home and lives with the pain, but her pain is unbearable, so she starts taking narcotics. The narcotics make her tired and incompletely mask her pain, so she stops going out as much and distances herself from her friends and family. Her inactivity rises in tandem with her pain, and she develops obesity, which contributes to her development of insulin resistance and type 2 diabetes mellitus. Her diabetes eventually leads to kidney failure resulting in dialysis.

This too is a disaster! Patient B would have dramatically benefited from having a total knee replacement, but her fear and distrust led her to avoid the recommended treatment.

Outcomes

Both Patient A and Patient B ended up with worse problems than when they started. In both cases unfortunately the provider failed to measure an objective baseline of the patient's symptoms. With OutcomeMD, both patient's symptoms would have been automatically measured and quantified before the orthopedist saw the patient.

Taking Patient A's case, let's say their initial score via OutcomeMD was an 88, meaning the patient had little pain and good function. With this information, before the doctor walks in the room they would have been empowered with data helping them identify that this is one of the patients who is not in much pain from their arthritis. What this patient really needs is piece of mind and reassurance. The patient goes on to live a happy life with conservative management, and the doctor and patient avoids nightmare complications.



Figure 3: Patient comparison metrics for Patient B.

Taking Patient B's case, let's say she too is sent an assessment before visiting with her orthopedist. Within 3 - 4 minutes of taking the assessment, she sees her score of 15. Realizing that she has an improvable range of 85. She now sees and better understands the scope of how much her

symptoms are affecting her, as well as her opportunity to improve from treatment. Once the orthopedist sees the x-ray and comments that she will need a knee replacement, she asks to see how patients just like her progress after treatment. Thankfully, within OutcomeMD there is a population-level dashboard with a hierarchical view complete with structured data around social determinants of health adverse life events and other important confounding factors. The orthopedist pulls up data on patients like her within OutcomeMD and notes that after three months post-op, they're 20% better, and at six months post-op, they're 82% better. Patient B, although now feels more trustful that the orthopedist has her best interest at heart because she now knows that the doctor keeps track of their results and can relay to the patient actual data on what to

expect in terms of improvement based on all patients who have come before her in this doctor's hands. Patient B goes along with the knee replacement and moves on in life with significantly improved symptoms. The doctor and patient can view her progression within the Outcome Timeline, where all her electronic health record (EHR) entered information and assessment data is displayed along with any additional information that she deems important. Let's say Patient B develops a hip impingement two years after her knee replacement; this information will be pulled in and visualized on her timeline. There is even a notification system within OutcomeMD that is highly customizable, informing the provider when the patient's symptoms are worsening and may even be reimbursable.

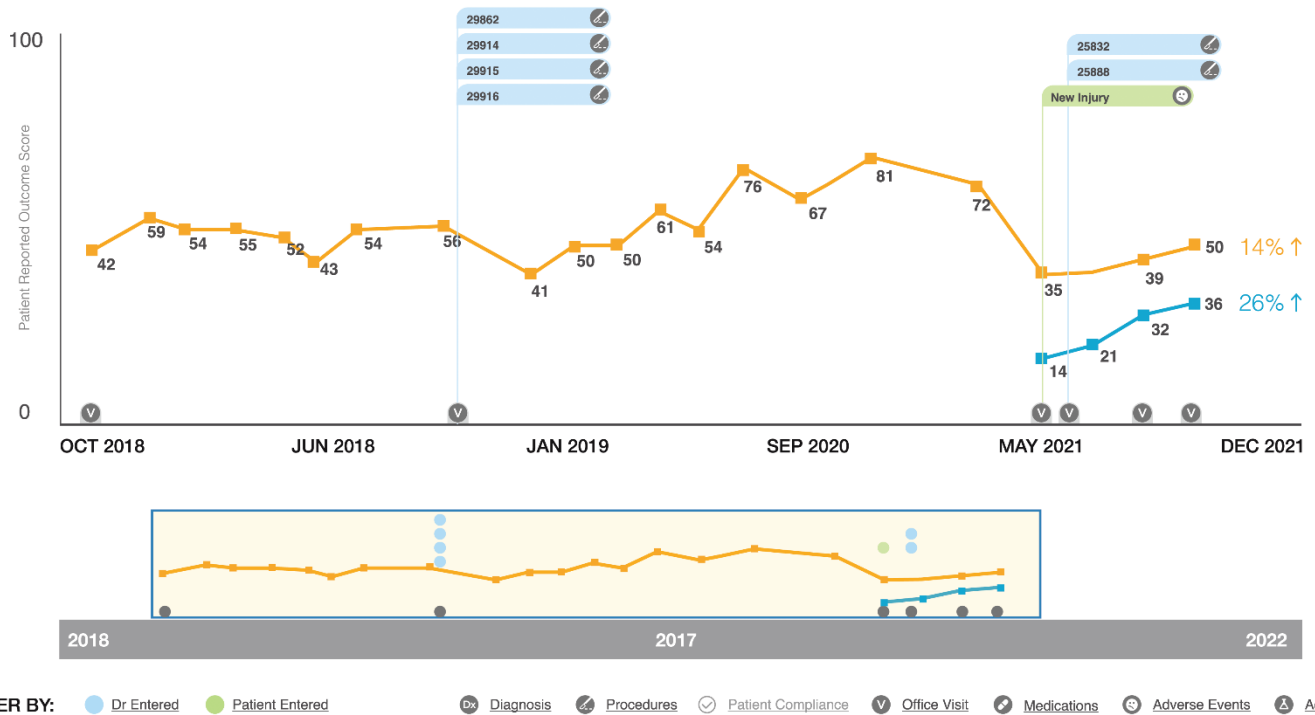


Figure 4: Visualization of patient's care with OutcomeMD's Patient Timeline.

OutcomeMD enables seamless measurement-based care that is fully integrated with all major electronic health records and can powerfully contribute to improving overall health outcomes and economics.

Outcomes. Not Opinions.

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