

NO DATA SCIENTIST NEEDED

More facilities are making patient data collection standard operating procedure. Here's how.

BY CHRISTINE UMBRELL

NEED TO KNOW:

- ▶ O&P facilities are stepping up their efforts to collect demographic data, conduct patient satisfaction surveys, and perform outcome measures testing, propelling the O&P profession toward data-driven decision making.
- ▶ The National Limb Loss & Preservation Registry, a new repository that aggregates data from entities that treat patients with amputation, offers a new opportunity to share de-identified data—and approximately 180 patient-care locations have signed on to the registry so far.
- ▶ Whether data is used within individual patient appointments, for research efforts, or when working with referral sources, it's important to recognize the ultimate goal is improved patient care.
- ▶ Several new technologies have been designed to assist with data collection, including one app that offers a library of outcome measures and a sensor-driven system that facilitates remote collection of patient data.



Imagine a patient with a traumatic transfemoral amputation arrives at your facility—and in addition to examining the patient and calling upon your education and experience, you can pull from a repository of treatment pathways throughout the country. You can search specifically for patients of a similar age and same gender with above-knee limb loss due to trauma, then look at actual devices prescribed, rehabilitation timelines, and long-term outcomes—and leverage that information to treat your new patient.

The world of data-driven care isn't far away, according to some O&P stakeholders. In just a few years, that scenario could be possible in your facility.

Across the United States, O&P facilities are collecting various types of demographic information and outcomes measures data, and applying that data in-office. Some clinicians and owners are beginning to look at facility trends to inform clinical decision making, and they're sharing that information with patients and referral sources.

The transition to more data-driven decision making started about 20 years ago when facilities began adopting electronic health record (EHR) systems. "Now that everyone uses EHR, it's time to use the information we're already collecting," says Dennis Clark, CPO, owner of Clark & Associates and OPOS¹. "With data collection and analysis, the chaos of clinical care becomes more organized."

With an eye to the future, many facilities are using new tools and integrating sensors to aid in data collection. Some facilities also are adding their data to the new Limb Loss & Preservation Registry (LLPR), in an effort to populate a national database for more informed decision making.

Measuring for Management

"We need to be quantitative and find a way to apply the data actionably, and provide data that's collated in a way for analysis," explains Sarah Chang, PhD, chief scientific officer at Orthocare Innovations. "Each patient is unique, so we want to make sure we're caring for them in the way they need."

Toward that end, most facilities gather information about demographics, amputation details, and outcome measures and house that data in their EHR systems or elsewhere. Ottobock.care, formerly Ability Prosthetics and Orthotics, for example, was an early adopter of data-driven care; managers built custom dashboards using data collected in-facility, according to Jeffrey Brandt, CPO, founder of Ability, AOPA vice president, and current member of the Registry's External Collaborative Panel (ECP), a multiple stakeholder team working to advance the LLPR effort.



Jeffrey Brandt, CPO

At Hanger Clinic, collecting outcomes and aggregating data has become a key component of patient care. "The important thing to remember is using outcomes data for an individual patient appointment, in research efforts, or with a referral source, is all in an effort to improve patient care," says Erin O'Brien, CPO, FAAOP, clinician and clinical education specialist at Hanger Clinic. "Whether we're referencing an individual patient's outcomes data to talk about the progress they've made since their last visit, using that same information to discuss therapy goals with their PT, or aggregating it with a large amount of other patients' data to look at which type of foot, for example, improves mobility most in our K3 patients—it's all in service of better patient care. We're using outcomes data in all of those ways, but for the sole purpose of improving the lives of our patients—individually and as a population."



Erin O'Brien, CPO, FAAOP



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Facilities have integrated aspects of data collection into their daily procedures—by collecting the required elements for their EHRs and by prioritizing outcome measurements during patient visits. "Collecting outcomes certainly takes time, but it doesn't have to interrupt day-to-day work as much as one might think," says O'Brien. Hanger Clinic primarily collects patient-reported outcome measures, so "the majority of time that is spent on the outcome measure is that of our patients." Patients complete surveys in the waiting room, while their clinician works on their device, or during any other downtime at patient appointments, according to O'Brien. "Our lower-extremity prosthetics outcome measures are even set up so that the patient can complete them electronically *prior* to coming into the office."

App Facilitates Data Collection for Use in Facilities and LLPR

Several apps are available or in development to assist with data collection. The P&O COMET—or Clinical Outcome Measures Electronic Toolkit (COMET)—mobile app was developed by Orthocare Innovations to simplify and standardize the use of outcome measures in daily clinical practice to inform evidence-based care, according to Sarah Chang, PhD, chief scientific officer. P&O COMET provides a library of clinical outcome measures for O&P users and practitioners and allows clinicians to select an appropriate measure, administer a test, and immediately receive the result.



Sarah Chang, PhD

The app allows for both patient-reported measures via questionnaires appropriate for different patients' etiology, and clinical outcome measures such as the Timed-Up-and-Go, Two-Minute Walk Test, and 10-Meter Walk Test, according to Chang. "The COMET provides anyone with the ability to collect outcome measures in a standardized and automated way," says Chang.

"Clinicians have the option to export the results into a PDF report to be compatible with the electronic health records and share the report with a patient," adds Chang. These outcome measures also aid in justifying decisions to payors.

The app also facilitates sharing data with the Limb Loss & Preservation Registry, according to Chang, by providing outcome measures to the registry in a compatible format that complies with HIPAA regulations.

The Department of Defense is funding new research at Orthocare Innovations that builds on the foundational P&O COMET app, which will combine multiple domains of outcomes data with sensor data through HIPAA-compliant cloud capabilities to provide clinicians with actionable information about patient outcomes, says Chang.



Some facility owners worry that ramping up collection of outcome measures increases clinician burden and takes time away from patients. "One of the challenges that O&P facilities are experiencing is: How do we collect outcome measures, but do so with the least amount of burden?" asks Chang. But she notes that the goal is to take outcome measures as part of patient care, "and make sure they're being collected in a standard way" to allow comparisons over time.

Positioning data collection as a priority for all facility staff helps ease the collection process, agrees O'Brien. "We have found that engaging the whole team in the effort really helps make the process successful," she says. At Hanger Clinic, "administrators typically start the process in the waiting room, and then allow the clinician, resident, or assistant to explain the results of the assessment as part of the normal patient-care interview process. Not only does this make the outcomes process meaningful to the patient—especially since it ties it into their patient care for the day—it also allows our clinicians to make clinical decisions based on the results of the patient's current assessment."

Many tools are available to help, according to O'Brien, but it's important to start by defining overall goals. "One of the biggest barriers to collecting data can be the infrastructure of the collection process," she says. "Another barrier might be determining what type of data you want to collect—how and why are probably two of the biggest barriers to *successful* collection. Until you know what you want to

find out about your patients, you may be asking the wrong questions and using an outcome measure that's not ideal for your purpose or patient population. Similarly, if you're using different outcome measures on the same patient over time, or the same outcome measure but on an inconsistent basis, then you're collecting data that isn't comparable in a helpful way. Outcomes data that means something in the long run requires collecting the same measure on the same schedule on the same type of patients, over and over again."

She points to the availability of free outcome measures, including PLUS-M.org and OPRO-M.org from the University of Washington. In addition, some resources allow clinicians to access the right outcome measures for their patients, including Shirley Ryan's database, www.sralab.org/rehabilitation-measures. "Because we now have access to those websites, even a single clinician could decide to start an outcomes program and be successfully administering outcome measures with their patient populations that would affect their daily care," she says. "You can start small and still be very impactful!"



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Joining the Limb Loss & Preservation Registry

Facilities that aggregate data in-house are finding many ways to leverage that data to help their own patients—but some facilities are taking the next step and joining the new LLPR to be part of a more comprehensive O&P data movement. The registry was built to aggregate data from all of

the entities that treat patients with amputation, limb difference, and preservation, including facilities, hospitals, and patient self-reported instruments. With all of this information, “the aggregate will provide clues and trends for patient care, and evidence for payors,” says Brandt.

To date, 12 O&P practices, consisting of approximately 180 locations, have signed on to the registry, which is no cost to join through October 2023, according to Brandt. “We’ve proven that data transfer can happen from EHRs to the registry,” he says. “Now we’re ensuring the quality of the data is up to par.” He emphasizes that facilities *push* data to the registry, so contributing facilities can decide the frequency they want to provide data.

For most facilities, “the data you’re already collecting” via EHR systems like OPIE and NymbL “is the beginning data the LLPR will be taking in,” says Clark. He encourages hesitant business leaders to overcome any preconceived notions regarding who will see the data and how it will be used. Clark’s patient-care facility was one of the first to join the LLPR and is ready to share de-identified data and patient-reported outcomes for its eight locations.

Brandt emphasizes that all information in the registry is de-identified, so patient protected health information remains secure. And facilities can provide only the data that they are already collecting: “There is no requirement or minimum data contribution,” he says. “Whatever portion of the 109 P&O provider elements a provider has, is welcomed.” He notes that providers will receive “quality reports,” which will identify the data they are not providing. “Then the provider can, if they so choose, place more emphasis on collecting more of the elements, thereby increasing the quality of their submission to the registry.” Even if a facility can provide only 30 of the 109 data points, “those numbers will help the registry from a regional and national perspective,” Brandt says.

Informing Care

Within the next few years, the LLPR will become populated with much more information from a wide swath of O&P practices.

“You’ll be able to go into a dashboard and look for information on a specific cohort of patients,” explains Brandt, which will allow

Sensor-Driven System for Remote Data Collection

Innovations are popping up across the O&P market to facilitate data collection. Dennis Clark, CPO, recently launched OPOS¹, a company that offers a low-cost, low-profile system that leverages sensors to collect objective data. The goal is to help to measure clinical outcomes and improve quality of O&P patient care.

Clark began working on this project about six years ago when he began using a new glucose monitoring system to manage his own diabetes. “The system prevents me from having to stick my finger—I can just use an app, which monitors and stores [his glucose level] and sends the data to my endocrinologist,” says Clark. “It helps me stay much more regulated.” He realized similar technology could be helpful for the O&P community. “I thought, I need a monitor like this for my profession.”

After several iterations and a partnership with Simbex, Clark created the OPOS¹ system. Small sensors that measure wear time and step count adhere to any type of prosthetic or orthotic device—“like a Band-Aid”—without interfering with its use. Using Bluetooth technology, data is sent to patients and prosthetists. The system passed Food and Drug Administration registration requirements at the end of 2022 and passed Federal Communications Commission requirements in early 2023. “We’re doing validity testing now at the Mayo Clinic,” says Clark, and several beta sites—O&P facilities as well as orthopedic and podiatry groups—are using the technology.

The system enables “remote therapeutic monitoring,” and informs patients whether they are meeting their individualized benchmarks for step count and activity, according to Clark. “This helps them stay within, or exceed, their ‘normal’ range,” he says. “The patient can see their own progress and say, ‘I was in the green five days in a row.’ It’s a constant motivator to do more and to do better,” which helps boost activity levels and prevent sedentary lifestyles—all promoting health and saving medical dollars.

This information can also be shared with referral sources, who may be reimbursed using existing CPT codes for remote therapeutic monitoring data in making care decisions and educating patients on their progress and care.

The technology allows for more object comparison across facilities. “I love the Timed-Up-and-Go and the Two-Minute Walk tests, but no two facilities implement these tests exactly the same way,” says Clark. “This is a sensor and data app that captures real-world data during the patient’s normal daily activities in their normal environments—not just data accrued in an O&P facility setting.”



The OPOS¹ sensor, which enables remote therapeutic monitoring, was designed to adhere to any type of orthotic or prosthetic device (shown here on a prosthesis).



Dennis Clark, CPO

PHOTO CREDIT: DENNIS CLARK, CPO/OPOS¹

users to build “a more informed patient view specifically about trauma patients, for example, and how quickly we think their rehabilitation journey ‘typically’ progresses,” he says. “You’ll be able to look more specifically within a patient cohort, which can lead to more predictive patient care.”

Users will be able to narrow the data scope to type of amputation, cause of amputation, specific comorbidities, and other defining characteristics, such as social determinants of health as well as health-care disparities, “then get a more realistic patient-care journey” to share with patients, Brandt adds. While there is no cost to join and contribute data at the lowest subscription level, three pricing levels for more advanced dashboard reports will begin in January 2024.

For a small fee, registry participants can receive a personalized dashboard, through a recent partnership the registry has forged with BData, a healthcare data science company. “We have deep expertise in healthcare data, healthcare IT, advanced analytics, and research methods,” explains Bart Phillips, founder of BData. “We look to create value for multiple stakeholders from real-world healthcare data. In most engagements, this focuses on facilitating research and quality improvement initiative.” The company has partnered with other healthcare sectors, including burn care, in building web-based platforms to assist those sectors in understanding their patient populations and the variability in outcomes, with the goal of driving improvements in patient care and organizing data for research purposes.



Bart Phillips

“As soon as payors know certain providers are participating in a registry, they will expect participation” from providers that submit claims.

—DANIELLE MELTON, MD



For the LLPR specifically, BData is in the initial phases of customizing dashboards for health systems and O&P practices. After facilities contribute data, participants will be able to log in and see relevant and actionable dashboards, and look at patterns in their data, according to Phillips. They may use the information for benchmarking that will eventually include machine-learning driven risk models. “We are helping to organize data to deliver it back to hospitals, providers, and eventually patients,” says Phillips.

Partnering With Hospital Systems

Data from O&P patient-care facilities becomes more valuable when it is accompanied by data from the hospital systems that perform amputations and limb preservation procedures. Moving



forward, both payors and patients will demand evidence-based data following the continuum of care, says Danielle Melton, MD, director of amputation medicine and rehabilitation and associate professor, Department of Physical Medicine and Rehabilitation, University of Colorado. Melton also is a member of the Executive Advisory Panel to the LLPR.

“From a treating physician perspective, the number of peer-to-peer requests to justify medical necessity” has quadrupled over the past 20 years, she says. “Looking at it from a cost perspective, there are more requests to justify medical necessity; payors want more information, and payors are issuing more initial denials” that must be appealed to get reimbursement, says Melton. “I am constantly asked for proof—or evidence—such as whether interventions lead to a decrease in readmissions, or fewer falls. But we don’t have a lot of evidence.”

In addition to payors, more consumer-minded patients will be demanding data-driven decision making from both their physicians and their prosthetists, Melton predicts. “As a patient advocate, I often get questions on how [patients are] doing compared to other patients,” and what benchmarks to expect, she says. Using registry data, “I will be able to say to patients: For someone your age and your level of amputation, this is what you can expect.”

Clinicians who work regularly with specific treating physicians should “help convince hospitals to add their information” to the registry, which will benefit those hospitals in the future, says Melton. For those O&P facilities that are reluctant to join the registry, Melton says the age of data is already here. “You have to participate or get left behind,” she says. “As soon as payors know certain providers are participating in a registry, they will expect participation” from the providers that submit claims. ✂



Danielle Melton, MD

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