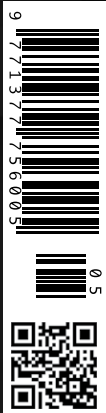




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The Wait is Almost Over – An Imminent Return to Elective Orthopedic Surgeries

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Torbjorn Skold and Prof David Barrett, one of the design surgeons for ATTUNE Knee System, explore ways to tackle the backlog in orthopedics and get more people moving pain free.

Key Points

- Osteoarthritis is one of the most frequent diseases leading to the need for joint replacement.
- Medical professionals face huge challenges in addressing the mounting quantity of cases.
- One major goal is to reduce the waiting lists. This need can be addressed by simplifying the time requirements related to diagnostics, scheduling, procedural efficiency, and follow-up care.
- Continued evolution in the orthopedics world brings with it increasing patient demand, higher expectations, and an unrelenting focus on driving efficiencies in costs, time, and resources.
- Helping surgeons build a strong provider-to-patient connection may enable a more positive patient experience.

Torbjorn Skold: Over the last 18 months, many hospitals were forced to postpone elective surgeries to make room for COVID-19 critical care. In the UK alone, 100,000 people had their joint replacement procedures cancelled during first wave, leaving them with untreated pain and mobility challenges.¹

More than one-third of those waiting for a total knee or hip arthroplasty described their state of being as “worse than death,” a situation twice as bad as that observed prior to the pandemic.² The picture is similar across Europe.

Osteoarthritis (OA), a degenerative joint condition that affects approximately 350 million people worldwide, is one of the most frequent conditions for which patients may need a total knee replacement.³ We know that as populations age, the risk of OA increases – leading to higher demand for care.

The pandemic has made medical professionals face huge challenges in addressing the decreasing quality of life and the mounting quantity of cases. At DePuy Synthes we believe

that our industry should focus on helping surgeons, patients, nurses, and healthcare systems work through this backlog.

Prof. Barrett: Total knee arthroplasty (TKA), commonly known as knee replacement surgery, is the gold standard treatment for OA, and the number of procedures carried out annually is projected to grow 189% by 2030, representing 1.28 million procedures annually.⁴

However, the image of an older person undergoing a knee replacement before settling down to a quiet, sedentary life is outdated. The success of TKA has led to its increasing use in younger patients, with a recent study indicating a 188% rise in procedures among people aged 45 to 64 years old.⁵

Younger patients often have more work or family commitments, as well as a higher expectation of their ability to resume normal activities such as sport. Different knee systems offer different levels of benefit to patients – yet up to a fifth of all patients are dissatisfied with their surgery, with their



expectations for ease of movement post-surgery unmet.⁶

If we're to keep patient outcomes as our focus and goal, the product innovation must be patient centric. **From an initial goal of increasing longevity of the implant, in recent years the goal of innovation has been to address unmet patient need.** It is only by considering the patient perspective that we'll be able to realize the true transformational potential of this surgery, giving patients that freedom of pain-free movement they need.

Although challenged with the increasing burden of OA, I must admit that we're in an exciting time for orthopedic surgery in general, particularly with TKA. New technology is set to evolve how surgeons, and the whole healthcare team, manage patients' care from pre-admission to long-term recovery.

Torbjorn Skold: The ATTUNE Knee System was developed from a commitment to put patient needs at the heart of product design. It was created around one key principle: **the right implant for the right patient, in the right setting with the right surgical approach, at the right cost.**

In 2019, several innovations were introduced across primary and revision procedures that had the potential to significantly transform patient outcomes by achieving improved stability in motion.

Prof. Barrett: Innovation shouldn't stop with the implant – it has to cover the whole care management system and the patient pathway. **The challenge we've got with the healthcare is that we have to look at it as the whole process** and take it to a drastically new level where the planning of the procedure, speedy throughput, rapid discharge, and reducing prolonged hospital stays and complications, are the important components of success. The desired outcome is a streamlined patient pathway with meaningful economies and savings of time and space.

Torbjorn Skold: Our goal is to achieve and maintain a high throughput of patients without compromising on either the outcomes or the standards of care. Since it's unlikely that hospitals can double the number of surgeons or that they will receive extra resources, what remains within our control is to perform orthopedic procedures more effectively and efficiently.

In essence, patient throughput is a function of three factors: operating time, complications, and length of stay (LOS).

Consistently shorter procedure times allow planners to put more patients on a list, maximizing the use of available operating theater space. Choosing one implant over another could reduce surgery time allowing an additional patient to be added to each operating list.

For example, mean operative time for cemented TKA equates to about 93.7 minutes.⁷ Cementless solutions have been shown to save about 11.6 minutes per surgery. This 11-minute boost per procedure can represent a significant time saving.

Each complication is likely to block a bed and to affect operating capacities and hospital personnel. The quality of implant



used is one of the ways to decrease the rate of complications. The latest digital technologies designed to reduce surgical variation and improve consistency of outcomes can also contribute to a reduction in those rates. This can translate directly into shorter hospital stays and bypassing rehabilitation centers.

The choice of surgical approach can result in significant LOS reduction. For many patients LOS could be as short as 24 hours in a hospital. This shift from inpatient to outpatient care can alleviate pressure on the hospital system and reduce associated costs.

With the right support, hospitals can optimize and streamline the patient pathway from pre-admission to post-discharge care. It is important that the patient also understands what they can do to contribute to a successful outcome following surgery.

Prof. Barrett: Some may wonder if 24-hours rehab is possible at all? The answer is yes – **COVID-19 has changed patients' perceptions because they're quite anxious about spending a lot of time in the hospital.** Whereas previously it's been tough for us to get them home because they wanted to stay for as long as possible as they felt better with the opportunity to socialize with other patients and have access to physio etc. Now they realize that the longer they spend in the hospital the higher their chances to contract the virus.

Some of my colleagues in the U.S. mentioned about 95% of their patients, who undergo a total knee replacement, go home on the day of the surgery. Surgeons have been moving to a very efficient fast-track procedure and this is most definitely changing patients' perception, converting them to being fully up for going home as soon as possible.

In addition to those in the private sector, there are a number of projects in the NHS which aim to install "hospitals within hospitals," which are COVID-free and have very rapid



throughput for elective surgeries.

Torbjorn Skold: What happens before the patient reaches the operating theater makes a difference. The more the procedure and the implant are appropriate for the specific needs and physiology of the patient, the less likely the patient is to be dissatisfied and/or need revision surgery, and the more likely they are to recover more smoothly. **Investing in the pre-surgery stage leads to downstream savings post-surgery.**

Pre-operative surgical planning and patient-specific guides are enabling technology to design customized instruments. Using proprietary software, the surgical team works to better understand the patient's anatomy and soft tissue, to ensure the implant is placed as accurately as possible.

Prof. Barrett: Digital workflows can also improve both

consistency and quality across the surgical process as a whole. Synchronized digital workflow technology and real-time insights reduce variability and work to support surgical teams by giving them increased, and more detailed, information.

The development and adoption of artificial intelligence (AI) has real potential in the field of orthopedics.

Innovations in digital technology means that after the surgery, most patients move forward through their mobile phones. There is never a need to go back to the hospital. **With smart technology, we can monitor at a distance better than we could when we were making outpatient visits.**

We have information on the number of patients take, who take the stairs, where they go in the house – this really helps. There is no longer need in outpatient facilities: we can run virtual patients through virtual clinics – available any time any place, helping hospitals save time, and it's a lot easier to organize.

Torbjorn Skold: Lastly, we would like to mention that education of the hospital team plays a crucial role in ensuring every patient gets a consistent high level of care. A surgeon's learning curve on ATTUNE is often short; it can take about five cases to start becoming proficient with the products and procedures.⁸ So we focus on getting practicing surgeons up to speed and accelerating them as quickly as possible. A combination of in-person and virtual events, along with online platforms, virtual reality, and tele-mentoring, can all be used to support the learning of everyone involved.

Surgeons and healthcare teams must take advantage of the promise that new technology brings to better map procedures to patients, to drive consistency and efficiency, and reduce the need for surgical revisions. Only then will we be able to avoid overwhelming health systems and, most importantly, help patients achieve the surgical outcome that will enable them to resume normal life. ■

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