



# Same Day Surgery Total Joint Replacement

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As 2018 comes to a close and 2019 is about to commence, the field of total joint replacement (TJR) surgery is also about to dawn a new era – the era of the routine outpatient TJR surgery. According to data by the Centers for Disease Control, the average length of stay of a total hip replacement in 1992 was 10 days. By 2000 it was 6.2 days and by 2010 it averaged approximately 3 days. Not only was the hospital stay protracted, but a significant number of patients also discharged to a post-acute facility such as a skilled nursing facility or acute rehab center before finally heading home. The idea of a truly same day surgery (SDS) procedure would not have even been considered feasible.

Advances in the surgical methods of TJR surgery, as well as the perioperative care and postoperative rehab, have improved dramatically to allow for SDS TJR. One of the biggest intangible contributions was made possible by the shift in orthopedics from low quality

observational or retrospective studies to a greater appreciation for the value of prospective clinical studies as is more common across other medical disciplines. I will highlight just two of the most significant impacts below.

A hemostatic agent with the on-label use for menorrhagia, tranexamic acid (TXA), has had a landmark impact in reducing bleeding in TJR surgery. Although described in European literature earlier, in 2010 one of the first prospective randomized studies in the US showed the benefit of TXA on minimizing blood loss following TJR surgery. These findings, including evidence of safety of this intervention, were replicated across numerous subsequent trials. Widespread adoption of TXA has spread across TJR surgery nationwide. Transfusion rates, which previously averaged 20% or more, now are in the range of 1% at our facility. For patients with normal starting hemoglobin, postoperative blood draws are no longer even considered a necessity.

Another example of the power of prospective studies in TJR surgery was the demonstration in 2013 that dexamethasone administered intraoperatively has a profound effect on reduction of postoperative nausea and pain. Hospital length of stay was also reduced significantly as patients were able to reduce opiate consumption and start physical therapy sooner. Because these studies were prospective and well designed, TJR surgeons were able to know with confidence that complications such as infection would not increase due to this therapy.

My first foray into short stay TJR surgery started in 2013 through serendipity. Due to an unusually high hospital census it became clear that a healthy 65-year-old man who had just undergone total hip replacement surgery would be without a ward bed for a protracted period of time. He indicated that he felt so good, perhaps he could start his physical therapy right in the postoperative recovery room. Taking him at his word I called the physical therapists to do just that. By that evening he was walking the hallways, clearly functionally independent and ready for discharge by the following morning, a first at our institution. Emboldened by that patient's success, a rapid recovery pathway we termed DASH (Doylestown Accelerated Surgical Healing) was developed through a multidisciplinary approach.

DASH served as a model that eventually transitioned to nearly all patients at our hospital. Fast forward 4 years to 2017, and the average length of stay for patients of all ages, including the elderly, was averaging only 1.3 days. Amazingly these advancements occurred with a concomitant reduction in post-acute facility utilization. In 2017 it became clear it was time to jump to truly SDS TJR, and a new protocol was developed to ensure a seamless interdisciplinary approach that emphasized patient safety and comfort. Now as we turn the page to 2019, it has become a routine event for our physically capable and motivated patients of all ages to return home the same day following surgery.

Ideal SDS TJR candidates have a support network of family or friends but need not have first floor living accommodations. They are well prepared through preoperative teaching classes and physical therapy "prehab." The surgery itself in our program is performed under a short acting spinal anesthetic lasting less than 1 hour in duration. Patients start physical therapy in the postoperative recovery room and are discharged after they meet criteria of walking unassisted for 100 feet, urinating and ascending stairs. Amazingly, even though the 30 days TJR readmission rate nationwide for all comers is approximately 5%, our program has not had one readmission or even an ER visit following an SDS TJR procedure in the 18 months since it began. This is in line with a recent prospective, randomized study that found lower complications in SDS total hip among patients with predefined inclusion criteria.

Patient satisfaction with SDS TJR has been excellent, and, for many patients, has resulted in significantly reduced expense for the surgery. Since TJR surgery as a procedure is expected to increase substantially over the next decade, reducing the economic impact to our health system as a whole will be paramount. The next step in this evolution will be the movement of SDS TJR from the hospital setting to that of free-standing ambulatory surgery centers. Nationwide this trend is already occurring and estimated to grow by 500% over the next 10 years, driving expenses down even further while increasing convenience for patients, a win for the entire health system.

