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## Good Samaritan introduces robotics for hip-replacement surgery

Good Samaritan Medical Center is increasing the types of surgeries its doctors perform using robotic systems.

On Oct. 6, orthopedic surgeon Dr. Elvis Grandic performed the first hip-replacement surgery in Palm Beach County using the RIO (Robotic Arm Interactive Orthopedic) system. Prior to surgery, hospital staff took a CT scan of the patient's hip and used RIO to create a three-dimensional image. With that digitalized image, the system tracked the patient's body so that the artificial hip components could be accurately aligned and positioned.

The system allows for custom fits with the patient's anatomy, according to Good Samaritan Chief Executive Officer Mark Nosacka.

Manually placing the acetabular cup into the pelvic socket can be challenging, according to Grandic.

"If you put the cup in the correct position, it will decrease the risk of dislocation," the orthopedic surgeon said. "Dislocation can happen immediately post-op or a few years down the line." In addition to potentially minimizing discrepancies in leg length, the accuracy gained from use of the robotic system also helps decrease implant wear and tear, Grandic said. "If the implants are positioned correctly, it increases the longevity of the implants," he said.

The orthopedic surgeon cited a Massachusetts General Hospital study, published in the February issue of Clinical Orthopaedics and Related Research, to indicate improper positioning of the acetabular cup (socket) during traditional hip surgery is a significant issue.

In that study, of 1,823 total hip replacement or hip resurfacing surgeries analyzed, only 50 percent were within the optimal range for both criteria — abduction and version angle — regarding cup positioning. (Researchers determined that feedback to surgeons helped decrease cup mis-positioning for high-risk factors, which include the minimally invasive surgical approach, the surgeon volume and patient obesity.)

Grandic said people who are candidates for traditional hip-replacement surgery are appropriate candidates for robotic system-assisted surgery.

Good Samaritan unveiled the \$1 million RIO system, located in its Joint and Spine Institute, in late 2010. The initial software installed facilitates knee replacement. In 2009, it debut a \$2 million daVinci robot, which is used for minimally invasive gynecologic and urologic procedures.