

# Unlocking Efficiency

Overcoming challenges in orthopedic surgery with CIARTIC Move

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*"I like to do the surgeries, not wait to do surgeries."*

"I like to do the surgeries, not wait to do surgeries," says Dr. Geoffrey Marecek, MD, Associate Professor of Orthopedic Surgery at the Cedars Sinai Medical Center, Los Angeles, CA. He specializes in problem fractures with an emphasis on post-traumatic reconstruction and limb salvage. Like many surgeons, Dr. Marecek faces challenges including wasted time, positioning inefficiencies, and lack of reproducible results. Here, he discusses how the CIARTIC Move, a self-driving mobile c-arm delivering 2D and 3D CBCT imaging, can help.



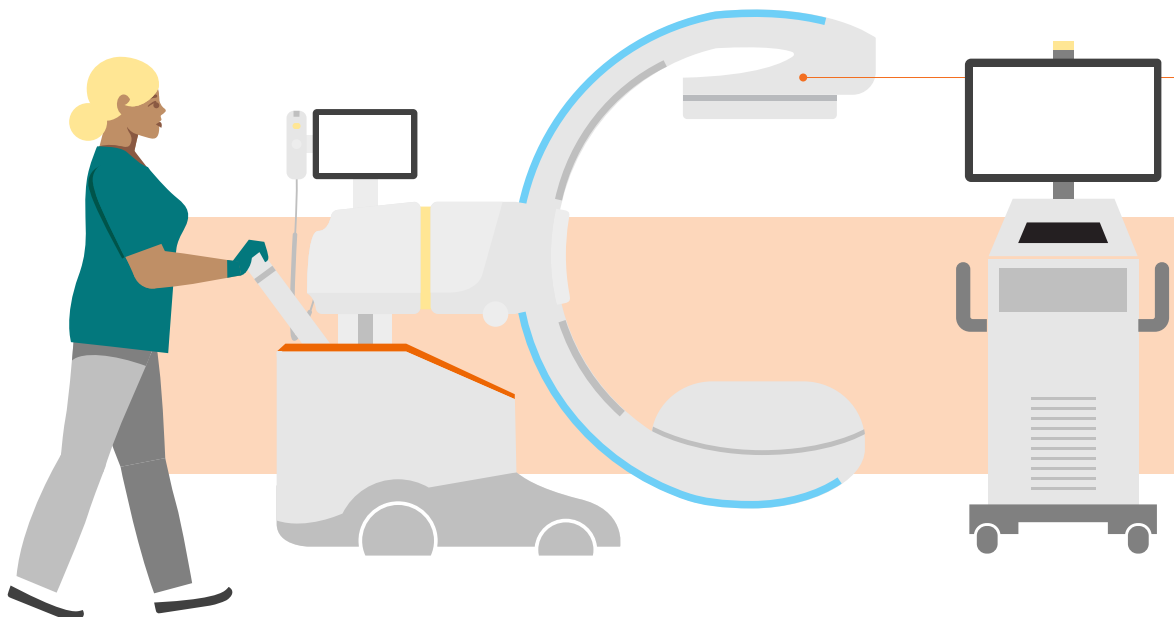
### Supporting improved accuracy

Surgeons count on technologists to move and operate c-arms, but can't always get the help they need. "On any given day, our technologists are stretched all over the hospital. They're running to the ER. They're running upstairs. They're running the cath lab or they're running to the OR. Our technologists are really being challenged," says Dr. Marecek. In orthopedic surgery, it can be even more difficult, depending on the procedure. "When my spine surgery partners are doing surgery, they go to a lateral and they stay at the lateral. They can step on the pedal themselves," continues Dr. Marecek. "I can't do that. I need to go back and forth many times. I need someone there to help me, or I need to be able to do it myself."

Complicating the matter, staff are often shared among various clinical specialties that use fluoroscopy, from orthopedics to neurology and urology.

"Just last week, I had a case where I scrubbed in, we did our timeout, and we brought the c-arm in. Then, we just stood there, waiting for the technologist to show up," says Dr. Marecek. "Eventually, I broke scrub and ran the c-arm for my fellow."

For Dr. Marecek and many other orthopedic surgeons, these difficulties can impact not only their workflow efficiency but also their procedural confidence and, potentially, outcomes. Designed to address these challenges, the CIARTIC Move offers unique benefits that can help make positioning more efficient, improve reproducibility, and put control back in the surgeon's hands.





## Making [re]positioning more efficient

C-arm systems can be heavy and physically demanding to move. The CIARTIC Move, however, enables effortless movement through holonomic wheels that move in every direction, and touch-sense handles that recognize your intended direction and engage the system's motor to gently reduce the effort needed to move.

Yet, pre-procedurally moving the system isn't the only challenge. In orthopedic surgeries, the c-arm needs to be repositioned frequently – and precisely – to give surgeons exact anatomical views. With conventional mobile c-arms, this repeated manual positioning can be stressful, time-consuming, and prone to error. With Position Assist, the CIARTIC Move can store up to 12 different positions (Defined by your surgical team) and steer itself back to any one of these positions during the procedure. In fact, the system can support intraoperative imaging time savings of 55%<sup>1</sup> during pelvic surgery.<sup>1</sup>

"You can tell this c-arm where to come in the room and it will start from wherever you've told it to park, move into the field, tilt to the position you want, change it to a different position, and then come back," says Dr. Marecek. "At the start of a hip fracture case, I can envision using this to take my AP lateral, setting those spots, setting a resting position in the room, pull back, prep, and drape. Then, let those wheels put the machine where it needs to be."

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Geoffrey Marecek, MD



*"If you're not getting the right shot, you're not doing the right surgery or you're not doing the surgery well."*

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### Consistent, reproducible results

Positioning is, of course, only one part of the challenge of using a conventional c-arm during surgery. "Some studies suggest 50% of the time, the first shot is wrong," says Dr. Marecek. "It's crazy how often it's done wrong or done poorly. If you're not getting the right shot, you're not doing the right surgery or you're not doing the surgery well."

To illustrate how difficult this can be for a surgeon, Dr. Marecek references a recent pelvic ring surgery with a left-sided proximal femur fracture. "Having *almost* an inlet and then almost an inlet and almost an inlet is not okay. For pelvic surgery, I need an inlet and then another inlet and then another inlet view," he says. "As you're moving a c-arm around, there can be very subtle differences in positioning. The patient might even move just a bit. Your tech needs to adjust to reproduce the same image even though it's not in the exact same spot."

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**Smart Control enables a single person to operate the system remotely, even from inside the sterile field.**

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In these instances, Dr. Marecek points out it would help if the surgeon could easily take control, but that is not always possible. "On many c-arms, the technologist must unlock it for me to take control," he says. This can cause delays and, potentially, confusion as surgeon and technologist wait for each to take control of the system. "But, with the CIARTIC Move, I can use Smart Control and move the system two degrees over or, my assistant can pull it into position, and I can take over from there," Dr. Marecek continues. Smart Control enables a single person to operate the system remotely, even from inside the sterile field. With it, trained surgeons can keep working even when dedicated intraoperative imaging experts are unavailable.



## Putting surgeons in control

"There's one thing orthopedic surgeons, neurosurgeons, and vascular surgeons have in common: We don't like being told what to do or not being able to do what we want. For us, it's a huge benefit to have more autonomy with a c-arm that we can more readily control," says Dr. Marecek. "I can take control of the CIARTIC Move when I want and really set things the way I like."

In fact, this ability to take control of the c-arm may be easier than some surgeons think. In a preclinical test of the CIARTIC Move, 14 surgeons in a cadaveric lab received 15 minutes of training on the system. Then, they were asked to capture standard pelvic projections on both the CIARTIC Move and a previous generation system. On average, the surgeons performed the imaging in 55% less time on CIARTIC Move<sup>1</sup>. "If you've noticed one thing," says Dr. Marecek. "It's about empowering surgeons to do what they need to do and getting reproducible results."

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*<sup>1</sup>Proven in a cadaveric setting with 10 human specimens, with orthopedic trauma and spine surgeons, compared with Cios Spin.*

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