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# Alaska PULSE

adn.com  
Anchorage Daily News

APRIL 2012



Dr. Humphreys and his team at Central Peninsula Hospital pose in front of the O-arm.

PHOTO COURTESY OF ROY MULLIN

## New spine imaging technology

DOCTOR'S QUEST: *Less invasive and more accurate procedures*

By **TARYN ARMSTRONG**  
Special to Pulse

It's the only one in Alaska — the **Medtronic O-arm Surgical Imaging System** — and it arrived at Central Peninsula Hospital in Soldotna after a three-year process initiated by Dr. Craig Humphreys, an orthopedic spine surgeon at Kenai Spine in Soldotna. The O-arm provides three-dimensional, real-time imaging for delicate spine surgeries, leading to less invasive and more accurate procedures, less exposure to radiation for patients and staff, and a more sterile environment for patients.

Life-long Alaskan Humphreys left the state for medical training, a journey in experience that would ultimately bring him back with a highly specialized treatment team, most of whom dropped their lives in Tennessee to bring their expertise in spine surgery care to Alaskans.

What's unique about the O-arm is it allows Humphreys and his surgical team to visualize the spine and surrounding anatomy in remarkably clear three-dimensional images that can be rotated to view the entire internal surgical field while he works. Three two-dimensional cross-sections are

also available to him during procedures — all from one pass over the patient to create a composite of images in as little as 13 seconds.

"The O-arm is a living CAT scan," said Humphreys. "From my point of view, bringing equipment over the patient just once is better than ten times in a single case because each time you're exposing the patient to sterility risks, and the patient and staff to increased radiation risks — especially the staff, when they've been around it for 15 or 20 years."

Once everything's hooked up, with just



one shot, Humphreys continues to see the images in real time.

"As I move around a patient's anatomy, I have three views working all the time — a side view, a top view, and a circumferential view (looking down into the spine from any chosen point)," he said. "A fluoroscope view is just two dimensions, so there's far less anatomical information available."

Whether Humphreys is sinking hardware or probing around, the O-arm images help guide him visually to where he needs to be in a person's unique anatomy.

"If I'm putting in screws, I can see the depth that I need to place them," he said, adding that the images are particularly helpful if someone has scoliosis. "It's very helpful if a patient has had previous surgery and what would be normal anatomy isn't there anymore — so you're trying to find places to grab on to, or to remove bone — and with the O-arm images, you can see exactly where you are and where you need to go."

"Once the first O-arm CAT scan has done its work, a lot of the procedure at that

point is we're just looking at a screen and we can move along and get the job done without having to stop for more images," he continued. "I know I'm within one millimeter of the spinal canal and stop, where before, it would be a guess until you gathered another image."

Humphreys admits he was on a mission when he came back home to Alaska.

*"I wanted to come home more than anything, but decided if I was going to do that, I wanted to be able to do spine surgery with technology as good as anywhere in the Lower 48 — that was my one stipulation," he said. "The O-arm technology and the great team I work with at our Kenai Spine and CPH made it possible."*

We're here to help Alaskans with the best technology available in the state. It's the best imaging technology for spine surgery available anywhere, really. ■



## OUR VIEW IS TRULY UNIQUE

Here on the Kenai, this is our view for the treatment of spinal injuries. Central Peninsula Hospital is the only hospital in Alaska with a revolutionary real-time 3-D imaging system, Stealth surgical navigation and a staff with years of experience, which means less invasive procedures for a quicker recovery.

And we're the only hospital in Alaska recognized by the Joint Commission as a top performer in surgical care.

The Spine Program at

**CENTRAL PENINSULA HOSPITAL**

*State-of-the-Art Technology. State-of-the-Heart Care.*



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