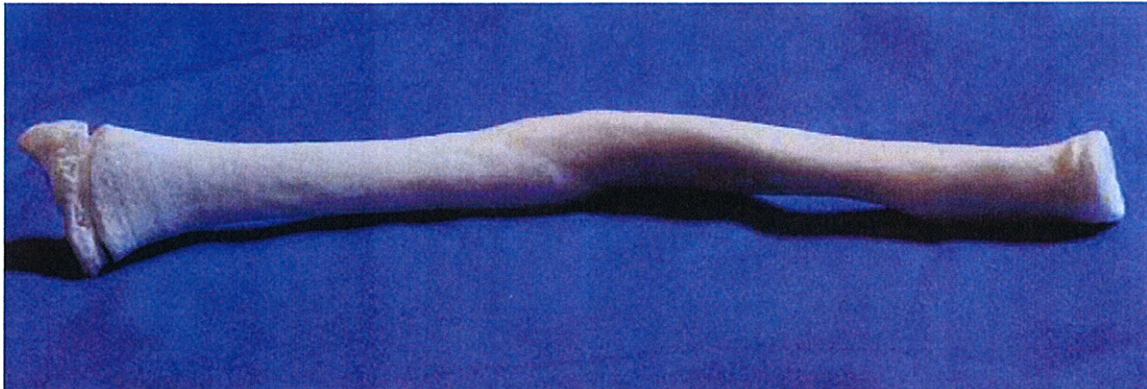


Surgeon 3-D Prints Bones to Save Money



This bone model was developed based on a patient's CT scans, and it was then 3-D printed. (Credit: Shapeways)

When orthopedic surgeons prepare for surgery, it's often necessary to have a model of the patient's bone or bones made, so that the surgery can be properly planned. The models are often also used for practice surgeries to ensure that the actual surgery goes without a hitch. This is an expensive process, as such bone models can cost thousands of dollars to make, and also take a significant amount of time, which delays the start of surgery.

In an effort to avoid going through this process, orthopedic surgeon Mark Frame at RSHC Glasgow was convinced that he could produce a better model. So he turned to the community at 3-D Printing company Shapeways. Writing in a blog post to tell give his testimonial, Dr. Frame describes the process. He used open source software to render the CT scans into images, then simply uploaded those files into his Shapeways account.

A week later, he had the bone models at his hospital, which were compared to the CT scans. Dr. Frame verified that the model matched the CT scans, and reported that "a great material to machine and use our normal orthopedic drills and saws and screws on to practice the operation."

The total cost? 77 pounds, or about 120 bucks (using today's exchange rates). That's about 10% of the cost his team spent on another model, which was both truncated and ultimately unusable for surgical planning. Dr. Frame and his team have since used 3-D printing to produce other bones, including a full pelvis for a complex hip replacement.

3-D printing is, in my mind, the little technology that could. As it grows and more opportunities come available, I think we're going to see a lot more stories like this – where old, expensive methods of fabrication are replaced with easy, custom printing. The possibilities are pretty close to endless.