Slide 6- Every 5 seconds someone in the US fractures a bone, and the most common place for these fractures to occur is in the wrist or upper arm.

Slide 7 – the majority of these injuries will be healed with this a 3m fiberglass cast, and although technically it is fit for purpose, after conducting 52 interviews with both orthopaedic consultants and former patients, we've come up with the same recurring issues

Slide 8 – firstly the cast is not breathable or waterproof. This causes issues and dermatological issues to occur under the cast. Furthermore as the cast is not waterproof, it means you are unable to wash, and so the cast can develop an odour.

Slide 9 – secondly the cast is too bulky which makes normal day to day tasks unnecessarily difficult

Slide 10 –finally as you cannot access the skin underneath the cast, you are not able to use the latest healing methods which have been proven to drastically reduce your healing time.

Now we aren't the first people to notice this and are two main competitors are xkelet and osteoid

Slide 11- xkelet are a 3d printed plastic cast. A two part design that clips around your arm, theyre lightweight, waterproof and breathable

Slide 12- osteoid are pretty much the same as xkelet except they have a slightly different design and the have also paired with an ultrasound company so you can buy both products together

Slide 13- now how are we going to make ourselves different?

Slide 14 – well firstly the cast must be waterproof and breathable, no one wants to have to wrap their arm in clingfilm if theyre going for a shower. Secondly you must be able to access the skin to use the latest healing methods like ultrasound, and I would heartily encourage this.

Slide 15- and so would the journal of bone and joint surgery they've ran tests and have proven that the use of ultrasound can reduce your healing time by up to 40%

Slide 16 – now we still haven't distinguished ourselves form xkelet and osteoid, and I'm going to do that like this.

Slide 17 - they are both 3d printed designs, and initially this was the method we had in mind. So the hospital scans the patients arm, creates the drawing, the drawing is sent to us, we print the cast, check it, package it and send it back to the hospital for them to fit it on the user. This is a logistical nightmare.

Slide 18 – so we thought ok, hows about we give each of the hospitals a printer. This 3d printer the makerbot replicator costs $2700 and is big enough to print a 3d printed cast. There are 78 hospitals in Ireland so to give each hospital a printer would cost us $210,600. On the face of things that doesn't look that expensive however, Ireland was only ever going to be our test market. There are 5627 hospitals in the united states of America. To give each a 3d printer would cost $15.2 million. This is before we talk about the scanners for the arms, the maintenance on the machinery, the training of the hospital staff to use all the equipment!!!

Slide 19- lets simplify things. We thought what if the hospitals had a silicone sleeve that they could pull over the patients arm, fill it with a hardener where it hardens on site and then the patient could leave the hospital with a personalised, comfortable, waterproof cast.

Slide 20 – well that's ucast. A silicone tubing sleeve that comes in 3 sizes similar to latex gloves, you pull it down over the patient's arm and it fits snugly, and them you fill it with hydraset, a bone cement developed by stryker, and it hardens within 15 minutes leaving you with a comfortable, lightweight, waterproof breathable cast.

Slide 21- our design delivers on all fronts being lightweight, breathable, and waterproof, ultrasound compatible and unobtrusive as well as being competitively priced and extremely quick to deploy.

Slide 22- at the moment to manufacture the product would cost us $35 so with labour and machinery costs we feel our product will cost us between $50-75. However we do expect this to reduce once we agree purchasing agreements with our materials providers and increase our production volume. We have also undertaken customer research and have found that customers highly value what our product can offer them. And were willing to pay around €300 to be able to wash, wear their favourite clothes, and just complete their day to day activities more easily. As a result we have value priced our product at €220. We intend to sell directly to hospitals however we will also offer them a second option. On average hospitals in Ireland deal with 625 wrist and upper arm orthopaedic injuries per year, we will offer these hospitals a subscription of 35000 a year up front. The casts will then sell at 150 per unit and as a result after 500 casts, the hospital will save on the original model. We hope this encourages the hospitals to promote our cast and also to use the upfront payment to pay off our own upfront costs.

Slide 23 – We have a highly skilled team of enthusiastic engineers with members having domain expertise in biomedical engineering, materials engineering as well as Blair having 6 years' experience in industry specialising in production quality engineering, all of which we hope to utilise in the process of getting our product to market.

Slide 24 – the lean start up process has taught us some very valuable lessons.

Slide 25 – Firstly our product had to satisfy a myriad of different customer archetypes, including the hospital (our buyer) and the patient (our end user).
We also realised that our customers greatly value our product, so originally when we used cost pricing we were missing a trick.
it was imperative for us to use materials that were already medically approved to reduce our products lead time into hospitals as hospital lead times can be long.
and also to utilise an iterative design process to find a design that is both comfortable, and practical. Something we feel we have achieved more than any of our competitors in the field.

Slide 26 – and our next steps.

Slide 27 – we feel to get our product to market we must first validate our product design and then possibly consider patenting our IP.
we then must network with hospitals to ensure that
after we will need to avail of clinical trials to get our product out to customers and get feedback on how well they feel it works in practice.
and finally we would have to complete the CE and FDA applications so we can sell our product to hospitals.

Slide 28- Thank you for listening to our presentation. We're UCast and finally we're putting you (the patient) first.