

# Service Developments

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Health and  
Social Care



- Limb Volume App Development
- Water-based Exercise Classes

# Limb Volume App

# Limb Volume App

Reasons for development:

- Increased numbers of part-time staff and geographical spread of clinics making sharing of calculators difficult
- Cost of devices
  - Limb volume Calculator £175-200 with additional £50 when they need repairing or re-calibrating
  - Computer software £595 per PC
- Calculators/software giving differing results
- Time taken to measure, write down each measurement, input into calculator/software and document results

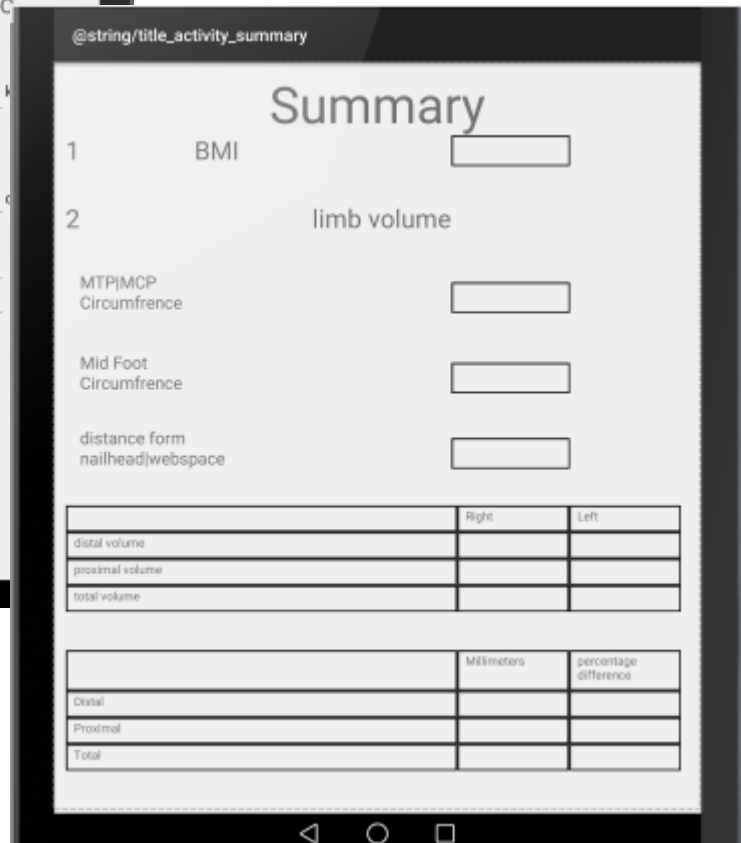
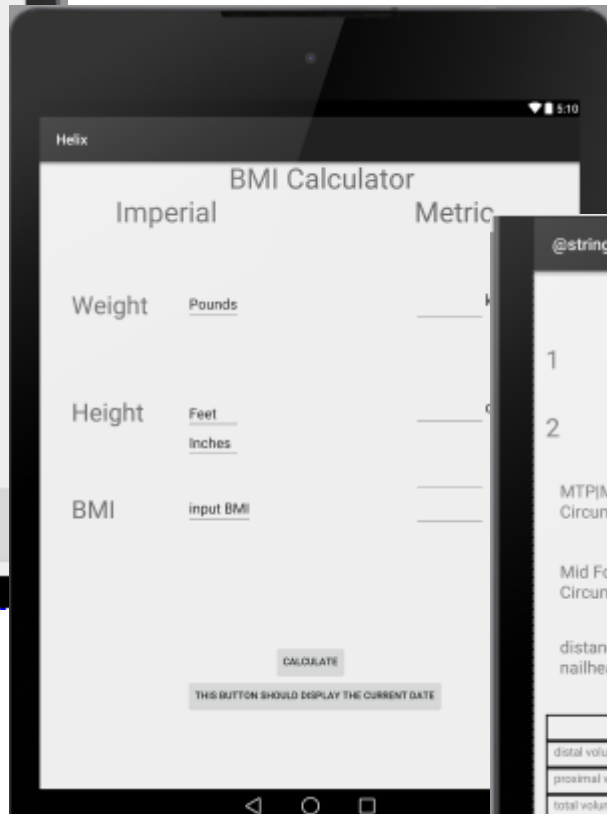
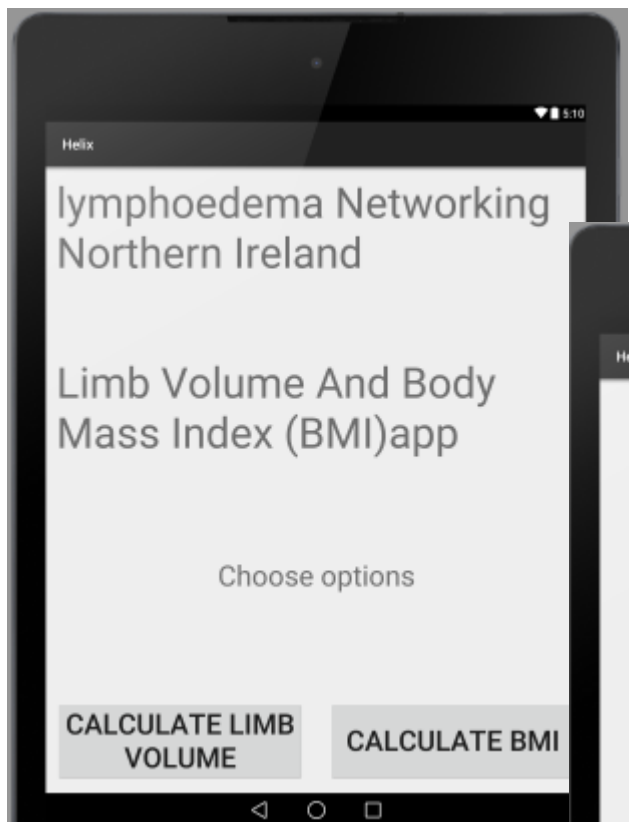
# Limb Volume App

Vision for the product:

- Limb volume and BMI calculator App downloadable to PC, tablet or phone
- Measurements directly input onto the device
- On completion the measurements and calculation can be:
  - hand-written into notes
  - e-mailed directly to the therapist and printed or inserted into electronic patient records.
- Results are time and date stamped with no patient identifiable data
- This is not a medical device as it purely measures a symptom

# The process so far...

1. A project team was formed with members from LNNI, the Ulster University and the Public Health Agency
2. An Excel version of the limb volume and BMI calculators were developed and tested by the LNNI trust teams with anonymised data
3. App specifications were developed with the LNNI clinical leads' engagement
4. Undergraduate computer science students were recruited to develop the App
5. On completion of their placement, development has now been brought back into the network and will enter the final testing phase before a launch in 2018



# The future

- Service User App development with potential for:
  - Self measurement (with reduced measurement points)
  - Embedded videos on skincare, simple lymphatic drainage, garment application etc.
  - Triggers on when to contact your therapist (with the ability for the patient to send measurement details/photos)
- Consideration of alternative means of limb volume measurement including via a wearable sensor sleeve or programmed camera





# Water-Based Exercise for Lipoedema and Lymphoedema Patients with a High BMI

# Lipoedema and Exercise in Water

- Lipoedema UK's Big Survey reported The largest patient survey for lipoedema patients carried out by Lipoedema UK reported that **'Aqua aerobics/swimming is an effective treatment for both size reduction and pain relief in lipoedema'**
- However, only 23% said they regularly exercised in water. Of these, 79% said they found exercising in water helped their lipoedema. Some themes that came up in the answers:
  - legs feel less heavy
  - increase in mobility
  - regular swimming has reduced legs dramatically
  - I have less pain than other types of exercise and can exercise for longer periods.
- 59% of people surveyed said that embarrassment was the main reason they didn't exercise in water.

# Obesity within Lymphoedema Services

- Only 7.3% of our patient population have a healthy BMI (reduced from 20.3 in 2011)
- Severity of obesity is increasing
- If these trends continue patient populations will increase, become harder to manage and potentially require more intensive (expensive) input.
- Optimal management of long-term chronic conditions rely on patient concordance with weight management and exercise, we were finding this particularly difficult in our obese and lipoedema patients

Regional BMI data for Lymphoedema Services in NI

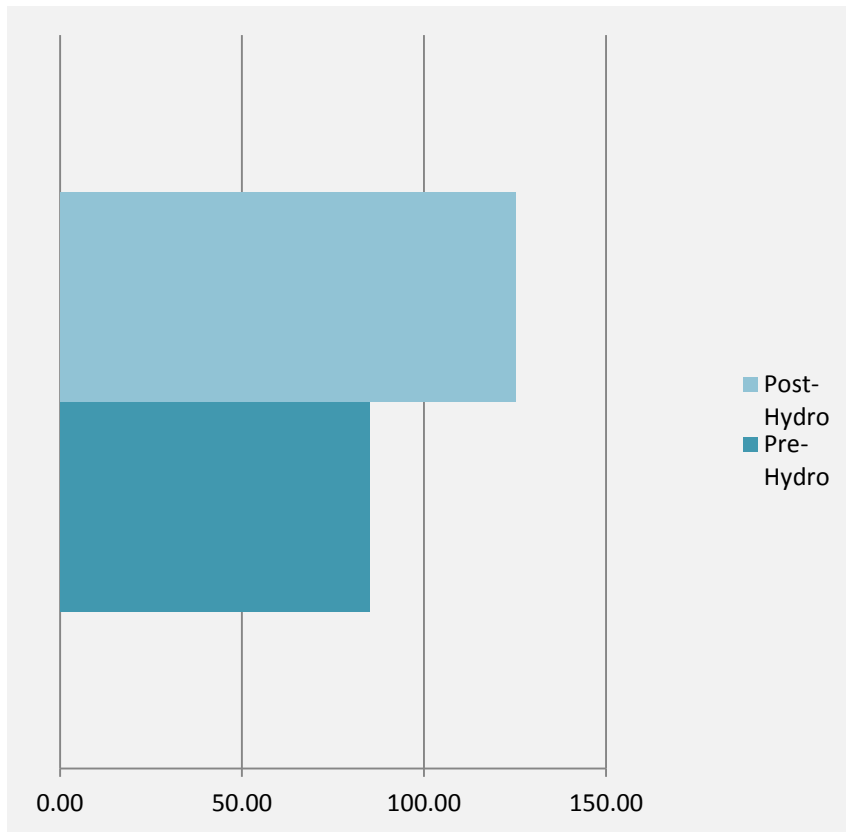


# Our Programme

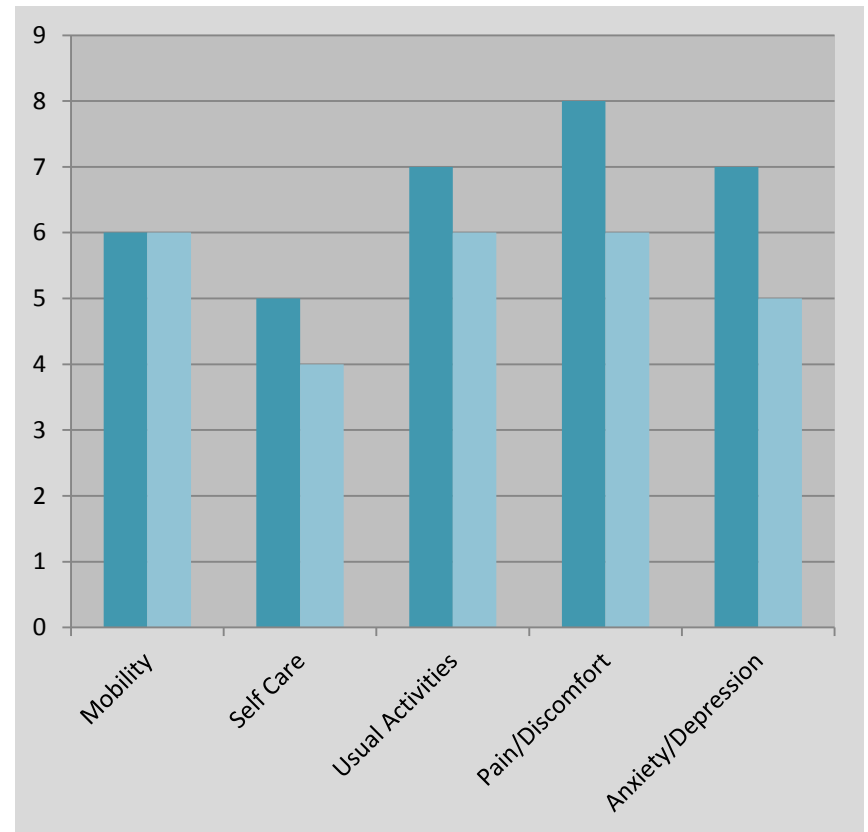
- Musculoskeletal out-patient physiotherapy chronic pain hydrotherapy classes already running
- 6 week programme, once a week
- 30-45 minute gentle water-based exercise
- Based in a public leisure centre
- Max 1.2 metre depth of water
- Lymphoedema technical instructor assistance for our patients
- Outcome measures gathered before and after programme:
  - Limb volume
  - Weight and BMI
  - Health and activity scores
  - EQ5D
- Physiotherapy Assistant staff were trained in motivational interviewing techniques to promote patient accountability and concordance

# Outcome Results

## Health Score

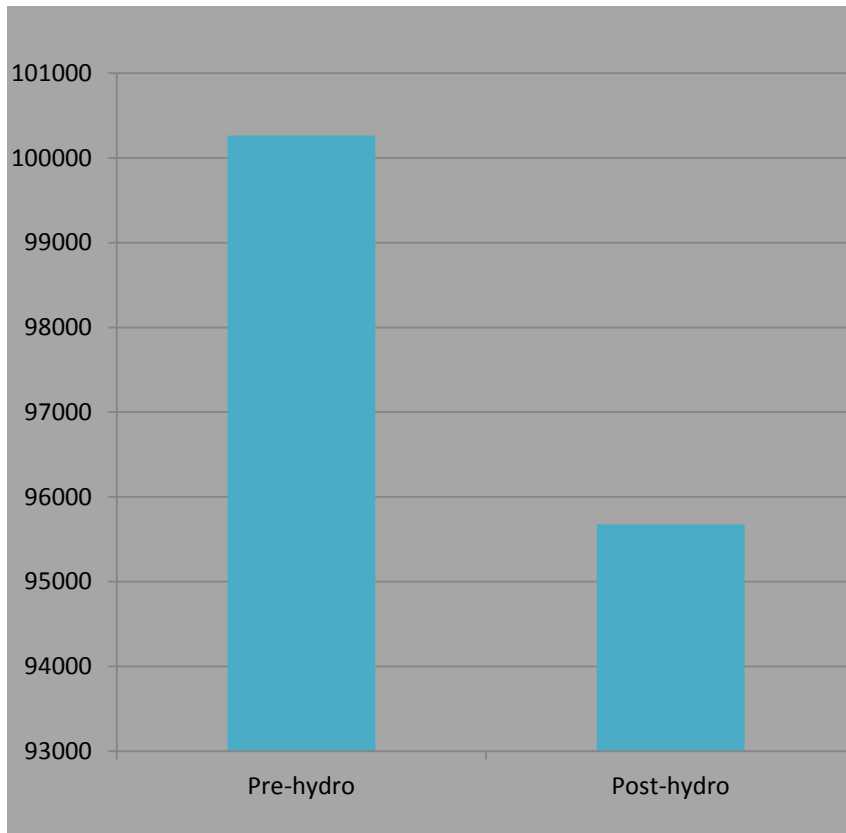


## EQ5D

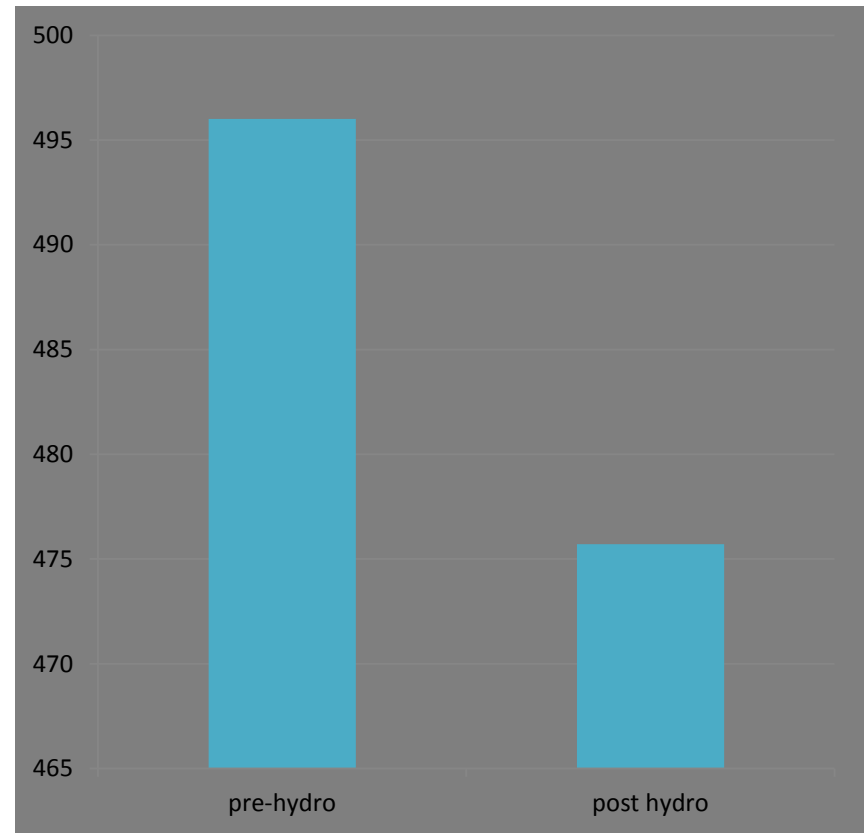


# Out come Results

## Limb Volume (ml)



## Weight (kg)



# Patient Experience



'The classes have helped me getting out, they've given me confidence. I've found getting in amongst people with the same sorts of problems helps you to know you're not alone'

Thank-you

Any Questions?