



North of England
Critical Care Network

www.noeccn.org.uk



Blow it up your nose!
Can you safely expand your
level 2 capacity with nasal
high flow oxygen?

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What is high flow oxygen therapy?

The delivery of warmed humidified oxygen that can provide 100% oxygen at a maximum flow rate of 60L per minute.

Used in spontaneously breathing patients through a variety of patient interfaces including

- HFNC
- Tracheostomy adaptor
- Mask adaptors

Distances in miles

60
45
15
Cramlington

Newcastle

South Shields

Sunderland

Dunelm

Stockton

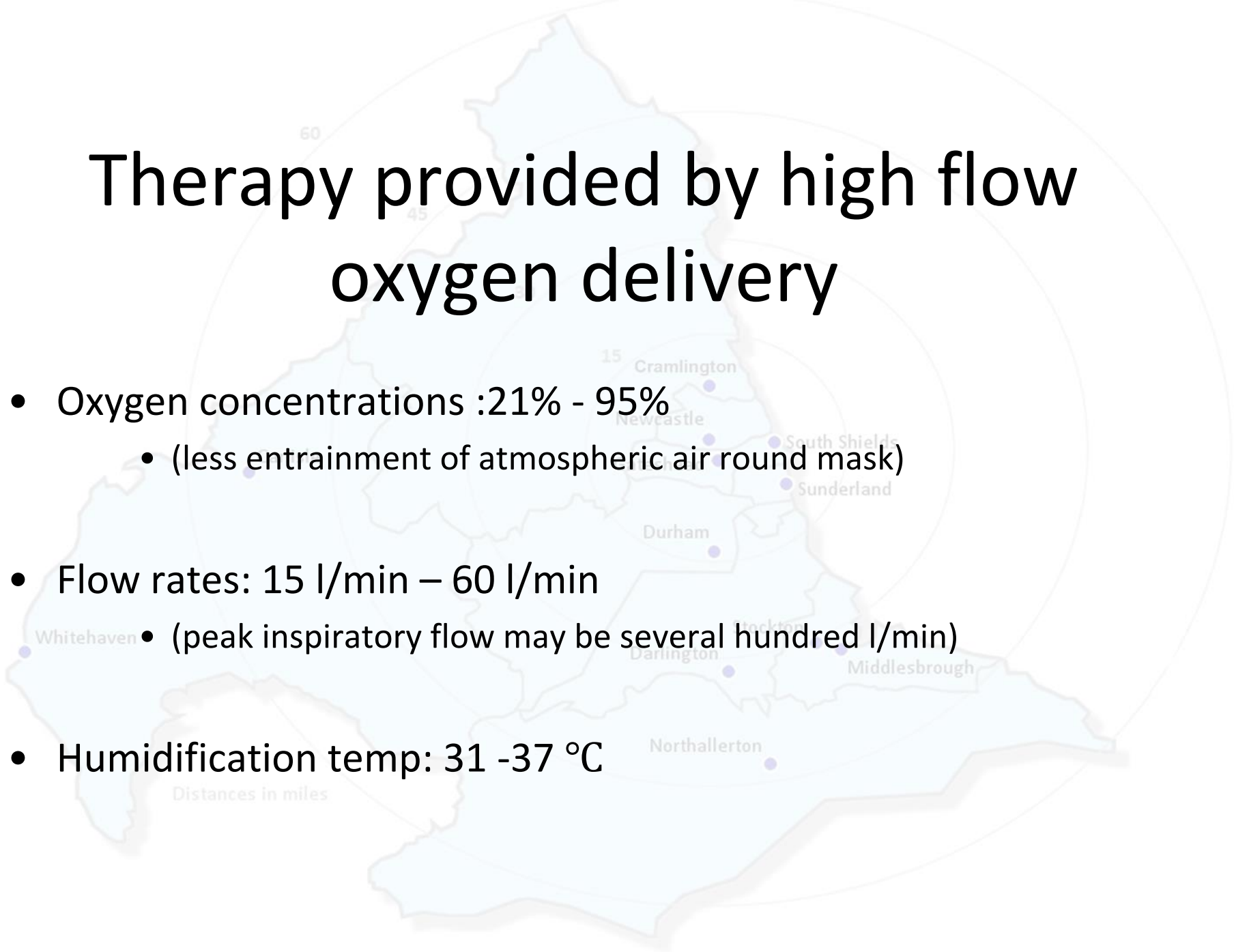
Darlington

Middlesbrough

Northallerton

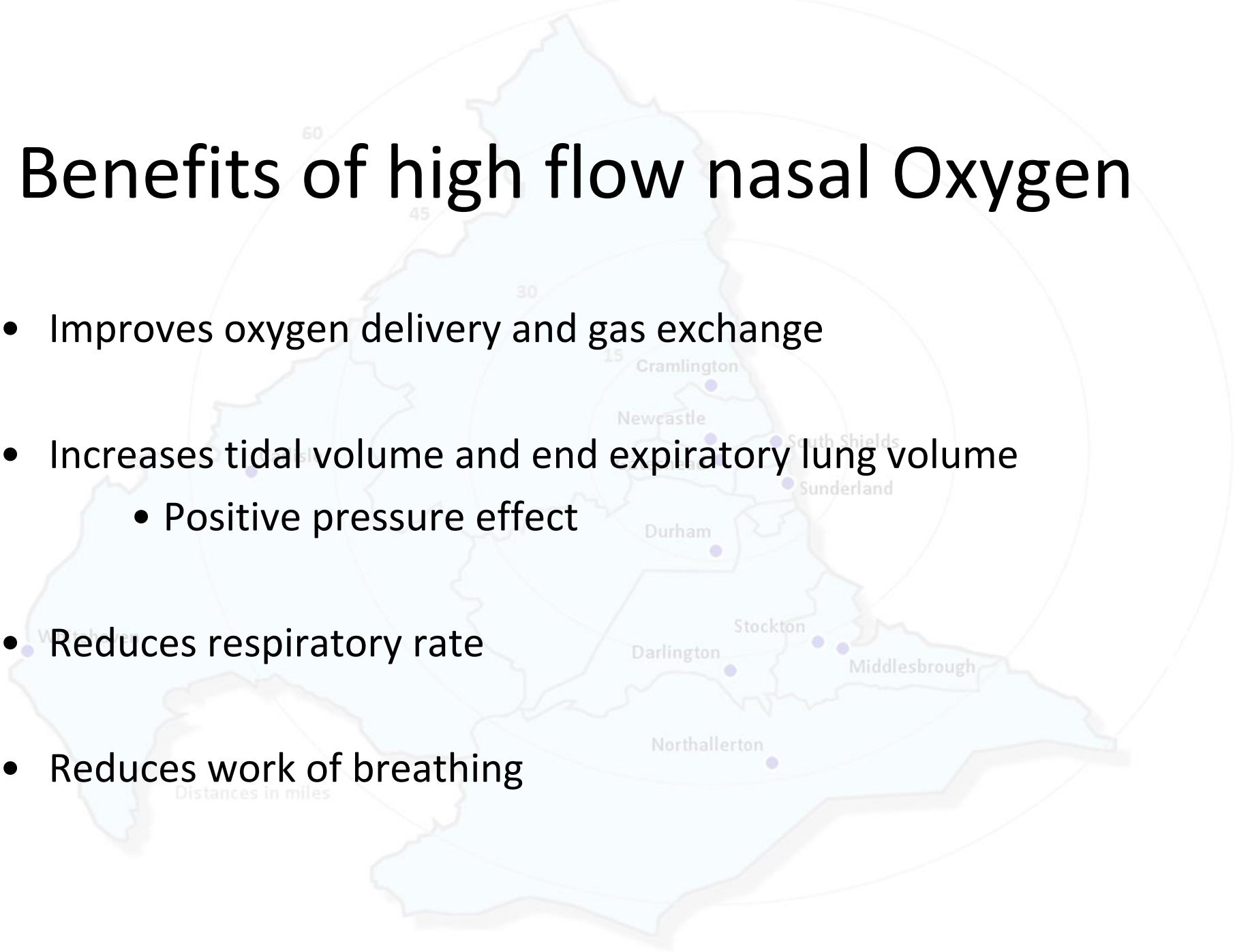
Therapy provided by high flow oxygen delivery

- Oxygen concentrations :21% - 95%
 - (less entrainment of atmospheric air round mask)
- Flow rates: 15 l/min – 60 l/min
 - (peak inspiratory flow may be several hundred l/min)
- Humidification temp: 31 -37 °C



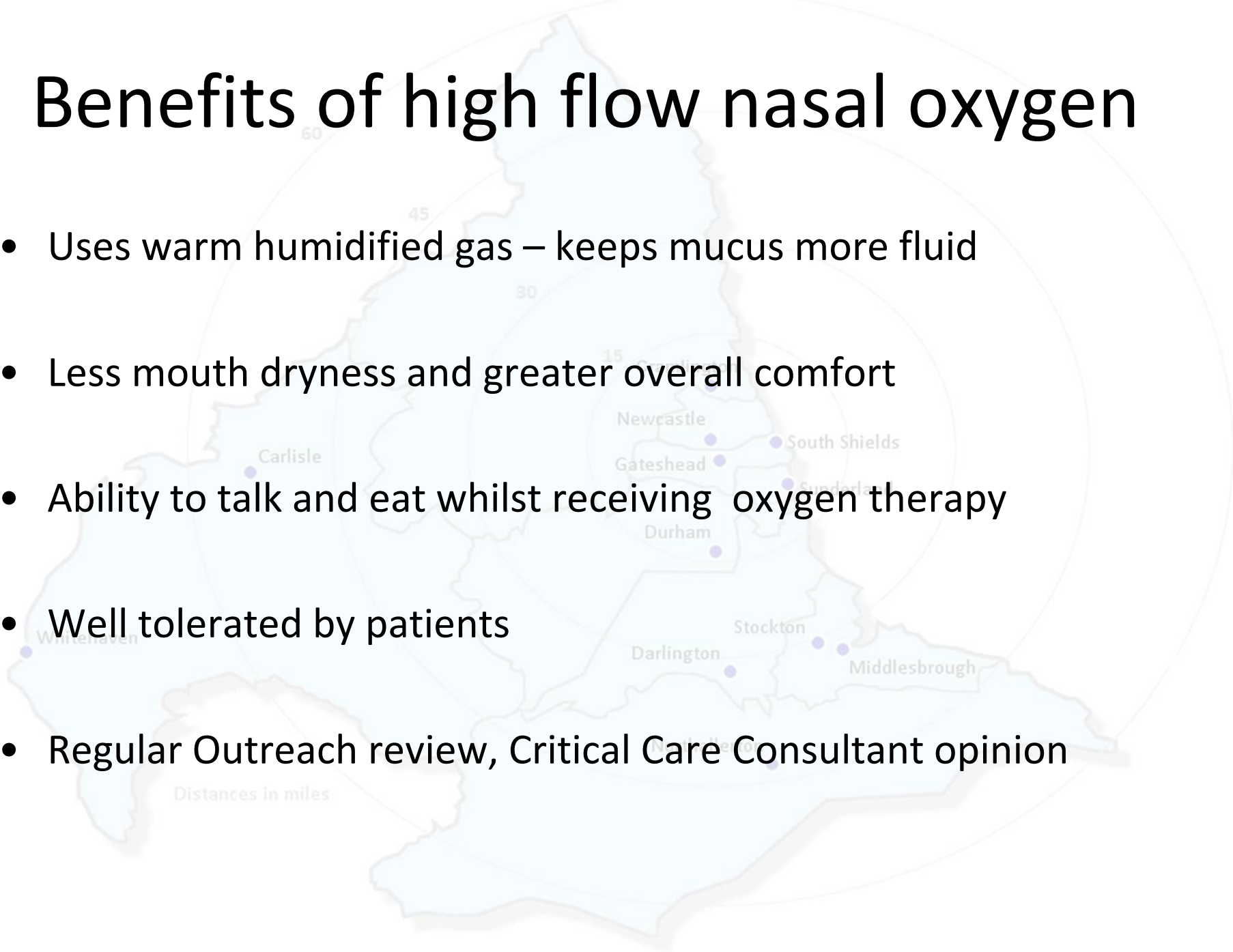
Benefits of high flow nasal Oxygen

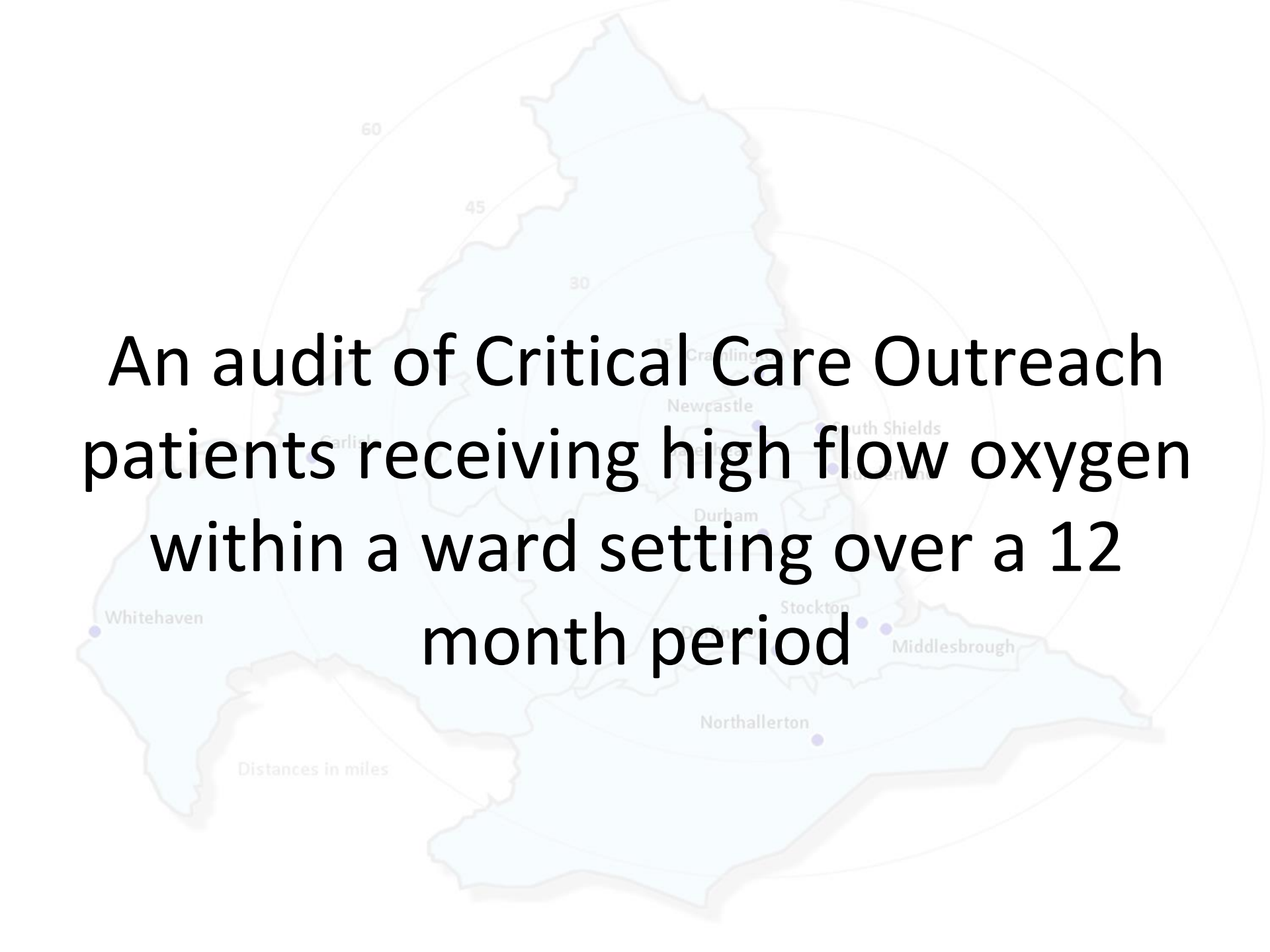
- Improves oxygen delivery and gas exchange
- Increases tidal volume and end expiratory lung volume
 - Positive pressure effect
- Reduces respiratory rate
- Reduces work of breathing



Benefits of high flow nasal oxygen

- Uses warm humidified gas – keeps mucus more fluid
- Less mouth dryness and greater overall comfort
- Ability to talk and eat whilst receiving oxygen therapy
- Well tolerated by patients
- Regular Outreach review, Critical Care Consultant opinion

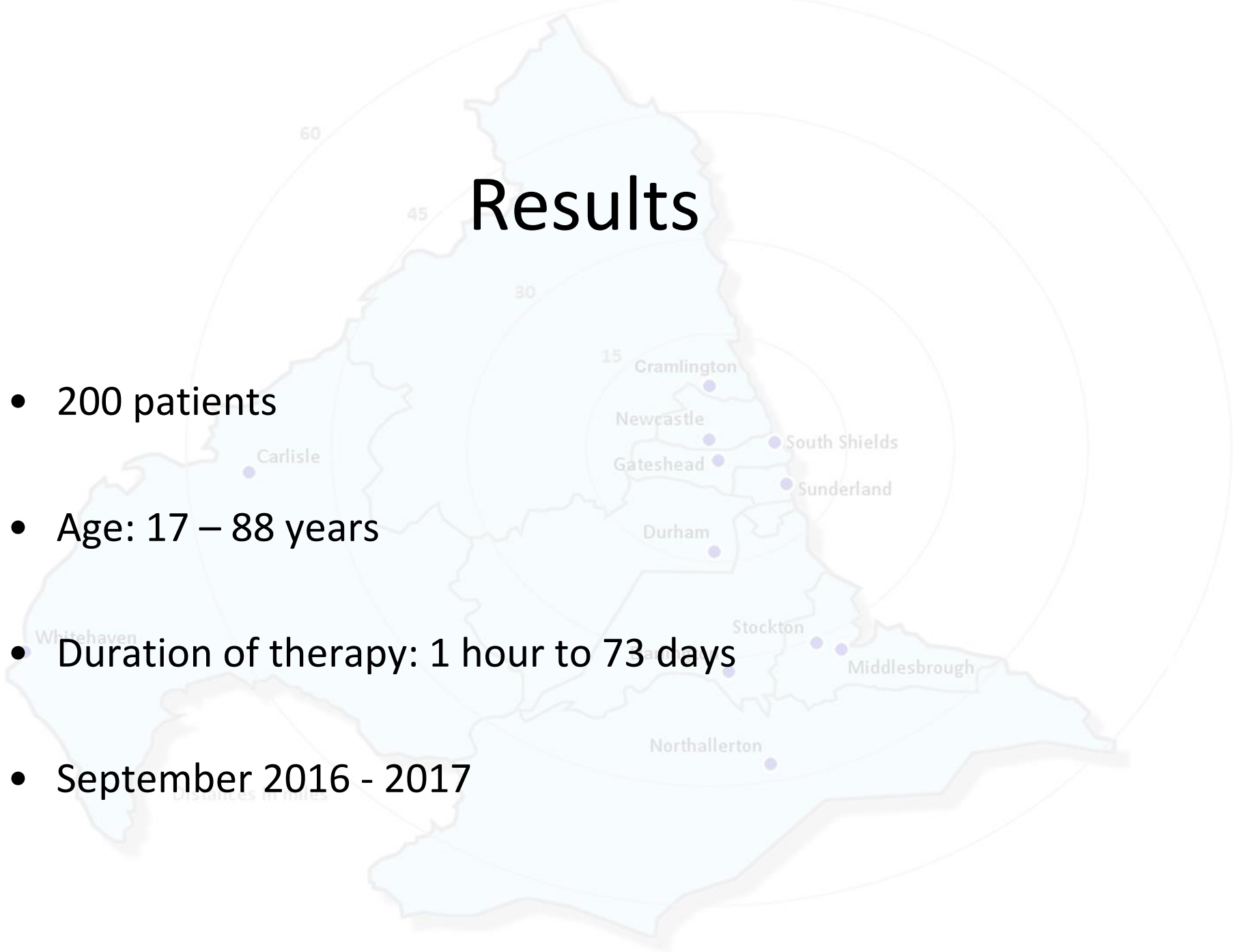


A map of North East England is shown in the background, featuring a light blue landmass and a grey sea. Concentric circles representing distances in miles are drawn around Newcastle, with labels for 15, 30, 45, and 60 miles. Several cities are marked with blue dots and labeled: Whitehaven, Carlisle, Newcastle, South Shields, Durham, Stockton, Middlesbrough, and Northallerton. The text 'Distances in miles' is located in the bottom left corner of the map area. Overlaid on the map is the following text:

**An audit of Critical Care Outreach
patients receiving high flow oxygen
within a ward setting over a 12
month period**

Results

- 200 patients
- Age: 17 – 88 years
- Duration of therapy: 1 hour to 73 days
- September 2016 - 2017



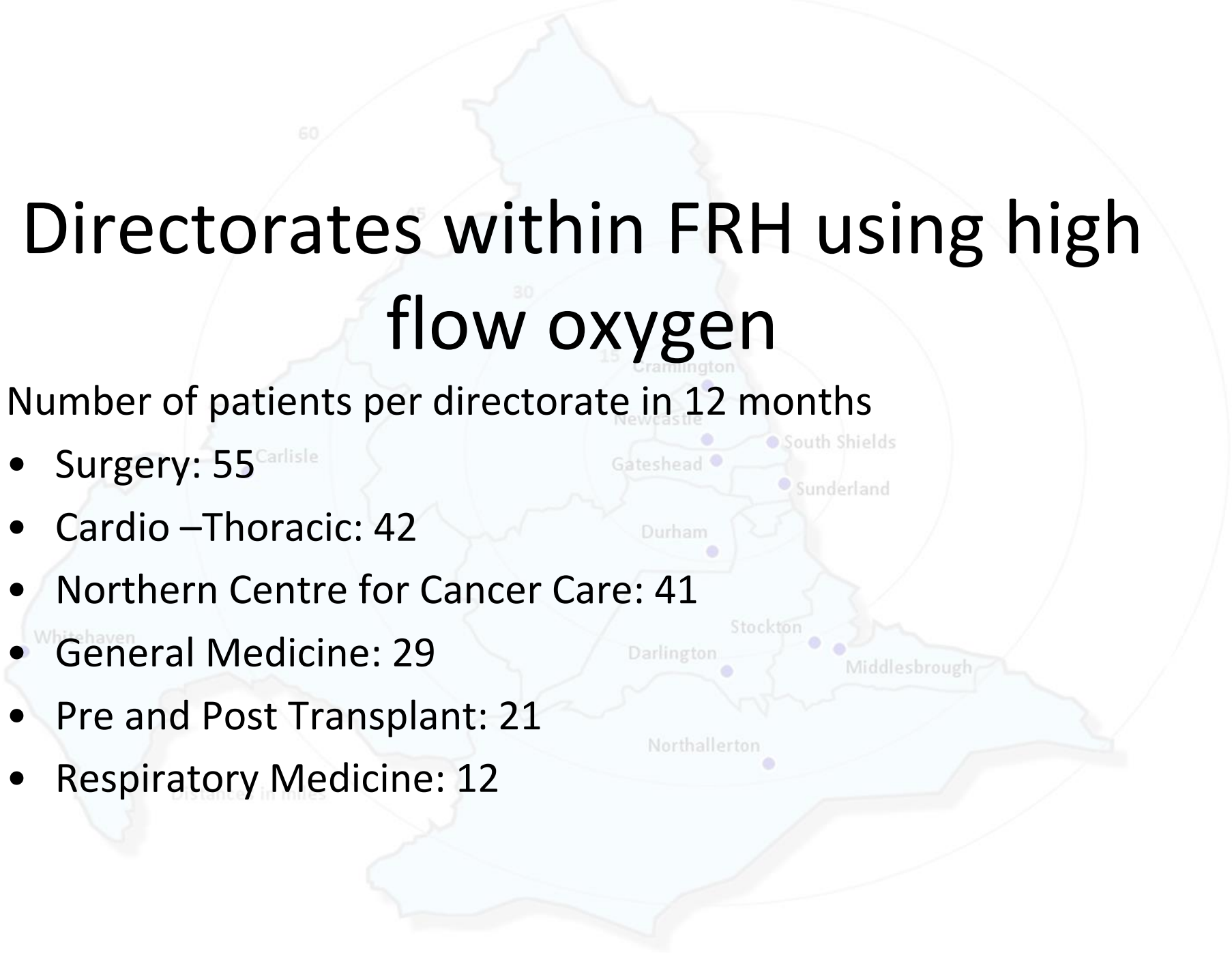
Reasons HF oxygen therapy started

- Chest Infection (CAP, HAP, Atypicals): 114 patients
- Pre Transplant: 9 pts
- Discharge from Critical Care on HF oxygen: 9 pts
- Atelectasis: 8 pts
- Pulmonary oedema: 8 pts
- Pleural effusion: 6 pts
- Tracheal stenosis/Airway issues: 2 pts
- Pulmonary haemorrhage: 2 pts
- P.E: 2 pts
- Combination of above: 35 pts
- Other: 5

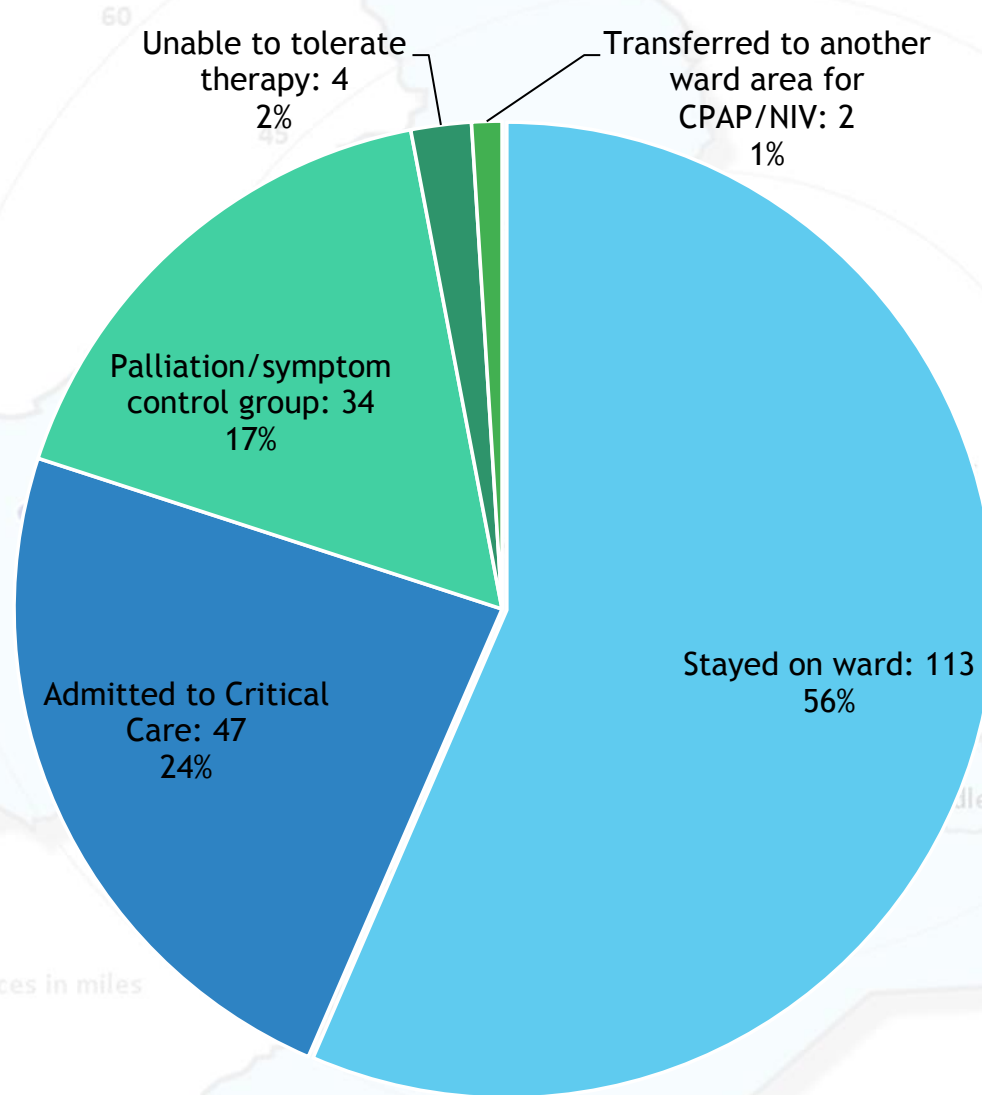
Directorates within FRH using high flow oxygen

Number of patients per directorate in 12 months

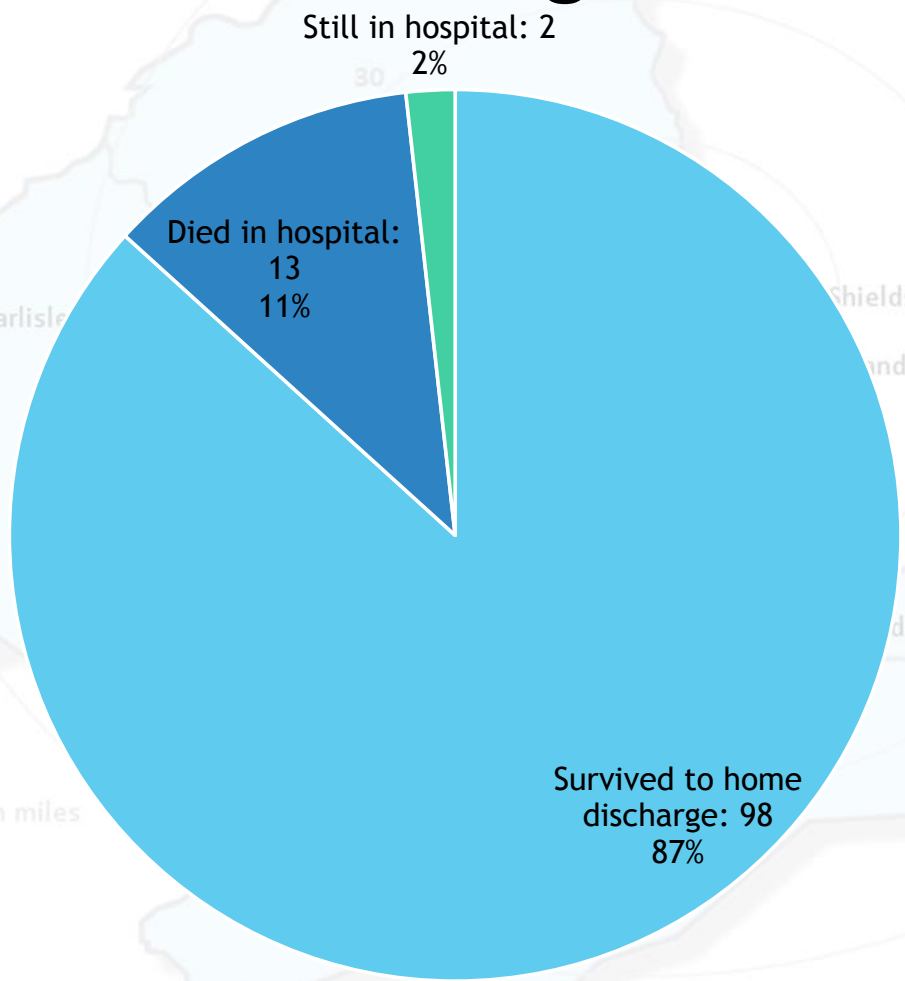
- Surgery: 55
- Cardio –Thoracic: 42
- Northern Centre for Cancer Care: 41
- General Medicine: 29
- Pre and Post Transplant: 21
- Respiratory Medicine: 12



Patient outcomes



Outcomes of patients who remained on high flow oxygen therapy within ward setting



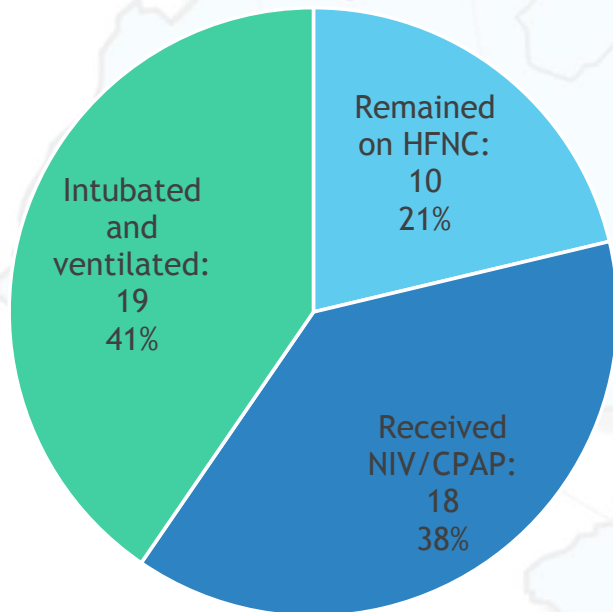
Distances in miles

Patients who were appropriate for escalation of care, received high flow oxygen on ward and did not require admission

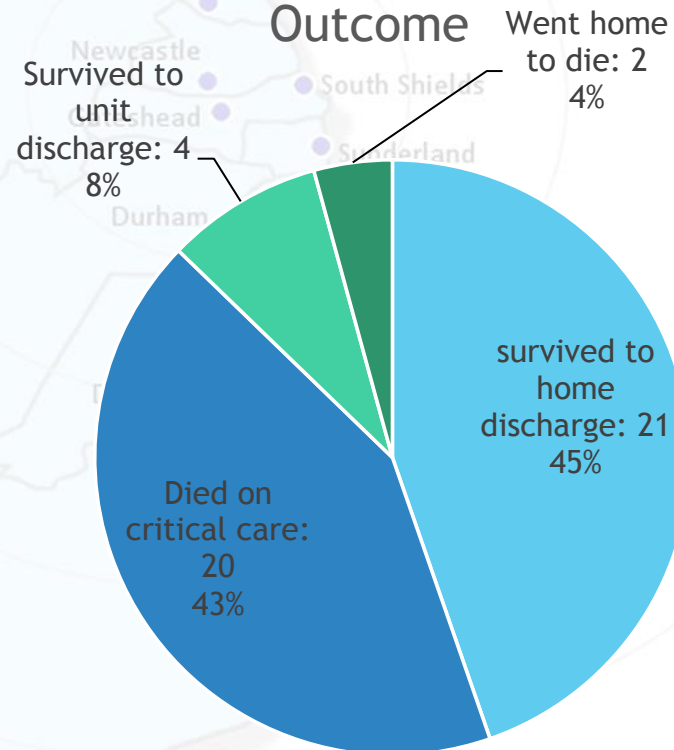
- 113 patients
- HF oxygen therapy was used for a total of 479 days
- Potential Level 2 days saved: 479 within critical care units at FRH
- Cardiothoracic ITU – 237 days
- Integrated Critical Care Unit – 242 days
- Potential cost savings £380,000 in 12 months period
- Increased Critical Care Capacity, ? Reduction in elective cases being cancelled

Outcomes of the 47 patients admitted to Critical Care Units

Therapies

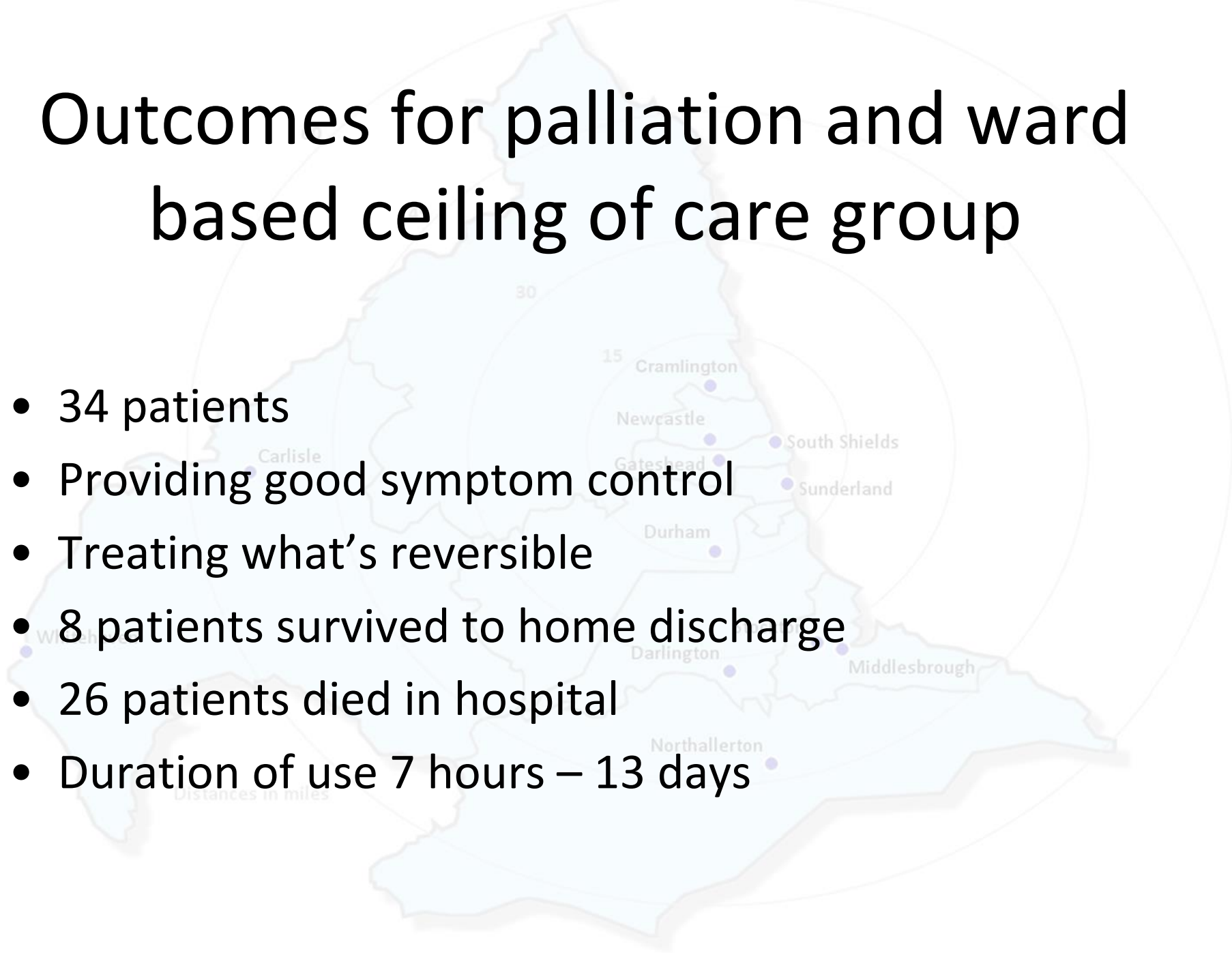


Outcome



Outcomes for palliation and ward based ceiling of care group

- 34 patients
- Providing good symptom control
- Treating what's reversible
- 8 patients survived to home discharge
- 26 patients died in hospital
- Duration of use 7 hours – 13 days



Benefits to the patient

A map of the North East of England region, centered on Newcastle. Concentric circles represent distances in miles from Newcastle: 15, 30, 45, and 60. Various cities are marked with blue dots and labeled: Cramlington, Newcastle, Gateshead, Sunderland, Durham, Stockton, Darlington, Middlesbrough, Northallerton, and Witley. The text 'Distances in miles' is visible at the bottom left of the map.

- Improves outcomes (?)
- It makes them feel better and quickly!
- Buys time for other therapies to start working, (or in some cases bridges to lung transplant)
- Helps prevent and reduce Critical Care Unit admission, enabling patients to stay within the ward area with staff they know
- It's comfortable and well tolerated, the patient can talk, eat and drink
- Provides symptom control while treating what's reversible and for those patients who are receiving EOL care

Added Benefits of Critical Care Outreach taking the lead with HF oxygen

- Competent practitioners with expertise in patient deterioration, assessment and clinical skills reviewing this critical group of patients
- Helping to maintain safety throughout the hospitals by the sharing of knowledge and working in a partnership with our colleagues on the ward
- Close links to Critical Care units allowing prompt referral
- Providing 24/7 cover to the whole hospital
- Sharing of Critical care skills and ward nurses expertise