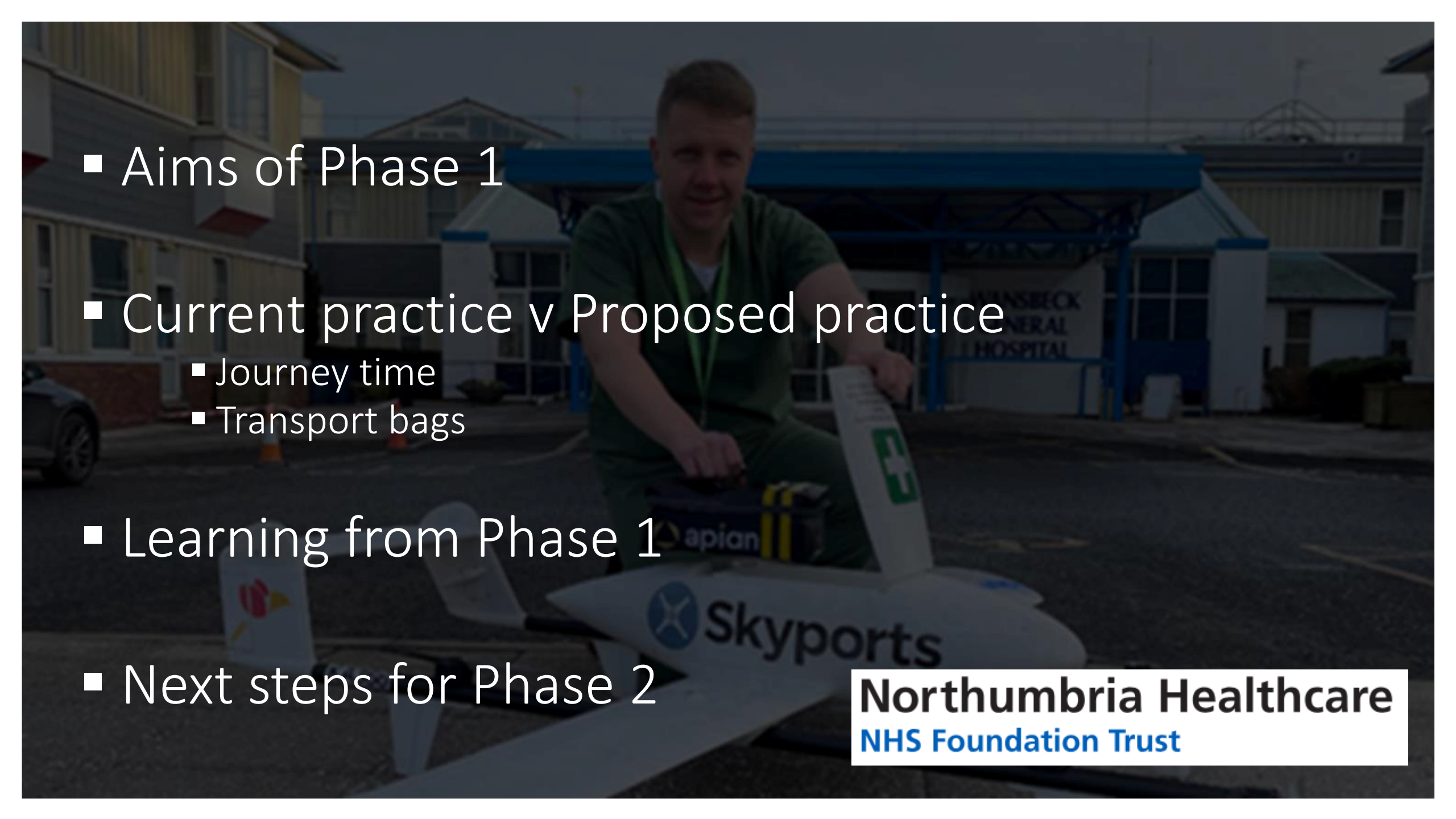


A man in a green uniform is holding a white drone with 'Apian' and 'Skyports' logos. The drone is positioned in the foreground, and the man is standing in front of a hospital building. The background shows a multi-story building with a sign that reads 'WANSICK GENERAL HOSPITAL'.

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Drones trial in partnership with Apian and Skyports

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- 
- A man in a green uniform is sitting on a white Skyports trolley in front of a hospital building. The trolley has the Skyports logo and name on it. The background shows a large hospital building with a blue awning and the words 'WANSBECK GENERAL HOSPITAL' visible. The man is smiling and looking towards the camera.
- Aims of Phase 1
 - Current practice v Proposed practice
 - Journey time
 - Transport bags
 - Learning from Phase 1
 - Next steps for Phase 2

Phase 1

12-week trial (February – May 2023)

Aim: “Trial transporting chemotherapy medicines from Wansbeck General Hospital to Alnwick and Berwick Infirmaries.”

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OUR

HOSPITAL SITES

- 1** **HEXHAM GENERAL HOSPITAL**
Corbidge Road, Hexham, NE46 1QJ
- 2** **NORTH TYNESIDE GENERAL HOSPITAL**
Rake Lane, North Shields, NE29 8NH
- 3** **WANSBECK GENERAL HOSPITAL**
Woodhorn Lane, Ashington, NE63 9JJ
- 4** **THE NORTHUMBRIA HOSPITAL**
Northumbria Way, Cramlington, NE23 6NZ
- 5** **ALNWICK INFIRMARY**
South Road, Alnwick, NE66 2NS
- 6** **BERWICK INFIRMARY**
Infirmary Square, Berwick-upon-Tweed, TD15 1LT
- 7** **BLYTH COMMUNITY HOSPITAL**
Thoroton Street, Blyth, NE24 1DX
- 8** **HALTWHISTLE WAR MEMORIAL HOSPITAL**
Westgate, Haltwhistle, NE49 9AJ
- 9** **MORPETH NHS CENTRE**
The Mount, Morpeth, NE61 1JY
- 10** **ROTHBURY COMMUNITY HOSPITAL**
Whitton Bank Road, Rothbury, NE65 7RW

Key considerations of Phase 1

- Cold chain
- Vibration
- Chain of custody

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Drone specification

Skyports Swoop Kookaburra Mk III hybrid drone

Maximum take-off weight	17kg
Maximum payload	3kg
Power	Fully electric powered - Vertical take-off and landing (VTOL)
Maximum speed	78mph (68knots)
Maximum endurance	68 minutes (at maximum take-off weight)
Wind limitation	30mph (27knots) from any direction
Operating temperature limitation	0°C / +45°C

Journey time:

Ashington to Alnwick
(21 miles)

Ideal road journey = 31 minutes

Drone flight = 38 minutes*

(*includes road journey to/from take-off/landing sites)

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Journey time:

Ashington to Berwick
(45 miles)

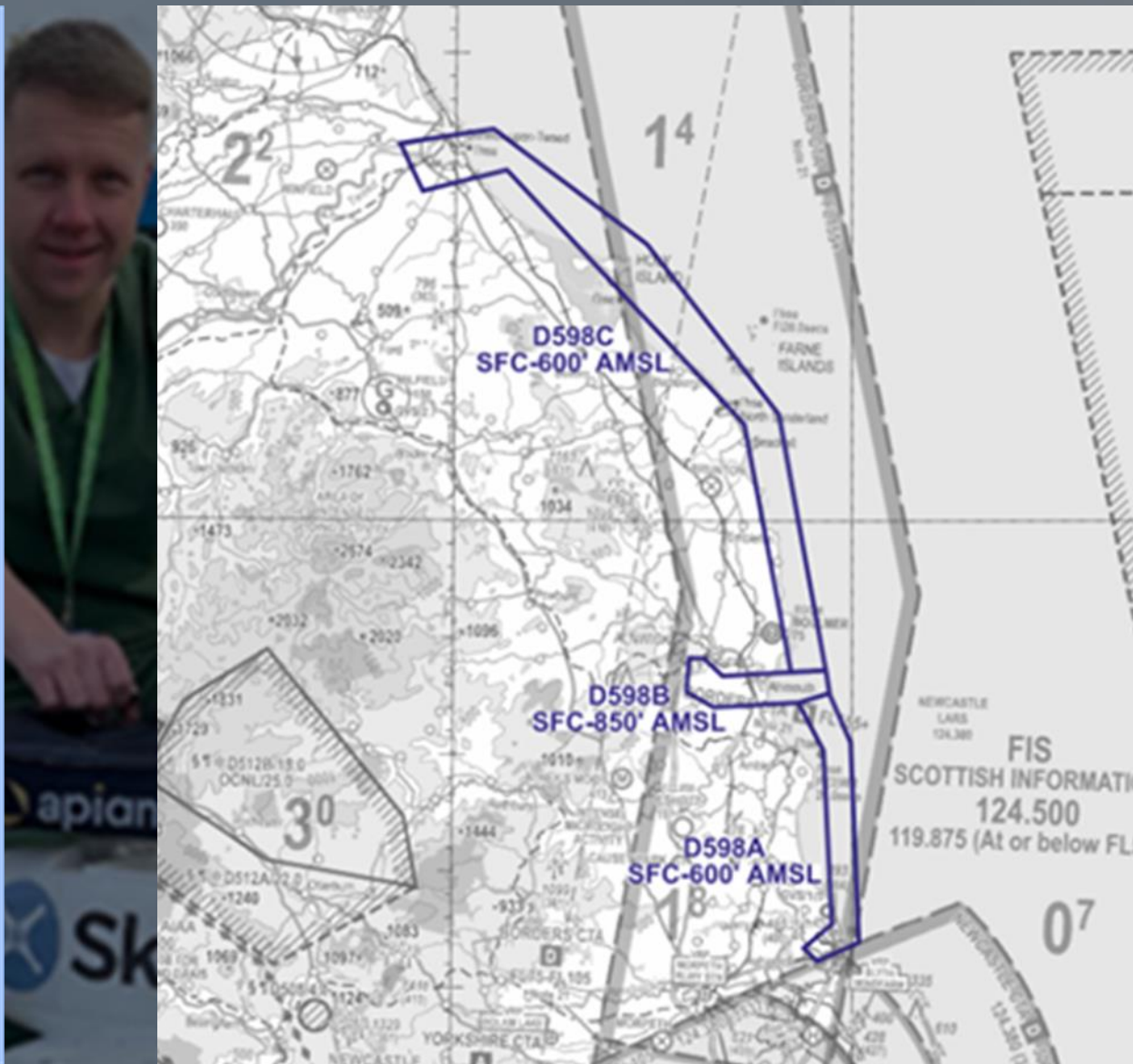
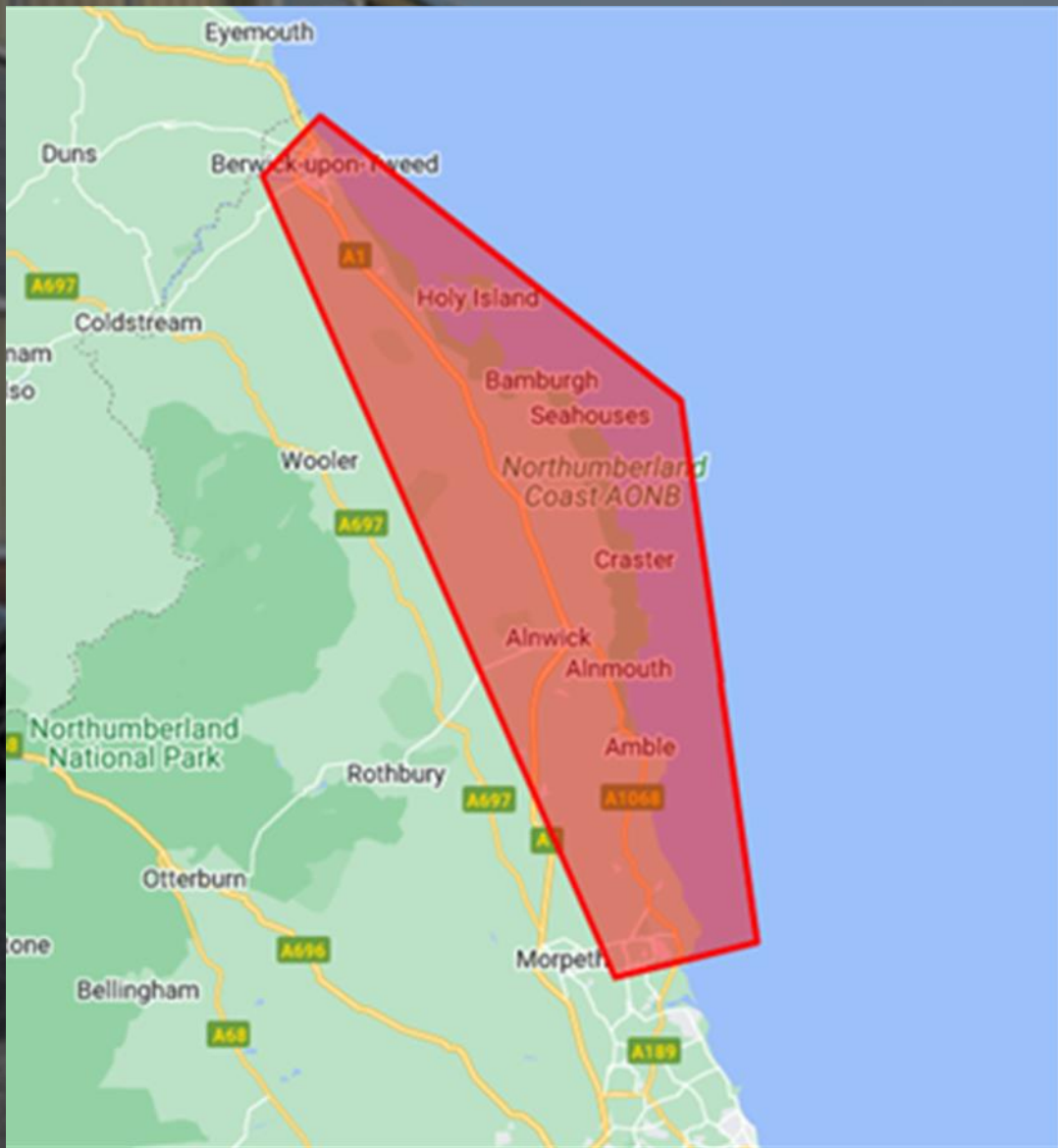
Ideal road journey = 71 minutes

Drone flight = 108 minutes*

(*includes road journey to/from take-off/landing site – and stopover at Alnwick)

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Transport bags

Currently: 18L Versapak bag

Proposed: 3L Versapak bag

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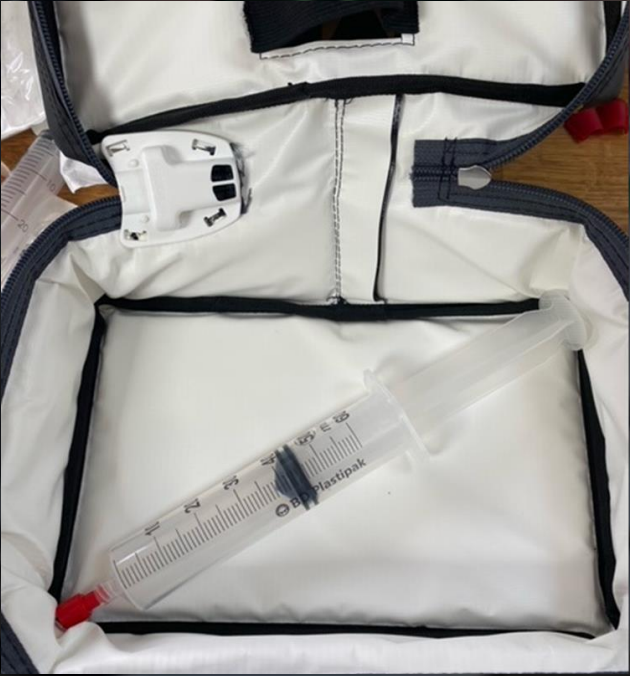


3kg payload limitations

250ml bag



50ml syringe



ICECATCH cool brick



Phase 1 learning

- Cold chain difficult to maintain throughout whole journey. Deviations occurring at start/end of journey.
- Validation flights 10 empty bag, 10 full bag (mock products) both temperature conditions:
 - Fridge temperature 14/20
 - Room temperature 4/20
- In-flight temperatures during validation flights remained in range.

Phase 1 summary

- Chain of custody and Vibration not assessed during Phase 1.
- Temperature concerns preventing further validation at this stage.
- Take forward into Phase 2.

Phase 2 – What next?

Bigger drone with bigger payload.

(Previous Apian project – less reliable for multiple journeys)

More thermally efficient bag, dependent on drone capacity.

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Phase 2 - next steps for Northumbria

- Engagement with MHRA GDP Inspector: long-term suitability of drone delivery considering - GDP guidelines.
- Room temperature oral products. Build up to transporting PPU-manufactured products in future phases.
- Northumbria envisages drone delivery would not replace current delivery methods, but supplement what is already in place.

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Video: Planning for future innovation

Andrew Edmunds, Director of Innovation

Northumbria Healthcare's vision for the future and importance of innovation...

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