Pre-hospital pathway aid (PHPA)

Chris Ashton

Greater Manchester Stroke Operational Delivery Network Coordinator, HCPC Registered Paramedic & Associate/Specialist Lecturer (MMU and Edge Hill)

NHS Greater Manchester Stroke Operational Delivery Network

Salford Royal NHS Foundation Trust University Teaching Hospital safe • clean • personal

CONNECTED HEALTH CITIES A nhsa project

MANCHESTER 1824 The University of Manchester

NHS North West Ambulance Service NHS Trust

Pathway dilemmas and decisions?

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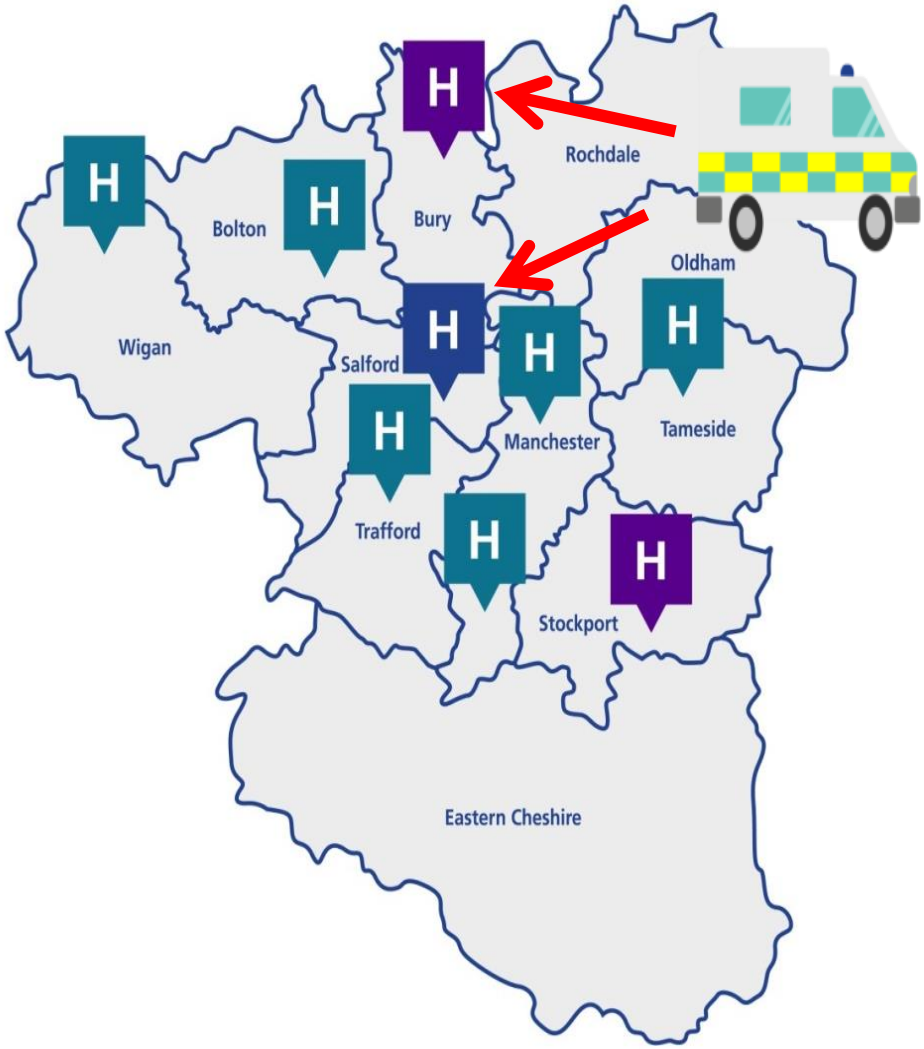

- FAST status?
- Time window?
- Any exclusions present?
- Nearest receiving unit?
- Do I know the area?
- Is it open?
- Operational hours? Can I get there?
- FAST symptoms resolved/resolving?
- Medications?
- How long on scene?
- Pre alert?
- Confusion with other pathways!
- Clinical Support delays in uncertainty!

NHS North West Ambulance Service NHS Trust

Greater Manchester and Eastern Cheshire Stroke Pathway

Operational 13 March 2018

NHS Greater Manchester Stroke Operational Delivery Network

History/AVPU/ABCD Assessment

Base Line Observations

FAST POSITIVE ON ASSESSMENT? NEW ACUTE ONSET OF SYMPTOMS

- **<4 Hours** — Nearest Hyper-Acute Stroke Unit
- **4 - 48 Hours** — Nearest Hyper-Acute Stroke Unit
- **Over 48 Hours** — Transport to local ED as normal * (excludes NMGH & Royal Oldham)

Patient on any anticoagulation medication LISTED BELOW?

- **Yes** → RED Stroke Standby. Use ASHICE mnemonic. Include name and D.o.B
- **No** → No Pre-Alert needed

Salford Royal (Hope) 24 hours
Fairfield (Bury) 06:45—22:45
Stepping Hill (Stockport) 06:45 –22:45

Remember 'Time is Brain', minimise on scene time <15 minutes

TREATMENT CONSIDERATION

- Consider Cannulation (unaffected arm)
- Witness to accompany the patient where possible
- Document last seen well time
- 12 lead ECG if clinically appropriate —a 12 lead is not required to diagnose a Stroke.
- Document any irregular heart rate or AF

FAST NEGATIVE
Follow normal NWAS clinical Procedures

Clinical Advice is available from the Clinical Support Hub or an Advanced Paramedic.

PATHWAY EXCLUSIONS

AGE - < 16 years old

A - Airway compromised following basic manoeuvres
B - RR - <10 >30
- Sp02 <90% post high flow O2
C - BP (systolic) - <90mmhg
HR - <40bpm or >150bpm
D - GCS—7 or less
- **Any seizure activity reported during or causing, this incident / 999 call.**
G - BM < 4.0 mmols post treatment

Transport to Nearest appropriate Emergency Department and provide a pre-alert as per NWAS standby notification procedure where appropriate

Anticoagulant medication

Direct oral anticoagulants (DOACs) –

Apixaban, Rivaroxaban, Dabigatran or Edoxaban

Vitamin K antagonists -

Warfarin or Sinthrome

Patients in the Pennine Acute Hospitals Trust catchment area will continue to go to Fairfield and not NMGH or Royal Oldham.

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Connected Health Cities Compliance Results

01/09/2015-28/02/2017 (18 months)

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- SRFT attendances only
- Non SRFT catchment area patients only
- 4216 Suspected stroke arrivals

- Airway compromised not measured
- Pre alert adherence not measured
- >48 hours since onset not measured

- Analysis suggests up to 500 patients arrived incorrectly at SRFT and may have a had a more suitable destination in line with pathway rules

GMSODN Stroke training and education scoping exercise (Aug 2016)

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The understanding of stroke presentation, pre hospital intervention and timeliness of care is poor.

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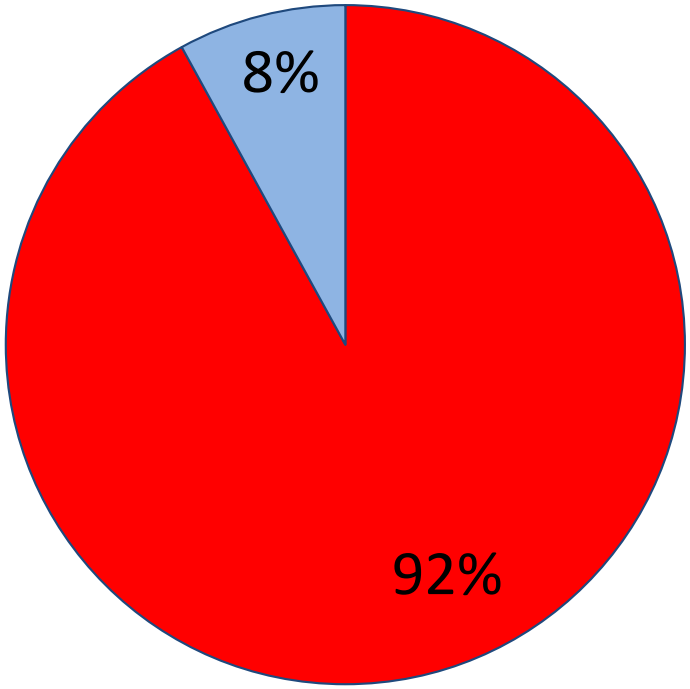

" 92% of respondents feel there are gaps in current stroke training and education "

GMSODN, 2016

Was there a solution?

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- To aid pathway compliance, we developed and piloted a smartphone app to support and improve pathway decision making.

- Taking the patient to the "right place at the right time for the right care" is paramount for improving health, improving patient experience and is cost effective for the NHS.

Pre Hospital Pathway Aid (PHPA) app

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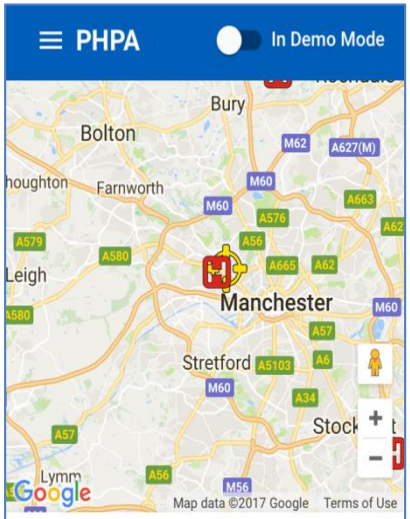
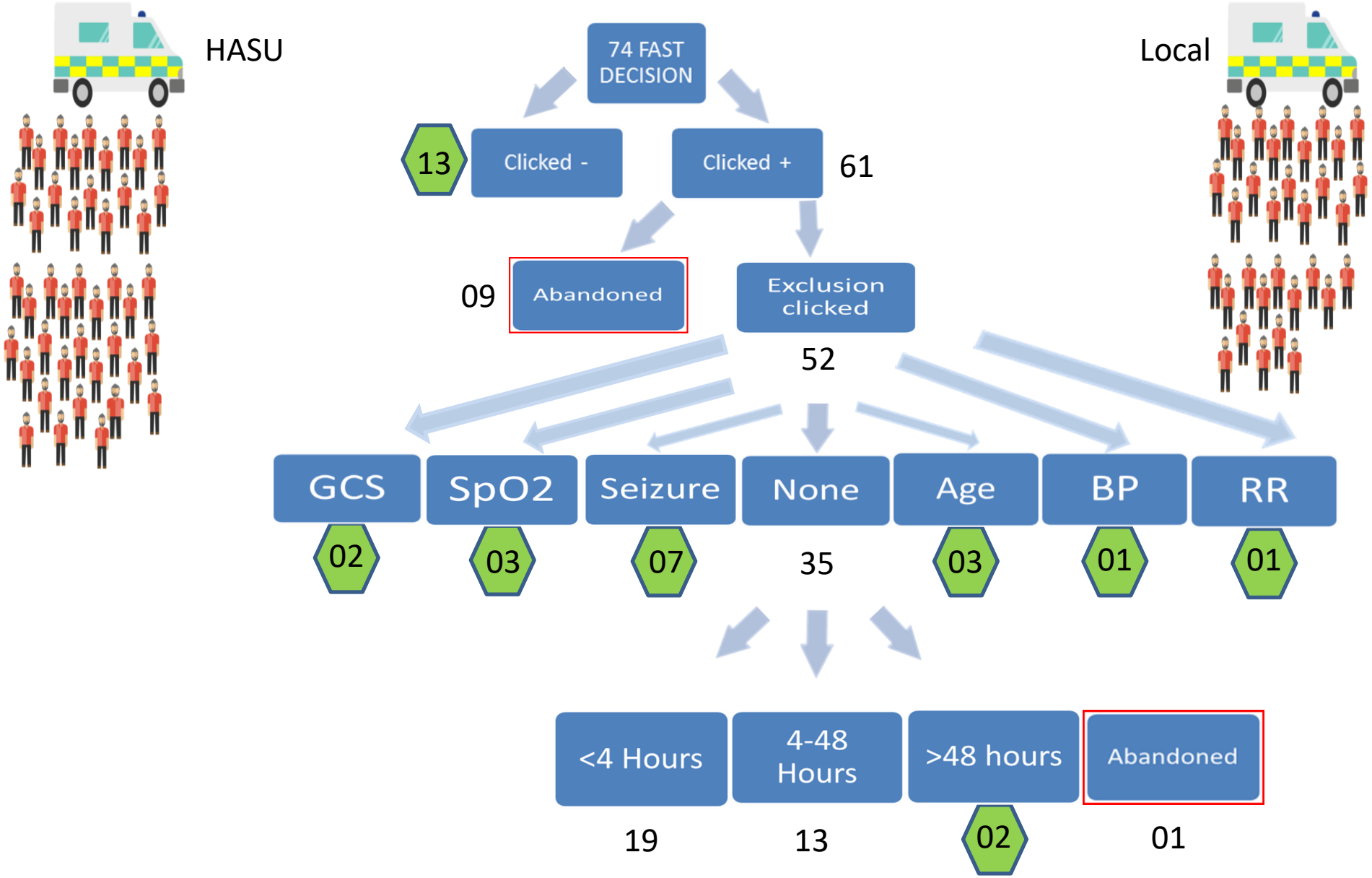
- At a "AHSN Mobilise the NHS hack day" the GMSODN Coordinator, a NWAS paramedic and a SRFT Neurologist worked with a developer (D2Digital) to design the "Pre Hospital Pathway Aid" (PHPA) app.
- The app was designed to support all pre-hospital pathways but initial development and testing has focused on the GM Stroke Pathway. Ghost menus are available within the app for other conditions.
- Reproduces GM pre-hospital stroke pathway
- Directs to nearest open HASU or ED
- Prompts to pre-alert (< 4 h)
- Nearest hospital finder embedded
- A beta version was provided to 74 paramedics that volunteered to test the app.



To aid borderline decisions by paramedics - The hospitals are drawn from a list which includes those within and just outside Greater Manchester borders.



Green Hexagon = The Number diverted to the nearest appropriate hospital in relation to incident location

Total = 32/74 (43%)

Pre-hospital pathway aid

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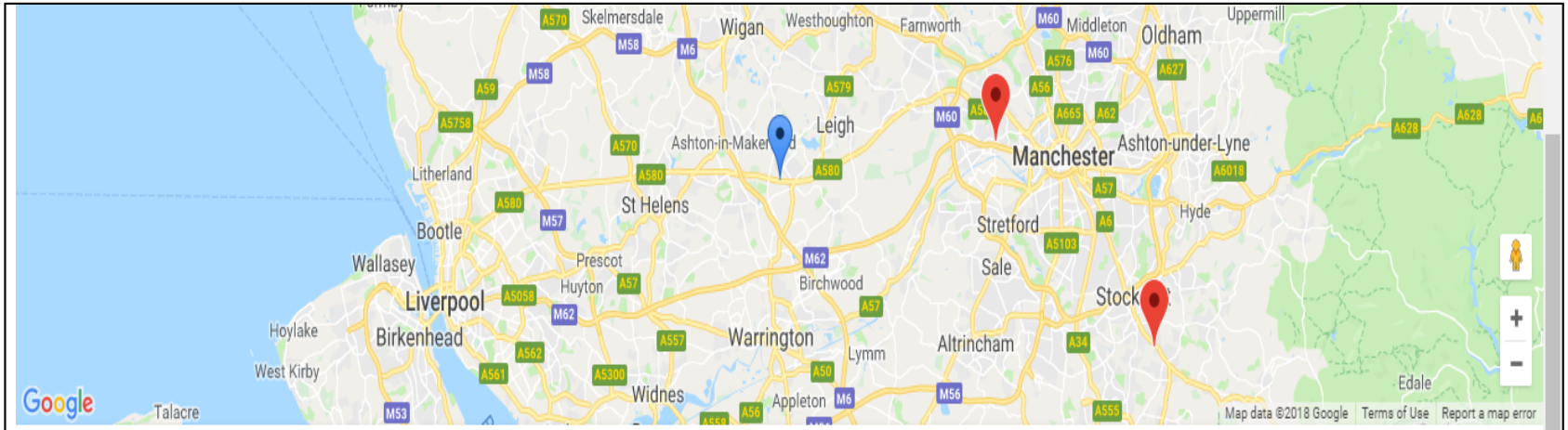

To aid borderline decisions by paramedics - The hospitals are drawn from a list which includes those within and just outside Greater Manchester borders.

Salford Royal - 16.8 mi

- A & E Open 24 hours
- Hyper Acute Open 24 hours

Fairfield General Hospital - 19.7 mi

- A & E Open 24 hours
- Hyper Acute Closes in an hour

Stepping Hill Hospital - 29.1 mi

- A & E Open 24 hours
- Hyper Acute Closes in an hour

Does it work?

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"The app comes across as a brilliant, simple and effective idea that reduces the need for paramedics to carry around pieces of paper and allows them to instantly decide on the most appropriate place of care based on the symptoms they may be presenting with. Having experienced a stroke myself, I vividly remember the paramedic on that day trying to work out and discuss where he should take me. This app would have made that decision clearer and faster for him on that occasion."

Ann Bamford, stroke patient and chair of the (GMSODN) patient and carer group.

PHPA video link – https://vimeo.com/267198349

Impacts of the PHPA

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1. Reduction in the number of inappropriate attendances at GM HASUs due to non-compliance of the pre-hospital pathway

2. Reduction in the number of unsafe transfers of patients to HASUs where they should be taken to a nearest ED

3. Increases the selection of the correct nearest HASU for crews with poor local geographical knowledge

4. Reduction in calls to Ambulance Clinical Support Hub when crews are uncertain of the pathway (improves efficiency within NWAS)

5. Improved intervention numbers (thrombolysis and thrombectomy)

6. Reduction in the number of additional ambulance transfers back to a local hospital for patients brought to a HASU inappropriately

National benefits

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- Local pre hospital stroke triage filters can be added with ease
- Assist pre hospital clinicians to “GIRFT”
- Allow instant updates and change in clinical practice
- Apps are educational
- Would allow any new tools to be implemented with ease
- This app or one of similar functionality can host other clinical pathways (It has been developed for numerous pre hospital pathways)

Next steps

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- Prospective study to measure the impact of the app on the breach arrivals at SRFT (Nov 2019)
- Research work currently ongoing into a potential new assessment tool or one to work in conjunction alongside FAST
- Launch focus groups with users for feedback on the app use within the field of practice

Thank you for inviting me to share our work

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Thank you for listening

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Thank you to all my contributors

Christopher.ashton@srft.nhs.uk

CONNECTED HEALTH CITIES
A nhsa project

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The University of Manchester

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