Recovery and Learning: The role of research

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During uncertain times – how do we ensure research plays its part?

• COVID-19 shock
  • Enormous changes in clinical need, patterns and volume of demand
  • Hiatus in provision of usual care, especially elective care; and in active research
  • Lack of evidence to underpin provision of care in new circumstances, for new and existing health care needs
  • Scramble for COVID-19 related research funding
  • Some expedited research permissions processes to allow timely production of evidence particularly re vaccines

• Example of research funded through Urgent Public Health Rolling Call: TRIM study

• Lessons learned, looking forward …
What TRIage model is safest and most effective for the Management of 999 callers with suspected COVID-19? A linked outcome study (TRIM)

Collaboration - essential

Study lead: Swansea University Medical School

• Co-applicants and collaborators:
  • **Universities** – University of Stirling; Kingston University; St George’s University London; Lincoln University
  • **Ambulance Services** – Welsh Ambulance Service NHS Trust; East of England Ambulance Service NHS Trust; East Midlands Ambulance Service NHS Trust; West Midlands Ambulance Service; Yorkshire Ambulance Service; National Ambulance Research Steering Group; College of Paramedics
  • **Other NHS**: Acute hospitals in East of England, East and West Midlands, Yorkshire; NHS Digital
  • **Public contributors**

• Funded by: **MRC via UKRI-DHSC COVID-19 Rapid Response Rolling Call July 2020 – June 2021 £360,000**
Context - cast your mind back to March 2020

- COVID-19 pandemic caused a surge in 999 calls in some areas... Like New Years’ Eve everyday ...
- Ambulance services cannot and should not attend and convey all COVID-19 patients
- 2 stage triage:
  - Who to attend?
  - Who to convey?
- Under-triage = potential patient harm; Over-triage = unnecessary resources used/hospital acquired infections
- Uncertainty about disease, risks, transmission routes
- Many 999 staff sick or isolating
Research aims

• To evaluate models used to triage and manage emergency ambulance service care for patients with suspected COVID-19 who call 999 in England, Wales and Scotland

• To describe triage models used during 2020 COVID-19 pandemic in the UK; call categorisation, attendance and conveyance associated with each model
  • Survey

• To understand which models worked best to get the right patients to the right care
  • Linked outcomes – deaths/ITU/hospital admissions/COVID-19 infection
  • Stakeholder interviews
Phase 1 methods

• Survey of all UK ambulance services (n = 13);
  • Emailed questionnaire to all Chief Executives copied to Research Leads, email and telephone reminders

• The questionnaire covered:
  • Triage tools used February - August 2020 to identify and allocate responses to 999 calls coded as suspected COVID-19
  • Data related to 999 calls received, those coded as suspected COVID-19; attendance and conveyance outcomes
Questionnaire results: Call centre triage

• Two initial call triage systems used: AMPDS (n = 8), NHS Pathways (n = 4)

• Services made modifications to nationally agreed protocols:
  • upgraded response to calls e.g. ‘ineffective breathing’, STEMI
  • added questions about travel and symptoms

• Calls further triaged by paramedics, nurses, advanced paramedics or GPs/other medically trained staff, through “Clinical Hub” or links with e.g. NHS 24, 111

• Various tools used for triaging less acute cases: Manchester Triage System; Lowcode, NHS Pathways, Odyssey, NHS Inform
Questionnaire results: On scene triage

Services reported a range of protocols to support decision making on scene, including

- NEWS2
- Manchester Triage System
- JRCALC App
- Senior clinical advice was available remotely to support decision-making – from within the ambulance service or through external arrangements e.g. 111, “Consultant Connect”.

Study of 999 Call Centre Triage of Suspected Covid-19
Total emergency calls by service and week of study

Study of 999 Call Centre Triage of Suspected Covid-19
Calls identified as COVID-19

Study of 999 Call Centre Triage of Suspected Covid-19
Total 999 calls, COVID-19
Attended, conveyed

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<tr>
<th>Service (popn)</th>
<th>Total 999 incidents</th>
<th>% suspected Covid-19 incidents</th>
<th>% of suspected Covid-19 incidents attended</th>
<th>% of suspected Covid-19 incidents where patient conveyed</th>
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Key findings: Call volume

- Call volume varied widely between services
  - UK peak 13.1% above baseline (service range: -0.5% to +31.4%)
  - All services ended period with lower call volume (service range: -3.7% to -25.5%)
- Suspected COVID-19 calls totalled 604,146 (13.5% of calls)
  - Wide variation (service range 3.7% to 25.7%)
  - Within services variation was wide
    - AS12: 47.7% suspected COVID-19 at peak in early April
    - AS4: 11.4% at its highest
- Two effects
  - Sharp rise and then gradual fall in calls coded as suspected COVID-19
  - Rise and then fall in total emergency calls.
  - Trends peaked and troughed at different times
Key findings:
Prehospital triage outcomes

Wide variations found in
• proportion of calls to which a vehicle was dispatched for face to face assessment and care:
  • 79% across all services, from 59% to 100%
  • No clear relationship with call volume
• proportion of patients conveyed to the ED
  • 44% across all services, from 32% to 54%
  • lowest rates of conveyance were seen in the two ambulance services with the lowest volume of calls coded as suspected COVID-19
TRIM progress

• Phase 1 results published August 2021

**Call volume, triage outcomes, and protocols during the first wave of the COVID-19 pandemic in the United Kingdom: Results of a national survey (nih.gov)**

• Permissions required including ethical approval, R&D approvals, CAG, data sharing agreements have been lengthy, interdependent, inconsistent and almost insurmountable at times

• Study extension approved to allow data linkage and analysis

• All permissions now in place, ambulance service data transferred to NHS Digital

• Awaiting datasets for analysis in order to answer key research question

  *With so much variation, what worked best for patients?*
Wider lessons

• Now in new era – recovery?
  • Patients with COVID-19
  • Patients with other ‘usual’ conditions
• Demand continues to be volatile, unpredictable, overwhelming at times
• Triage crucial for care of patients with COVID-19 and other health emergencies
• Research must play a role in informing policy and practice by understanding:
  • Clinical/social needs
  • Provision of care during COVID-19
  • What worked well and what didn’t
• In order to produce timely evidence we need to be slicker across the research process, particularly in securing permissions to undertake work