Ambulance service patient management outside hospital – evidence & lessons learned

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Where we are

- Range: 27.9 - 57.6% (March 2015)
- Netherlands 27%
- Spain (Andalucia) 76%
- Spain (Basque) 20%
  Tel advice, 15%
  Nurse/Dr home visit, 16% info only

Source - AQI
# Population utilisation of emergency ambulance services

<table>
<thead>
<tr>
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<th>Calls/100 popn</th>
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<tbody>
<tr>
<td>Belgium</td>
<td>33</td>
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<tr>
<td>Czech Republic</td>
<td>21</td>
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<tr>
<td>Hungary</td>
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<td>Ireland</td>
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<td>Latvia</td>
<td>20</td>
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<td>Lithuania</td>
<td>29</td>
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<td>Norway</td>
<td>17</td>
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<td>Turkey</td>
<td>4</td>
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<td>UK</td>
<td>13</td>
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- Variable utilisation across countries
- Access for range of health needs not just emergencies
- Lacking comparable data on responses and conveyance

• Telephone based services
• Ambulance clinician care outside hospital
• Demand & information
• Networks

What evidence is there on the effectiveness of different models of delivering urgent care? A rapid review

Janette Turner, Joanne Coster, Duncan Chambers, Anne Cantrell, Viet-Hai Phung, Emma Knowles, Daniel Bradbury and Elizabeth Goyder

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http://www.journalslibrary.nihr.ac.uk/hsdr/volume-3/issue-43#abstract
Telephone based services

- Primary evidence on efficiency, effectiveness and patient experience
- Managing requests for emergency or urgent care
- 10 SR (33 articles) and 44 primary research studies, 7 trials
- Outcomes – Accuracy; compliance; safety; satisfaction; costs; service impact; access
Summary findings

- Accuracy high for minimising risk. Inaccuracy tends to over-triage
- Adverse events very low
- Risk-averseness = safe but not efficient
- Compliance mixed but generally good - higher for Self-care/ED than primary care
- Satisfaction high and well liked by users
Which clinician?

• Only 7 studies reported different staff types, 3 comparing Dr v nurse

• Mixed results on appropriateness – nurses tend to higher level care

• Higher satisfaction with Dr triage & higher repeat calls in nurse group

• High acuity and non-urgent easier to assess, urgent more complex so may benefit from higher level clinician - ?2 tier
Gaps

• Individual, system or both? – no comparisons of triage systems
• Only 3 studies were on services using non-clinical call handlers (2 OOH, 1 NHS111)
• Little assessment of impact – usually single other service. Only 1 US & 2 UK have addressed system impact
• Limited study of costs & results mixed
• Simplify access? – remarkably little attention
Management by ambulance clinicians outside hospital

- Extended care paramedics, treat & leave or refer, ED avoidance, urgent conditions
- 7 SR (21 papers), 12 primary studies, 3 trials
- Outcomes – decision making; referrals/admissions; ED transports; costs; satisfaction
Summary of findings

• Small number of high quality studies support extended paramedic roles

• Safe decisions, reduced ED transports, high satisfaction and acceptable; cost-effective

• Decision making is complex and needs to be underpinned by right education

• Small scale, single sites using sub populations of patients or clinicians
Gaps

- Workforce implications at scale – numbers; skill-mix; training & education; costs and cost-effectiveness
- Better understanding of population case-mix – is there a threshold for non-conveyance?
- Pathways to support decision making and referral to further reduce ED transports
- Whole system impact
Understanding demand (or not)

- Trends over time; characteristics of demand; all E&U care services
- 4 reviews, 8 primary studies
- Increasing demand trend across developed countries. Population utilisation growing faster for ambulance
- Demographic changes explains some but not all increases - Health needs; socioeconomic; patient behaviours; policy
Gaps

- Few attempts to map demand, characteristics and relative effects, what is needed to respond
- Mainly single service – not whole system
- Lack of population based studies & identification of risk factors for access
- Inability to forecast
Networks

- No empirical evidence on operating models and effectiveness
- Evidence for specific conditions – but not generalisable to a heterogeneous population
- Pressing need to conduct robust evaluation of emerging network models to identify what works best
Main messages

• Map and characterise population demand at a system level

• Assess network development, existing evaluation and commission longer – term impact evaluation

• More work on pathway development and requirements for delivery at scale (including costs)

• Information systems to support
Network management

Service delivery

Monitoring & Evaluation

Demand profile & planning

Information
PhOEBE progress

- Linked dataset – CAD; ePRF; HES A&E; HES; ONS mortality
- 188,414 calls
- 63% to ED within 24 hours; 31% treated and discharged at scene; 6% telephone
- ED patients 16% admitted – mortality 0.1%
- Not conveyed – 25% attended ED; 4.3% admitted, 0.3% died
VAN (Variation in non-conveyance)

• Commissioner interviews
• Success depends on engaging, collaborative and motivational working relationships
• Challenges - access to information to enable decision making
• Scale of the geographical commissioning area
• Collaborative working, complexity, lack of resource
• Role as quality enforcers and reporters
VAN – Service interviews

- local and national guidelines
- out of hours provision
- commissioning approaches
- paramedic factors
- the wider health care system and its resources,
- patient factors
- availability and quality of training and support for paramedics
• Effectiveness, Cost-effectiveness, Efficiency & Acceptability of Alcohol Intoxication Management Services (AIMS)
• What supports successful implementation – key emphasis on frontline staff
• Acceptability to users and impact on ED users
• Impact on KPI – health service & ambulance
• Reduction in violent assaults
• Costs and cost-effectiveness
• 6 Intervention and 6 Control cities
• Funding NIHR HS&DR - 30 months @irvingad82
Priorities

1. System wide – information systems; understanding & mapping demand and need
2. Development of pathways & joined up services; networks
3. Ambulance clinician workforce and delivery at scale
4. NHS 111
5. NHS 111