



MCRU Programme 2006-2010

Emergency and urgent care systems

Final Interim Report of phase 2006-2008

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Summary

The Medical Care Research Unit is undertaking a five year research programme (2006-2010) focused on the emergency and urgent care system. This is the final interim report of the early phases of the programme (2006-8) for internal use by the Department of Health. These early phases involved study of the way in which an emergency and urgent care system is managed (Networks), and development of performance monitoring of systems through use of routine data (Performance Indicators) and the patient experience and view of the system (Patient perspective).

Networks

A previous policy initiative introduced 'networks' of representatives of emergency and urgent care services to ensure that they communicated and coordinated services within the system. We undertook a descriptive study of emergency and urgent care networks involving face-to-face interviews with a number of network leads followed by an email survey of primary care trusts (PCTs) in England. The aim was to explore the constitution and work profile of existing networks. Key findings were:

- There is a substantial amount of network activity across the NHS in England with 96/152 (63%) of PCTs reporting some network involvement.
- There is considerable variation in the organisation, scope, function and maturity of networks. Re-organisation and mergers have disrupted network activity but have also provided the impetus for creation of a number of new networks.
- A common feature of all the networks is a focus on a whole systems approach to emergency and urgent care delivery with the network providing the organisational means of introducing change and achieving related policy initiatives.
- Networks have already designed and implemented a large number of service changes aimed at improving working across organisational and professional boundaries and hence improving emergency and urgent care delivery.

Performance indicators

Given the range of services, access points and pathways in emergency and urgent care, there is a need to develop a generic set of 'system-wide' performance indicators based on outcomes and processes of care, structure, and equity of performance. We developed a range of potential indicators which could be adapted to monitor the performance of any emergency and urgent care

system. We then used a Delphi-style study of stakeholders in the emergency and urgent care system to identify a set of 16 candidate indicators. Examples include case-fatality rates for a set of serious emergency indicator conditions, hospital admission rates for urgent indicator conditions, and time from first contact with any emergency and urgent care service to admission or definitive care. We reviewed the literature on performance indicators to develop a checklist of attributes of good indicators, and assessed our candidate indicators against the checklist.

Patient perspective

Networks and PCTs need to monitor routinely whether their local systems work from the patient perspective, and monitor the effect of any changes made to their systems. We undertook focus groups and interviews with recent users of the emergency and urgent care system to identify important characteristics of the system and then used this qualitative research to develop a questionnaire to capture the patient perspective of a system. We tested this questionnaire, and survey methodology for how best to administer it, using: a population postal survey of 1000 people; a market research company telephone survey of 1000 members of the general population, and a survey of 200 users of two services in the system. Key findings were:

- The market research company telephone population survey was superior to the postal survey in terms of being more representative, more inclusive of hard to reach groups, and more accurately reporting use of individual services in the system.
- Preliminary testing showed that the instrument was valid and reliable with three domains of satisfaction: entry into the system; progress through the system; and patient convenience.
- 15% (151/1000) of the population reported using urgent care in a three month period. Eight percent of system users contacted four or more services for an episode of care. The average pathway length was 2.1 services. 66% felt that their problem was definitely treated with sufficient urgency.
- We developed a Toolkit to help networks or PCTs undertake their own surveys.

Next phase

We have selected four networks/PCTs which plan to make significant changes to their systems in 2009. In 2009-10 we will test the feasibility of calculating the indicators, and test the responsiveness to change of both the indicators and the patient survey.

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1. Introduction

1.1 Status of this report

The MCRU has a five year research programme focused on the emergency and urgent care system (2006-2010). This is an interim report of early phases of the programme (2006-2008) to complement our regular meetings with policy leads at the Department of Health. It has been written as an internal report for the Department of Health and thus some background knowledge about the policy context. Any publications in peer reviewed journals will acknowledge the policy context of the programme.

1.2 Rationale for Health Systems Research

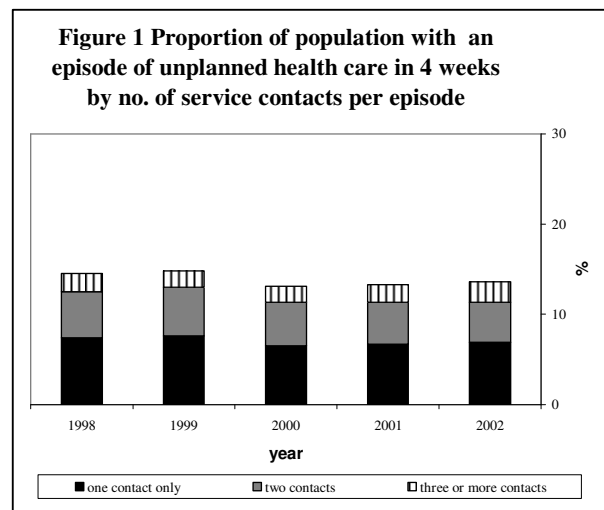
In October 2001 the government introduced a 10-year strategy for reforming emergency care. The strategy is based on six key principles.

- Services should be designed from the point of view of the patient;
- Patients should receive a consistent response, wherever, whenever and however they contact the service;
- Patients' needs should be met by the professional best able to deliver the service needed;
- Information obtained at each stage of the patient's journey should be shared with other professionals who become involved in their care;
- Assessment or treatment should not be delayed through the absence of diagnostic or specialist advice; and
- Emergency care should be delivered to clear and measurable standards.

The strategy addresses the performance of individual elements of the emergency care system such as ambulance response times and emergency department waiting. However, it also recognises that a more integrated approach is required to optimise the performance of the emergency and urgent care system from the patient's perspective, and this research programme is focussed on these system issues.

There is a vast amount of literature on health services research and whilst the focus of most is service-based, considerable research into care pathways that cross organisational boundaries has been reported. Patients experiencing an episode of ill-health may not attend or consult a single provider. Instead they may make several contacts often with different services, interacting with different clinicians and support staff. This is particularly true of patients contacting emergency and urgent care services, and a patient's experience of care when

they have an unplanned health care need often relates to the emergency care system rather than to single services. They may phone NHS Direct and visit their GP, or attend a walk-in-centre and later contact the out-of-hours service. For more serious emergencies they may be passed from the ambulance service to the hospital emergency department, and then on to a multi-agency community support team. Each of the individual services may be effective, efficient and safe - and yet the system may be inefficient, unsafe, and unsatisfying to the patient. Results of our surveys of users of emergency and urgent care systems suggest that most patients who contact the system make more than one contact per episode, with a significant proportion making 3 or more contacts (Fig. 1).



Although the quality of care provided by each service must be an important determinant of the overall quality of care provided by the system, an emergency and urgent care system (EUCS) is more than just its individual parts. The system has its own characteristics, such as accessibility, integration, appropriateness of referrals from one service to another, and speed and accuracy of information sharing. The system also has its own metrics, for example the number of services contacted before definitive care is received, and how long this takes. Users experience the system as well as the services, and so there are also questions about, for example, satisfaction with their pathway through the system.

The importance of the system as a whole is implicit in the recent white paper *Our health, our care, our say*, which notes that the urgent care strategy must focus on “introducing simpler ways to access care and ensuring that patients are assessed and directed, first time, to the right service for treatment or help”.

1.3 Four perspectives for Health Systems Research

We can distinguish four perspectives for Health Systems Research on the emergency and urgent care system:

1. The commissioner perspective

Commissioners of emergency and urgent care services, and policy-makers, are concerned with quality of care and performance against targets. Typically these are easily measurable, policy sensitive targets such as 48-hour access, 4 hour waiting times, and 8 minute response times. These process measures are the standards by which services are commissioned and therefore performance against these standards must be monitored, and other performance measures which are introduced shouldn't have any negative (or perverse) implications for these standards.

2. The service or provider perspective

In the service perspective we concentrate on measuring aspects (inputs, processes, outcomes) of a defined service. This is the traditional "pre-system" approach to evaluation. Thus, we would examine and compare the performance of ambulance services, emergency departments and so on in terms of measures such as waiting times, patient satisfaction, or critical incidents. Outcomes may also be used but they are outcomes focused on the service rather than the system, that is they are short term, (such as return of spontaneous circulation or death before discharge) and do not always represent the longer-term outcome over the whole episode for the patient.

3. The patient perspective

In the patient perspective we are interested in the quality and outcomes of care as experienced by individuals who use the system. While this may sometimes coincide with a service perspective, in urgent care it often will not, since the user often experiences a number of services in the course of a single episode of care. Thus, this approach leads us to ideas such as the patient pathway, the total time from symptoms/event to definitive treatment, and so forth.

4. The population perspective

In the population ("public health") perspective we are examining the impact of services and systems on the population as a whole, irrespective of which members of the population may be patients. Inherently, this perspective requires us to consider whether differences over time or between areas are attributable to

differences in populations (age, sex, incidence of disease, casemix), in services, or in the system as a whole.

1.4 Overview of the research programme

This research programme is concerned with investigating the Emergency and Urgent Care System (EUCS) from all four of these perspectives. There are three distinct parts to the programme reported here:

Networks

As a mechanism to deliver the objectives of the NHS Plan, emergency and urgent care networks are regarded by the Department of Health as a vital part of Reforming Emergency Care (http://www.dh.gov.uk/en/Healthcare/Emergencycare/Modernisingemergencycare/DH_4063735). Emergency and urgent care networks have been established to coordinate services within a EUCS. We consider how systems are managed in England by describing whether and how networks are used in England.

Indicators

We identify performance indicators based on routine data which, from a population perspective, provide a means of comparative performance monitoring of outcomes and events which are the result of the EUCS.

Patients

We develop and test a questionnaire to measure the performance of the system from the patient perspective. We develop a 'toolkit' to allow networks to measure routinely the patient perspective of their EUCS.

The final phase of the programme will involve working with four networks managing EUCS, further developing and testing our indicators and toolkit, and finally measuring the performance of these EUCS using our indicators and toolkit.

2. Emergency and Urgent Care Networks

2.1 Background

In 2000 The NHS Plan¹ set out a vision for the future of the Health Service and a strategy for modernisation. Within the Plan were targets for the provision of emergency and urgent care. Since that time a number of reviews and policy initiatives have been developed to guide implementation of urgent care targets in the NHS Plan including an Out of Hours review,² Reforming Emergency Care³ and Taking Health Care to the Patient⁴ cumulating in the current development of the Direction of Travel strategy for urgent care.⁵

All of these initiatives have a common theme, which is that to be achievable some means has to be found to co-ordinate and organise a diverse group of primary, secondary, out of hospital (ambulance) and social care services into an Emergency and Urgent Care System (EUCS) that can implement and deliver a service that is efficient, effective and acceptable to patients. Delivery of the system can be achieved in a number of ways; Emergency Care Trusts could be established to provide a formal mechanism for emergency and urgent care delivery. Alternatively an arrangement of incentives and rewards without management could encourage organisations in a system to develop co-operative and co-ordinated services. A middle ground is the use of a managed network to provide a structured and focussed approach to developing and co-ordinating a system. Emergency and Urgent Care Networks (EUCNs) have been viewed as one means of managing the varied services within an emergency and urgent care system⁶ and this approach provides the focus for our further exploration of system development.

We have previously reported our early work on the theory and evidence of systems and networks, and the findings of initial empirical work conducted with 6 EUCNs.⁷ The next stage has been to conduct a survey of all Primary Care Trusts (PCTs) to determine current emergency or urgent care network (EUCN) activity. The aim of this survey was to describe the number and characteristics of EUCNs and the types of activities they are engaged in and hence provide a broad picture of the possible different approaches that are being taken. It was not designed as an evaluative study to assess the relative merits of different models of EUCN organisation or the success or not of individual networks.

2.2 Methods

2.2.1 – Questionnaire development

Key issues around EUCN organisation, management and activity had been identified from a number of case studies in the earlier report to DH.⁷ The main issues identified were:

- Size of network is important. Consideration of regional system requirements has to be balanced with the need to deliver services that are relevant and appropriate to local health economies
- Membership of local network Boards will reflect the strategic aims and objectives of the network but should at least include PCTs, Acute Trusts, Ambulance Trusts, NHS Direct, Mental Health Trusts, Patient Groups and Social Care.
- Networks have the potential to reduce inefficiencies, deliver innovative services, improve quality of care and give value for money. This can be achieved in a number of ways such as:
 - Defining, planning, implementing and evaluating cost-effective clinical pathways for patient care. This can include major service re-design
 - Modelling demand and patient flows across the system
 - Performance monitoring and audit
 - Information sharing
 - Providing information and communications to support patients and the public who access the EUCS
- Networks identified that success in achieving objectives and functions is dependant on a number of factors:
 - Senior level (Chief Executive) participation and commitment.
 - A framework of work streams and specialist groups to allow projects and initiatives to be taken forward
 - Engagement of a range of enthusiastic and committed emergency and urgent care providers and commissioners who are open to change and willing to work co-operatively
 - Dedicated network support – a minimum of a network manager and some administrative resource to support and manage network functions
 - Funding to support network management, project development and system wide information systems.

These findings formed the framework for questionnaire development. In addition the survey was designed to assess progress since the National Audit Office (NAO) survey of EUCN in 2003.⁸ The questionnaire therefore comprised replication of key, appropriate questions from the previous NAO survey and additional questions designed to address other issues identified by our earlier work. There were 4 main sections:

- Network details – type, membership, organisation and management
- Network strategy and reporting – including performance monitoring
- Network operation – including network activities
- Network achievements – Including barriers, challenges and future plans

2.2.2 – Participant identification

Since there was no centrally held list of EUCNs, we decided to contact PCTs to ask them to identify any networks to which they belonged and to give details about that network. Thus although we have sent the questionnaire to PCTs, the survey is about networks. All PCTs were eligible. A list of PCTs in England was obtained from the nhs.uk website. Every PCT was telephoned and asked for an email contact address for their emergency or urgent care lead. If a contact email address was obtained the questionnaire was sent to this individual. Where a lead could not be identified the questionnaire was sent to the PCT Chief Executive.

2.2.3 - Questionnaire distribution

Questionnaires were sent by email in October 2007. A covering letter was sent with the questionnaire explaining the purpose of the study. Where the questionnaire was sent to Chief Executives they were asked to forward the form to the appropriate person. Participants were also asked to send copies of any Terms of Reference for their network or other supporting documents with their completed questionnaire. A reminder was sent to non-responders in November 2007.

2.3 Results

2.3.1 – Response rate

One hundred and fifty two PCTs were identified from the nhs.uk website. Contact details for an emergency or urgent care lead were identified for 69 PCTs. A questionnaire was sent to every PCT identified. A total of 56 questionnaires were returned (37%). Where there was more than one PCT in a network one questionnaire was returned on behalf of all the PCTs in that network providing information on 103 PCTs and an overall response rate of 68%. Table 2.1 summarises the responses to the questionnaire.

Table 2.1 Summary of survey response

	Number
Total number of questionnaires sent	152
Questionnaires returned	56
Number of PCTs in responses for regional networks	85
Number of responses for single PCTs	18
Total number of PCTs	103
Total non-responders	49

Six questionnaires were not used in the analysis as they replicated information provided by another PCT within the same network. One PCT had no network and 6 PCTs were in the process of restructuring or re-organising network activities and so provided no further information for this analysis. This gave 43 useable questionnaires for analysis.

No questionnaire was returned from 49 PCTs and we therefore have no information about network activity in these areas. It is possible that there are additional networks that have not been identified. However, surveys are more likely to be responded to if it is of direct relevance and hence questionnaires not returned may reflect PCTs that have never been part of a network or have been involved in some form of network that has ceased to function.

2.3.2 Network characteristics

Of the 43 responses there were returns for 10 local networks (1 PCT), 22 regional networks and 10 responses from local networks that were members of a broader regional network. These 10 responses were considered separately as they provided information on the local network activity rather than the regional activity.

The number of PCTs in regional networks varied from 2 – 12. Half of these networks were for 2 PCTs very often following county boundaries. For example Derbyshire, Nottinghamshire, Shropshire and Bedfordshire have all formed a network of the 2 PCTs covering that county. These networks demonstrated a single tier model. There were 5 regional networks with 4 PCT members and one regional network with each of 3,5,8,9,11 and 12 PCT members. The larger networks (>8) tended to comprise a two tier system of a regional network providing strategic direction supported by local networks that implemented urgent care service development.

There were differences in the maturity of networks with a mix of active, well established networks, emerging networks and embryonic networks that were not

yet functioning. The reconfiguration of ambulance services and PCTs in 2006 has had some impact on network development so whilst some well established networks, for example that described for Southern Derbyshire in the previous report, have successfully built on their experience and expanded the network to now cover a single county, others have gone through a period of inactivity and dormancy whilst decisions have been made about how they will be structured in future. The reconfiguration has also been a catalyst for development with new networks being formed that have ambitious and wide-ranging plans. A detailed proposal for one of these new networks covering Bath and North East Somerset, Swindon & Wiltshire is given as an example in Networks Appendix 1.

Table 2.2 summarises the main characteristics of the networks which responded to the questionnaire and Table 2.3 gives a summary of the types of organisations involved in these networks. Four questionnaires provided no details of membership.

The majority of networks (70%) described themselves as formal with 30% classed as informal, that is, a forum for services to discuss emergency and urgent care strategy and issues but with no formal authority to implement change. For networks where a network manager had been appointed this was a full time post in 8 organisations and a part time post in 3, with 5 networks unable to specify how much time was dedicated to this role. In all networks where there was a manager, this role was funded either as part of another role or jointly by the PCTs aligned to the network. No networks had their own budgets for network activity other than provision of management and administrative support but a number had accessed funding by developing business plans for specific projects or service changes. Just over half of the responding networks had a network board to manage and oversee network activity. The majority of networks had clear lines of accountability and reporting mechanisms to high level authority, for example Health and Social Care Partnership Boards or Chief Executive Strategy and Planning Boards.

Table 2.2 – Main characteristics of networks

Characteristic	Local network	Regional	Local part of regional	Total
Type				
Informal	1	12	0	13
Formal	10	10	10	30
Total	11	22	10	43
Number of PCTs in network (range)	1	2-22	1-4*	
Number of member organisations in network (range)	5-14	3-22	3-11	
Network board				
Yes	6	8	6	20
No	5	9	4	18
Missing		5		5
Total	11	22	10	43
Network manager				
Yes	5	8	3	16
No	6	10	7	23
Missing		4		4
Total	11	22	10	43
Frequency of meetings				
Monthly	6	8	5	19
Bi-monthly	3	2	4	9
Quarterly	1	5	1	7
2 weekly	0	1	0	1
6 weekly	1	1	0	1
Missing		5		5
Total	11	22	10	43

*One local network comprised 4 PCTs as a sector of a large regional network

Table 2.3 Member organisations of networks

Organisation type	Local network	Regional	Local part of regional	Total
PCT	10	19	10	39
Hospital or Community Trust	9	16	10	35
Ambulance Trust	9	15	9	33
Mental Health Trust	7	6	3	16
Social Services	8	14	8	30
NHS Direct	3	10	5	18
Strategic Health Authority		1	3	4
Out of Hours provider	4	10	6	20
GP/Primary Care	4	3	2	9
Practice Based Commissioners	1	2	2	5
Patient/public member	5	2	2	9
Private residential care	1			1
Public Health	1			1
Police		1		1
Voluntary sector	1			1
Transport Executive		1		1
Walk in Centre		1	1	2
Allied Health Professionals		1		1
Community nursing			1	1
Pharmacy		1		1
Dental services		1		1
External communications consultants		1		1

PCT membership has been counted as a single organisation in the figures given in table 2.3. However 12 networks listed separate membership for provider and commissioning functions for PCT members and a number of other networks listed multiple PCT membership but did not differentiate the different functions.

There was wide variation in the number of member organisations for networks ranging from just 3 organisations (all PCTs) to 22 organisations and a mean 8.7 organisations represented. The most frequently represented organisations were PCTs, acute and community NHS Trusts, Social Services and Ambulance services. There was less representation of other key organisations such as NHS Direct, Out

of Hours providers and Mental Health Trusts and very little involvement of, for example, dental, pharmacy and community nursing services.

2.3.3 Network scope and function

Twenty four networks provided copies of their Terms of Reference (TOR) or network objectives. There has been some change in terminology and so whilst the majority of responders still used emergency or urgent care network as the descriptor of the organisation they were describing a small number had changed the focus, for example:

- Urgent Care and Capacity Programme board (West Kent)
- Partnership Board for Emergency & Urgent Care (Cornwall)
- Urgent Care Strategic Commissioning Board (West Yorkshire)

There was considerable variation in the scope and function of networks as described by their TOR. Network function can be summarised as three broad types

1. Networks which function in an advisory capacity and provide a forum for discussion, review, planning, strategy and prioritisation. With this model the network acts as an agent for ideas and oversees urgent care development but is not responsible for actual development and implementation of service change.
2. Networks which have an operational focus that includes specific work streams and projects concerned with implementation of service change with strategic direction provided by some other forum.
3. Networks that undertake both a strategic and operational role.

Boxes 2.1 and 2.2 provide examples of different network objectives.

Box 2.1 Example of Network objectives

Derbyshire Urgent Care Network Board - Objectives

To develop a Derbyshire wide strategic plan for the delivery of a system of urgent care and ensure that appropriate mechanisms are in place for effective implementation.

To ensure accountability for the implementation of the Urgent Care Strategy and the realisation of the planned benefits.

To develop whole-systems solutions and supporting partners in order to achieve the standards set out in national policies and strategies.

To ensure that there is timely and effective, clinical and professional engagement in developing service redesign and development.

To ensure that there is a mechanism in place for proactive public and patient participation and consultation.

To influence the development of an integrated workforce development strategy across all sectors of urgent care services in conjunction with the Workforce Development Teams in Derbyshire.

Promote and share knowledge of local and national developments in urgent care amongst health and social care professionals and users.

To advise and make recommendations on urgent care service re-designs proposals, relevant Practice Based Commissioning proposals and where necessary ensure incorporation in commissioning plans.

To ensure that the strategic planning and delivery process is aligned with the key strategic aims and objectives of:-

- Practice Based Commissioning Plans
- Local Delivery Plan
- Derbyshire County and Derby City Local Area Agreements.

Box 2.2 Example of Network objectives

West Kent Urgent Care and Capacity Programme Board Remit

The Urgent Care and Capacity Programme Board will act as the executive steering group for implementation of the programme; it will influence, control and be accountable for the programme and ensure successful delivery of the agreed whole system changes and benefits, and hold project / initiative teams to account.

In particular The Board will be responsible for:

- 'Signing off' the whole system vision and scope of the urgent care programme in line with national and local priorities. In particular this will focus on delivering the priorities identified in the West Kent PCT Strategic Commissioning Plan.
- Developing plans and monitoring implementation of the service changes and benefits within agreed timescales.
- Engaging the public from the outset in developing service changes.
- Ensuring appropriate planning and resource is in place across the local health and social care economy to deliver equitable, safe and effective services.
- Ensuring robust performance management processes are in place to monitor achievement of all relevant milestones, benefits and key 'targets'.
- Resolving issues and mitigating risks.
- Approving plans / business cases that seize opportunities for interim funding (in particular that promotes joint working).
- Agreeing the use of Partnership Funding.
- Overseeing the work being undertaken by local (district) groups in terms of delivering effective whole system services.

Within these 3 broad types there were combinations of each. Where networks undertook both strategic and operational functions there were examples where this was carried out by a single group and others where the two functions were linked but managed by separate strategic and operational groups. In other examples strategic groups or boards were supported by specific project groups which were responsible for implementation of key service changes or network objectives.

Networks also differed in their involvement with emergency and urgent care performance management and monitoring. Some networks were actively engaged in monitoring performance targets such as ambulance response time performance

and Accident and Emergency waiting times with performance figures being reported directly to the group. Improvements in key performance targets were clear objectives for the network. Others were not involved directly in performance management but instead focussed on developing services that could improve performance. For these networks performance management was directed to the network itself and the achievement of development, implementation and impact of network objectives.

There was also some variation in the role of networks in relation to commissioning of emergency and urgent care. Most commonly networks viewed their function as a vehicle for reviewing and assessing emergency and urgent care needs across the network population and providing advice to commissioning groups on priorities for service change and allocation of resources. However, a small number of more recently formed boards were taking a more pro-active approach to commissioning of services and planned to be much more actively engaged in the commissioning process. Two examples are given in Network Appendices 2 and 3.

Although there was variation in the scope and function of EUCNs and Urgent Care Boards there were also some features evident from the Terms of Reference and supporting papers providing details of specific projects that were common to networks including;

- Commitment to a whole systems approach to emergency and urgent care and recognition that system solutions are the key to improving services.
- The engagement of high level support and delegated authority - of the 43 questionnaires returned all but 2 reported that network membership of the constituent organisations was a Chief Executive or Director level. In many cases the network member has delegated authority to agree decisions on behalf of the organisation they are representing and this was viewed as a key feature of enabling network plans to move forward.
- A common purpose that the network is the means of moving forward and implementing DH policies for emergency and urgent care including Reforming Emergency Care; Taking Healthcare to the Patient; Our Health, Our Care, Our Say and Direction of Travel for Urgent Care.
- Strong links with and building on previous related initiatives including Integrated Service Improvement Programmes, Local Delivery Plans and other related networks such as Cardiac and Intensive Care Clinical Networks.

So, although there were differences in network structures and functions reflecting different purposes and models of organisation there were clear and consistent themes in terms of the broad objectives and in particular to developing whole system solutions to the delivery of emergency and urgent care.

2.3.4 Network activity

The questionnaire included a number of questions to assess network activity and the extent to which networks have resulted in actual service changes and developments. Table 4 provides a summary of the frequency of activity in the networks who responded to the survey.

A substantial proportion of respondents who answered these questions indicated that the network had undertaken some activities. Seventy five percent of respondents (33/43) reported activities involved with working across organisational boundaries and almost half reported activities working across professional boundaries. Twenty nine networks had undertaken at least one whole system recording activity and 23 (53%) some whole system design process.

Respondents were asked to briefly describe any activities they had undertaken and a wide range of projects and service initiatives were reported.

Activities to develop new ways of working across organisational boundaries

- Events, workshops and conferences to share information, experiences and develop system solutions to urgent care problems
- Joint public information/social marketing campaign to provide advice on what services are available and when
- Development of primary care services in A&E (e.g GPs and Primary care nurses in A&E, Urgent Care Centres in A&E)
- Development Out of Hours palliative and end of life care services
- Development of alternative referral and conveyance pathways for ambulance services (utilising e.g. mental health services, falls services, Walk in Centres and Urgent Care Centres)
- Development of stand alone Urgent Care Centres
- Development of alternatives for managing ambulance service category C calls
- Initiatives to support early discharge and admission avoidance for example rapid response community nursing teams and intermediate care teams.

Table 2.4 Summary of network activity

Activity	Local network	Regional	Local part of regional	Total
<i>Activities to develop working across organisational boundaries</i>				
Yes	10	16	7	33
No	1	1	3	5
Missing		5		5
Total	11	22	10	43
<i>Development of protocols for joint working between providers</i>				
Yes	4	7	6	17
No	7	9	4	19
Missing		6		6
Total	11	22	10	43
<i>Work to design whole system processes</i>				
Yes	11	10	6	23
No	0	16	4	14
Missing		6		6
Total	11	22	10	43
<i>Whole system activities recorded</i>				
Analysis of patient flows	10	11	8	29
Modelling to improve flows	8	8	6	22
Analysis of system care pathways	9	9	8	26
Modification of care pathways	5	7	5	17
Development of system guidelines or protocols	1	7	3	11
Other	3		1	4
<i>Activities to develop working across professional boundaries</i>				
Yes	7	10	6	23
No	4	6	4	14
Missing		6		6
Total	11	22	10	43

Activities supporting whole system redesign

- Single point of access/contact telephone services
- Clinical navigation systems
- System wide capacity management and information systems
- Whole system service directories

Activities to develop new ways of working across professional boundaries

- Emergency Care Practitioners working in A&E, Primary Care and Out of Hours services
- GP triage of A&E patients
- Community nurses trained in minor injury assessment
- Primary care nurses, community assessment teams and facilitators in A&E and MIU to support early discharge; community and discharge planning matrons working with A&E.

We also asked respondents what they thought the major achievements of their network had been. In addition to the specific service developments that had been developed and implemented and described above there were also some common themes in the responses with regard to the usefulness of working as part of an emergency or urgent care network. The main themes that emerged were:

- Better knowledge and understanding of the health and social care system
- Enhanced ability to performance manage
- Real measurable improvements in key performance targets, excess bed days and reductions in inappropriate admissions
- The ability to reach agreement on priorities across PCTs and associated organisations and take decisions which can affect a number of different agencies
- Improved information sharing, communication and understanding of roles and responsibilities
- The ability to develop care pathways and standardise them across different areas to create a more equitable service
- Improved negotiating ability

The questionnaire also asked what factors had provided obstacles to achievement of network objectives and where respondents thought the major challenges lay in the future. Only 25/43 respondents answered these questions and considered that the following factors had influenced achievement of network objectives:

Factor	Number answering yes
Funding – availability	10
Funding – ability to reallocate	11
Discharge of patients	10
Legal framework	7
Local policies and procedures	10
Facilities – emergency departments	9
Facilities- other services	9
Staffing skills and mix – ED	8
Staffing skills and mix – elsewhere	9
Mergers	10

Funding, discharge of patients, policies and procedures and mergers were the most frequently identified obstacles to network function. In particular the financial constraints and difficulties involved in moving funding around the system were considered a major factor in inhibiting whole system development. An example given is the difficulty in releasing funding from primary care when patients are seen in Walk in Centres or Urgent Care Centres. Financial flows and the disincentive of Payment by Results to divert patients from A&E and the impact this has on the ability to commission new models of service delivery were identified by 4 respondents as potential obstacles in the future. Other obstacles to future development identified included:

"There is a tension between A&E and Primary Care and the ability and competencies of Primary Care to care for its own patients"

"The reluctance of hospitals to allow primary care to manage the front door of A&E is a major stumbling block"

"Focussing on the patient journey and not the needs of clinicians can be difficult"

"There are two emerging tensions in developing a whole systems approach to urgent care

1. Commissioning and stakeholder engagement: At what point do potential providers of emergency services need to step back in developmental work

due to potential conflict of interest should a procurement route be taken forward.

2. Clinical evidence and clinical opinion: The two may conflict. Clinical evidence may not be available but opinion may be. Is this acceptable?"

"With continuous restructuring the network locally has struggled and currently operates as a "virtual network" to manage the system of unscheduled care. Linking into strategic planning across 11/2 PCTs and trying to co-ordinate a system of care where a number of different providers need to work collaboratively is challenging!"

Despite these problems the networks that responded to the questionnaire all have a clear focus about what they want to achieve and in some cases already have comprehensive and ambitious plans for taking forward emergency and urgent care in their localities

2.4 Summary

We have conducted a survey of all PCTs in England to assess the current status of Emergency and Urgent Care Networks. We have found that there is a substantial amount of emergency and urgent care network activity across the NHS in England with 96/152 (63%) of PCTs reporting some network involvement. These networks are at different stages of maturity. Some well established networks have continued to function since the 2006 re-organisation. Others are relatively new and in the early stages of development. A small number of respondents reported networks whose activity had been suspended as they were being restructured and others that networks were planned but not yet functioning. All of the networks, including those which had continued working, reported some re-organisation and re-structuring had been necessary since 2006 and that this had either halted or slowed progress during the last year. A small number of groups have moved towards forming Urgent Care Programme Boards but essentially function in the same way as a network.

Of the functioning networks a number of key features have been identified:

- The regional model was dominant with 85 PCTs being involved in some form of regional network. Half of these regional networks comprised 2 PCTs working together over a well defined health economy. Two larger networks were co-ordinated at an SHA level.
- Almost all (19/20) local networks described themselves as a formal network compared to half of the regional networks.

- Half of the respondents had networks managed by a network board and 40% had a network manager who spent at least some of their time co-ordinating the network.
- There was a broad range in both the number and types of organisations making up network membership. Almost all networks included PCTs, hospital trusts, ambulance service and social services or community trusts in their membership. At least half also included Mental Health services, NHS Direct and Out of Hours providers. Nine networks had a public and patient involvement member.
- There was variation in the focus of networks with some engaged in developing strategy and acting in an advisory capacity and others taking a much more operational focus involving service re-design and implementation and performance management of key emergency and urgent care targets. Some networks undertook both of these functions.
- Networks appear to be becoming more involved in commissioning of emergency and urgent care when compared to the findings of our earlier work in 2006⁷. Nearly all of the respondents cited service review, planning, prioritisation and consideration of resource allocation and using this information to influence and advise commissioners as one of their functions. A small number of networks have moved this forward and made commissioning the primary focus of their work.
- A whole system approach to resolving urgent care problems and high level (Chief Executive or Director) engagement to move network initiatives forward was a common feature of current networks.
- 33/43 (77%) responders reported undertaking some kind of activity designed to develop urgent care in their area. More than half of the respondents had undertaken some form of whole system analysis or re-design. There were many examples of network activities and service changes that have been made to improve working across organisational and professional boundaries.
- There remain some obstacles to continued network development and the implementation of service change. These principally relate to funding and in particular the ability to move and reallocate resources around the emergency care system. Mergers and restructuring; problems around discharging patients from hospital and the requirement to comply with local policies and procedures were also identified as problem areas that inhibit network effectiveness.

This descriptive analysis from a survey of English PCTs has shown that Emergency and Urgent care network activity is continuing in the NHS and in many cases is developing into stronger organisational structures. The networks which responded clearly viewed their role and function as being the “vehicle” for

implementing emergency and urgent care policy initiatives and for improving emergency and urgent care across the health economies they represent. Although the large scale reorganisation of PCTs and Ambulance Services in 2006 has presented some problems, particularly for established networks, it also appears to have provided a catalyst for the growth of established networks and creation of new ones who have developed comprehensive and ambitious plans for whole system review and change. Our survey was carried out after a period of major change. It would be useful to re-assess network activity in 2009 or 2010 to examine to what extent the objectives and plans they have set have actually been achieved.

3. Development of performance indicators for emergency and urgent care systems

3.1 Background

As stated in the introduction, in October 2001 the government introduced a 10-year strategy for reforming emergency care.¹ The strategy addresses the performance of individual elements of the emergency care system such as ambulance response times and A&E waiting. However, it also recognises that a more integrated approach is required to optimise the performance of the emergency and urgent care system from the patient's perspective.

There is a vast amount of literature on health services research and whilst the focus of most is service-based, considerable research into care pathways that cross organisational boundaries has been reported.^{2,3} Patients experiencing an episode of ill-health may not attend or consult a single provider. Instead they may make several contacts often with different services, interacting with different clinicians and support staff. Each of the individual services may be effective, efficient and safe - and yet the system may be inefficient, unsafe, and unsatisfying to the patient. Results of our surveys of users of emergency and urgent care systems suggest that most patients who contact the system make more than one contact per episode, with a significant proportion making 3 or more contacts.⁴

Improvements in the quality of care and in performance may coincide. However, quality indicators and performance indicators are different concepts and rely on different types of measurement. Quality indicators infer a judgment about the care provided or received. Performance indicators monitor performance over time using statistical methods. They do not provide solutions. The purpose of performance indicators is to 'flag up' potential problems or good quality of care so if required, these may be investigated further.⁵

In the introduction we distinguished four perspectives for health systems research on the emergency and urgent care system. We repeat them here to provide the background to developing performance indicators for the system:

1. The commissioner perspective

Commissioners of emergency and urgent care services, and policy-makers, are concerned with quality of care and performance against targets. Typically performance is easily measurable, for example, the frequency that policy sensitive targets such as 48-hour access, 4 hour waiting times, and 8 minute response times are met. These process measures are the standards by which services are commissioned and therefore performance against these standards must be monitored. Other performance measures which are introduced shouldn't have any negative (or perverse) implications for these standards.

2. The service or provider perspective

The service perspective concentrates on measuring aspects (inputs, processes, outcomes) of a single type of service. This is the traditional "pre-system" approach to evaluation. Thus, we would examine and compare the performance of ambulance services, or of emergency departments, and so on, in terms of measures such as waiting times, patient satisfaction, or critical incidents. The most frequently used and relevant performance measures for services are based on adherence to good clinical practice guidelines. Using clinical audits, rates of adherence to guidelines such as those published by the College of Emergency medicine for the care of patients in the emergency department (ED) can be measured and used to monitor practice, assess performance, and/or stimulate change. Outcomes may also be used but they are outcomes focused on the service rather than the system, that is they are short term, (such as return of spontaneous circulation or death before discharge) and do not always represent the longer-term outcome over the whole episode for the patient.

3. The patient perspective

From the patient perspective we are interested in the quality and outcomes of care as experienced by individuals who use the system. While this may sometimes coincide with a service perspective, in urgent care it often will not, since the user often experiences a number of services in the course of a single episode of care. Thus, this approach leads us to ideas such as satisfaction with and experience of the patient pathway, the total time from symptom onset to definitive treatment, and the outcome of the episode of ill health rather than the outcome of the treatment provided by a service.

4. The population perspective

In the population ("public health") perspective we are examining the impact of services and systems on the health of the population as a whole, irrespective of which members of the population may be patients. We may be concerned with

the performance of the system for different groups of the population at different times, nevertheless the focus is statistical, looking at benefits for the whole group, rather than clinical, looking at benefits for individual patients. Inherently, this perspective requires us to consider whether differences over time or between areas are attributable to differences in populations (age, sex, incidence of disease, casemix), in services, or in the system as a whole. This project is concerned with developing population-level performance indicators for the EUCS.

3.1.1 A population or patient perspective

One advantage of looking at the quality of health care from either a patient perspective or a population perspective is that they intrinsically focus on system performance rather than service performance. Another advantage is that both patient and population system indicators are more resistant to provider “gaming” in which for example, one service in the system simply passes patients to another service in the system to improve service level performance measures. Population level indicators can also have some advantages over patient level indicators such as being easier to monitor routinely, and providing a natural way to balance gains and losses for different groups of people. For example, the impact of service changes which result in higher use or better service accessibility can be measured only by taking a whole population perspective, since the impact may be on non-users as well as users of services.

However, the use of a wholly population perspective is limited by two issues. The first is the availability of relevant data. For example, while mortality data forms a rich and comprehensive data set, there are many aspects of system performance for which mortality is not likely to be a sensitive measure. However, population level morbidity data are not widely available in the same way. This is a familiar problem in the measurement of the impact of health care systems on the health of populations.

The second issue is that of attribution: how far could change in an indicator be reasonably attributed to change in the emergency and urgent care system? Clearly population level indicators may be influenced by many factors other than the system and this had led some researchers to question the usefulness of outcome measures for assessing performance.⁶ The main problems stem from comparisons between systems using population outcomes when other factors which are outside the control of the system, such as levels of resource and population levels of morbidity, may be determining the population outcome. Whilst there is some truth in this, the argument is much weaker with respect to monitoring within system performance - answering the question “are things getting better”. Nevertheless to help avoid the problem of attribution, it may be necessary to use patient level indicators. Thus, in practice our suggestions for indicators include both population-level and patient-level indicators.

However, patient-level system performance indicators are rarely available routinely because routine data are currently only recorded at a service level. For example, in emergency care time from first contact to definitive care is an important measure of quality, but first contact is typically with one service and definitive care with another. The patient-level system performance measure thus needs the linkage of the service level data. However, recent work on the use of routine data to measure performance in the NHS suggests that routine data, involving various datasets, can be used to investigate and monitor health systems performance^{7,8} and, linking at an individual level two or more service datasets can allow us to examine aspects of the system performance. An additional problem with using linked datasets to monitor the performance of emergency care systems is the need to ensure the linked datasets measure the relevant data in the same way. For example, emergency admissions in HES data should have the time of admission as well as the date of admission recorded since in emergency care the important units of time are hours and minutes, not days.

Another problem with attribution is around defining the population to be used in the population indicators. When patient level indicators are used to assess the quality of a service it is clear that the indicators should be based on processes and/or outcomes for users of the service. However, when population indicators are used for a system, the unit of analysis is less clear. Further, we have to assume that there is a unique and well-defined catchment population for the system so that population event rates for the system can be calculated. In reality this is not true and this blurs the attribution of population outcomes to system performance.

3.1.2 Aims

We are aiming to develop a set of performance indicators which can be used to monitor the performance of Emergency and Urgent care systems over time. We are undertaking a two phase study to develop suitable measures encompassing the structures, processes and outcomes of care. The first phase in this process is to develop a set of candidate indicators which might be used to assess the performance of an EUCS. This phase is completed and is reported here. The second phase will be to refine and test these indicators in four case studies.

3.2 The emergency and urgent care system

3.2.1 Component services

The emergency and urgent care system consists of all the services which contribute to the management of people during the emergency phase of health problems, together with the processes in place for referring patients between services. The list of services which comprises the EUCS is therefore indeterminate but includes:

General services

- accident and emergency departments
- ambulance services
- out-of-hours services
- minor injury units, walk-in-centres, and other urgent care centres
- social services
- NHS Direct
- Urgent/same day GP services

Specialist Services - eg.

- mental health crisis teams
- emergency dental services
- maternity services

EUCS may be organised by PCTs or by Emergency Care Networks which may cover one or more PCTs (see part A of this report). The Networks therefore are the basis for defining the system and determining the populations for which performance measures need to be calculated. Thus for calculating population event rates we have used the resident population in the PCTs in the network, although as discussed above this may not be exactly the same as the true catchment population for the system.

3.2.2 What is a good EUCS?

Worldwide there is a 10-fold variation in survival rate from out-of-hospital cardiac arrest.⁹ Although part of this variation is no doubt due to differences in case-mix, definitions, ascertainment and data quality, it is very likely that the variation in outcomes also reflects considerable variation in system quality. Differences in first responder services, the availability of public defibrillators, bystander CPR, and quality of pre-hospital care as well as geography and demography may all make a difference.

A good system therefore is one which achieves good outcomes, but this should be judged in relation to the 'inputs'. The number of deaths from out-of-hospital cardiac arrest matters from a public health perspective and may be a good indicator of the quality of the whole health care system, but it is the case fatality rate which focuses on the performance of the emergency care part of the system. A good system increases the chances of survival of someone who has an out of hospital arrest.

For most emergency and urgent health care problems, health outcomes are not known and performance must also be measured by processes of care and by the structures put in place to help those processes. The question then is which processes should be included in a performance assessment. The processes should be those that are clearly or evidentially related to outcomes that matter to patients. Eight minute ambulance response times could be included as they are clearly related to survival rates; waiting times in A and E are evidentially related to patient satisfaction, shorter times are always preferred over longer times; but this is not true for access times to GPs. As has recently been discovered, achieving short access times by restricting advanced booking is worse for some patients.¹⁰

As illustrated by these examples one process which is always an important indicator in emergency and urgent care is the timings. By definition, in emergencies, and other things being equal, the chances of better outcomes are improved with shorter times to care. If this is not true, it is questionable whether the condition can be called an emergency. In urgent care the relevant measure may be more focused on time to access care but nevertheless the 'time to' is still an important measure of system performance from a patient perspective. So a good system is one which minimises times to care and through the care pathway. However, this leaves a host of questions around which times, for which patients.

A good system could also be argued to be one that is organised in an optimal way, so that, for example, facilities are close to patients, they are open when they're needed, and they are appropriately staffed. So some 'structural' measures could also be included in assessing a good system.

Finally, a good system should achieve the best outcomes, processes, and structures it can for the resources available. Good systems are efficient as well as effective.

3.3 Performance indicators

3.3.1 Sets of indicators

There is a considerable literature on performance indicators, much of which is focused on what makes a good indicator and how to choose and develop indicators.

Generally this literature sets out a number of different categories of quality, eg.

- i) Types of indicator
- ii) Fitness for purpose
- iii) Performance characteristics of the individual indicators
- iv) Implementation and cost
- v) Statistical issues

Before briefly discussing these issues, however, it is worth considering the larger question of what makes a good set of indicators. No single indicator can assess the quality of a service or system. Consequently, a set of indicators is always used. What properties should this set have? There is relatively little literature on this question. We consider that the set should ideally be

- i) Inclusive - the set of indicators should ensure that service or system performance relevant to all patient groups is covered by the set of indicators. If some patients are excluded, then there is the possibility of distorting the system to focus only on those groups included. This is related to equity.
- ii) Comprehensive - addressing all the dimensions of performance quality, such as effectiveness of services and care, appropriateness, equity, efficiency, safety and so on.¹¹
- iii) Co-ordinated - Indicators should work independently or with each other, not against each other. For example including both the proportion of Traumatic Brain Injury patients treated in a neurosurgery centre and the total number of transfers could cause conflict.

- iv) Parsimonious - Equally, a good set of indicators should avoid unnecessary duplication (indicators that are measuring or indicating performance in the same area). An over-riding principle identified by the RSS working group on PIs is the need for parsimony.¹²

3.3.2 What is a good indicator

Types of indicator

One issue to consider in selecting types of indicator is the question of whether they are 'indicators' or 'measures'. Indicators do just that, they are said to 'resonate' with performance and quality but are not direct measures of it. For example, in emergency and urgent care one 'indicator' could be based on the number of attendances at an A and E department between 7am and midday on a Monday morning compared to the average numbers on other weekday mornings. There is known to be a Monday morning blip, which in itself it does not matter, nor is it a 'measure' of anything. However, when it is high it might indicate poor access to the EUCS over the weekend. It could be a measure that resonates with the quality and performance of the EUCS.

We have taken the view here, that measures are generally preferable and that the set of 'indicators' we choose for the EUC system performance should as far as possible actually measure aspects of the system performance which are themselves important and which if changed would indicate a better performance overall, and which taken together as a set are an indicator of the quality of the system. Nevertheless we have also considered some service specific measures which were considered to be 'indicators' of system performance.

A second issue is what type of thing should be measured. Performance indicators can make use of outcomes, including patient satisfaction and acceptability, etc, as well as health outcomes; processes, including timings and activities as well as treatments; structures; and costs per unit of performance. However, performance indicators in themselves are not a 'diagnostic tool'. They are statistical devices to flag up potential problems or good quality care which then require further investigation for example by local audit.

As touched on earlier the question of the value of outcomes as performance indicators has been hotly debated.^{6,13,18} Outcomes have been criticised as a measure of the performance of services for two main reasons

- i) Outcomes depend on case-mix (ie. inputs), and the case-mix is not identical for different areas or institutions. Case-mix adjustment is sometimes thought to overcome this problem, but the 'case-mix adjustment fallacy'¹³ and the 'constant risk fallacy'¹⁴ seriously undermine

this idea. However, this is less of a problem if the purpose of the indicator (see 3 below) is not so much to compare systems, but to monitor progress within systems. Case-mix tends to change slowly within areas and short and medium term trends, or changes before and after the implementation of a new service or organisation model, say, may be assessed in a relatively bias-free way.

- ii) Outcomes may be the result of the input of numerous technologies, services, and clinicians and cannot be attributed to a single step along the care pathway. Stigmatising or penalising institutions for poor patient outcomes may therefore miss the target and cause more harm than good. This is certainly a major stumbling block for using outcomes to measure the performance of services because patients are treated by systems. In emergency and urgent care this typically involves primary care, pre-hospital care, A and E, hospital services, rehabilitation and intermediate care services and so on. Indeed it is for this very reason that we are focussing on the evaluation of the emergency care system rather than component services. However, the same argument implies that outcomes may be an appropriate system performance measure, where the attribution is to the system not the component services.

There are other, important reasons for including outcomes in any set of indicators. Firstly, they focus attention on the main 'prize' and make sure that institutions, managers, clinicians and everyone involved in the system recognises what the system is there to achieve. Secondly, if processes of care were improving but outcomes were not, we would still be concerned. It would point to a flaw in the indicator set. Thirdly, if only processes are included we are left with the problem of how to assess overall performance. Some processes are more important than others and we might want to 'weight' these more highly. However, what we mean by 'more important' and how we judge this, is precisely by the importance of their influence on outcomes. Outcomes synthesise all the relevant processes and in proportion to their importance. It is true that they also represent a 'black box' which may leave us unable to determine what to do about poor performance. Nevertheless they are essential for monitoring performance and answering the question 'are things getting better'.

Fitness for purpose

Indicators may be used for performance monitoring, and be focused on performance assessment as a quality improvement tool, or they may be used for performance comparison in league tables for information (eg. for patients) or rewards (eg. for distribution of resources).

Indicators may be good for one purpose but not for the other. For example, case-mix sensitive measures may be no good for constructing league tables but may

be good for monitoring change in performance within a system to help drive up quality.

Some measures depend on factors which are not readily remediable (such as the location of an A and E department). These measures may be of little value in performance monitoring focused on quality improvement because they are not easy to remedy, but may be of importance to patients for information.

We have taken the view that EUCS indicators should be chosen with either performance monitoring within a system in mind, to answer the question 'are things getting better', or performance assessment to determine whether a change in the system has improved performance or not. We do not think any of the indicators we have considered has been established as robust enough to be used for between-system comparisons and the construction of league tables.

Characteristics of good performance indicators

Several lists of the attributes of a good performance indicator have been published. We have synthesised the lists published by Pringle et al¹⁵ (12 items), The Audit Commission¹⁶ (AC, 13 items), the RSS¹² (14 items), and the Institute for Innovation and Improvement (III, 11 items relevant to individual indicators, and 2 items focused on the set of indicators)¹⁷ (see Table 1).

The table also shows whether the attribute has been retained in our checklist. Whilst all the criteria have some value, a checklist of 22 items is unlikely to help choose between indicators because some criteria are much more important than others. We have chosen therefore to omit 8 items which we have judged to be less important in order to create a checklist which we have used to assess our candidate indicators.

One item not directly covered by these lists relates to the feasibility of collecting the data to calculate the indicator. Although the cost-effectiveness of the indicator is a related attribute, feasibility is also concerned with practical questions about how the data can be collected, and how the indicator can be calculated. Clearly when the raw data are available in routinely collected datasets such as HES data on admissions and ONS data on deaths, feasibility is a question of 'calculability'. For system indicators this will often be a question of whether service datasets can be linked so that indicators related to the pathway through the system can be generated. When the data aren't currently routinely available then a special data collection using audits or surveys might be necessary. For example, in our survey instrument for evaluating the patient experience of the EUCS we ask respondents "how long did it take from the time the first service was contacted until the help you wanted was received?" and this or a related question could be used as the basis for calculating indicator 7 (time from first contact to clinical assessment) for example.

Finally, although it may not be current feasible or cost effective to calculate some indicators, changes in IT systems in the future may make it realistic. In particular, the data sharing across NHS services envisaged in Connecting for Health, may mean that many system indicators which are currently not feasible, may become so in the medium term.

We have therefore taken the view that in this first phase of the development of EUCS indicators we should ignore the feasibility question. Instead we seek first to identify the indicators we want, and then we will move on to consider what data collection and dataset linkages are needed to enable the calculation of the indicator. Thus some of the indicators we have considered are not currently feasible to calculate, and the experts we consulted in our Delphi exercise (see later section) were explicitly told not to consider cost or difficulties in data collection in making their judgements on the value of the indicators. This was because initially we wanted to identify the best indicators in order to help drive the data collection rather than using data collection to determine the indicators. Furthermore the availability of data is changing rapidly with Connecting for Health and what might not be feasible currently may become so in the future.

3.4 What is a good EUCS indicator?

As well as adhering to general principles around the development of good PIs, there are some specific issues that are important for the EUCS.

1. System measures. They must be attributable (to some extent) to the performance of the EUCS as a system rather than to service performance. So, for example, response times for the Ambulance Service would not be appropriate. But in a system which used fire, police, community, and BASICS responders to medical emergencies as well as the Ambulance Service, time from call to first response on scene might be a good system performance indicator.

Nevertheless, performance data from a service may still relate to the performance of the system or part of the system. For example, data from a service such as a walk in centre on inappropriate attendance points to faults in the system of services not the walk in centre. So some of the indicators that have been listed as candidate measures are based on local service specific data acting as 'indicators' rather than 'measures'.

Using service specific data for a system performance indicator is appropriate if the measure depends on the performance of more than one service and if the data are used to monitor within system performance. Service specific data cannot usually be used to compare performance between systems.

Table 3.1 Published attributes of good performance indicators

Attribute		Description	Source*	Checklist
1.	Relevant to people	The PI should be relevant to patients and to the organisation, and to people providing the data.	AC, III	√
2.	Communicable (simple as possible)	The relevance of the measure can be easily explained, and the measure should be easy to understand and use.	Pringle, AC, III	X
3.	Clear definition	Clear and unambiguous definition in order to aid consistent collection.	AC, RSS	√
4.	Valid	The indicator should measure some aspect of performance which is known to be directly related to quality	Pringle, III	√
5.	Effective	The indicator should measure what it purports to measure, and in particular should not be open to gaming.	Pringle, III	√
6.	Cost-effective	Balancing cost of data collection and the value of the data collected	AC, RSS, III	√
7.	Consistent	The indicators and definitions, and the data collected should be consistent so that time periods, places, or organisations can be compared.	AC, RSS	√
8.	Reliable	The data should be complete, accurate, and reproducible and hence verifiable	AC, Pringle, III	√
9.	Objective	The data should be independent of subjective judgement.	Pringle	X
10.	Interpretable	The interpretation of the indicator should be unambiguous.	AC,RSS, III	√
11.	Attributable	The level of the indicator should be attributable to the performance of the organisation	Pringle	√
12.	Remediable	Furthermore, the organisation to which the indicator is attributed should be able to wholly or partially influence performance in the area captured by the indicator and in the timescale being monitored.	AC, Pringle, III	√
13.	Responsive	Indicators should be sensitive to improvements over time.	AC, Pringle	√
14.	Timely	The indicators should also be able to be collected and calculated within a timescale which is appropriate for their use.	AC, RSS, III	√
15.	Avoid perverse incentives	Indicators should obviate rather than stimulate counter productive behaviour	AC,RSS,III	√
16.	Statistically reliable	Indicators should have acceptable technical properties, eg. for precision, response rates, etc.	AC, RSS, III	√
17.	Allow innovation	Shouldn't restrict or stifle innovation just because its not in the indicator set.	AC	X
18.	Contextual	Indicators should be context free	Pringle	X
19.	Interpretation	Indicator should reflect health needs, capacity, structures or performance.	Pringle	X
20.	Comparable	Indicators should be comparable to a gold standard	Pringle	X
21.	Conformable	Indicators should conform to any international standards.	RSS	X
22.	Deconstructable	Can the indicator be 'deconstructed' in order to understand the particular reasons for the results.	III	X

* AC = Audit Commission¹⁶
 III = Institute for Innovation and Improvement¹⁷
 Pringle = Pringle, et al¹⁵
 RSS = Bird, et al¹²

2. Event rates. It is important that measures should not be open to gaming, (eg. by changing the time at which calls are said to have been received). One set of measures which are important in many fields including the EUCS, and which are partly susceptible to gaming are 'event rates' such as case-fatality rates, or avoidable admission rates. Case-event rates can be reduced by increasing the denominator (identifying more 'cases') as well as by decreasing the numerator (fewer 'events'). Nevertheless, because these are potentially very important measures we have included them in the candidate indicators.

3 Avoidable events. Remediable or avoidable event rates have been extensively used to assess system performance. For example, avoidable deaths have been used to compare trauma systems, whole health care systems, hospitals, etc; and avoidable admissions to compare primary care services, HMOs etc. Although less widely used, "ambulatory-care-sensitive" conditions for which hospital admissions can be prevented by timely and effective ambulatory care have been identified in the US, and also in the UK^{19,20,31} to look at preventable urgent admissions.

Avoidability is of course a difficult concept to capture from routine data. We can distinguish three different ways in which events might be avoided (or prevented) - by preventing the disease (eg. so that the person doesn't have asthma at all) preventing the exacerbation or episode (so that the acute attack is prevented perhaps by optimum ambulatory care) and by preventing the urgent care event for the episode (such as hospital admission). Plainly for assessing urgent care systems it is the latter group of avoidable events that we are seeking to identify. Thus we are not looking for events which could have been prevented by preventing the disease or an acute episode resulting from the disease, but looking for events which could have been prevented by effective urgent care delivered at the right time and in the right place to a patient having an acute episode.

Avoidable hospital admission is one of the goals for the urgent care system set out in the White Paper *Our Health, Our Care, Our Say* which focuses the urgent care strategy on "significantly reducing unnecessary admissions to hospital". Thus as well as potentially avoidable outcomes, avoidable processes might be used to monitor the performance of emergency and urgent care. We have focused on avoidable outcomes in serious emergencies, particularly death, and on avoidable processes such as admissions and transfers for urgent conditions.

4. Conditions which are relevant to emergency and urgent care. In order to examine avoidable events it is necessary to identify a set of conditions, such as MI, cardiac arrest, or mental health crisis, which present to the EUCS and in which a good performing system manages to avoid events judged to be undesirable, such as death or hospital admission.

We have therefore also identified a set of serious emergency conditions for which 'emergency-care-sensitive' events could be prevented by timely and effective emergency care and a set of less serious urgent conditions for which 'urgent-care-sensitive' events can be prevented by timely and effective urgent care.

Indicators such as case-fatality rates or admission rates can be calculated for each condition or for the whole set of conditions together. We prefer the latter approach as an overall indicator of performance, but it may be necessary to calculate condition-specific indicators in order to 'deconstruct' the indicator, and remedy any problems.

5. Unnecessary contacts. One sub-group of 'avoidable' processes are those related to unnecessary contacts with services. For example, a good performing EUCS might be expected to avoid unnecessary attendances at A and E and unnecessary home visits by OOH services, as well as unnecessary emergency hospital admissions. The Medical Care Research Unit has been involved in developing measures of unnecessary contacts with the EUCS for a number of years^{21,22} based on explicit criteria relating to whether the care received needed the level of service contacted. In this model, for example, a patient who made a face-to-face contact with a GP out-of-hours but received no treatment or investigation might be judged to have made an unnecessary contact. Unnecessary contacts may not be avoidable of course, and we have found, for example, that patients who are suitable for care elsewhere often have strong reasons for attending A and E.²³ Thus we need to focus on unnecessary contacts which are avoidable in a good performing EUCS. These assessments need individual level patient records of contacts and care from services within the EUCS. Routine data has been successfully used for this to examine unnecessary A and E attendances, but routine data from other services is more difficult to use because use of other services in the system for the same episode of ill health may be an important element of judging whether contact with a service was unnecessary and service datasets are not linked.

6. Recurrent users. Another group of potentially avoidable events relate to recurrent users of urgent care services. For example, patients who attend A and E, and who are referred to social services, acute mental health services, community child health, or maternity services, but who re-attend at A and E within a few weeks may point to a 'system' failure. Patients who attend a walk-in centre and who are referred to other health or social services for appropriate care, but re-attend at the walk-in centre for the same problem within a short period of time may indicate problems with care or access elsewhere in the system. Some recurrent use is, of course, to be expected and so population indicators may need to relate to the rate of recurrent use.

3.5 Methods

3.5.1 Identifying candidate indicators

A long list of approximately 70 candidate indicators was developed from reviewing sets of UK NHS indicators which might be relevant to emergency and urgent care, examining the scientific and policy literature, and by consulting expert opinion.

The main sources of existing measures which were reviewed are listed in Box 3.1.

The review of the scientific literature found little material of direct relevance with the exception of some papers presented at a Royal Society of Medicine (RSM) symposium on how quality of the emergency services could be measured.²⁴ The main scientific material was the indirectly relevant literature on i) avoidable events (mortality, admissions, contacts) and ii) variations in performance (between times and places). The long list of indicators, and their source reference is shown in the Indicators Appendix.

Box 3.1

Main sources of existing quality measures which were reviewed

1. The Health Care Commission performance indicators for the 2004/5 performance ratings for mental health, ambulance, acute and specialist care and primary care trusts.²⁵
2. The Health Care commission's Service Review of urgent and emergency care 2007/8.²⁶
3. NHS performance indicators, February 2002. Performance Assessment Framework for Health Authorities and Hospitals.²⁷
4. Social Services Performance Assessment Framework, Indicators 2006-2007.²⁸
5. National quality requirements in the delivery of out-of-hours services, July 2006.²⁹
6. Dr. Foster Intelligence measures and indicators.³⁰

3.5.2 Consensus methods

We used formal Delphi consensus methods based on the RAND design²⁹ to elicit the combined opinions of two different panels of experts on the long-list of possible indicators of the performance of the EUCS. We chose to use two panels to reflect both expert opinion on good indicators and user opinion on useful indicators which would be judged to be meaningful and relevant to their organisation. After a small pilot study to test the feasibility of using e-mail, expert opinions were canvassed electronically in three separate rounds of consultation. The focus was the potential suitability of 70 measures identified by consulting expert opinion, and also the scientific and policy literature. The indicators were formatted into a questionnaire arranged according to whether the indicators were: i) health outcomes; ii) processes; iii) structures; or iv) equity (i.e. concerned with whether performance is the same for sub-groups of incidents). The questionnaire also listed 27 serious emergency conditions, and 16 urgent conditions (including external causes, injuries, poisoning and violence) for use with the indicators, identified from the literature on 'avoidability' and from expert opinion as potentially sensitive to good system performance. The panel participants were asked specifically not to raise questions about the availability or feasibility of data collection and calculation. This is because our aim was to identify the best indicators in order to help drive the data collection rather than using data collection to determine the indicators.

Participants

The prospective participants in the Delphi exercise were selected purposively to cover a broad range of views. Panel one consisted of 30 senior clinicians, and university researchers, known nationally or regionally in the UK to have an interest in some aspect of the EUCS. The specialty profile covered paediatrics, general practice, emergency medicine, urgent care, acute medicine, public health, pre-hospital care, anaesthesia, health services research (including a lay member), pharmacy, and psychiatry. Panel two consisted of 19 urgent care leads or commissioners in 18 Primary Care Trusts (PCTs) and one Strategic Health Authority (StHA). Participants in this group brought the perspective of senior managers or administrators who might use performance indicators to commission and monitor the EUCS. Panel one participated in rounds one and two. The third round was sent to panel two.

Membership of the panels was completely anonymous. To provide the opportunity for members to decline to take part, the invitation and information about the consultation were sent to each individual separately either by email or letter several days before the questionnaire was forwarded on. The 'alert' assumed that we would send the survey if the recipient did not withdraw by a particular date.

Round one

In round one, the questionnaire was sent to each member of panel one. Each recipient was asked to score his or her level of agreement with a statement that *"this measure is likely to be a good indicator of the performance of the emergency and urgent care system (EUCS)"* on an increasing Likert scale of 1-9 (1 being 'disagree strongly' and 9 'agree strongly'). The lists of prospective serious, emergency and urgent candidate conditions for use with the indicators were rated on the same scale. Participants were asked to score their level of agreement on an increasing Likert scale 1-9 with the statement that: *"this condition is likely to be a good candidate to monitor the performance of the EUC systems."* The criteria for judging urgent conditions were *'conditions whose exacerbations could be managed by a well-performing EUC system out of hospital or in emergency departments (EDs) without admission to an inpatient bed.'* The questionnaire also contained 'free text' space for participants to add any further comments or suggestions about the usefulness or otherwise of the items proposed.

On receipt of the completed forms, the aggregated score of the panel for each measure was calculated and entered on to the survey instrument alongside the individual score. All the comments received were sorted by indicator. Small modifications were made to the wording of the instrument in line with some of the points raised.

Round two

In round two, to enable members of panel one to reconsider their original scores against the aggregated scores, and to alter their own scores if they so wished, the revised version of the questionnaire together with all the feedback received was then resubmitted to participants.

Round three

Using the same rating scale of 1-9, in the third round the list of indicators, with some minor revisions in line with the feedback from the previous round, was circulated to panel two.

Analysis

After each round, all the scores were analysed using SPSS. In consensus methods where individual scores are aggregated to reveal the view of the group, the RAND/UCLA manual recommends using a central measure of agreement, and also a measure of the disagreement between individual scores and the group score.³² The measure of agreement for each indicator we used was the median

score. The extent of the disagreement was expressed by the mean absolute deviation of the individual scores from the group median (MAD-M). Median scores of ≥ 7 were taken as agreement that an item was likely to be a 'good' indicator for the EUCS; scores of $5 < 7$ were regarded as 'equivocal'. Scores of < 5 were taken as agreement that the measure was 'poor'. After round two, those items scoring less than 5 were removed from the questionnaire. When round three was completed, to give equal weight to panel one (clinicians and researchers $n=30$), and panel two (PCTs and StHA users $n=19$) the group median scores achieved in rounds two and round three were simply added together. Each indicator then was re-ranked by its total median score to yield the level of consensus. The cut-off scores showing agreement in the likely usefulness of a particular item were reassigned as follows:

Scores of 14-18 = 'good';
10<14 = 'equivocal'; and
<10 = 'poor'.

Overview

To consider the list of the 'good' indicators, the candidate conditions, and all the feedback in more depth, the MCRU researchers and clinical colleagues held a small sub-group meeting ($n=5$). The purpose was to take an overall look at the results of the Delphi to ensure that a good set of indicators as well as good indicators were being identified, confirm the 'system-wide' rather than service relevance of the measures, address questions that had been raised about definitions, and to develop a consistent approach to including or excluding any indicators whose scores were at the margins of the cut-off points between inclusion and exclusion. The clinicians present ($n=3$), guided by the additional 'candidate conditions' proposed in the feedback to the Delphi, also made additional recommendations about which serious emergency and urgent conditions, in their opinion, would be viable to use with the indicators.

3.6 Results of consensus study

The Delphi process revealed agreement between the two sets of panellists that 36 indicators were likely to be good performance indicators for the EUCS. The maximum possible score was 18. The range of disagreement from their own panel median score was 0.9 to 1.7. (Table 3.2)

Table 3.2 – Good performance indicators for the EUCS

	<i>Agreement</i>	<i>Disagreement</i>
Outcomes		
Mortality rates for serious, emergency conditions for which a well-performing EUC system could improve chances of survival	15	1.2
Case fatality rates for serious emergency conditions for which a well-performing system could improve chances of survival.	15	1.3
Process		
<i>Admission</i>		
Hospital emergency admission rates for urgent conditions, the exacerbations of which could be managed out of hospital or in emergency departments (EDs) without admission to a hospital bed.	16	1.4
Arrivals at EDs referred by any EUCS services and discharged without treatment or investigation(s) that needed hospital facilities.	15.5	1.2
Arrivals at EDs by emergency ambulance and discharged without treatment or investigation(s) that needed hospital facilities.	15	1.4
Adherence to evidence-based good practice guidelines for serious emergency and urgent conditions.	15	1.3
<i>Service users</i>		
Multiple transfers between EUCS services	14	1.4
<i>Timings</i>		
Time from first contact with a EUCS service to clinical assessment. For example:		
a) call to NHSD to nurse contact	15	1.5
b) call to AS to paramedic contact (ie. time on scene)	15.5	1.3
c) call to GP in-hours or OOH to clinical assessment by primary care team	15.5	1.3
For patients with indicator conditions who are admitted, time from first contact with a EUCS service to time of admission. For example:		
a) call to NHSD to admission	15	1.6
b) call to AS to admission	15	1.4
c) call to GP in-hours or OOH to admission	15	1.4
d) call to mental health team to admission	14.5	1.4
Time from first contact to definitive care for indicator conditions eg for patients having thrombolysis – call to needle time; for patients having percutaneous coronary intervention (PCI) call to Cath lab; patients with serious head injury, undergoing neurosurgery – call to theatre; for mental health crisis - call to contact with mental health crisis team.	17.5	0.9
Equity		
Relative case fatality rates (ie. deaths as a proportion of contacts) for serious emergency conditions between contacts made:		
a) In hours vs. out-of-hours (OOH)	15	1.2
b) Weekdays and weekends	15	1.2
Variations in times from first call to any EUCS service to first clinical assessment, for example with NHSD, AS, GP, mental health team between:		
a) In hours vs. OOH	15	1.5
b) Weekdays and weekends	14	1.3
c) Area of residence		
Variations in times from first contact with any EUCs service for example, NHSD, AS, GP, mental health team, to admission between:		
a) In-hours vs. OOH	15	1.7
b) Weekdays vs. weekends	14	1.5
Variations in times from first contact to definitive care for eg for patients having thrombolysis – call to needle time; for patients having PCI – call to Cath lab; patients with serious head injury – call to theatre, between:		
a) In-hours vs. OOH	16.5	0.9
b) Weekdays vs. weekends	16	0.9
c) Area of residence	14.5	1.4

Agreement for the serious emergency conditions (Table 3.3) and also the urgent conditions (Table 3.4) revealed by the higher ratings are shown below. The range of the disagreement from their own panel median for serious, emergency conditions is 0.6 to 1.6; for urgent conditions it is 0.9 to 1.6.

Table 3.3

Serious emergency conditions	<i>Agreement</i>	<i>Disagreement</i>
Myocardial infarction	18	0.6
Stroke/CVA	17	1.5
Meningitis	17	1.1
Cardiac arrest	17	1.1
Anaphylaxis	17	1.0
Major haemorrhage (e.g. ruptured aneurysm)	16.5	1.6
Fractured neck of femur	16	1.1
Asthma <65 years	16	1.2
Falls <65 years	16	1.2
Septic shock	15.5	1.5
Asphyxiation	15.5	1.5
RTA injuries	15	1.4
Acute heart failure	15	1.3
Isolated extradural haematoma	14.5	1.6
Childbirth	14	1.4
Exacerbation of COPD	14	1.2

Table 3.4

Urgent conditions	<i>Agreement</i>	<i>Disagreement</i>
COPD	15.5	1.2
Hypoglycaemia	15.5	1.2
Urinary tract infection	15.5	1.6
Acute mental health crisis	15.5	1.1
Non-specific chest pain	15	1.2
Asthma	15	0.9
Elderly falls	15	1.1
Minor head injuries	14.5	1.3
Angina	14	1
Epileptic fit	14	1.1

Adjustments proposed by the sub-group meeting

Generally, because in phase two of this work we will test the 'good' indicators on routine data, we felt it advisable at this stage to adopt an 'inclusive' rather than 'exclusive' approach to measures that had scored less well in phase one, if it was reasonable to do so.

The proposed indicator:

'9 Emergency re-admissions within **28 days** for urgent conditions as a proportion of all live discharges'

was not rated by the panellists as a 'good' indicator. On consideration, the sub-group felt that as this is included in the Health Care Commission performance indicators for acute trusts:

(http://ratings.healthcarecommission.org.uk/Indicators_2005/), this item should be retained. However, guided by the opinions of several panellists who expressed the view that 28 days was too long, we propose to reduce the time for re-admission from 28 days to 7 days.

The group felt it was important to have a set of indicators covering the whole profile of the EUC system to capture outcomes, processes, structures and equity. Outcomes, processes and equity had appeared in the 'good' indicator list. However, neither of the two 'structure' indicators did so.

'21 Proportion of population living within 10 km of emergency or urgent ambulatory care facilities'

'22 Proportion of population living within 10 km of 24 hour emergency or urgent ambulatory care facilities'

Since a similar structured indicator also included in the Health Care Commission review the group proposed to retain a structural indicator to maintain the 'system' profile and also for their potential usefulness for capturing the impact of opening or closing new services and interpreting other indicators affected by distance to services. However, we have amended the indicator to read

'22.1 Proportion of population living within 10km of emergency or urgent ambulatory core facilities open for more than 12 hrs/day 7days/wk.'

In the Equity indicators (Table 3.1), the 'area of residence' indicators straddled the cut-off between 'good' and 'equivocal'. For consistency and also for distance-adjustments, it was decided to retain 'area of residence' in **all** the equity indicators.

Several panellists had raised questions about the differences between 'mortality rates' and 'case fatality rates'. The sub-group confirmed that mortality rates expressed for example as 2/1000 depend on the incidence of a disease in a whole population. Case fatality rates are based on the numbers who have a disease who die, expressed as a proportion of those who have the disease. The preferred

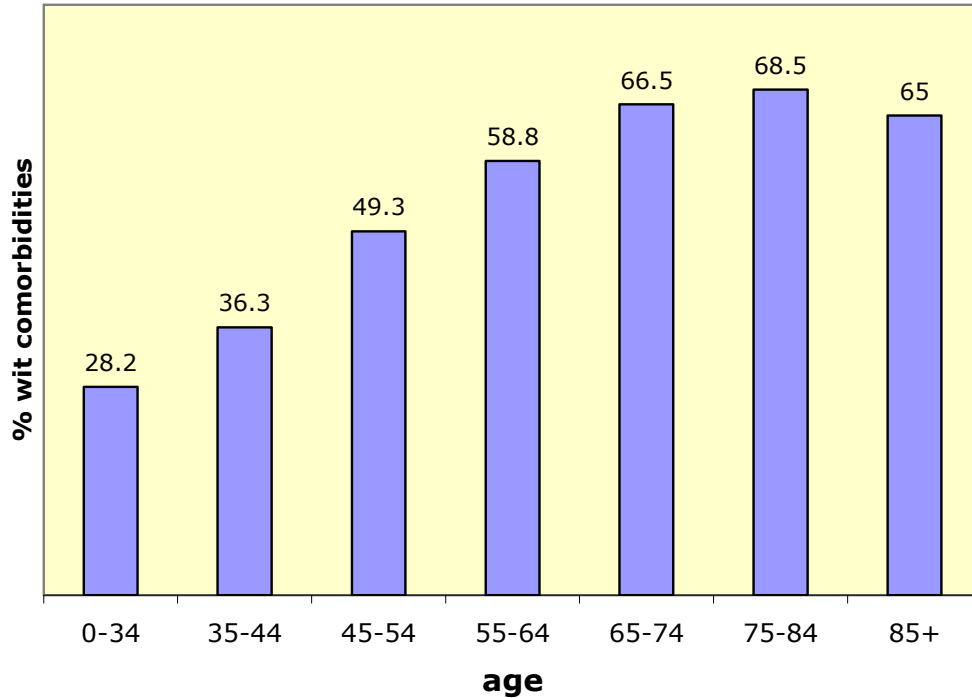
outcomes indicator is case fatality rate, though in practice it is unlikely to be directly calculable in the absence of data linkage between service datasets and ONS mortality records. However, a case fatality ratio, comparing for example number of deaths and number of admissions, can be calculated and this may be a useful indicator.

Another question raised was how 'in hours' and 'out of hours' was defined? We felt that 'in-hours' and 'out of hours' is a familiar concept around the availability of GP services, and propose the convention that 'in-hours' is 08.00 until 18.00 Monday to Friday. In order to make the indicators clear we have recommended comparing performance between weekdays and weekends, and separately between in hours and out-of-hours on weekdays.

In respect of the list of 'good' serious emergency conditions for use with the outcomes indicators, the recommendation of the clinicians was that some case definitions need to be tighter and conditions that were time-sensitive were likely to be more useful than conditions that were not. To avoid ratings of performance being swamped by unavoidable deaths, either the definitions of the conditions needed to be tighter, eg. '*major haemorrhage (for example, ruptured aneurysm)*' - could be qualified to 'operable aneurysms', or the indicators needed to be limited by age.

We have taken the view that limiting by age and excluding elderly patients, for example, should not be done in order to avoid the possibility of the indicators creating an incentive for the EUCS to focus on one age group at the expense of another. However, clearly indicators such as case-fatality rates and emergency admissions rates may point to different issues in the elderly. For example, in the elderly, death rates are more likely to be related to the management of co-morbidities and less likely to be directly related to the management of the index condition. For urgent conditions, admission of elderly patients to hospital will be more closely linked to the performance of social services than in younger patients. Figure 3.1 shows the proportion of patients in HES admitted as emergencies in 2004/5 who had more than one diagnosis on admission, indicative of the presence of co-morbidities. It will be seen that this shows a steep rise up to the age of 75. We have therefore recommended that all of the indicators should be reported separately for the under-75s and the over-75s.

Figure 3.1 Proportion of emergency hospital admissions with more than one admission diagnosis by age.



It was also felt that whilst there may be sufficient numbers of cases in some conditions, for example MI, to detect variations in mortality between EUCS, to be meaningful, the numbers of the less common conditions like meningitis and anaphylaxis may need to be grouped together. This can be seen in Table 3.5 which shows numbers of emergency admissions in HES data for 2004/5 for each of the emergency and urgent indicator conditions. The numbers shown are for the range of the number of admissions for residents of emergency care 'networks' identified from the survey of PCTs reported earlier. Some of the 'networks' are single -PCT and some multiple-PCT based. Consequently, there is a considerable range of numbers of admissions for all conditions, and many conditions would clearly need to be combined to create a meaningful indicator.

Table 3.5 No of emergency admissions in HES data for 2004/5 for indicator conditions by network, range

Candidate condition	Age 0-74	Age 75+
<i>Serious emergency conditions</i>	range	range
Meningitis	3 - 34	0 - 3
Anaphylaxis	5 - 77	0 - 5
Myocardial infarction	51 - 806	30 - 705
Fractured neck of femur	6 - 95	10 - 243
Asthma	213 - 1203	10 - 151
Cardiac arrest	6 - 34	4 - 36
Pregnancy and birth related	573 - 2417	N/A
Serious head injuries	119 - 578	0 - 47
Self harm	128 - 1645	1 - 32
Ruptured aortic aneurysm	2 - 27	1 - 27
Stroke/CVA	73 - 495	65 - 816
Falls ≤74	370 - 2710	N/A
Road traffic crashes	156 - 876	3 - 62
Septic shock	13 - 164	12 - 95
Asphyxiation	0 - 2	0 - 2
Acute heart failure	82 - 377	91 - 825
Isolated extradural haematoma	1 - 8	0 - 0
<i>Urgent conditons</i>		
COPD	199 - 1130	102 - 828
Acute mental health crisis	464 - 2662	31 - 418
Non-specific chest pain	566 - 3045	74 - 815
Elderly falls >75	N/A	243 - 2597
Non-specific abdominal pain	554 - 3809	23 - 400
Deep vein thrombosis	37 - 311	10 - 129
Cellulitis	166 - 654	28 - 314
Pyrexial child aged ≤5	15 - 96	N/A
Blocked tubes, catheters and feeding tubes	1 - 49	0 - 23
Hypoglycaemia	23 - 177	12 - 116
Urinary tract infection	191 - 814	95 - 683
Angina	1 - 24	1 - 17
Epileptic fit	123 - 528	5 - 86
Minor head injuries	10 - 164	2 - 92

Some amendments to the list of serious emergency conditions were proposed by the subgroup. First, since COPD was included in the list of urgent indicator conditions it was decided to exclude it from the emergency conditions where it was scored lower. On the other hand, asthma was included in the emergency conditions rather than the urgent conditions where is scored lower. Second, rather than only include isolated extradural haematoma, it was considered that all serious Traumatic Brain Injury should be included if possible in the emergency

conditions (and minor TBI in the urgent conditions). We have therefore included this group as a possible addition to be considered.

There was a detailed discussion about the inclusion of stroke, which was not considered to be a condition which emergency care had an important role in managing, apart perhaps from a small number of patients suitable for thrombolysis. Nevertheless, this patient group has been returned since it was highly rated by the Delphi panels.

The sub-group also discussed the importance of including mental health conditions and felt that self-harm (rated 13.5, just below the cut off of 14) should be reinstated in the list of candidate indicator conditions.

For urgent conditions the sub-group suggested adding some conditions which had not been included in the list scored by the panel - Non-specific abdominal pain, DVT, cellulitis, pyrexial children, and blocked catheters, feeding tubes, etc. These conditions have been included for consideration in the next phase of testing the indicators.

3.7 Performance of candidate indicators

3.7.1 Checklist

The checklist of the attributes of good quality performance indicators developed in section 3.4 has been applied to the 16 candidate performance indicators selected by the Delphi exercise. Those attributes which we were confident the indicator possessed are shown in table 3.3. The assessment has been made by the MCRU team members. No attributes have been shown for indicator 7 - adherence to good practice guidelines - since the details of this indicator have still to be developed.

One of the theoretically best PIs is the case-fatality rate for emergency conditions. However, this is difficult to calculate because a case is not well defined and death can happen outside hospital. Consequently this PI scores relatively poorly on the attributes. Similarly 'unnecessary referrals' has been assessed relatively poorly, largely because although the definition was developed by MCRU, we are aware of controversy about how to clearly identify unnecessary attenders.

Overall, however, we assessed that most of these candidate indicators, possessed most of the attributes that 'good indicators' should have, and this set of indicators will therefore be taken forward to the next phase of development.

3.7.2 Calculations of PIs

	Attribute	Relevant to people	Clear definition	Valid	Effective	Cost-effective	Consistent	Reliable	Interpretable	Attributable	Remediable	Responsive	Timely	Avoid perverse incentives	Statistically reliable
	Indicator														
1	Mortality rates	√	√		√	√		√	√			√		√	√
2	Case/fatality rates	√		√		√			√			√		√	
3	Emergency admission rates	√	√		√	√			√		√	√		√	√
4	Unnecessary ED referrals				√		√			√		√			
5	Unnecessary AS transfers to ED				√		√			√		√			
6	Emergency re-admissions	√	√		√	√	√					√		√	√
7	Adherence to guidelines														
8	Multiple transfers	√	√		√	√	√		√		√	√		√	√
9	Time to clinical assessment	√	√	√			√		√	√	√	√	√	√	√
10	Time to admission	√	√		√		√		√		√	√	√	√	√
11	Time to definitive care	√		√	√	√			√	√		√	√	√	
12	Population living within 10km	√	√		√	√		√				√	√	√	√
13	Relative case fatality rates		√		√	√	√	√		√	√			√	
14	Variations in times to clinical assessment		√		√	√	√	√		√	√	√	√	√	
15	Variations in time to admission		√		√	√	√	√		√	√	√	√	√	
16	Variations in times to definitive care		√		√	√	√	√		√	√	√	√	√	

3.8 Discussion and conclusions

In recent years there have been many substantial changes to the provision of emergency and urgent care in the NHS. The introduction of NHS Direct and walk-in-centres, the re-organisation of GP out-of-hours care, and the re-configuration of trauma services and the use of helicopter ambulances, for example, may have all had a profound effect on the performance of the EUCS. However, although many studies of these individual services have been carried out we know very little about their impact on system performance.

The purpose of the indicator set that we are developing is to provide a set of reliable and meaningful measures of system performance that can be used to monitor the impact of changes that are introduced in future. We have shown that it is feasible to identify a set of indicators which groups of researchers, clinicians, and users think are potentially able to do this.

The 16 potential indicators we have identified are likely to be too susceptible to variation in local circumstances to be used to compare the performance of different systems. The impact of variation in case-mix, definitions, methods of data recording, data reliability, geography and demography mean that comparisons between systems are likely to be at best meaningless and at worst unfairly stigmatising.¹² However, the indicators may be used to monitor progress within a system and create a framework in which those responsible for delivering emergency and urgent care can be alerted to areas of performance which need attention.

The set of 16 candidate indicators that we have identified include measures of outcome, processes, structure, and equity of performance. Development of the indicator set is still in progress and in particular we need to explore in detail how data might be collected in order for some of the indicators to be calculated. One particular need is for patient records held by services to be linked across services so that pathways and timings can be established. Data linkage between service records can be done on a research basis but can be time consuming, incomplete, and sometimes inaccurate. An alternative approach is to use patient surveys to ask about pathways and timings. The difficulties with this approach are the accuracy of the recall of times and the small number of patients that can be identified in a population survey who have the emergency and urgent indicator conditions. A more promising possibility in the medium term is the data sharing across NHS services envisaged in Connecting for Health.

We also need to

- i) develop a 'final' set of 'definitive care' events such as thrombolysis, PCI, and neurosurgery,

- ii) identify any evidence-based standards or guidelines for the management of emergency and urgent conditions which are relevant to the performance of the system (such as 20 minute standard for 'door to needle' times for thrombolysis in the ED).

We are planning to undertake this work in the next phase of the MCRU programme in which we will work with 4 EUCS to collect data on these indicators and explore their performance. As a result of this work we expect to reduce the number of indicators, to tighten up their definitions, and to identify methods for data collection.

4. Measuring the patient perspective of the emergency and urgent care system

4.1 Background

Emergency and urgent care network boards or primary care trusts (PCTs), which manage systems rather than individual services, may need to measure the patient perspective of the system routinely to ensure quality and measure the effect of changes. Standard survey methodology, used to measure the patient perspective of services, may need to be adapted to measure the patient perspective of a system. There are numerous standardised questionnaires available to measure the patient perspective of individual emergency and urgent care services such as accident and emergency departments or same day general practice. However there is no standardised questionnaire for measuring the patient perspective of the system.

4.1.1 Aims

1. Test survey methodology for measuring the patient perspective of the system.
2. Test a questionnaire for measuring the patient perspective of the system.
3. Describe the characteristics of a system.
4. Develop a toolkit to help Emergency and Urgent Care Networks to measure routinely the patient perspective of their systems.

4.1.2 Structure of this part of the report

Each of the first three aims is addressed in a separate paper in preparation for publication in peer-reviewed journals: survey methodology, questionnaire testing, and characteristics of a system. The Toolkit is presented in the Patient Perspective Appendix.

4.2 Testing survey methodology for measuring the patient perspective of the system

4.2.1 Abstract

Aim: To address three methodological challenges: how to identify users of a system, the optimal recall period for system use, and the mode of administration which is most feasible, representative and inclusive in the context of a routine survey.

Methods: A postal survey of 900 members of the general population, a standard market research telephone survey of 1000 members of general population, and two service-based surveys of 200 users each.

Results: Response rates to the postal and standard market research company population surveys were 51% and 9% respectively. In these two surveys a screening question identified users of the system in the previous three months: 22% (99/457) of postal and 15% (151/1000) of telephone survey respondents. For both surveys, recall of event occurrence reduced by a half after four weeks and by a further half after 8 weeks. The telephone survey more accurately estimated use of individual services than the postal survey. Recall of experiences and views of events remained reasonably stable over the three month recall time period for both surveys. Even though the response rate was lower, the telephone survey was more representative of the population, included a higher proportion of people from minority ethnic groups, was faster and cheaper to undertake, and did not suffer from missing values. System-focused service-based surveys were also a feasible way of identifying patients' views of parts of the system.

Conclusions: It is possible to identify users of the emergency and urgent care system using a population survey. A recall period of three months can be used to estimate experiences and views, but a recall period of four weeks is needed to estimate use of the system. A standard market research telephone survey gives a low response rate yet is superior to a postal survey of a random sample of the population.

4.2.2 Background

When patients access emergency or urgent care they can attempt to contact a range of services,¹ and may use two or more in the process of obtaining definitive care.² For this reason it is important that services work as a system, offering smooth transit of the patient along their pathway of services. Policy makers in

England take a system perspective of emergency and urgent care,³ and have recommended the establishment of 'networks' of system stakeholders to ensure that services are coordinated within local systems.⁴

Commissioners and providers of care are interested in the quality and outcomes of care experienced by patients.⁵ Monitoring the performance of services from the patient perspective usually involves a survey of recent users, for example callers to NHS Direct, or attendees at a walk-in centre. There have been a number of national surveys in England of individual emergency and urgent care services, for example the ambulance service⁶ and emergency departments.⁷ However, obtaining the patient perspective of the system is not as straightforward as this. Standard survey methodology used to measure the patient perspective of a service may need to be adapted to measure the patient perspective of a system. For example, the administrative records of services can be used to identify recent users but the system is a virtual entity and does not keep records of its own.

Measurement of the patient perspective of the emergency and urgent care system can be undertaken by academic researchers as part of research studies. It is also important that those responsible for managing systems are able to routinely monitor the quality of their system and assess the effect of changes they make. Our aim was to address three methodological challenges related to measuring the patient perspective of the emergency and urgent care system: identification of users; identification of the optimum recall period to use; and identification of the most feasible, representative and inclusive mode of administration of a survey to be undertaken routinely rather than as a one-off research project.

Identifying users of the emergency and urgent care system

A number of approaches are possible for identifying users of a system rather than an individual service. First, it would be possible to access the records of all component services within a system. However, this would raise intractable problems due to the large number of services which make up the emergency and urgent care system,² and the problems of sampling and double counting. Furthermore, it excludes anyone who attempted, but failed, to use the system. Second, it would be possible to screen the general population for recent users and follow this with a survey of those recent users. The use of screening questionnaires in a two-stage survey approach has been used in other substantive areas of research.⁸⁻¹¹ A population screening questionnaire has been administered either by post or telephone and then relevant respondents contacted again by telephone, post or interview to complete a lengthier, more detailed questionnaire. Screening postal questionnaires have obtained various

response rates, for example 49%⁹ and 67%,⁸ and a telephone screening survey 52%.¹¹ However, in the context of this system survey, the two stage approach would introduce an unacceptable delay between first contact with a respondent and obtaining details about their recent use of the system. Therefore a combined questionnaire, covering screening and details of any event would be more appropriate. We have used this approach successfully in a previous study of unscheduled care.²

The strength of using a population survey to identify system users is that all parts of the system can be included. The weakness is that a large proportion of responses will be from non-users, and few users of some services within the system may be identified. A possible addition to a population survey is the use of 'system-focused service surveys' whereby a single service is targeted and users of that service are asked about the system rather than the service they used.

A second challenge for identifying users of the emergency and urgent care system is the screening question used within any questionnaire. The general population must understand what is meant by the term 'emergency and urgent care'. Our earlier qualitative research with people who had recently used a range of services within an emergency and urgent care system identified that, although people have a clear and consistent understanding of the term 'emergency', the meaning of 'urgent' is problematic.¹ A solution proposed by the research participants was to offer examples of the range of services which might be accessed for urgent care, as well as offering a definition of it.

Selecting an appropriate period of recall of events

A survey of user experiences of the system requires respondents to remember whether a health event occurred in a particular time period and then remember the detail of that event. These events will include minor actions such as going to a pharmacist, and major actions such as calling a 999 emergency ambulance. Recall bias is particularly pertinent in this context. Psychologists have studied autobiographical memory.¹² For non-threatening issues, memory errors represent the greatest problem¹³ either through episode omission whereby the respondent does not recall the event which occurred in the specified time period, or by 'episode telescoping' and 'episode expansion' whereby the respondent puts the event more recently in time or more distant in time than it really is.

Different recall periods for health events have been used, in particular four weeks,¹⁴ eight weeks,¹⁴ three months,^{15 16} six months,^{17 18} and one year.^{14 15 19} No consistent results have emerged from previous research about the optimum recall period. However, previous research indicates that recall is never perfect and that

it can depend on the severity or significance of the event,²⁰ the clarity of definition of the event,¹⁵ the types of details asked for, and the characteristics of the population under study.¹²

A further issue relevant to a population survey of the emergency and urgent care system is the need to capture rare as well as common events. Short time periods of recall will limit the number of rare events captured. The optimum recall period in this system survey needs to be long enough to include a large number of events without unduly affecting recall of event occurrence or details of any events. In a previous research study of unscheduled rather than urgent care we used a recall period of four weeks and found that 16% of people had sought help.² Other researchers have estimated use of urgent care in a month to be 23% of adults seeking care for themselves or someone else, with the figure rising to 56% when the time period was the previous year.²¹

Routine measurement of performance

Patient surveys can be undertaken within an academic environment but it is important that commissioners and providers of systems - in this case PCTs and emergency and urgent care networks - have the ability to measure the patient perspective of their local systems on a routine basis. It is important that a survey is feasible in this context, representative of local populations, and inclusive of hard to reach groups. Levels of inclusiveness may depend on the mode of administration of a survey. Postal questionnaires can exclude people with reading difficulties, and older people are less likely to respond to telephone screening.²² A review of survey methodology concluded that no single mode of administration is superior in all respects in all settings, and that choice should to be made on a survey-by-survey basis.²³ Therefore we compared a telephone and postal survey approach.

4.2.3 Methods

We compared two modes of administration for a population survey: postal and telephone. In addition we tested the use of 'system-focused service surveys' whereby service users were sampled and asked about the system rather than the service they used. We undertook all surveys within an emergency and urgent care system managed by one network. The network covered a population of one million people in the geographical area of two PCTs. We obtained ethical approval from a local NHS Ethics Committee and research governance from the two PCTs.

Postal population survey

We considered identifying the general population sample using the electoral roll. However, this includes adults only, and people have the option of removing their names and addresses from the publicly accessible roll. We therefore used general practice lists to identify members of the general population. We planned to select a stratified random sample of 20 practices and a random sample of 50 patients from each practice. Stratification was by area to ensure geographical representation across the whole population. We selected 20 practices and contacted the named practice manager in each, requesting participation in the research. Practices which did not want to participate were replaced by other practices from the same geographical sampling stratum. In total we contacted 65 practices - approximately half of all the practices in the network - and 13 agreed to participate. When we realised how difficult it was to recruit practices we increased our request from a sample of 50 patients to a sample of 100 patients from practices recruited later in the process. The 13 practices selected a random sample of patients from their lists, removing people from the sample to whom they felt it would be inappropriate to send a postal questionnaire. The practices posted questionnaires on behalf of our research team and respondents returned completed questionnaires directly to our university via reply paid envelopes. Two reminders were sent to non-respondents. Questionnaires were sent to adults aged 16 and over, and the parent/guardian of children aged up to 16 years of age. Practices were paid for administrative time, and stamps were provided.

Telephone population survey

We engaged a market research company to undertake a telephone survey of a random sample of the general population. Our plan was that they would identify 1000 telephone numbers at random and undertake up to four contacts to obtain approximately 600 respondents, that is, mirror the approach taken in the postal survey. However the market research company did not normally undertake surveys in this way. Their standard approach was to call telephone numbers once only until they obtained 1000 respondents who fitted the age sex profile of the population. In the interest of the feasibility of a network undertaking such a survey routinely, we decided to adopt this standard market research company approach. We identified the post codes covering the system population and supplied them to the company. They undertook random digit dialling with one attempt to contact that number. Their aim was to identify 1000 respondents. Quota sampling was undertaken to ensure that the profile of respondents was similar to the system population profile in terms of age and sex. Standard market research procedures were followed to identify an adult to speak to within a household who was aged 16 and over. Once an adult was identified, the ages of

children in the household were identified. An adult or a child was selected as the focus of the interview in line with meeting the quota sample.

System-focused service surveys

Two services were selected to test the benefits of enhancing a population system survey with a system-focused survey of services. The network selected a minor injury unit (MIU) and a new walk-in centre (WIC), two services which have relatively small use within a population in comparison with other services in the system.² An administrative person at each service created a list of new attendances over a one week period, ordered by time of attendance. They drew a systematic sample from this list to identify 200 users. People were excluded from the list if nurses felt that they would be distressed by receiving a questionnaire. The same methods used in the postal population survey were applied.

Questionnaire

The same questionnaire was used in all of surveys. It was developed based on qualitative research with recent users of the system.¹ All participants were asked a screening question about use of urgent care and some socio-demographic questions. If they had attempted to contact emergency or urgent care services in the previous three months they were asked to complete the remaining parts of the questionnaire about the most recent event. They described the first three services in their most recent pathway and answered 22 satisfaction items about their most recent use of the system. The telephone version was adapted to ensure it worked in the context of a telephone interview. In particular, lists of options to some questions were shortened so that the interviewee would not have to listen to a long list. An introductory script was written to replace a covering letter. A section was added to identify children within households.

Routine data

To consider the inclusiveness of the population surveys we identified 2001 Census data about the population covered by the system. To consider the accuracy of service utilisation data within the population surveys we requested routine statistics about numbers using emergency and urgent care services within the system.

Analysis

Data were analysed using SPSS version 12.1. Proportions of the population using the system, identified in the two population surveys, were compared. Recall was

studied by plotting the proportion of respondents reporting that they attempted to use the system by the week in which the most recent contact was made. Accuracy of rates of service use was tested by comparing reported rates in the surveys with the gold standard rates based on routine data. Consistency of reports of events with different lengths of recall was tested by comparing experiences and views of events within four weeks and those occurring over four weeks. Response rates, representativeness and inclusiveness were compared for the two modes of administration of the population survey. Chi-squared tests and t-tests were used to compare proportions and continuous variables respectively. The postal population survey was analysed at the individual level, without taking the clustered nature of the data into consideration.

4.2.4 Results

Response rates

For the postal population survey, 13 practices of the 65 approached agreed to participate. The first eight practices randomly sampled 50 patients on their lists, and the next five sampled 100 people, giving a total sample of 900 people. When any 'return-to-senders' were removed from the denominator, the response rate was 51% (457/893). For the telephone population survey, 18,091 calls were made but 4,871 numbers were unobtainable, and there was no response to a further 8689 because the telephone was unanswered (3806), engaged (320), on answer-phone (3074) or the person was not available (1489). Some people refused to respond to the questionnaire (2221), were not eligible (1272), or were duplicates (24). The response rate was 8.5% (1014/11924) from people who were contactable and eligible for inclusion. The 1000 respondents fitting the telephone survey quota sampling were selected for analysis.

Identification of system users

25% (113/457) and 15% (151/1000) of respondents reported seeking urgent health care in the previous three months in the population postal and telephone surveys respectively. In the population postal survey some respondents ticked 'yes' to the urgent care question but reported their most recent event at over 13 weeks. When they were excluded, the postal survey event occurrence reduced to 22% (99/457). That is, the postal population survey identified a higher proportion of recent users of the system than the telephone survey.

Recall of event occurrence

When reporting the timing of their most recent event, respondents expressed digit preference after week 4, for example, using 8 and 12 weeks rather than 7 and 11 weeks respectively. Therefore we smoothed the distribution of respondents' most recent events over time by allocating the mean of weeks 5 and 6 to week 5 and week 6, and repeated this for weeks 7-8, 9-10, 11-12/13. We plotted the smoothed distribution of the most recent events for each week over the three month period (Figure 4.2.1). The lines on Figure 4.2.1 represent the distribution of all reported events by the week in which they occurred; they do not represent the proportion of respondents reporting system use in each week. A uniform distribution would indicate similar recall of event occurrence over the time period. There was evidence, from both the telephone and postal surveys, that there was a reduction in recall of event occurrence after 4 weeks, with further problems emerging after 8 weeks. There was also evidence of episode telescoping in the postal survey, with respondents placing more distant events into the three month time frame to make the questionnaire more relevant to them. The sample size was too small to plot recall for individual services within the system. The estimated use of the system in the previous four weeks was 10% (46/457) for the postal survey and 8.5% (85/1000) for the telephone survey.

Accuracy of recall of event occurrence

Given that recall of event occurrence was more accurate within four weeks, we used the survey data for events occurring in that shorter period to estimate the population use of individual services. We multiplied the number of most recent events by the mean number of events which respondents reported in that four week period: a mean of 1.5 in the postal survey and 1.8 in the telephone survey. We calculated a service utilisation rate per 1000 population in a four week period. The network provided us with routine data on numbers of people from their geographical area using specific services in their system in 2006/7. The network was able to supply limited data on a small number of services only. We calculated rates of use per 1000 population in a four week period for these services. The telephone population survey appeared to be more accurate than the postal survey in determining use of specific services, with the exception of walk-in centres (Table 4.2.1).

Figure 4.2.1 Percentage of all users reporting use by week of recall period

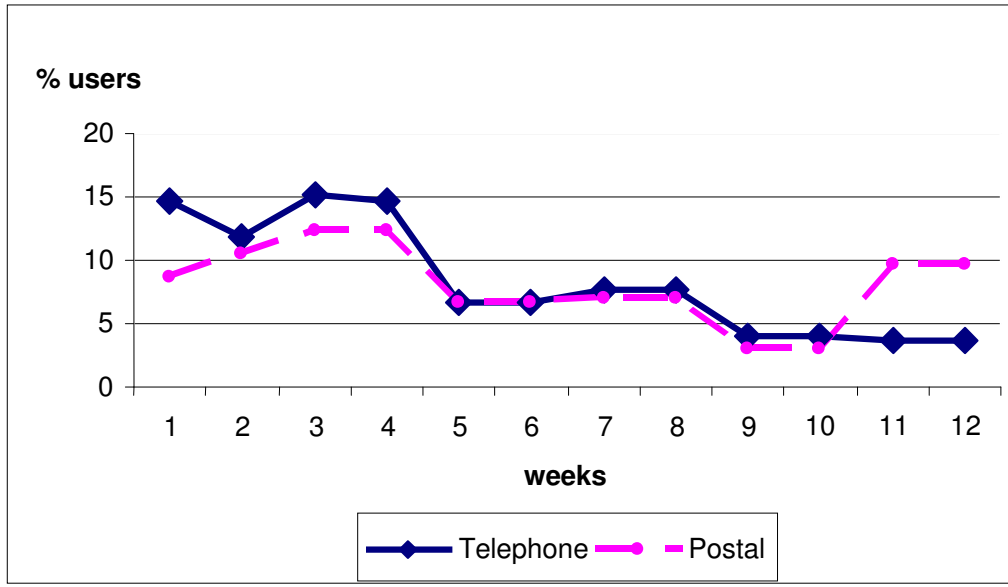


Table 4.2.1 Rate per 1000 population per month using specific services in the system

Service	Postal survey	Telephone survey	Routine data
GP out of hours	26	13	13
A&E	23	11	12
999	3	7	6
Urgent care centres (MIUs)	6	4	5
WIC	3	9	0.5

Recall of experiences and views

We tested whether respondents’ experiences and views were dependent on the length of recall of their most recent event. We compared experiences and views for events occurring within four weeks of completing the questionnaire, and events occurring between four weeks and three months. We did this separately for the postal and telephone surveys in case recall differed by mode of

administration. Statistical power was low due to small numbers. There were some statistically significant differences by time period for some key variables (Table 4.2.2), although there was no consistent pattern concerning superiority of either administration mode. Of the 22 satisfaction items, only one was statistically significantly different and that was for the postal survey. Therefore it is possible that a time period of 3 months could be used to assess experiences and views of the system.

Table 4.2.2 Comparison of experiences and views of most recent event by recall period of event

	Postal <=4 weeks N= 46	Postal 5-13 weeks N= 52	Telephone <=4 weeks N=85	Telephone 5-13 weeks N=66
Mean number of services involved in most recent event	2.3	2.6	1.9	2.2
	P=0.294		P=0.071	
When help was sought from first service+				
In hours	67%	77%	82%	69%
Out of hours	33%	23%	18%	31%
	P=0.286		P=0.075	
Case managed with sufficient urgency+				
Definitely not/No, I don't think so	22%	15%	11%	12%
Yes, I think so	20%	46%	22%	23%
Yes, definitely	59%	39%	67%	65%
	P=0.021		P=0.951	
Overall rating of care received+				
Excellent	30%	31%	52%	33%
Very good	30%	35%	26%	44%
Good-very poor	39%	35%	22%	23%
	P=0.875		P=0.039	

+response categories collapsed to ensure validity of chi-squared test

Representativeness and inclusiveness

The response rates to the two population surveys were very different. The telephone survey had a lower response rate. We compared the socio-demographic profile of the two population survey respondents with the census population from which they were sampled (Table 4.2.3). People below the age of 44 years old were underrepresented and people aged over 45 were overrepresented in the postal survey; males were also underrepresented. In contrast the telephone survey was designed to be representative of the age and sex structure of the population through quota sampling. It was also representative of ethnic groups whereas the postal survey was not. The postal survey was superior only in terms of representing home ownership; the telephone survey overrepresented people who owned their homes.

Table 4.2.3 Socio-demographic profile of survey respondents compared with population

	Postal sample N=457 %	Telephone sample N=1000 %	2001 census population %
Age			
<5	2	5	5
5-9	5	6	6
10-15	5	6	6
16-24	7	11	12
25-34	6	11	12
35-44	13	16	16
45-54	19	14	13
55-64	20	13	13
65+	24	17	17
Sex			
Male	42	50	49
Female	57	50	50
Ethnic group			
White	98	95.8	96.0
Asian	0.5	2.7	2.3
Other	1.6	1.5	1.7
Accommodation type*			
Owner	76	84	73
Rented/other	24	16	27

*Home ownership does not compare like with like: it was measured for individuals in our surveys and for households in the census)

Feasibility of population surveys

The telephone survey was undertaken by a market research company, analysed and reported, all within one week. The postal survey took months in terms of recruiting general practices and sending up to two reminders to respondents. The cost of the telephone survey was approximately £10,000 to identify 150 system users. The cost of the postal population survey was higher when costs of printing, postage, return postage, administrative time at each general practice, and researcher time at the university were summed. A conservative estimate was £12,000 to identify 99 users of the system. The amount of missing data for items varied for the postal questionnaire but was zero for the telephone survey (Further details in Section 4.3).

System-focused service surveys

The service surveys were feasible, with response rates similar to that of the postal population survey: 46% (90/197) for the MIU and 45% (86/192) for the WIC. The proportion of respondents who reported seeking urgent health care in the previous three months was 81% (142/176), varying little between services (82% in the MIU and 80% in the WIC). We expected this to be 100% given that we wrote to people who had recently used an urgent care service. However, people can use these services when they perceive that their problem is not urgent and therefore <100% does not necessarily indicate a problem. Routine data was available for these two services in a six and three month period (MIU and WIC respectively) in which the surveys were undertaken. Use was available by age group. The WIC survey respondents largely represented users, but MIU respondents had a differing age distribution from users (Table 4.2.4). Recall was less of an issue for the service surveys than the population ones because questionnaires were posted approximately one week after use of an urgent care service. A telephone survey would be feasible only if patient telephone numbers were available and NHS ethical and other approvals obtained.

Table 4.2.4 Representativeness of service surveys

Age group	MIU Survey N=90 %	MIU Routine data N=18,442 %	WIC Survey N=86 %	WIC Routine data N=1632 %
0-2	9	8	1	5
3-15	11	26	16	13
16-64	66	50	69	70
65-74	9	9	5	7
75+	4	7	10	5

4.2.5 Discussion

Summary of findings

Although the telephone survey used market research quota sampling and obtained a lower response rate of 8.5%, it performed better than the postal survey in terms of representativeness by age and gender, inclusiveness of minority ethnic communities, and estimating use of different services in the system. It also cost less and did not suffer from missing values. Although considered low when compared to a postal survey, a response rate of 8.5 per cent is not untypical when using a Random Digit Dialling (RDD) and quota sampling approach to telephone survey methodology. Two papers using RDD, with response rates of 9.1%¹ and 10.1%² have been published in the BMJ in recent years.^{24,25}

A superior mode of administration was not identified in a randomised controlled trial of a postal versus telephone survey.²⁶ However a higher rate of missing values was found in the postal survey, supporting our findings and those of previous studies. An important point which emerged from this trial was that telephone surveys can elicit more extreme responses and particularly more positive responses.²⁶ This is an important issue to bear in mind if telephone surveys are to be recommended for obtaining the patient perspective of the emergency and urgent care system. However, it is not an issue when monitoring within systems over time.

Use of the system was estimated as 10% or 8.5% in a four week period for the postal and telephone surveys respectively. In our earlier research, where we used population postal surveys to explore the use of unscheduled care, we found that

16% of the population used unscheduled care in the previous four weeks.² The focus of our current research was urgent rather than unscheduled care but there is a considerable overlap between these two forms of care and we would have expected higher use in our current surveys than we obtained. However, we did validate reported use of some services in the system and our current estimates appear to be accurate.

Strengths and limitations

The strength of this study is that methodology has been tested. A limitation is the low power for some of the statistical comparisons made.

Conclusions

It is possible to identify users of the emergency and urgent care system through a population survey. A recall period of three months can be used to estimate experiences and views, but a recall period of four weeks is needed to estimate use of the system. A standard market research telephone survey using quota sampling gives a lower response rate yet is superior to a postal survey of a random sample of the population.

4.3 Measuring patients' experiences and views of the emergency and urgent care system: psychometric testing of the Urgent Care System Questionnaire

4.3.1 Abstract

Aim: To psychometrically test the Urgent Care System Questionnaire (UCSQ) for the routine measurement of the patient perspective of the emergency and urgent care system.

Methods: The UCSQ was developed based on qualitative research with recent users of the system. It consisted of a screening question to identify recent users of the system, questions on patient experience such as number of services used in an event, and 22 satisfaction items. We tested it in a postal survey and a telephone survey of 900 and 1000 members of the general population respectively. We considered the acceptability, validity and reliability of the UCSQ.

Results: The response rate to the postal administration of the questionnaire was 51%, similar to other surveys of services in the system. Item response rates for some of the 22 satisfaction items were poor, indicating a need for a 'does not

apply' category in the response set. There were three discrete satisfaction domains with good internal consistency: progress through the system (10 items), entry into the system (3 items), and patient convenience (5 items). There was evidence that these domains varied as expected by age and overall rating of the system.

Conclusions Preliminary testing suggests that the UCSQ has reasonable acceptability, validity and reliability. Further testing is required particularly in context of how it can be used in practice to routinely measure patient perspective of the system.

4.3.2 Background

The 2008 review of the National Health Service (NHS) in England - 'High Quality Care For All' - places the patient experience of health care at the heart of health care provision.²⁷ This creates an increasing imperative for the routine measurement of the patient experience of the NHS. Although the 2008 review focuses on the patient experience of individual services, patients tend to experience a system where they make choices about which service to use and make use of a number of services within a health care episode. Therefore the patient perspective of the *system* of health care is as important as that of individual services.

There are many questionnaires which assess the patient perspective of different services within the emergency and urgent care system such as 999 ambulances,⁶ out of hours primary care,²⁸⁻³¹ and in-hours general practice including same day appointments for urgent care.³² Dimensions covered by these service-specific questionnaires may be of relevance to the emergency and urgent care system, but it may also be the case that the system has its own characteristics. We found no questionnaire which attempts to measure the patient perspective of the emergency and urgent care system and therefore, in an earlier phase of our current programme, we undertook qualitative research with people who had recently sought health care urgently to understand the system from their perspective.¹ We identified issues which are rarely addressed in service-specific questionnaires, in particular confusion over the most appropriate service to use for their health problem, coordination between services, and informational continuity across services. Some of these issues were similar to those identified in a study of the patient perspective of the primary-secondary care interface, which is a significant part of the general health care system.³³ Other characteristics were identified which, although commonly included in service-specific questionnaires, had the potential for system-specific consequences. For example, patient perception of poor communication with one service could increase their

subsequent use of the system. From this first phase of our programme, we concluded that there was a need for an instrument which addressed system issues and our aim was to develop such an instrument based on our qualitative research¹ and then test its psychometric properties.

4.3.3 Methods

Developing the questionnaire

We planned to develop a questionnaire which would measure patient-reported system metrics, descriptive aspects of patients' experiences, and patients' views of those experiences. The metrics were determined by our research team; two key metrics were the number of services in an episode, and length of time from beginning of an episode until definitive care. Descriptions of experience were also determined by our research team and included whether the episode occurred in or out of hours, and reasons for moving from one service to another. Questions about patients' views or satisfaction with the system were derived from three sources. First, we used items from standard service-specific questionnaires which we felt would be relevant to patients' views of the system, for example whether they felt their problem had been treated with sufficient urgency.³¹ Second, we used items determined by our research team, for example views about sharing of information between services. We produced a draft questionnaire and cognitively tested it within the interviews and focus groups undertaken to explore patients' views of the system.¹ The questionnaire was refined throughout this process. The third – and most influential – source of questions was the analysis of our qualitative data from which we identified 22 items which captured patients' views of the system.

The questionnaire consisted of seven sections over 12 pages: a screening question about whether the system had been used in the previous three months and socio-demographic details; description of the most recent episode including number of services contacted; experience of the first service contacted; experience of the second service; experience of the third service; overall views of the episode including 22 satisfaction items; and two open questions – how to improve local services and 'any other comments'. Most respondents completed the first section only because they had not used the system in the previous three months; respondents who had used the system completed the full 12 page questionnaire. We needed to make a decision about the response set for the 22 satisfaction items because no consistent response set has been used in patient satisfaction surveys for services in the system. We selected a five point Likert scale 'strongly agree, agree, unsure, disagree, strongly disagree' for the 22 items because it allowed us to word items in a way which captured the voices of

participants in our earlier qualitative research. Because of this choice of response set, the 22 items included a combination of positive and negative statements.

Data collection

We undertook a postal survey of 900 members of the population and a market research company telephone survey of 1000 members of the population. The data collection was described in detail in Section 4.2.3.

Analysis

We tested the acceptability, validity and reliability of the questionnaire.³⁴ We tested acceptability by considering survey response rates, item response rates for all questions, and response distributions for the 22 satisfaction items. We expected the rate of missing responses to be higher for the postal than the telephone survey.²⁶ Satisfaction items are usually positively skewed and therefore we expected skewed response distributions for our 22 items. Nonetheless we expected responses to be distributed across all categories for these items.

Content validity was derived from basing the questionnaire on qualitative research. Face validity was derived partly through cognitive testing in the earlier qualitative research. Further face validity was considered by reading any comments respondents made next to individual questions, looking for consistency of answers throughout each questionnaire, and comparing answers to the structured questions with answers to the open questions for each questionnaire where the open questions were treated as the gold standard.

We had constructed four dimensions of satisfaction for the questionnaire, based on our qualitative research. The 22 items were grouped into these dimensions: 'accessing services', 'progress through the system', 'communication' and 'general.' We did not have enough confidence in these dimensions to undertake confirmatory factor analysis. Therefore we undertook exploratory factor analysis on the 22 satisfaction items to test construct validity. We applied factor analysis in SPSS using principal component analysis with varimax rotation, and eigenvalues >1 , to identify domains of system satisfaction.³⁵ We tested reliability by measuring the internal consistency of domains using Cronbach's alpha. Individual items in a domain should be highly correlated with each other if they are measuring aspects of a single construct, but not so correlated that some items are redundant. A Cronbach's Alpha between 0.7 and 0.9 indicates an adequate level of item correlation within a domain. Precision was addressed through use of a five point Likert scale for the 22 satisfaction items. We

calculated domain scores by scoring individual items from 'strongly agree=5' through to 'strongly disagree=1' for positive statements, with reversal for negative statements. We calculated the mean score in each domain so that scores varied between 1 and 5, where 5 indicated most satisfaction. Missing values for individual items within a domain were replaced by the mean for that domain. Finally, we further tested the construct validity of the instrument by examining domain scores across sub-groups known to hold different views of services. Specifically, older people are more likely to be satisfied with services than younger people and we hypothesised that this would hold for satisfaction with a system.³⁶ We also tested the relationship between domain scores and overall satisfaction with care. We used ANOVA for these comparisons. All analyses were undertaken in SPSS version 12.1.

4.3.4 Results

Acceptability

The response rate was 51% (457/893) for the postal survey and 8.5% (1014/11924) for the telephone survey (see Section 4.2.4). Only some respondents were users of the system in the previous three months: 99 and 151 in the postal and telephone survey respectively. These respondents completed the full questionnaire and we studied their item response rates. The percentage of missing values for items on the telephone survey was 0% because respondents were encouraged to answer all questions. However, they were higher than the desired '5% or less' for some of the 22 satisfaction items in the postal survey (Table 4.3.1), for example 'travelling to the services I needed was easy' (missing value rate=18%), and 'services understood that I had responsibilities, like my need to look after my family' (14%). Study of individual questionnaires revealed that some respondents put 'N/A' against some of these items. We realised that some of the 22 items would not be applicable to everyone and this highlighted the need for a 'does not apply' option in the response set. Other key questions in the postal survey had acceptable missing data levels, for example number of services involved in the most recent event (3%), whether a case was managed with sufficient urgency (1%), perception of number of services contacted (7%), and overall satisfaction (1%).

Given that the telephone survey was found to be superior to the postal survey in terms of representativeness and inclusion of hard to reach groups (see Section 2 of this report), the distribution of responses are shown for the telephone survey only (Table 4.3.1). The response distribution was as expected for all 22 satisfaction items with the exception of 'services understood that I had responsibilities, like my need to look after my family', and 'services did not seem

to talk to each other'; the use of the 'unsure' category was very high for these two items. Again this was due to these items not being relevant to everyone and further highlighted the need to add a 'does not apply' option to the response set.

Validity

We read individual completed postal questionnaires to look for inconsistencies and comments which respondents had made beside questions. Some instructions on the postal questionnaire needed to be clearer and some questions about patients' experiences needed slight rewording or the addition of extra options e.g. we needed to add 'Bank Holidays' as an option for when help was sought. The adapted telephone survey did not suffer from many of these issues because it had been scripted slightly differently for use over the telephone. A key inconsistency occurred around the types of service contacted. Respondents sometimes ticked 'A&E' in one question but 'Minor Injury Unit' in another. Respondents could not necessarily engage with or understand the generic labels used for some services. Therefore an individual Network or PCT using this questionnaire might consider using the actual names of services employed by their local population rather than generic service labels.

Some comments to the open questions at the end of the questionnaire were general or were related to services not detailed in the structured part of the questionnaire. When a respondent wrote about a specific experience which named the services discussed in the structured part of the questionnaire, both their good and poor experiences were evident in the structured satisfaction section of the questionnaire. There were few exceptions to this. An example of an exception was someone ticking 'excellent' and 'strongly agree' to all satisfaction questions but in the open question expressing concern about nurses at a service chatting instead of treating patients.

The satisfaction questions were open to the problem of 'acquiescent response set', where respondents tick the same option on each line of a set of satisfaction questions, ticking the option equivalent to 'satisfied'. This indicates that someone has not read the individual items but is expressing general satisfaction. This can be problematic in the context of a series of positive and negative statements where a respondent may wish to express general satisfaction but indicates dissatisfaction by ticking the wrong box for negative items. However, there was no indication that this occurred here.

We undertook factor analysis on the 22 satisfaction items using responses from the 250 system users in both the postal and telephone surveys together. Our dataset was of an adequate size because we had over 10 subjects per item tested. One item was highly correlated with two other items and we removed it – ‘I got the help I wanted quickly’. Factor analysis on the 21 remaining items identified three system satisfaction domains, accounting for 63% of the variance (Table 4.3.2):

PROGRESS through the system (13 items, 37% of the variance)

ENTRY into the system (3 items, 14% of the variance)

PATIENT CONVENIENCE (5 items, 12% of the variance)

Reliability

Cronbach’s alpha was in the acceptable region of between 0.7 and 0.9 for two domains but high for the 13 item factor. There was no indication that the removal of a single item would reduce the high Cronbach’s alpha. We removed three items which were correlated reasonably strongly with others in that domain (* in Table 4.3.2) and the Cronbach’s alpha on the remaining ten items was 0.93.

Further construct validity

Domain scores were higher for older people, indicating higher satisfaction as expected (Table 4.3.3). However, this was only statistically significant for one domain. Domain scores also varied as expected by overall rating of the system, with poorer domain scores associated strongly with poorer rating of the system.

Table 4.3.1 Distribution of responses to the telephone survey (N=151)

	Postal survey % missing values N= 99	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
I did not know which service to go to about this problem	12	5%	9%	3%	32%	52%
I felt that the first service I tried was the right one to help me	8	60%	34%	2%	3%	1%
I felt sometimes I had ended up in the wrong place	13	3%	4%	1%	38%	54%
I found it easy to get the service I wanted	8	54%	33%	1%	5%	7%
Travelling to the services I needed was easy	18	45%	42%	3%	9%	2%
I had to push to get the help I needed	11	10%	8%	3%	33%	46%
I moved through the system smoothly	4	46%	42%	3%	4%	5%
It took too long to get the care needed	8	8%	11%	1%	40%	40%
I felt that no one took responsibility and sorted out my problem	8	5%	6%	3%	38%	49%
I saw the right people	8	47%	44%	4%	3%	3%
I felt I was given the wrong advice	11	0%	2%	7%	38%	54%
My problem was sorted out	9	42%	39%	7%	9%	3%
I got the help I wanted quickly	4	42%	41%	3%	7%	7%
I had to repeat myself too many times	7	4%	7%	1%	41%	47%
Services had the information they needed about me	6	43%	43%	5%	8%	1%
Services did not seem to talk to each other	9	6%	12%	16%	34%	32%
I was told how long I'd have to wait	10	23%	36%	9%	23%	9%
My concerns were taken seriously by everyone	6	46%	44%	3%	4%	3%
Services understood that I had responsibilities, like my need to look after my family	14	19%	44%	27%	7%	4%
I was made to feel like I was wasting everyone's time	7	2%	3%	1%	41%	54%
The system did not work well this time	6	7%	9%	1%	44%	39%
At each stage, I was confident in the advice services gave me	5	41%	42%	5%	9%	3%

Table 4.3.2 Results of factor analysis on telephone and postal survey system users (N=250)

Domain	Cronbach's alpha	Item	Rotated factor loadings		
			Factor1	Factor2	Factor 3
PROGRESS	0.95	I found it easy to get the service I wanted*	-0.70		
		I had to push to get the help I needed	0.66		
		I moved through the system smoothly	-0.84		
		It took too long to get the care needed	0.79		
		I felt that no one took responsibility and sorted out my problem	0.76		
		I saw the right people	-0.68		
		I felt I was given the wrong advice	0.62		
		My problem was sorted out *	-0.68		
		Services did not seem to talk to each other	0.59		
		My concerns were taken seriously by everyone	-0.75		
		I was made to feel like I was wasting everyone's time	0.69		
		The system did not work well this time*	0.77		
		At each stage, I was confident in the advice services gave me	-0.73		
		ENTRY	0.70	I did not know which service to go to about this problem	
I felt that the first service I tried was the right one to help me				-0.73	
I felt sometimes I had ended up in the wrong place				0.51	
PATIENT CONVENIENCE	0.75	Travelling to the services I needed was easy			0.60
		I had to repeat myself too many times			-0.45
		Services had the information they needed about me			0.51
		I was told how long I'd have to wait			0.82
		Services understood that I had responsibilities, like my need to look after my family			0.48

Table 3.3 Domain scores for system users by age and overall satisfaction (mean, SE)

	N	Progress	Entry	Patient convenience
Age				
<65	200	4.04 (0.06)	4.25 (0.06)	3.82 (0.06)
65+	48	4.32 (0.09)	4.38 (0.10)	3.97 (0.10)
		p=0.044	p=0.311	p=0.253
Overall satisfaction				
Excellent	96	4.63 (0.04)	4.58 (0.07)	4.31 (0.06)
Very good	83	4.29 (0.05)	4.37 (0.07)	3.96 (0.05)
Good-very poor	70	3.10 (0.11)	3.74 (0.11)	3.05 (0.09)
		p=0.001	p=0.001	p=0.001

4.3.5 Discussion

The response rate of 51% for our postal questionnaire was similar to that of other recent surveys of users of general practice out of hours services, where rates of 46%^{29 31} were obtained, surveys of primary care trust populations where a 45% response rate was obtained,⁷ and the recent national general practice survey of five million adults where a response rate of 43% was obtained.³⁷ In fact, we obtained rather a good response rate given that the questionnaire was sent mainly to people to whom it was irrelevant - that is, non-users of the system. We have no comparable information for response rates to market research company telephone surveys.

Our preliminary testing of this questionnaire shows convincing evidence of its acceptability, validity and reliability. After testing the questionnaire is equivalent to a 10 page postal questionnaire, with 18 satisfaction items (see Section 5 Toolkit for the telephone version of the questionnaire).

Strengths and limitations

We have not tested the reproducibility using test-retest methods, nor assessed its responsiveness to change.

Conclusions

We have developed and tested a questionnaire which can measure the patient perspective of the emergency and urgent care system – the UCSQ. Future research should address its responsiveness to change and its utility in the context of routine measurement of system performance.

4.4 The patient perspective of an emergency and urgent care system: the case of the Derbyshire Urgent Care Network

4.4.1 Abstract

Background: Networks or Primary Care Trusts responsible for managing an emergency or urgent care system may wish to routinely measure the patient perspective of their system. We developed survey methodology and a questionnaire for this purpose and used them to describe the patient perspective of one system in England.

Methods: A market research company telephone survey of 1000 members of the general population, postal survey of 900 members of the population and two postal surveys of 200 users of two services in the system.

Results: 8.5% of the population reported using the urgent care system in the previous four weeks. Two thirds of users in the previous three months (67%) contacted more than one service for their most recent event, with a mean of 2.1 services per event. Half of system users received definitive care within six hours (49%). The mean satisfaction score out of 5 was 4.3 for entry into the system, 4.2 for progress through the system, and 3.9 for patient convenience of the system. When the GP out-of-hours service was on a user pathway, satisfaction was lower for these domains: 3.8, 3.6 and 3.2 respectively.

Conclusions: The patient perspective of a system in England indicated that patients experience pathways of care rather than single services, that the convenience of the system for patients could be improved, and the system could be improved by focusing on the GP out-of-hours service.

4.4.2 Background

Networks or Primary Care Trusts responsible for managing the emergency and urgent care system may wish to routinely measure the patient perspective of their system. They may do this to identify aspects of the system which appear not to be working as well as others, that is diagnose problems with their system, or to measure the effect of changes they have made to their system by undertaking surveys before and after any change. We developed survey methodology (see Section 4.2) and a questionnaire (see Section 4.3) for this purpose. We describe here its use in one system in the north of England.

Setting

Derbyshire County is situated in northern/central England with a population of approximately one million people. It has one major city – Derby with a population of quarter of a million people – and a number of large towns including Chesterfield. The county covers large rural areas, including the well known Peak District. The socio-demographic profile of the whole of Derbyshire County is very similar to England with the exceptions of a lower proportion of ethnic minority communities and a higher proportion of home ownership.

In an earlier phase of our research programme we identified a number of Emergency and Urgent Care Networks in England which are charged with coordinating care provided by services in the system. Derbyshire Urgent Care Network was an active network covering a county which includes a mixture of urban and rural populations, and a range of levels of social deprivation. The Derbyshire Urgent Care Network Board manages the emergency and urgent care system for the whole of Derbyshire County. Its purpose is "To develop and ensure effective implementation of a community-wide Urgent Care Strategy for the populations of Derbyshire County and Derby City PCTs, to provide safe, effective and efficient, patient focussed, urgent care service throughout the whole of Derbyshire." (Stated Terms of References 2/2/07). A key member of the Network - the Head of Urgent Care of Derbyshire County PCT - agreed to host our survey. She discussed the draft questionnaire with her patient and public involvement contacts and suggested minor changes. She recommended two services to test the system-focused service-level survey on – a large established Minor Injury Unit (MIU) in north-east part of the county open 24 hours a day, and a newly opened Walk-in Centre (WIC) in Derby city.

Aims

- (i) To describe patient-reported system metrics, in particular the number of services contacted on a pathway of care, and the duration of a pathway in terms of elapsed time to arrival at definitive care.
- (ii) To describe experiences of the system in terms of common pathways through the system and reasons for moving from one service to another.
- (iii) To describe satisfaction with the system.
- (iv) To diagnose problems with the system, including problem pathways.
- (v) To consider sample size and timing of routine system surveys.

4.4.2 Methods

Data collection

We undertook a postal survey of 900 members of the population, a market research company telephone survey of 1000 members of the population, and a survey of 200 users of an MIU and 200 users of a WIC. The data collection was described in detail in Section 4.2.3. We obtained approval from a local NHS Ethics Committee and research governance.

Analysis

All data were analysed using SPSS version 12. ANOVA was used for comparison of means and the chi-squared test for comparison of proportions.

4.4.3 Results

Estimate of use of urgent care system

As shown in Section 4.2, estimates of urgent care use in the population must be based on a recall period of four weeks only, and estimates from the telephone survey were more accurate than the postal survey. For a four week period, population estimates of urgent care use were 8.5% (85/1000) based on the telephone survey. This rate did not vary by different groups in the population. It appeared to vary by age group (see Table 4.4.1), but this was not statistically significant.

System metrics

Respondents were asked to describe the length of pathway for their most recent event in the previous three months. The majority of system users (67%) had more than one service on their pathway (Table 4.4.2), indicating the importance of considering pathways and systems rather than use of individual services. The vast majority of users had three or less services in their pathway, but 8% had four or more services in their pathway.

Respondents were asked about the length of time from contacting the first service until the help they wanted was received. The time to definitive care depends on the urgency of an event as well as system delays. Half of telephone survey respondents felt that they received the help they needed within 6 hours of first contact (Table 4.4.2).

Table 4.4.1 Reported urgent care use in four weeks in telephone survey by socio-demographic characteristics

Characteristic	Telephone survey		
	%	n	N
Age			
0-15	9	15	175
16-44	6	24	380
45-64	10	26	275
65+	13	20	170
Sex			
Male	8	39	500
Female	9	46	500
Ethnic group			
White	9	82	958
Other	7	3	42
Accommodation type			
Owner	8	70	840
Rented/other	9	15	160
Total	8.5	85	1000

Table 4.4.2 Length of pathway in each survey

	Telephone N=151	Postal N=99	MIU N=73	WIC N=66
	%	%	%	%
Number of services				
1	32	26	41	21
2	40	35	33	40
3	19	20	19	25
4+	8	19	7	14
Mean (sd)	2.0 (1.1)	2.5 (1.5)	1.9 (1.0)	2.4 (1.2)
Time to definitive care				
Minutes	20	23	39	39
1-6 hours	29	42	39	29
7-23 hours	8	1	4	3
1 day	9	3	10	5
2-4 days	7	11	1	11
5-7 days	4	8	1	0
weeks	20	3	1	8
Still waiting	3	10	4	5

System experiences

Less than a fifth of the population contacted the system about an injury (Table 4.4.3) and, as expected, users of the MIU were more likely to have an injury than other system users ($P=0.0001$). Although about a third of people contacted a service immediately after thinking the health problem was urgent, a minority waited more than a day before making contact with a service.

The most common service on a pathway in the population surveys was a daytime GP (Table 4.4.3). Few people had contacted the 999 ambulance service – in the telephone survey only 7 of 151 system users had used this service. Most (85%) respondents to the WIC survey had used the WIC; some people would have had another event between using the WIC and responding to the questionnaire. The lower proportion (60%) of MIU respondents using the MIU is more likely to indicate that people did not necessarily think of this service as an MIU. When reading through questionnaires for consistency (see Section 4.3) we noted that people would tick 'A&E' in the structured part of the questionnaire but in the open question at the end would discuss their visit to the hospital in which the MIU was based. That is, the term 'minor injury unit' is not well known within the population.

About a quarter of first contacts took place out-of-hours in the population surveys, although this was higher for the service user surveys because these services have 'out-of-hours' opening times (Table 4.4.3).

Pathways

Based on the 250 system users in the two population surveys, the most common pathways were single service pathways: GP in hours only ($n=31$), A&E only ($n=13$), GP out-of-hours only ($n=6$), and NHS Direct only ($n=6$). Pathways involving two or more services were diverse in terms of the combination and order of services. The most common multi-service pathways were GP in hours to pharmacy ($n=19$), GP in hours to an 'other' service ($n=13$), GP in hours followed by another GP in hours ($n=10$), GP to A&E ($n=7$), NHS Direct to A&E ($n=5$) and 999 ambulance to A&E ($n=5$).

When the service based surveys were considered, common pathways again were single service: MIU only ($n=19$), WIC only ($n=14$) and A&E only ($n=8$). Common

multi-service pathways were GP in hours to WIC (n=15), MIU to an 'other' service (n=5), and A&E to GP in hours (n=5).

The diversity of pathways through a system makes it difficult to undertake any analysis at an individual pathway level in a survey of this size. However, it is possible to study pathways another way – by considering pathways which involve a particular service. For example, any pathway with A&E on it could be compared with any pathway with GP out-of-hours on it.

Table 4.4.3 Description of most recent event with the urgent care system in past 3 months

	Telephone N=151	Postal N=99	MIU N=73	WIC N=66
	%	%	%	%
Type of problem				
Illness	54	46	18	29
Injury	17	13	57	39
Other	29	40	15	32
Time elapsed before sought care				
Immediately	37	35	37	30
< 2 hours	11	17	16	15
2-12 hours	13	20	23	27
12-24 hours	11	11	11	8
>24 hours	29	16	12	20
Services involved*				
GP in hours	68	67	23	49
A&E	14	20	26	14
NHS Direct	14	12	5	8
GP out-of-hours	9	12	4	1
999 ambulance	5	5	5	3
WIC	7	3	0	85
MIU	1	2	60	1
Time of <u>first</u> contact				
In hours	76	72	62	70
Out of hours	24	28	38	30
Time of <u>any</u> contact				
In hours	74	71	62	59
Out of hours	26	29	38	41

* sums to more than 100% because more than one service on pathway

Reasons for moving along a pathway

System users were asked why they used a second, third or fourth service for the same problem. Only 192 of the 246 multi-service users who were asked about this ticked a reason for their movement along a pathway; some respondents indicated that there was a missing option for this question - 'the treatment had not worked'. In the population survey the main reason for using another service was that a service told them to do so (Table 4.4.4). People's health problems also got worse or changed. However, people also moved along a pathway because they were unhappy with other services in the system.

Table 4.4.4 Reasons for moving from one service to another

	Telephone N=92 %	Postal N=33 %	MIU N=29 %	WIC N=38 %
Told by other service	76	54	45	26
The problem got worse	7	21	31	26
The problem changed	5	6	0	8
Wanted other opinion	4	6	14	5
No access to other service	1	3	0	13
Not satisfied with other service	7	9	10	21

Satisfaction with the system

We asked questions about patients' views of the urgency of their care, the number of services contacted, overall care received, and 22 satisfaction items about different aspects of the system. During psychometric testing we reduced the 22 items to 18 and they formed three discrete domains of system satisfaction (see Section 4.3).

We show here the satisfaction levels found in the telephone and postal surveys, and in the two service surveys (Table 4.4.5). The telephone and postal surveys offer a patient perspective of the whole system and should indicate the same levels of satisfaction. However, the mode of survey administration affects findings, with a tendency for the telephone survey to offer a more positive picture

of the system, an issue that is not unique to our study (See Section 4.2). The MIU and WIC surveys offer a perspective on the part of the system which involves each of these two services. Survey administration was postal and therefore any comparisons between the MIU or WIC and the whole system must be made with the postal population survey.

Urgency

Around four in five system users felt that their case had probably or definitely been managed with sufficient urgency (Table 4.4.5). There was evidence of differences in views of urgency across the four surveys ($p=0.022$). The difference occurred between the telephone and postal population surveys. In the telephone survey two thirds of system users felt that their case was definitely managed with sufficient urgency whereas this was half of system users in the postal population survey. There was no evidence that this differed for the MIU or WIC surveys.

Number of services

Around 85% of system users felt that they had contacted the right number of services (Table 4.4.5). There were considerable differences between the four surveys for users' views of the numbers of services contacted ($p=0.0001$). The population surveys gave similar results. Respondents to the WIC survey were more likely to feel that they had contacted too many services.

Overall satisfaction

Around 40% of system users reported their overall care as excellent (Table 4.4.5). There was some evidence that overall satisfaction levels differed by survey ($p=0.028$). The difference occurred between the telephone and postal population surveys, indicating a survey mode of administration issue. There was also evidence that a higher proportion of system users felt their overall care was excellent in the WIC survey (52%, 33/64).

Domains of satisfaction

Scores for patient convenience were lower than the other domains of entry and progress through the system (Table 4.4.5). Entry satisfaction differed by survey ($p=0.003$) and was lower for the WIC. Progress satisfaction was similar across all surveys ($p=0.307$). Patient convenience differed by survey but this was a mode of administration issue ($p=0.037$).

Table 4.4.5 Satisfaction with the system

	Telephone N=151	Postal N=99	MIU N=73	WIC N=66
	%	%	%	%
Did you think your case was managed the sufficient urgency?				
Definitely not	5	9	6	3
No, I don't think so	7	9	12	18
Yes, I think so	22	33	36	32
Yes, definitely	66	48	46	47
How do you feel about the number of services contacted?				
Too many	8	7	11	23
Too few	2	9	1	10
The right number	90	85	87	67
Overall, how would you rate the care you received?				
Excellent	44	31	39	52
Very good	34	33	25	19
Good – very poor	22	37	36	30
	Mean	Mean	Mean	Mean
Entry	4.3	4.2	4.1	3.9
Progress	4.2	4.0	4.0	4.0
Patient convenience	3.9	3.7	3.7	3.7

Satisfaction may differ by the length of pathway and whether system entry occurred in or out-of-hours. All surveys were amalgamated to explore this. We would expect satisfaction with the system to decrease as the number of services involved in a pathway increased. Although there was evidence of a reduction in satisfaction, dissatisfaction only became apparent at four or more services in a pathway (Table 4.4.6). For example 42% of users rated their overall care as excellent if they contacted one service whereas only 26% did so if they contacted four or more services. Apparent differences were not always statistically significant because so few of the system users had used four or more services.

Assessment of the patient convenience of the system reduced as the number of services in a pathway increased (p=0.007).

Table 4.4.6 Satisfaction with number of services in the pathway

	One N=111	Two N=140	Three N=76	Four or more N=43
	%	%	%	%
Did you think your case was managed with sufficient urgency?*				
Definitely not	9	4	0	17
No, I don't think so	10	7	16	14
Yes, I think so	24	34	32	26
Yes, definitely	57	55	53	43
How do you feel about the number of services contacted?*				
Too many	5	8	12	30
Too few	8	4	4	2
The right number	88	89	84	67
Overall, how would you rate the care you received?				
Excellent	42	46	37	26
Very good	27	28	35	35
Good – very poor	31	26	28	40
	Mean	Mean	Mean	Mean
Entry	4.3	4.2	4.1	3.9
Progress	4.1	4.1	4.0	3.7
Patient convenience*	3.9	3.8	3.7	3.4

*p<0.05

We might expect the system to work less well out of normal working hours than in-hours. However, there was little evidence of this (Table 4.4.7). The only statistically significant difference was for assessment of the patient convenience with the system which was lower when any service on a pathway was contacted out-of-hours (p=0.036).

Table 4.4.7 Satisfaction by when contact was made

	First contact		Any contact	
	IN N=267	OUT N=107	IN N=76	OUT N=43
	Mean	Mean	Mean	Mean
Entry	4.2	4.1	4.2	4.1
Progress	4.1	4.0	4.1	4.0
Patient convenience	3.8	3.7	3.8	3.6

Diagnosing problems with this system

A system perspective has identified possible problems with this system such as long pathways, particularly for the 8% of system users in the telephone survey where four or more services were contacted in a single episode of care, and patient convenience. Further consideration of pathways within the system might help to diagnose further problems. Therefore we looked at satisfaction with the system when individual services were on a pathway (Figures 4.4.1 and 4.4.2).

When the GP out-of-hours service was on a pathway, overall satisfaction with the system was lower than when it was not on a pathway ($p=0.041$); the percentage of people reporting that their case was definitely dealt with sufficient urgency was lower ($p=0.025$); and satisfaction with system entry, progress and convenience was lower ($p=0.018$, $p=0.001$, $p=0.008$ respectively).

Figure 4.4.1 the percentage of respondents reporting 'overall excellent care' and 'definitely treated with sufficient urgency' by service on a pathway

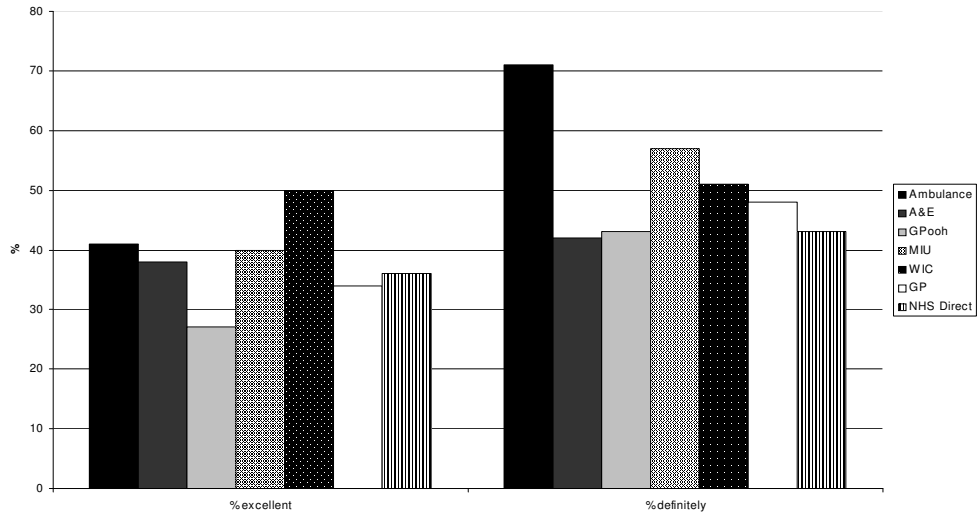
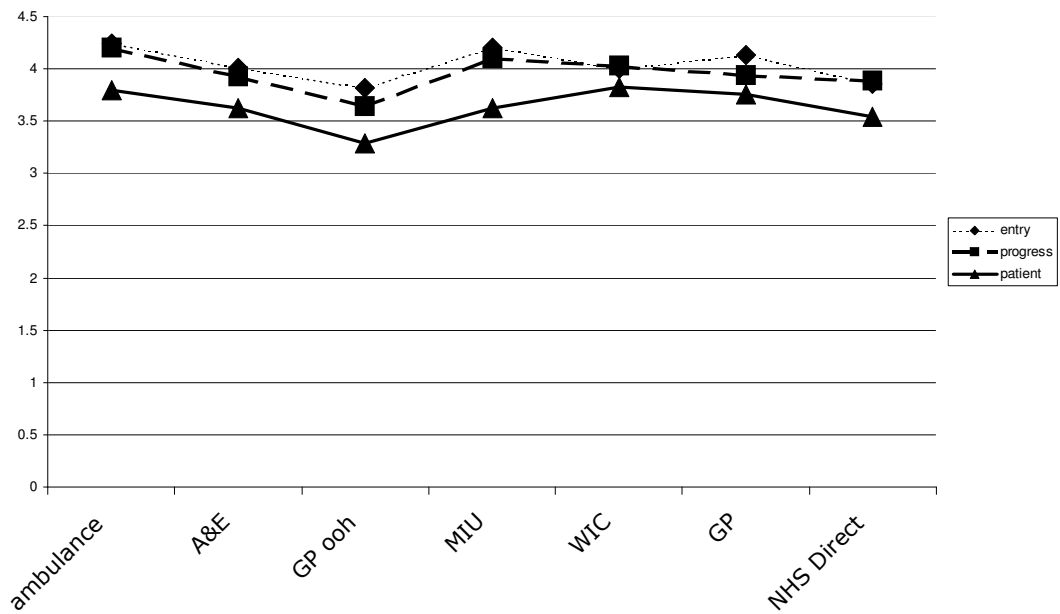


Figure 4.4.2 Domains of satisfaction by service on a pathway



Future routine surveys

Sample size requirements

If a Network or PCT instigated change within their system to improve patient convenience of their system to the level of other satisfaction domains – from a mean of 3.8 to a mean of 4.1, with a standard deviation of 0.9 - they would need 142 system users to detect this effect size of 0.3 at the 5% level with 80% power. That is, a market research company telephone survey of 1000 members of the general population before and after the change would suffice because it would identify approximately 150 system users each time.

Detecting change in proportions requires considerably larger sample sizes. Detecting an increase of 10 percentage points in the proportion of users assessing overall system care as excellent, from 44% to 54%, would require 390 users before and after the change. That is, a population survey of at least 2000 people would be required each time.

Timing of surveys

A Network or PCT routinely diagnosing problems with their system would only need to undertake a survey every two years. If they make considerable changes to their system then a survey a month or two before the change, and a survey about a year later, would be helpful. Seasonal use of services may affect system use and satisfaction and therefore we recommend that Networks/PCTs undertake their survey at the same time each year.

4.4.4 Conclusion

The survey was useful for describing experiences of and satisfaction with a system. It detected potential problems with the GP out-of-hours service within the system.

5. Conclusions

5.1 Conclusions from early phases of the programme

We have identified that networks are operating in England, taking a variety of approaches to coordinating and integrating emergency and urgent care services. They are key users of information about the performance of systems. We have developed two ways of measuring system performance: 16 performance indicators, and a survey methodology for obtaining patient views of the system in a feasible, fast and inclusive manner.

5.2 Next stage of the programme

Integration of the three strands of the programme will take place in 2009-2010 when we will work with four network/PCTs some of which will make major changes to their systems in 2009. We will measure the effect of these changes by calculating our indicators and facilitating networks to undertake patient surveys using our toolkit methodology in 2009 and 2010.

5.3 A new programme of ambulance services

Over 2008-2010 we will also undertake a new programme of policy-driven research on ambulance services including developing performance indicators for category B calls, payment by results, and assessing the current evidence base in pre-hospital care research priorities.

5.4 Meeting the needs of policy makers

During 2006-2008 we worked closely with policy makers at the Department of Health. Findings from the early phases of the programme on emergency and urgent care networks were fed directly into the Department of Health consultation for Direct of Travel for Urgent Care

(http://www.dh.gov.uk/en/Consultations/Responsestoconsultations/DH_080364).

In addition to the five year programme, we respond to the Department of Health's requests for research into different aspects of emergency and urgent care. During 2006-8 we:

- completed a preliminary evaluation of 'Pathways' a new triage system in emergency and urgent care;
- evaluated the policy of establishing walk-in centres in or near train stations to provide health care for commuters;
- synthesised the evidence on paediatric emergency admissions;
- completed a six-year study of the cost-effectiveness of the implementation of new response time standards for ambulances.

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Network Appendix

**B&NES, SWINDON &
WILTSHIRE
HEALTH COMMUNITY**



Urgent Care Network

Proposal for Development of a Health Community Wide Network.

1 Purpose

This paper is submitted to explore the future direction of the individual urgent care networks that currently exist within Bath and North East Somerset (B&NES); Swindon and Wiltshire.

It has been produced in consultation with both commissioners and providers with interests in urgent care from each locality; following review of pertinent literature. However, this research has produced a number of questions, some of which are highlighted within the report, and which will require further discussion and clarification.

The report concludes with recommendations to develop an efficient and productive network that overrides organisational boundaries across the Bath, Swindon and Wiltshire area.

2 Background

Following the publication of several key documents; National Health Service Trusts have undergone radical transformation. The Department of Health publication 'Commissioning a Patient-Led NHS,'¹ stated that PCTs should achieve clear organisational separation between their commissioner and their service provider function; with the former holding the latter to account. The aim of this is ensure improved commissioning in order to improve health and reduce health inequalities.

Both Wiltshire Primary Care and the Great Western Ambulance Service NHS Trusts have grown into larger organisations; significantly altering their previous geographical boundaries. In addition, many organisations are striving to attain Foundation Trust status whereby decision-making is devolved from central Government to local organisations and communities.

¹ Department of Health: *Commissioning a Patient-Led NHS*. London: TSO. 2004.

There are currently three urgent care networks in operation across B&NES, Swindon and Wiltshire; all coterminous with the boundaries of their local Acute Trust. Although each has its own unique structure, underpinning principles are the same. It was therefore decided by the Primary Care Trust Chief Executives to merge the networks; the key driver for which is to enable a more coherent and strategic framework and to ensure a continued and clear commissioning focus. This will result in the development of one all-encompassing system thereby avoiding duplication of effort, capitalising on economies of scale and ensuring improved process across the newly defined area.

Locally, urgent care networks have been in existence since 2002 when they were embedded as a continuing strategic priority for the Health Community through the work of the Emergency Services Collaborative.

3 Networks

3.1 The Purpose of Networks

Recent attention within the National Health Service has focused on the development of clinical networks, which concentrate on the linkage between primary, secondary and tertiary care.

Networks in healthcare allow for a continuous working relationship between organisations and individuals to improve the treatment of patients who require care across a range of institutions.

The emphasis on networks as a system for sustaining access to healthcare is of particular importance. The notion of a single hospital providing all of the facilities for a catchment area is neither desirable nor tenable².

Additionally, networks are relevant to the broader policy objective in delivering integrated services. They therefore have the ability to impact significantly on the future quality of health and social care.

3.2 Urgent Care Networks

Urgent Care Networks play a vital part in the reform of urgent care. They aim not only to ensure that patient perspective and quality of care are priorities in planning urgent care provision, but also to ensure ease of access to appropriate services at the appropriate time without unnecessary duplication for the patient, in line with national policy and standards.

This is achieved through the co-ordination and engagement of various organisations whose services contribute to the effective delivery of urgent care and the identification of health and social care priorities for action by the community.

The Urgent Care Network can be defined thus:

² Baker C. & Lorimer A: Cardiology: the development of a managed clinical network. *BMJ*. 321(7629) pp 1152-53. 2000.

“Linked groups of health professionals and organisations from primary, secondary and tertiary care working in a co-ordinated manner unconstrained by existing professional and organisational boundaries to ensure equitable provision of high quality, clinically effective services³”

The concepts of ownership, developing a shared vision, building strong leadership and inclusive planning are all important, cohesive characteristics of urgent care networks. This is generally seen at the level of the sub-groups where ‘adhocracies’ develop. Ties strengthen and collaboration becomes more than a theoretical ideal⁴.

Management within networks and management of networks are two important yet distinct concepts. Management within a network refers to the activity of trying to shape organisational ability, individual willingness and resources in order to sustain collective action to pursue a set of goals through a system of organisations⁵.

It is important to examine the internal organisational capability of networks from a strategic management viewpoint in order to establish those conditions that enable members to implement partnership strategies. Although the term network implies collegiality and mutual benefit, in reality they are often characterised by internal power struggles and professional protectionisms⁶.

Management of the network infers the recruitment and facilitation of constituent members within some form of integrated organisational structure. However, urgent care network membership is often large and unwieldy. The range of agencies represented at these networks reflects the often fragmented nature of health and social care delivery.

Despite the depth of information available regarding network development, it would appear that there is no ‘best’, transferable model that is ready to use. Different types of network predicate different management and governance strategies.

Networks need to be flexible and dynamic in nature due to the changing needs of their members. Therefore, adoption of a hybrid approach with the ability to evolve and be reflective should avoid ossification and retain their net worth.

Questions:

Do agreed priorities of network agencies really reflect the true priorities of local people, or do they reflect those areas in which separate organisations are willing to co-operate? Can shared decision-making ever be achieved?

How can commitment to the network be sustained if urgent care is not related to an organisation’s core business?

³ Scottish Office: *Acute Services Review Report*. 2001.
www.scotland.gov.uk/library/documents5/acute.00.htm.

⁴ John P: *Analyzing Public Policy*. London: Pinter. 1998

⁵ Eccles R. G & Norhia N: *Beyond the hype: rediscovering the essence of management*. Boston: Harvard Business School Press 1992.

⁶ Kraakman R: *The Twenty First Century firm; changing economic organization in international perspective*. Princeton Uni Press: New Jersey. 2001

How can the network ensure that it is ‘active’ in the development of new and effective services rather than protective of existing hospitals and/or medical specialties?

4 Bath, Swindon and Wiltshire Health Community Urgent Care Network

The following section describes the proposed structure of the Urgent Care Network that will encompass Bath, Swindon and Wiltshire.

4.1 The Urgent Care Network Strategic Commissioning Group (Attachment 1)

Networks can improve and support commissioning by providing commissioners with a framework within which service and system redesign can evolve; driven by a ‘shared’ and agreed urgent care commissioning strategy.

The recently published Darzi⁷ report emphasises the importance of commissioning in driving improvements in care delivery but recognises that in many areas, particularly within urgent care commissioning, significant improvement is required to fully support delivery of the vision.

The primary purpose of the commissioning group is to define, shape and direct urgent care strategy taking into account both national guidance and local need. It will concentrate on the high level interface between commissioner and provider and monitor performance of the ‘whole system.’

In addition, this overarching group will:

- Facilitate coordination and consistency of network policy for the commissioning and provision of urgent care;
- Recommend and commission urgent care delivery proposals;
- Serve as the final common pathway for the network’s constituent statutory organisations and providers to develop agreements which feed into local delivery plans.

Strategic group representation should be at Director level. The group will be chaired by the nominated Chief Executive lead for urgent care and will comprise commissioning representation from both health and social care organisations in addition to local core providers. This may include independent providers where appropriate.

The authority to make decisions is crucial within this group. It is typically easy for network members to reach consensus on mission, objectives and local key priorities. However, when it comes to the implementation of new structures, projects or innovative services, decisions are often postponed or implemented with significant delay.

⁷ Department of Health: *NHS Next Stage Review, Interim Report*, London: TSO, October, 2007

The group will meet quarterly but will receive monthly performance reports. There will be clear channels of communications between this and the other urgent care groups that are described below.

The developing concept of networks at policy level has grown beyond the idea of a ‘hub and spoke’ model; such that the interest of the network as the organisational leader of care provision dominates those of individual trusts. This means that the Urgent Care Network Strategic Commissioning Group will define the overarching urgent care vision and health community mission. The network and its collective goals take priority over any self-interest, important for developing legitimacy, ensuring a cohesive approach and thus, streamlining service delivery.

4.2 The Urgent Care Network Manager

Well structured networks obtain much higher results than non-structured networks⁸. Network co-ordination promotes service redesign and cross-institutional professional partnerships.

The role of the Urgent Care Network Manager is to drive forward development of the Network and delivery of the work programme; to promote understanding of and support for the Network and to provide assistance and advice to the urgent care leads in the partner organisations.

In particular, the Network Manager will facilitate inter-agency collaboration and pro-actively encourage network engagement.

The Network Manager will not become involved in resolving ‘operational’ issues that affect individual organisations, but will maintain an overview to ensure that appropriate actions are taken by the health community to address potential capacity problems. It is also important to note that this role is not ‘owned’ by any one organisation and that the role seeks to serve the community at macro level.

The Network Manager should be a ‘specialist’ in contemporary urgent care policy and development and should seek to both challenge and inspire the Network to advance creatively and innovatively.

In recognition of the broader context of urgent care; the Network Manager will cultivate and develop relationships with the leads from neighbouring networks; thus ensuring a truly collaborative approach across the extended health and social care community.

Supporting this post will require some financial investment from commissioning partners. However, research suggests that legitimacy of a network is enhanced by partner agencies providing funding⁹. Some degree of ‘lock-in’ helps process and provides greater stability¹⁰.

⁸ Burt R.S et al: *Structural holes: the social structure of competition*. Chicago: Uni Chicago Press. 1992

⁹ Kendrick S: The patterns of increase in emergency hospital admissions in Scotland. *Health Bulletin*. 54 pp169 – 183. 1996

¹⁰ Goodwin N et al: *Managing Across Diverse Networks of Care: Lessons form other sectors*. London: NCCSDO 2004.

4.5 The Locality Implementation Groups (Attachment 2)

The boundaries of these groups are coterminous with those of the local acute trusts. Termed 'Locality Implementation groups'; they are intended to function as the 'hub' of the network; where those people leading the delivery of the service and the implementation of commissioning strategy i.e. local commissioners and providers, will work together on a shared work programme.

Although primarily provider-led, membership of the locality implementation groups will include commissioners with responsibility for urgent care. It is imperative that the direction set by the Strategic Commissioning group is translated into the appropriate local commissioning and procurement framework for delivery. Commissioner representation at locality level will ensure providers are challenged to deliver services within a robust performance management framework.

A coordinated provider forum allows local organisations to develop strong professional partnerships and enables new and innovative ways of working to be explored within the existing infrastructure.

This type of structure is gathering momentum internationally and can be best evidenced through Sweden's 'Chain of Care' model. It is a network based on contractual relationships between purchaser and provider. Payments in the system are made for collective healthcare effort. Providers become incentivised to work within a forum to reduce duplication and to share both services and risk.

'Chains of Care' offer an important counterbalance to healthcare fragmentation¹¹ by overcoming competitive and isolative tendencies associated with creating competition between providers to improve choice.

Analogous to a 'Command and Control' structure; it can be best described as the 'tactical' arm of the Urgent Care Network. With the mission and vision set by the Strategic Commissioning group, the locality implementation groups must develop the plan to get there.

In order to function effectively, all of the key partners need to be involved at this level. Each organisation is linked, tactically, to the other; each in support of the bigger picture.

The locality implementation groups should be perceived within the Network, as the prime place where the work programme is co-ordinated and delivered. This is also where performance monitoring will be initiated through the development and production of a monthly performance report focussing on key targets in addition to the work programme. Exception reporting will be undertaken where targets are achieved, missed or amended.

4.6 The Urgent Care Project Sub-Groups

This is the 'operational' arm of the Network and is critical in ensuring health community-wide realisation of the urgent care strategy.

¹¹ Ahgren B: Chains of Care: a counterbalance to fragmented healthcare. *Journal of Integrated Care Pathways* 5 pp126 – 132, 2001.

It is recognised that although the overarching vision evolves at the strategic commissioning level and that the work programme is developed at the ‘tactical’ level; success will only result from those actions that are owned and delivered locally. It is also at this level that value-added activities transform inputs into measurable outputs.

It is proposed that local project groups will evolve from specific workstreams identified by the locality implementation groups. These project groups should have clearly defined objectives and should aim to achieve explicit outcomes within a specified timeline. Issues suitable for project group work may include winter planning, escalation review, admission avoidance and discharge planning.

5 Summary

This paper proposes a new framework for the Urgent Care Network and the responsibilities of its members across the B&NES, Swindon and Wiltshire Health Community.

A traditional ‘Command and Control’ style hierarchy is used to illustrate the functioning of the Network. This is intended to figuratively clarify the process only; members may prefer to use more familiar structures.

The Urgent Care Network Manager is the conduit that encourages and ensures member engagement and the adoption of a whole system approach. This is achieved by the crossing of organisational boundaries locally and through the search for best practice nationally.

Whilst networks are not a panacea for all modes of complex collaboration; an effectively crafted network can provide a solid base upon which to achieve successful partnership working between organisations.

6 Conclusion

The need for improvement in urgent care is well documented and understood. Growth in demand is unsustainable and continuing to meet this demand in conventional ways is unaffordable and ineffective. To achieve increasingly challenging targets in urgent care and to improve the patient experience requires better management, co-ordination and collaboration across the whole system of health and social care.

The development of a ‘synergised’ Urgent Care Network where productivity output is greater than the sum of its parts; will improve planning co-ordination and service delivery across the B&NES, Swindon and Wiltshire Health Community. This integrated model of urgent care delivery will deliver sustainable high quality and accessible health services; make the best use of available and developing skills, recognise the constraints of the current system and the benefits of emerging technology. It is this that will ultimately result in the ‘Right Skill, Right Place.....First Time’ ethos that should prevail.

Attachment 1

Urgent Care Network Strategic Commissioning Group

Terms of Reference

Background

Urgent Care Networks play a vital part in the reform of urgent care. They aim not only to ensure that patient perspective and quality of care are priorities in planning urgent care provision, but also to ensure ease of access to appropriate services at the appropriate time without unnecessary duplication for the patient; in line with national policy and standards.

This is achieved through the co-ordination and engagement of various organisations whose services contribute to the effective delivery of urgent care, and the identification of health and social care priorities for action by the community.

The Urgent Care Network can be defined thus:

“Linked groups of health professionals and organisations from primary, secondary and tertiary care working in a co-ordinated manner unconstrained by existing professional and organisational boundaries to ensure equitable provision of high quality, clinically effective services¹²”

Networks can improve and support commissioning by providing commissioners with a framework within which service and system redesign can evolve; driven by a ‘shared’ and agreed urgent care commissioning strategy.

Overall Purpose

The overall purpose of the Urgent Care Strategic Commissioning Group is to lead on the development of a shared urgent care strategy for Bath, Swindon and Wiltshire, in line with national guidance and local need. This requires senior commissioning input from urgent health and social care services to achieve and/or exceed key performance indicators through:

- Reviewing performance information and using this to inform service redesign.
- Planning and developing modern, effective 24/7 urgent care services.

¹² Scottish Office: *Acute Services Review Report*. 2001.
www.scotland.gov.uk/library/documents5/acute.00.htm.

- Ensuring effective partnerships across agencies to provide timely, appropriate services.
- Ensuring public, patient and carer involvement in developing and monitoring services.

In addition, the group will review the process for urgent care commissioning across Bath, Swindon and Wiltshire; this will include exploration of the following areas:

- The impact choice and contestability in elective care has upon service quality in urgent care i.e. the role of independent sector treatment centres.
- The impact of elective patient flows on urgent care.
- Productivity and value for money in commissioning relationships.
- Integration of the primary and secondary care interface to achieve whole systems redesign of urgent care pathways.
- The intelligent commissioning of a system of multiple urgent care providers.
- The prioritising of quality and reducing variations in standards of care across an integrated system.
- Implications for workforce development.
- The role of primary care in urgent service delivery.
- Supporting the population to stay healthy to ensure ongoing economic viability of the NHS.
- The development of a social marketing strategy to direct the public to appropriate urgent care services. How does this contradict patient choice?

Membership

Although the group is primarily commissioner-led; membership will also include core NHS / independent providers where appropriate.

Each representative brings their individual and organisational interest and experience to the network in order to be able to contribute as fully as possible to the overall purpose and work of the group.

Membership should be at Director level.

Additional members may be co-opted for particular time-limited exercises, according to their specialist knowledge.

A number of non-member organisations may be copied into circulation lists where this will inform service access or delivery.

Membership should include the following:

- Primary Care Trusts ~ B&NES, Swindon and Wiltshire (commissioner and provider).
- Social Services ~ B&NES and Wiltshire. Swindon represented through joint director appointments.
- Acute Trusts ~ RUH, Bath; Salisbury Foundation Trust and Swindon and Marlborough NHS Trust.
- Avon and Wiltshire Mental Health Partnership NHS Trust.
- The Great Western Ambulance Service NHS Trust.
- NHS Direct.
- The Strategic Health Authority ~ NHS Southwest.
- Patient and Public Forum ~ lay person.

Structure and Frequency of Meetings

The group will be chaired by the nominated Chief Executive lead for urgent care.

The Urgent Care Network Manager will ensure all communications relating to meetings are disseminated and papers / reports are circulated in a timely manner.

Agenda items should be forwarded to the Network Manager, 1 week prior to the meeting.

Meetings will take place on a quarterly basis and should last for no longer than three hours.

The first hour of the meeting will be commissioner only and is where commissioning priorities and intentions will be shared.

The second half of the meeting will give providers the opportunity to explore and discuss service delivery models, critical issues etc.

Responsibility and Accountability

User involvement will be sought in planning and evaluating all care delivery.

Members and designated deputies must hold a mandate from their organisation or group to make decisions.

Members must designate a fully briefed deputy to attend if they are unable to be present.

Members will be responsible for ensuring that their own organisation or group is fully briefed on Strategic Commissioning Group decisions.

Sub-groups will be tasked with specific issues, or responsibility for addressing issues within specific client groups, and will report back regularly to the Strategic Commissioning Group.

A quorum of six members constitutes a valid decision making group. Appropriateness of the represented organisations to make that decision will be determined by the chair person but as a minimum each PCT should be represented.

Governance

Each Provider-led Locality Implementation Group is accountable to the Strategic Commissioning Group.

The Strategic Commissioning Group will operate within a robust performance management framework.

The Strategic Commissioning Group is accountable to individual PCT Professional Executive Committee (PEC) Boards. A quarterly report will be produced for each.

All other organisational boards will receive generic quarterly reports.

It is the responsibility of the Urgent Care Network Manager to ensure these reports are compiled and circulated.

Attachment 2

Urgent Care Provider Implementation Group

Terms of Reference

Background

Urgent Care Networks play a vital part in the reform of urgent care. They aim not only to ensure that patient perspective and quality of care are priorities in planning urgent care provision but also to ensure ease of access to appropriate services at the appropriate time without unnecessary duplication for the patient; in line with national policy and standards.

This is achieved through the co-ordination and engagement of various organisations whose services contribute to the effective delivery of urgent care and the identification of health and social care priorities for action by the community.

The Urgent Care Network can be defined thus:

“Linked groups of health professionals and organisations from primary, secondary and tertiary care working in a co-ordinated manner unconstrained by existing professional and organisational boundaries to ensure equitable provision of high quality, clinically effective services¹³”

Following the publication of Commissioning a Patient-Led NHS¹⁴ and the resulting commissioner / provider split, the creation of provider networks in particular, offer an important counterbalance to healthcare fragmentation by overcoming competitive and isolative tendencies associated with creating competition between providers to improve choice.

Overall Purpose

The overall purpose of the Urgent Care Locality Implementation groups is to ensure delivery of the urgent care strategy for the health community, in line with national guidance and local need. This requires integration of urgent health and social care services to achieve and or exceed key performance indicators through:

- Reviewing performance information and using this to inform commissioner-led service redesign.

¹³ Scottish Office: *Acute Services Review Report*. 2001.
www.scotland.gov.uk/library/documents5/acute.00.htm.

¹⁴ Department of Health: *Commissioning a patient-led NHS*: London: HMSO, 2005.

- Implementing urgent care commissioning priorities.
- Scoping current urgent care initiatives across the locality and sharing best practice.
- Identifying gaps in service provision and escalating to Strategic Commissioning Group where appropriate.
- Exploring new and innovative ways of working within the existing health and social care infrastructure.
- Ensuring effective partnerships across agencies to provide timely, appropriate services.
- Working in partnership to reduce duplication and share services and risks.
- Developing a local work programme that identifies priorities for health community actions.
- Ensuring public, patient and carer involvement in developing and monitoring services.

There will be three Locality Implementation groups all of which will serve a defined geographical area:

- B&NES, Mendip and West Wiltshire,
- South Wiltshire,
- Swindon, Marlborough and North Wiltshire.

Membership

Membership represents all local organisations involved in urgent care delivery.

New Targets to Achieve
<ul style="list-style-type: none"> • Long Term Conditions • 5% reduction in emergency bed days • Improving health outcomes • Patient Experience • Helping older people live longer in their own homes • Ambulance Trust • Call Connect April 2008 • Reduction in conveyance rate <p>Recommendations contained within ‘Our NHS, Our Future’ DoH, October ’07.</p>

Standards to Maintain
<ul style="list-style-type: none"> • Four hour emergency access standard • 24/48 hr access to primary care • 75% Cat A ambulance calls in 8 minutes • 95% Cat A, Cat B calls within 19

Each representative brings their individual and organisational interest and experience to the network in order to be able to contribute as fully as

possible to the overall purpose and work of the group.

Membership should be at senior management level; senior clinicians representing all disciplines will also be invited to attend.

Additional members may be co-opted for particular time-limited projects, according to their specialist knowledge.

A number of non-member organisations may be copied into circulation lists where this will inform service access or delivery.

Membership should include the following:

- Primary Care Trusts, commissioner and provider representation.
- Social Services.
- Acute Trusts.
- The Ambulance Trust.
- The Mental Health Partnership Trust.
- Out of Hours Providers not represented by the PCT.
- NHS Direct.
- The Strategic Health Authority.
- Patient and Public Forum ~ lay person.

Structure and Frequency of Meetings

The group will be chaired by a nominated lead Director representing a provider service.

The Urgent Care Network Manager will ensure all communications relating to meetings are disseminated and papers / reports are circulated in a timely manner.

Agenda items should be forwarded to the Network Manager, 1 week prior to the meeting.

Meetings will take place on a monthly basis and should last for no longer than 1.5 hours.

Responsibility and Accountability

User involvement will be sought in planning and evaluating all care delivery.

Members and designated deputies must hold a mandate from their organisation or group to make decisions.

Members must designate a fully briefed deputy to attend if they are unable to be present.

Members will be responsible for ensuring that their own organisation or group is fully briefed on any RUH Provider Network decision.

Sub-groups will be tasked with specific issues, or responsibility for addressing issues within specific client groups, and will report back regularly to the Urgent Care Provider Network

A highlight report will be compiled every 3 months detailing the status of the urgent care action plan for stakeholders. It is the responsibility of the Urgent Care Network Manager to ensure this is completed and circulated.

A quorum of five members constitutes a valid decision making group. Appropriateness of the represented organisations to make that decision will be determined by the chair person.

The provider-led strategy implementation groups will be accountable to the Urgent Care Strategic Commissioning group. Each local group will be represented at strategic level.

Appendix 2. Urgent care management structure for Leeds and West Yorkshire

“In Leeds we used to hold the Reforming Emergency Care Network regularly, which was inclusive of all health and social care partners. We have now altered our approach to fit with our implementation of the regional urgent care commissioning strategy, and to take account of the commissioner/provider split, as we have now entered the procurement phase of the programme, which makes the old-style REC no longer fit for purpose.

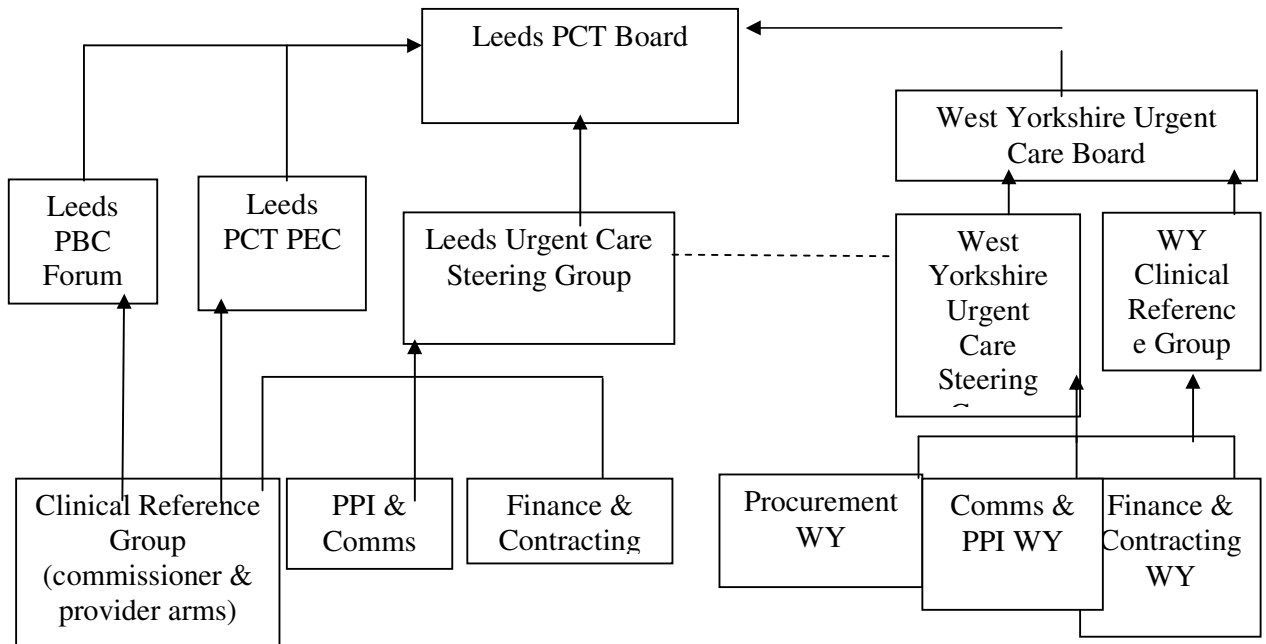
On an operational level, a whole-systems group meets monthly to agree actions to meet and sustain national targets, chaired by the SHA. This includes representation from PCT (commissioner & provider arm), acute Trust, mental health Trust, Ambulance Trust, social services, and GP out of hours. The acute Trust also hold weekly meetings regarding A&E and urgent activity, to which partner agencies are invited every other week. Additionally, the PCT holds a Capacity and Escalation Planning Group to monitor, review and amend capacity and escalation plans, on an operational level, and prepare for peak times i.e winter. These groups maintain operational dialogue around emergency and urgent care systems.

On a strategic level however (diagram attached), instead of the REC we now have a clinical reference group that has a commissioner and a provider arm; commissioners (PBC leads, PEC leads, LMC/LDC leads, PCT Commissioners) meet to discuss the clinical aspects of the commissioning strategy and workstreams, and are then joined by providers to have a broader discussion about themes of the future service model and viability of provision. This structure reflects the need to ensure all change programmes are clinically driven. The PCT commissioning team also regularly meets with the management tiers of local provider organisations, on an individual basis, to sustain dialogue regarding the strategy and any implications for the providers on an organisational level. A PPI and Communications urgent care sub-group is in place to gather and collate patient input to the programme, and this feeds into the clinical reference group, provider groups, and the internal PCT steering group.

There is also a West Yorkshire-level structure in place to drive the urgent care strategy forward. This consists of a fortnightly steering group, made up of PCT Urgent Care Commissioning Leads, who feed upwards to the monthly West Yorkshire Urgent Care Programme Board, made up of Executive Directors of Commissioning and chaired by the Chief Executive of Kirklees PCT. This Board has

delegated powers from PCT Boards to oversee and co-ordinate the regional urgent care strategy and commissioning framework. “

Structure for West Yorkshire & Leeds Urgent Care Strategic Commissioning Framework



Appendix 3 - Cornwall & Isles of Scilly

Partnership Board for Urgent and Emergency Care

TERMS OF REFERENCE

Purpose of Partnership Board

The partnership board will be a multi-agency forum that will:

- Provide strategic direction and oversight of the development of emergency and urgent care services across the health and social care community.
- Support the strategic framework for practice based commissioning
- Ensure that a comprehensive and appropriate range of services are in place
- Support organisations to achieve optimum health, well-being and independence outcomes
- Support organisations to meet operational standards and performance targets

Commissioning

The Partnership Board will agree commissioning decisions on evidence based or authenticated evaluation. This will require a review of gaps or overlaps in current service provision.

Structures, functions and key relationships

The Partnership Board is required to be part of all planning, decision making processes and delivery issues as they affect Urgent and Emergency Care.

All statutory agencies are required to consult with the Board on all major service planning and delivery issues as they affect urgent and emergency services. Such consultation must take place at the inception of such planning.

The Board will also receive regular reports from those responsible for the delivery of agreed plans and services, in order to monitor and evaluate the plans and services against agreed outcomes and measure impact across the whole health community.

The Board working in partnership with others will inform commissioning strategy direction. The commissioning framework will be agreed across the sectors and will not exist as a separate function.

The Partnership Board will report formally to the Healthy Futures Board quarterly.

Each represented organisation will have in place a Local Implementation Team (or similar) to ensure and facilitate effective operational delivery of the implementation plans. A key role of the Partnership Board is to monitor delivery of the agreed goals and service changes as described and identified.

Objectives

The Partnership Board will produce key objectives for 2008 (which are aligned with the healthy futures objectives) and these will be openly communicated and rigorously monitored.

The Partnership Board will ensure, through its representatives, that a clear method of communication is developed and deployed across the system to keep all stakeholders advised of progress.

Membership

Table 1: PBU EC Membership (NOTE: To be amended)

Core Membership – Representation from:	Others to be Involved as Appropriate
PCT - Commissioning & Performance PBC Locality leads PCT - Operations Public Health Royal Cornwall Hospitals' Trust Social Services Commissioning South West Ambulance Service NHS Trust Out of Hours Provider Minor Injuries Units lead Community Pharmacy CPT – Crisis Intervention/Community/EMI Older Peoples Partnership Board Patients' Forum	Police Voluntary Organisations Rep from community regeneration schemes PCT Communications Workforce Development Local Authorities Care homes

The Partnership Board will meet quarterly for an initial period of not more than one year.

The Terms of Reference will be reviewed at least annually.

Performance Indicators Appendix

- 1. Long-list of candidate indicators**
- 2. Delphi results in detail**
- 3. Definitions of candidate indicators**

APPENDIX 1 Long-list of candidate indicators

Candidate/Performance measures for the EUCS

Focus	Measure	Data source	Calculation	Comments	Source
Outcomes	First person 999 contacts with AS who die within 3 or 7 days. This could be limited to deaths outside hospital (but not in A&E since ONS includes these as hospital deaths).	Linked AS + ONS mortality data.	Send random sample of 1000 first person Cat A calls to ONS for tracing each year. Calc % die OOH <7 days or <72 hrs. What period of time for death should be used - 1 day, 3 days, 7 days, etc?'	In the SWOOP study Val Lattimer used all deaths in 7 days for calls to a GP Co-op, and emergency hospital admissions within 24 hrs or 3 days. Different AS have different cat A categorisations so for comparing areas covered by different AS it might be better to use all calls rather than cat A calls, or use risk adjusted scores.	Lattimer ³³
Outcomes	First person contacts with any EUCS service (WIC, MIU, Mental Health Services, NHS Direct, AS, Out-of-hours service, etc) who die OOH in the next 7 days.		Needs data linkage by service collecting NHS number or name and address and sending a random sample to ONS each year.		Lattimer ³³
Outcomes	Mortality rate for conditions that are (typically) emergencies, but not inevitably fatal nor universally survivable, ie conditions in which death can be avoided by good system performance, eg. Stroke, MI Traumatic limb amputation Ruptured organs Asthma Poisoning	ONS mortality data by ICD code + area code + census data.	Calculated as rate per 1000 by area of residence covering the network. Standardised for age/sex.	Rates for broad clinical groups such as medical conditions psychiatric conditions accidents/injuries, etc could also be calculated. Clearly depends on incidence. So really want case-fatality rate.	Appendicitis, cholecystitis, asthma, acute respiratory disease are included in 'standard' lists of avoidable causes (Charlton ³⁴ ; Notte ³⁵ ; Korda ³⁶)

Outcomes	Out-of-hospital mortality rate for conditions that are (typically) emergencies, etc.	ONS mortality data by ICD code, place of death, and area code of residence + census data. ONS codes A&E deaths as 'hospital' deaths. If these should be included as OOH deaths, then ONS data would have to be added to A and E data. Pre-hospital deaths would be better than out of hospital, but ONS doesn't code this. However for emergencies OOH is roughly = prehosp.	Calculated as rate per 1000 by area of residence covering the network. Could be standardised. Could calculate pre-hospital deaths as OOH ONS deaths without a matching HES entry??	Emergencies are used again in order to remove as far as possible deaths at home by choice. An EMS should get people who are going to die to the doctor. In the UK this means to hospital.	Expert consultation.
Outcomes	Case-fatality rates for serious emergency conditions for which good EUCS system performance could reduce the chances of death.	ONS mortality data by ICD code and post code of residence (PCT). HES data by ICD code for reason for admission by PCT.	Calculated from ratio of total ONS deaths to (total ONS deaths + HES survivors). Could be age, sex standardised as well.	Can lead to biases if admission and hence 'caseness' vary over time or between areas. So conditions need to be selected which are 'always' admitted in order to avoid this possibility or HES survivors could be length of stay standardised.	"Avoidable death" list and professional opinion.
Outcomes	Out-of-hospital case fatality rates for conditions that are typically emergencies etc.	HES + ONS as above	Ratio of out-of-hospital deaths or pre-hospital deaths to total cases (= all deaths + surviving admissions). Can be standardised.	Can lead to distortions if admission threshold and hence 'caseness' varies from area to area so conditions need to be selected to avoid this possibility, or standardised for length of stay.	
Outcomes: Mental Health	Population suicide rates, or proportion of contacts with mental health crisis teams <u>or other EUCS services</u> committing suicide in the next 7 days (1m ?).	Linked service contacts and ONS mortality data.		What period of time should be used? Which services should be included?	NHS Performance indicators. Health Authority Indicator list (Feb 2002) ²⁷
Outcomes	Distribution of cases between pre-hospital deaths A and E deaths hospital deaths post-discharge deaths survivors. For conditions which are typically emergencies and where death can be avoided by good system performance	ONS + HES data by ICD code and residence.	Pre-hospital = ONS deaths not in HES A&E \approx HES death with LOS=0 Hospital = HES death with LOS \geq 1 Post-discharge = ONS death with HES discharge. Survivor = HES admission and no ONS death	A good system shifts this distribution towards survival.	Expert consultation.

Outcomes:	Case-fatality rates for all externally caused injuries, poisonings and violence.				EC working group on avoidable death ³⁷ .
Outcomes:	Out-of-hospital case fatality rates for IPV.				
Outcomes:	Case-fatality rates for specific groups of IPV, eg. RTAs Falls, falls>65 Poisonings, Stings Burns, etc.				Korda and Butler ³⁶ . Expert opinion
Processes: hospital admissions	Emergency hospital admission rate for conditions for which admission may not have been needed, eg All patients discharged alive within 48 hrs.	HES data for emergency admissions for LOS, hospital or patient postcode, + census data for hospital catchment area.	Rates/1000. Could assign each hospital to a network. Might need to be standardised.	Early discharge defined so as to indicate probably investigations only, no treatment and no complex problems. Could include paediatrics in this.	III. Focus on: Short stay emergency care ³⁸ .
Processes: hospital admissions	Hospital admission rates for urgent indicator conditions for which admission can be avoided by good EUCS performance, eg. Epilepsy Asthma Viral infection Diabetes Hypoglycaemia unspecified Cellulitis of face Pneumonias Mental health problem	HES data for emergency admission by ICD diagnosis for primary reason for admission, LOS, hospital or patient postcode, + census data for hospital catchment area..	Might be better as % of contacts with the EUCS for these conditions that result in hospital admission, ie. a case-event rate.	NB. This is not the same as ambulatory care sensitive conditions. Those are focussed on preventing the exacerbation. The focus here is on preventing admission following an exacerbation.	Arah ¹¹ . Derived from Sanderson ¹⁹ , Brown ²⁰ , Oster ³¹ . Expert group.
Processes: hospital admissions	Case-admission rates for urgent indicator conditions eg. proportion of contacts with emergency mental health services resulting in admission.				
Processes: mental health	Emergency psychiatric re-admissions	Social Service Performance Assessment Framework data.	Emergency psychiatric re-admissions within 90 days of hospital discharge as a % of people aged 16-64 discharged from the care of a psychiatric specialist.	.	This is a Social Service Framework performance indicator ²⁸
Processes:	Emergency re-admission	Linked HES data.	Emergency re-admission of patients with indicator conditions discharged in the previous 28 days		Health Care Commission ²⁵

Processes: A&E attenders	Frequent attenders at A and E	A and E data	≥ 4 attendances in one year defines a frequent attender. Could be % of attendances, or rate per 1000 population.	Frequent attendance either indicates a recurrent/chronic condition which is not being well managed, or that other services are not (perceived as being) available or accessible. Could look at frequent <i>unnecessary</i> attenders.	Locker ³⁹
Processes: A&E attenders	Arrivals at A and E by ambulance who are not admitted or who are judged 'unnecessary' A&E attenders by the Sheffield definition.	A and E data.	Numbers, proportions, ie 100% \times AS \rightarrow A&E unnecessarily AS \rightarrow A&E, and population rates.	Unnecessarily taken to A&E could be defined as picked up from home, discharged home without any treatment or investigation needing hospital facilities. May be too service focused.	Expert opinion.
	Referrals from any EUC services to A&E not needing treatment or investigation with hospital facilities.	Service data on disposal.		This may be a better 'system' indicator.	Expert opinion.
Processes: A&E attenders	Re-attendance within 7 days at urgent ambulatory care facilities (A&E, WIC, OOH primary care centre, etc) for patients referred to another EUC service at first attendance.	A&E and other EUCS service data.	No. as % of 1 st attenders, or % of 1 st attenders referred elsewhere who re-attend within 7 days.	Indicates wrong referral or problems with care or access elsewhere in the system. What period of time should be used for re-attendance - 7d, 1m?	
Processes: All service attenders	Inappropriate or unnecessary (or non optimal?) attendance or contacts with A&E, WIC, MIU, AS, NHS direct, OOH services.	Service data	Calculated from routine service data using agreed algorithms to define non-optimal first contacts, eg. A&E- from home, discharged home without treatment or investigation. MIU/WIC/OOH - referred to another EUCS service for primary management. NHS Direct - referred for 999 call. AS - Cat C call not responded to. Numbers summed across all services by PCT of residence and calculated as rate per 1000 population, or % of all first contacts.	As a system improves, more first contacts should be with the optimal service for this problem. However, this could lead to perverse incentives not to transfer or refer patients needing care elsewhere. How might we define first contacts which are not appropriate or optimal for each service?	Lowy ²¹ , etc.
Processes: Transfers	Multiple transfers between hospitals, or between services	HES data for hospital transfers, but other transfers ??	Proportions/rates of patients having 2+ transfers in <72 hours.	Difficult to see how to calculate from HES data or where to get other linked data.	Expert opinion.
Processes:	Other indicators based on patient surveys, eg. compliance with advice.				National Quality requirements in the Delivery of Out-of-Hours Services ²⁹ .
Processes: All service attenders	Adherence to treatment/ management guidelines on good practice across the system.	Audit data	Good <u>system</u> practice guidelines would have to be developed.	These might relate specifically to management at service boundaries, eg. transfers of critically ill children, to notification of patients' GPs about	Moody-Williams ⁴⁰ . HCC EU review ²⁶ .

				contact with other parts of the system.	
Processes: access	For all calls to the system (ie. NHSD, OOH, AS), time from call to start of assessment.	Service data	NHSD: first call to Nurse assessment OOH: first call to clinical assessment AS: first call to AS on scene (response time) Best measure is probably centiles - eg. 50 th , 90 th , etc.	Measures of ease, rapidity of access. Unclear how to combine the different service performance measures to get a system performance measure. Could just be weighted by % of contacts using that route.	Used by HCC in their review of EUC ²⁶
Processes: timing	Time from first contact to admission or definitive care such as first contact to needle time in thrombolysis.	Survey? or could use AS or NHSD call time as start, and admission time from A and E records or time to anaesthetic from theatre records as end.	Mean time.	Needs linked data and different end points (eg. admission, theatre, needle, discharge) for different conditions. But possibly important.	Expert opinion.
Structures:	EUC services available				
Structures: access	Proportion of the population living within a 5 (10) km radius of an A&E/WIC/MIU/UCC, or % of maximum possible population living within 5(10) km of a facility.	GIS data on population location and location of emergency attendance facilities.	% (max) accounts for different population densities of PCTs/networks.	Are facilities in the right place? It is hard to move A&E of course, but UCC-type facilities can be moved, so it might be best just to calculate based on these facilities.	Used by HCC in their review of Urgent and Emergency Care ²⁶ .
Structures: access	Proportion living within 10km of 24/7 ambulatory care facilities.	Takes into account opening hours.		Are facilities in the right place and open?	
Outcomes: Relative performance	Relative case-fatality rates for emergency indicator conditions in-hours and out-of-hours; weekdays and weekends; peak times and off-peak times; by season; and by area of residence.	ONS mortality data + HES data	Case-fatality ratios are calculated as ONS deaths divided by HES admissions. Deaths out-of-hospital can be added as a refinement. Day, season, area can be obtained from routine data, but times would used local data collection.	A good EUCS achieves equally good outcomes at all times and in all places by deploying its resources properly. Case-fatality rates have to be used because the incidence of events may be different at different times or in different places.	See for example Bell ⁴¹ ; Schmulewitz ⁴² .

Processes: relative performance	Relative process/performance measures, eg Times, Transfers, Admissions, on weekdays/weekends, etc (see 1i) In fact all the process measures suggested above could be compared between different times, places, groups of patients.				Peak vs. off-peak timings are included in the HCC review of EUC ²⁶ .
Processes: mental health	Contacts with mental health crisis teams/1000 population	Mental health services	Contacts/1000 perhaps standardised	May depend on supply. Is a high value a good thing or a bad thing?	
Processes: mental health	Proportion of contacts with mental health crisis teams resulting in hospital admission	Mental Health Services.			
Other:	Measures for other specific groups (maternity, paediatrics, dental services) not adequately covered by general indicators or specific conditions.				
Other:	Delayed transfers.				

APPENDIX 2 Summary of scores

Median scores of the Delphi panel survey of suitable measures to monitor the performance of the emergency and urgent care system

The results of the Delphi survey are shown in **TWO** sections:

Section 1 contains the original list of indicators: **A** Outcomes; **B** Process; **C** Structures; **D** Equity

Section 2 contains the original list of serious, emergency, and urgent conditions.

Two panels: i) Senior clinicians and researchers in emergency and urgent care, and ii) Commissioners and urgent care leads in PCTs and StHAs scored the indicators individually. The aggregate scores to Round one were fed back to panel i) to allow participants to revise their initial scores informed by the group 'median' scores, if they wished to do so. After Round two the lowest scoring measures were deleted. The refined list of indicators was sent to panel ii).

The 'median' scores after Round one are in column **R1**; Round two in **R2**; Round three in **R3** below:

SECTION 1

Participants were asked to score each indicator on an increasing scale of 1-9 (1 being 'disagree strongly' and 9 being 'agree strongly') with the following statement:

“This measure is likely to be a good indicator of the performance of the emergency and urgent care system (EUCS)”

Please note that there are no 'right' or 'wrong' answers. Even if you feel your expertise is in one part of EUCS only, please respond to all items. If you need extra space for comments, please cross-reference the item number and continue on a separate sheet. At this stage, do not consider issues of cost or difficulties you may see in obtaining the relevant data.

A	Outcome based indicators	Median score 1-9	R1	R2	R3	Comments (optional)
			n=3 0	n=3 0	n=1 9	
1a)	First person 999 contacts with the ambulance service who die within 3 days	7	7	5.5		
b)	As 1a) above, but for callers who die within 7 days	5	5	3.5		
c)	As 1a) above, but limited to out of hospital deaths	3.5	3			
2a)	First person contacts (by phone/internet/in person) with any EUCS service, who die within 3 days	6	6	5		
b)	As 2a) above, but for contacts who die within 7 days	4.5	4			
c)	As 2a) above, but limited to out of hospital deaths	4	4			
3a)	Mortality rates for serious, emergency, conditions for which a well-performing EUC system could improve chances of survival	8	8	7	See page 5 for list of serious, emergency indicator conditions	
b)	As 3a) above, but for those who die out of hospital	5	5			

4a)	Case fatality rates for serious, emergency conditions for which a well-performing EUC system could improve chances of survival	8	8	7
b)	As 4a) above, but for out of hospital deaths	5	5	
5	For all serious, emergency conditions together, the proportion of deaths that occur before admission (i.e. in pre-hospital or the Emergency Dept. (ED).	7	7	5.5
6a)	Numbers of hospital emergency inpatient admissions discharged home in <24 hours as proportion of all emergency admissions	6	6	7
b)	As 6a) above, but for patients discharged home in <72 hours	5.5	5.5	6
7	Hospital emergency admission rates for urgent conditions who exacerbations could be managed out of hospital or in EDs without admission to an inpatient bed	7	7	9
8	Proportion of contacts with EUCS services for urgent conditions resulting in a hospital inpatient admission	6	6	7
9	Emergency re-admissions within 28 days for urgent conditions as a proportion of all live discharges	5	5	
10	Adherence to any evidence-based good practice guidelines for serious emergency, and urgent conditions	8	8	7

Service users

11a)	Rate of frequent attendees at ED per 1000 population, standardised for distance from the ED	5	5	
b)	As 11a) above, but as a proportion of all ED attendees	6	5.5	
12a)	Arrivals at ED by emergency ambulance and discharged without treatment or investigation(s) that needed hospital facilities	7	7	8
b)	As 12a) above but referrals to ED by any EUCS services	7	7	8.5
13	Self-referred re-attendance at urgent ambulatory care services (EDs, walk in centre (WIC), out of hours (OOH) care, minor injury unit (MIU), mental health crisis team, etc.) within 7 days of initial presentation to any EUCS service	6	6	6.5
14	Total calls to emergency ambulance service for transfer of patients between EUCS services	6	6	6.5
15	Total attendance at EUCS services (excluding NHSD or other telephone advice services) referred elsewhere for primary management	5.5	6	6.5
16	Multiple transfers between EUCS services	7.5	7	7
17	Patients referred to services by EUCS services that do not attend or do not comply	4	4.5	

Timings

18 Time from first contact with a EUCS service, to clinical assessment .

Eg

a) call to NHS Direct (NHSD) to nurse contact

6.5	7	8
-----	---	---

b) call to ambulance service to time on scene

7	7	8.5
---	---	-----

c) first contact with OOH to clinical assessment (by nurse, other health professional, GP etc.

7	7	8.5
---	---	-----

19 For EUCs users with indicator conditions who are admitted, the time from first contact to admission, eg

a) from call to NHSD to admission

8	8	7
---	---	---

b) from call to ambulance service to admission

8	8	7
---	---	---

c) first contact with OOH to admission

8	8	7
---	---	---

d) first contact with mental health team to admission

7	7	7.5
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20 Time from first contact to care for indicator conditions, for example for patients having thrombolysis – call to needle times; for patients having percutaneous coronary intervention (PCI) – call to cath.lab; patients with serious head injury undergoing neurosurgery – call to theatre; patients with mental health breakdown – call to contact with mental health crisis team.

9	9	8.5
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C Structures			
21	Proportion of population living within 10 km of emergency or urgent care ambulatory care facilities	5	5
22	Proportion of population living within 10 km of 24 hour emergency or urgent ambulatory care facilities	5	5
D Equity			
23	Relative case fatality rates (ie proportion of all contacts with EUCS for serious, emergency indicator conditions who die) between		
	a) In hours vs out of hours	7	8
	b) Weekdays vs weekends	7	8
	c) Season	5	5
	d) Area of residence	6	
24	Variations in times from first contact with NHSD to nurse contact between:		
	a) In hours vs out of hours	7	8
	b) Weekdays vs weekends	7	7
	c) Season	4	4
	d) Area of residence	6	7
25	Variations in times from first contact with ambulance service to time on scene between:		
	a) In hours vs out of hours	7	8
	b) Weekdays vs weekends	7	8
	c) Season	5	5
	d) Area of residence	6	8
26	Variations in times from first contact to clinical assessment (by nurse, other health professional, GP, etc.) between:		
	a) In hours vs out of hours	7	8
	b) Weekdays vs weekends	7	8
	c) Season	5	5
	d) Area of residence	6	8

27	Variations in times from first contact with NHSD to admission between:			
	a) In hours vs out of hours	6.5	7	8
	b) Weekdays vs weekends	6.5	7	7
	c) Season	5	5	
	d) Area of residence	5.5	6	7
28	Variations in times from first contact with ambulance service to admission between:			
	a) In hours vs out of hours	7	7	8
	b) Weekdays vs weekends	7	7	8
	c) Season	5.5	6	
	d) Area of residence	6	6	8
29	Variations in times from first contact with OOH to admission between:			
	a) In hours vs out of hours]	6		
	b) Weekdays vs weekends	6	6.5	8
	c) Season	5.5	5.5	
	d) Area of residence	6	6	7.5
30	Variations in times of first contact with mental health team to admission between:			
	a) In hours vs out of hours	7	7	7.5
	b) Weekdays vs weekends	7	7	7
	c) Season	6	6	
	d) Area of residence	6	6	7
31	Variations in times from first contact to care for serious, emergency conditions for example, call to needle times, for patients having PCI – call to cath.lab; for patients with serious head injury undergoing neurosurgery – call to theatre; between			
	a) In hours vs out of hours	8	8	8.5
	b) Weekdays vs weekends	8	8	8
	c) Season	6	6	
	d) Area of residence	6.5	6	8.5

SECTION 2

A Serious, emergency conditions

B Urgent conditions – the exacerbations of which could be managed by a well-performing EUC system out of hospital or in EDs without admission to an inpatient bed

For each condition below, please score **1-9 (1 disagree strongly’ and 9 ‘agree strongly’)** to indicate your agreement with the following statement:

‘This condition is likely to be a good candidate to monitor the performance of EUC systems.’

A Serious, emergency conditions for use with mortality outcomes-based indicators (see Section 1, items 3 and 4)

Score 1-9	Median	R2	R2	R3	Score 1-9	Median	R1	R2	R3
Stroke/CVA		8	8	9	Isolated extradural haematoma		7	7	7.5
Myocardial Infarction		9	9	9	Asthma		8	8	8
Major haemorrhage (for example, GI bleed, ruptured aneurysm)		8	8	8.5	Septic shock		7	7	8.5
Epilepsy		5.5	5	7.5	Acute heart failure		7	7	8
Diabetes		6	6	7	Cardiac arrest		8	8	9
Cholecystitis		5	4.5		Exacerbation COPD		6	6	8
Appendicitis		6	5.5	8	Anaphylaxis		8	8	9
Fractured neck of femur		7	7	9	Acute pancreatitis		6	6	7.5
Meningitis		8	8	9	Asphyxiation		8	7	8.5
Childbirth		7	7	7					

External causes - injuries, poisoning and violence

Self harm (suicide)	7	6.5	7	Road traffic crash injuries	8	8	7
Falls	6	6	8	Falls >65 years	7	7	9
Assault	6	6	7	Poisoning	6	6	7
Burns	6	6	7	All external causes	5	5	7

B. Urgent conditions, the exacerbations of which could be managed by a well-performing, EUC system out of hospital or in EDs without admission to an inpatient bed. For use with process-based outcomes (see Section 1 items 7-9)

	Median	R1	R2	R3		Median	R1	R2	R3
Score 1-9					Score 1-9				
Angina	7	7	7		hypoglycaemia	8	8	7.5	
Non-specific chest pain	7	7	8		Minor head injuries	7	7.5	7	
Asthma	7	7	8		Syncope	6.5	6	7	
COPD	6	7	8.5		Chest infection	6	6	7.5	
Epileptic fit	6.5	7	7		Urinary tract infection	7	7	8.5	
Non-specific abdominal pain	6	5.5	8		Chronic heart failure	6	6	7.5	
Alcohol-induced coma	5	6	7		Acute mental health crisis	7	7	8.5	
Drug overdose/poisoning	6	6	7		Elderly falls	7	7	8	

Appendix 3 Candidate indicators to monitor the performance of systems of emergency and urgent care

Indicator	Contents
Outcomes based indicators	
1	Mortality rates for serious, emergency, conditions for which a well-performing EUCS could improve chances of survival.
2	Case fatality rates for serious, emergency conditions for which a well-performing EUCS could improve chances of survival.
Process based indicators	
3	Hospital emergency admission rates for acute exacerbations of urgent conditions that could be managed out of hospital or in other settings without admission to inpatient bed.
4	Arrivals at EDs referred by any EUCS services and discharged without treatment or investigations(s) that needed hospital facilities.
5	Arrivals at EDs referred by emergency ambulance and discharged without treatment or investigations(s) that needed hospital facilities.
6	Emergency re-admissions within 7 days for serious, emergency or urgent conditions as a proportion of all live discharges.
7	Adherence to evidence-based good practice guidelines for serious, emergency and urgent conditions.
8	Multiple transfers between EUCS services.
9	Time from first contact with a EUCS service to clinical assessment.
10	For patients with serious, emergency conditions who are admitted to a hospital bed, time from first contact with a EUCS service to time of admission.
11	Time from first contact with EUCS service to definitive care
Structural indicator	
12	Proportion of population living within 10 kilometres of emergency or urgent care facilities open for more than 12 hours per day and 7 days per week.
Equity indicators	
13	Relative case fatality rates between all contacts with EUCS services for SEC or urgent conditions, by defined comparators.
14	Variations in times from first contact with any EUCS service to clinical assessment for SEC or urgent conditions, by defined comparators.
15	Variations in times from first contact with any EUCS service to admission for SEC or urgent conditions, by defined comparators.
16	Variations in times from first contact with any EUCS service to definitive care for SEC, by defined comparators.

Definitions

'Contact with EUCS service'	Includes by face to face; or telephone call; or contact by other means either by patient directly or someone acting on behalf of patient.
'Clinical assessment'	First assessment of patient either by telephone or face to face by a doctor or a nurse or another health professional who is authorised clinically to assess patients.
'Definitive care'	The care that is the recommended clinical procedure or practice in the management of a condition.
'Referral'	Referred by one service in the EUC system to another. For example, referred by NHSD to ambulance service for transport to ED, <i>directly</i> to or on behalf of patient, via the telephone or face to face contact, or <i>indirectly</i> service-generated referral of one service to another.
'Defined comparators'	Sub-sets of the population or time, or other way of looking at the EUCS, that allow comparisons of performance to be made, for example, different postcode areas of residence, small area statistics; different times of the week; different times of the day; different types of area (for example) rural vs. urban; different age groups; male vs. female;
'GP in hours' and 'out of hours'	The period of 'in hours' in this document is defined as 08.00 hrs until 18.00 Monday to Friday;
'Weekdays' and 'weekends'	'Weekends' in this document are defined as Saturday and Sunday. Weekdays are Monday to Friday.

Definitions. Serious emergency and urgent conditions for use with the indicators

Candidate condition	ICD 10 Codes ¹	Comment
<i>Serious emergency conditions</i>		
Meningitis	G00-G03; A32.1; A39	
Anaphylaxis	T78.0; T78.2; T80.5; T88.6	
Myocardial infarction	I21-I23	
Fractured neck of femur	S72	
Asthma	J45-J46	
Cardiac arrest	I46	
Pregnancy and birth related	O00-O99	
Serious head injuries	S02-S09	Limited by GCS ≤8
Self harm	X60-X84	
Ruptured aortic aneurysm	I71.1; I71.3; I71.5; I71.8	
Stroke/CVA	I61, I62.9, I63, I64	
Falls ≤74	W00-W19	Falls in younger people are avoidable deaths
Road traffic crashes	V01-V89	
Septic shock	A41.9	
Asphyxiation	R09.0, T71	
Acute heart failure	I50	
Isolated extradural haematoma	S06.4	
<i>Urgent conditions</i>		
COPD	J40-J44	
Acute mental health crisis	F00-F99	
Non-specific chest pain	R07	
Elderly falls >74	W00-W19	Falls in older people are avoidable admissions
Non-specific abdominal pain	R10	
Deep vein thrombosis	I80-I82	
Cellulitis	L03	
Pyrexial child aged ≤5	R50	Age limited ≤5
Blocked tubes, catheters and feeding tubes	Z43	Attention to artificial openings
Hypoglycaemia	E10.0, E11.0, E12.0, E13.0, E14.0, E15, E16.1, E16.2	
Urinary tract infection	N39.0	
Angina	J20	
Epileptic fit	G40, G41	
Minor head injuries	S00	Be better to include all head injuries limited by GCS ≥14

¹ International Classification of disease (ICD) 10th Edition Codes for serious, emergency conditions, and urgent conditions.

Indicator: 1

Short title: MORTALITY RATES

Full title: MORTALITY RATES FOR SERIOUS, EMERGENCY CONDITIONS FOR WHICH A WELL-PERFORMING EUC SYSTEM COULD IMPROVE CHANCES OF SURVIVAL

Aim	Reduce mortality from serious emergency conditions (SEC) (Appendix n), that are (typically) emergencies but not inevitably fatal, in populations in areas covered by EUCS.	
Rationale	This indicator is based on health outcomes that may depend on how well the services within an emergency and urgent care system work together to deliver the care that the patient needs. Monitoring changes in mortality rates for specified SECs in the local population over time is one indicator of the performance of the EUC system/network, or multi-agency working.	
Data sources	Office for National Statistics (ONS) Mortality Statistics; Census population data grouped for Area by PCT and network; International Classification of Diseases Tenth revision (ICD-10)	
Period	Annual	
Provider	Not a provider-based indicator	
Construction	<i>Numerator</i>	The number of deaths in ONS Mortality Statistics limited by PCT code of residence for PCTs in the network and ICD10 codes for serious emergency conditions (SEC)-(see table of definitions) as the primary cause of death
	<i>Denominator</i>	The mid-year population of the PCTs
	<i>ICD10 codes</i>	See table of definitions
	<i>Process</i>	i) Simple ratio of total SEC deaths to population; ii) by ICD10 group iii) directly age-standardised to DH standardised population iv) for ≤ 74 years and >74 years
Comment	The rates could be standardised for age and sex. The indicator is sensitive to the incidence of the conditions in the population as well as to the performance of the EUCS in preventing the deaths of patients with the conditions. It is not recommended for comparisons between networks. The indicator can be improved by looking at early deaths, for example, deaths within 7 days or 30 days of first contact with the EUCS. However, data to calculate this are not available. Ideally, the indicator is based on network or PCT of care, not residence. The level of cross-boundary flows is another concern about the validity of this indicator. Note also that the census-based population data may be in error.	

Indicator: 2

Short title: CASE FATALITY RATIOS

Full title: CASE FATALITY RATIOS FOR SERIOUS, EMERGENCY CONDITIONS FOR WHICH A WELL-PERFORMING EUC SYSTEM COULD IMPROVE CHANCES OF SURVIVAL

Aim	Reduce the proportion of patients with specified serious emergency conditions (SEC)-(see table of definitions) who die.	
Rationale	This indicator is based on health outcomes . It indicates the chance that someone with a SEC will die (rather than the chance that someone will die of a SEC). It is therefore a useful indication of how well the services delivering care to the patient are working together to deliver timely and appropriate care.	
Data source	Hospital Episode Statistics (HES) for emergency admission; ONS Mortality Statistics	
Period	Annual	
Provider	All Trusts in the network PCTs covered by HES	
Construction	<i>Numerator</i>	The number of deaths in ONS mortality statistics by year and PCT of residence for PCTs in the network and ICD10 code where the primary cause of death is a SEC.
	<i>Denominator</i>	All deaths in the numerator plus all emergency admissions in HES data for PCT residents for SEC conditions discharged alive
	<i>ICD10 codes</i>	See table of definitions for SECs
	<i>Process</i>	i) Simple ratio of total SEC deaths to population; ii) by ICD10 group iii) directly age-standardised to DH standardised population iv) for ≤74 years and >74 years
Comment	The case fatality ratios could be standardised by age and sex. The calculations rely on linking HES data with ONS data. As with mortality rates this indicator could be improved by using early deaths.	

Indicator: 3

Short title: HOSPITAL ADMISSION RATES

Full title: HOSPITAL ADMISSION RATES FOR EXACERBATIONS OF URGENT CONDITIONS THAT COULD BE MANAGED OUT OF HOSPITAL OR IN URGENT CARE SETTINGS WITHOUT ADMISSION TO A HOSPITAL BED

Aim	Reduce hospital admission rates for exacerbations of urgent conditions (UC)-(see table of definitions), that could be managed out of hospital or in settings without admission to a hospital bed.	
Rationale	Indicators 3 extends the ambulatory case sensitive conditions by focussing on avoidable admissions for acute exacerbations of urgent conditions. In this way systems of EUC may monitor how well the services within their range of responsibility are managing demands for care for urgent conditions effectively over time without admitting the patient to a hospital bed.	
Data sources	Hospital episode statistics (HES);	
Period	Annual	
Provider	All Trusts in the network PCT area covered by HES	
Construction	<i>Numerator</i>	Number of emergency admissions to Trusts within network area for urgent conditions
	<i>Denominator</i>	Mid-year population estimates for the PCTs in the network
	<i>ICD10 codes</i>	See table for definitions of urgent conditions
	<i>Process</i>	i) Simple ratio of number of admissions to size of population; ii) by ICD10 group iii) directly age-standardised to DH standardised population iv) limited to HES admissions with only one diagnosis on admission
Comment	<p>This indicator is sensitive to the incidence of the conditions in the network population as well as the performance of the network in avoiding admission. It should not therefore be used for comparison between EUCS.</p> <p>Case admission rates would be preferable, but ‘cases’ should be contacts across the whole EUC system and we cannot count these. Case admission rates for a particular service may not have system relevance.</p> <p>Objective criteria in the form of a checklist to determine the appropriateness of condition-specific symptoms to be managed without admission to a hospital need to be established.</p>	

Indicator: 4

Short title: EUCS REFERRALS TO EMERGENCY DEPARTMENTS

Full title: ARRIVALS AT EMERGENCY DEPARTMENTS (EDs)
REFERRED BY ANY EUCS SERVICES AND DISCHARGED
WITHOUT TREATMENT OR INVESTIGATIONS THAT
NEEDED HOSPITAL FACILITIES

Aim	Reduce the number of referrals to EDs for conditions that do not need hospital facilities.	
Rationale	The focus of Indicator 4 is processes of care. The measure will enable EUCs to monitor the quality of the initial assessment, appropriate triage and management of the condition.	
Data sources	ED records	
Period	Annual	
Provider	EDs in the network area	
Construction	<i>Numerator</i>	The number of patients referred by any EUCS services in the system (excluding ambulance services) who are discharged without treatment or investigations that needed hospital facilities
	<i>Denominator</i>	Patients attending EDs who were referred by any EUCs services in the system (excluding ambulance services)
	<i>ICD10 codes</i>	N/A
	<i>Process</i>	ED records of all patients referred by any EUCs services in the system (excluding ambulance services) and calculated separately for arrivals in-hours and out-of-hours.
Comment	<p>?? Why exclude ambulance services? – if AS are transporting people to ED who do not need to be there isn't this something the 'system' may wish to look at?? –</p> <p>Could develop ED record to include code: 1 GP, 2 AS, 3 Work, 4 MIU, 5 WIC, 6 Telephone advice line; 7 Other for referral pathway? – then indicator 5 could be dispensed with.</p> <p>Relies on data from all EDs??</p> <p>Data may not be routinely available at present. The indicator can be calculated from ED records if they include a field indicating whether the patient was referred by another service. Patients not treated or investigated are defined in the literature as not investigated in any way (including by X-ray) and or treated except for a prescription bandage, sling, dressing or steri-strips.</p>	

Indicator: 5

Short title: ARRIVALS AT EDs BY EMERGENCY AMBULANCE

Full title: ARRIVALS AT EMERGENCY DEPARTMENTS (EDs)
REFERRED BY EMERGENCY AMBULANCE AND
DISCHARGED WITHOUT TREATMENT OR
INVESTIGATIONS THAT NEEDED HOSPITAL FACILITIES

Aim	Reduce the number of referrals to EDs for conditions that do not need hospital facilities.	
Rationale	Indicator 5 is a process-based measure to enable EUCs to monitor the quality of the initial assessment and appropriate triage of the condition at the first point of contact. It will also provide quantifiable data about the numbers of journeys by emergency ambulance that could be avoided if appropriate alternative care pathways were available, and inform the development of services within the system.	
Data sources	ED records	
Period	Annual	
Provider	EDs in the network area	
Construction	<i>Numerator</i>	Number of patients, not referred by another EUCs service and taken by emergency ambulance to EDs, who are discharged without treatment or investigations that needed hospital facilities
	<i>Denominator</i>	All referrals by emergency ambulance to EDs,
	<i>ICD10 codes</i>	N/A
	<i>Process</i>	i) ED records for all patients arriving at EDs by emergency ambulance; ii) Calculated separately for in-hours and out-of-hours
Comment	Though focused on emergency ambulance performance, this is related to the availability of alternative care pathways in the system available for the ambulance service to use.	

Indicator: 6

Short title: EMERGENCY RE-ADMISSIONS

Full title: EMERGENCY RE-ADMISSIONS WITHIN 7 DAYS FOR SERIOUS, EMERGENCY OR URGENT CONDITIONS AS A PROPORTION OF ALL LIVE DISCHARGES FOR SAME CONDITION

Aim	To encourages services in systems of emergency and urgent care to work collaboratively to manage care both in hospital and in the post-discharge period, in a safe and timely way.	
Rationale	The focus of Indicator 6 is the processes within the emergency and urgent care system.	
Data sources	Hospital Episode Statistics admissions data PCT re-admissions data	
Period	Annual	
Provider	Acute hospital Trusts in the network covered by HES	
Construction	<i>Numerator</i>	Number of patients re-admitted within 7 days for the same serious, emergency or urgent condition (see table of definitions)
	<i>Denominator</i>	Number of patients discharged alive admitted with any of the serious emergency or urgent conditions
	<i>ICD10 codes</i>	All SEC and urgent conditions (see table of definitions)
	<i>Process</i>	Calculated separately for SEC and urgent conditions
Comment	Although this indicator is only focused on the performance of part of the system i.e. the acute Trust clinical services and community services, this may coincide with the patient journey. The indicator has recently been used by the Healthcare Commission in their set of emergency indicators.	

Indicator: 7

Short title: EVIDENCE-BASED GUIDELINES

Full title: ADHERENCE TO EVIDENCE-BASED GOOD PRACTICE GUIDELINES OR STANDARDS FOR THE MANAGEMENT OF ANY EMERGENCY OR URGENT CONDITIONS

Aim	To encourage services within EUCS to adopt good practice in managing patient care in accordance with the best available research evidence in published guidelines.	
Rationale	Indicator 7 is a process measure that focuses on fostering good clinical practice in emergency and urgent care. It assumes that the awareness and adoption of good practice in the management of patient care will contribute to improving the clinical processes and outcomes.	
Data sources	Published guidelines in emergency and urgent care; Audit of practice and procedures implemented with EUCS.	
Period	Annual	
Provider	All emergency and urgent care services in the network	
Construction	<i>Numerator</i>	
	<i>Denominator</i>	
	<i>ICD10 codes</i>	
	<i>Process</i>	Implementation of development of good practice guidelines in the management of the SEC and urgent conditions over the availability of guidelines.
Comment	<p>This indicator is still being developed and guidelines and standard relevant to the emergency and urgent care system such as standards for ‘call to needle’ times for patients undergoing thrombolysis are still to be identified and agreed.</p> <p>Only the clinical guidelines which cross service boundaries, and therefore indicate the quality of clinical care provided by the system will be included.</p> <p>?? is ‘Any emergency or urgent conditions too broad?? – needs to be limited to guidelines or standards that exist for the indicator conditions – gaps will encourage the system to develop the relevant standards??</p>	

Indicator: 8

Short title: MULTIPLE TRANSFERS

Full title: MULTIPLE TRANSFERS BETWEEN THE SERVICES IN A SYSTEM OF EMERGENCY AND URGENT CARE

Aim	To foster good practice in initial assessment, triaging of patient direct to the appropriate care facility within the system, optimal case management and improved outcome for the patient.	
Rationale	Indicator 8 is a process measure. The increasing number of services within a system of emergency and urgent care, together with the consolidation and specialisation, may make inter-service transfers more common. Potentially this may increase the risks to patient safety. It is important therefore to have an indicator that will be able to detect changes in the number of transfers between services over time as a precursor to carrying out clinical audit of the processes and outcomes of care associated with any changes.	
Data sources	HES data Patient surveys.	
Period	Annual	
Provider	Acute Trusts in the network	
Construction	<i>Numerator</i>	Using HES data limited to first FCE (i.e. to identify admissions rather than episodes) the number of admissions with source of emergency admission = another hospital and discharge= another hospital; And using the HPRQ results to identify the proportion of EUCs users who report having multiple transfers
	<i>Denominator</i>	
	<i>ICD10 codes</i>	
	<i>Process</i>	Proportions/rates of patients having ≥ 2 transfers in less than 72 hours
Comment	Admisourc and Disdest (HES) do we need to link??– check with HES data dictionary? Linkage needed to match up with patient survey.	

Indicator: 9

Short title: TIME TO CLINICAL ASSESSMENT

Full title: TIME FROM FIRST CONTACT WITH ANY SERVICE IN A SYSTEM OF EMERGENCY AND URGENT CARE TO CLINICAL ASSESSMENT (FOR EXAMPLE, BY A NURSE, DOCTOR, OTHER CLINICALLY QUALIFIED HEALTHCARE PROVIDER.)

Aim	To identify delays in referral process between EUCS services to ensure that patient care is delivered in a timely and appropriate way.	
Rationale	Indicators 9 to 11 inclusive look at timings within the processes of emergency and urgent care. A defining feature of emergency and urgent care is that many of the conditions for which help is sought, are time-sensitive. A well-performing system therefore is one in which delays can be detected routinely and improved. As well as days or dates, the routine data required for this Indicator are times of first contact, first clinical assessment and all the critical points in the patient's journey.	
Data sources	Service-level data Patient surveys	
Period	To be defined by the PCT or network (typically 4 weeks)	
Provider	All services within network providing emergency or urgent care	
Construction	<i>Numerator</i>	Median and 90th percentile of times from first contact (call or registration) to clinical assessment for all patients with indicator conditions resident in the area covered by the network i) For all services together ii) By services separately
	<i>Denominator</i>	N/A
	<i>ICD10 codes</i>	All SEC and urgent indicator conditions
	<i>Process</i>	
Comment	The data should be available routinely from services. The indicator conditions might need to be identified on service records to ensure data capture. ??Are the data returnable to the PCT?? How and when are they processed? Are the conditions coded by ICD10 codes??	

Indicator: 10

Short title: TIME TO ADMISSION

Full title: FOR PATIENTS WITH SERIOUS, EMERGENCY CONDITIONS WHO ARE ADMITTED TO A HOSPITAL BED, THE TIME FROM FIRST CONTACT WITH A EUCS SERVICE TO TIME OF ADMISSION.

Aim	To ensure that patients with serious, emergency conditions who are admitted, do so in an appropriate and timely way.	
Rationale	Indicators 9 to 11 inclusive look at timings within the processes of emergency and urgent care. A defining feature of emergency and urgent care is that many of the conditions for which help is sought, are time-sensitive. Delays in the process of transfer between services from first contact to admission may affect outcomes adversely. It is important therefore that delays can be monitored routinely and addressed. The data collected routinely should include times of first contact, assessment and critical points in the patient's journey, as well as days or dates.	
Data sources	Service-level linked data; Patient surveys. PCT audit of the pathway of patients admitted through ED and self-referred or transferred from any other EUC service	
Period	Annual	
Provider	Acute Trusts in the system	
Construction	<i>Numerator</i>	Median and 90th percentile of times from first contact (call or registration) to admission for all patients with indicator conditions resident in the area covered by the network i) For all services together ii) By services separately
	<i>Denominator</i>	N/A
	<i>ICD10 codes</i>	All serious emergency and urgent indicator conditions
	<i>Process</i>	
Comment	The data are not currently available routinely. Could be obtained through local PCT audits of the patient journey or the use of e-health records. May be available in spine PCTs only.	

Indicator: 11

Short title: TIME TO DEFINITIVE CARE

Full title: TIME FROM FIRST CONTACT WITH A EUCS SERVICE TO DEFINITIVE CARE FOR SERIOUS, EMERGENCY OR URGENT CONDITIONS,

For example:

- a) for patients having thrombolysis – first contact to needle time;
- b) for patients having percutaneous coronary intervention (pci) – first contact to cath lab;
- c) for patients with serious head injury undergoing neurosurgery – first contact to theatre.

Aim	To reduce times on patient journey through the EUCS to definitive care	
Rationale	Indicators 9 to 11 inclusive look at timings within the processes of emergency and urgent care. A defining feature of emergency and urgent care is that many of the conditions for which help is sought, are time-sensitive. To enable the processes to be monitored, it is important that the routine data include times of first contact, assessment and critical points in the patient’s journey, as well as days or dates.	
Data sources	National and local recommendations for ‘definitive care’ for SEC or urgent conditions Service level linked data ED data; AS patient report forms; theatre books	
Period	Annual	
Provider	Acute Trusts in the system	
Construction	<i>Numerator</i>	Mean (SD) time from first contact (call or registration) to definitive care
	<i>Denominator</i>	Recommended timings from first contact to definitive care
	<i>ICD10 codes</i>	All serious emergency and urgent conditions (see table of definitions)
	<i>Process</i>	
Comment	‘Definitive care’ good practice guidelines associated with serious emergency and urgent conditions are still being developed. Could be measured by local audits or may become available in e-health records	

Indicator: 12

Short title: DISTANCE FROM EMERGENCY AND URGENT CARE

Full title: PROPORTION OF POPULATION LIVING WITHIN 10 KILOMETRES OF EMERGENCY OR URGENT CARE FACILITIES THAT ARE OPEN FOR MORE THAN 12 HOURS PER DAY AND 7 DAYS PER WEEK.

Aim	The aim is to ensure or improve access to emergency and urgent care service for the local population.	
Rationale	The focus of Indicator 12 is structural . A well-performing system will locate urgent care services in the most appropriate place relative to other services within the EUCS system, and the quality of the public transport routes, to meet the needs of the local population to have equitable access to emergency and urgent care, for minimum periods of more than 12 hours every day.	
Data sources	Geographical Information Systems (GIS) Local service planning data Area codes PCT boundaries mapped to EUCS or networks	
Period	Annual	
Provider	All services in PCT or network providing urgent or emergency care and open for more than 12 hours/7 days per week	
Construction	<i>Numerator</i>	Population numbers living within 10 Km radius of any EUCS facility open for more than 12 hours/7 days per week
	<i>Denominator</i>	Total population living in the PCT or network area of responsibility
	<i>ICD10 codes</i>	N/A
	<i>Process</i>	
Comment		

Indicator: 13

Short title: RELATIVE CASE FATALITY RATIOS

Full title: RELATIVE CASE FATALITY RATES BETWEEN ALL CONTACTS WITH EUCS SERVICE FOR SERIOUS, EMERGENCY CONDITIONS OR URGENT CONDITIONS, THAT DIE WITHIN 7 DAYS, BY DEFINED COMPARATORS for example:

- a) gp in hours vs. gp out of hours;
- b) weekdays vs. weekends;
- c) small group areas of residence covered by the system of emergency and urgent care

Aim	To achieve optimum outcomes of care equitably and consistently irrespective of extraneous factors such as: times of the day or day or the week or postcode area.	
Rationale	The equity indicators numbered 13-16 inclusive, address the issue of variations in outcomes due to differences in access to and availability of care. A well-performing EUCS achieves equally good outcomes at all times and in all places. Relative case-fatality ratios i.e. the numbers who are admitted with a serious, emergency or urgent condition, who die, by different times of the day or days of the week, are good indicators because the incidence of events (necessary to calculate mortality rates) may be different at different times or in different places.	
Data sources	Hospital Episode Statistics admission data ONS Mortality data	
Period	Annual	
Provider	All Trusts in PCT/network covered by HES	
Construction	<i>Numerator</i>	The number of deaths in ONS mortality statistics by year and PCT of residence for PCTs in the network and ICD10 code where the primary cause of death is a SEC.
	<i>Denominator</i>	All deaths in the numerator plus all emergency admissions in HES data for PCT residents for SEC conditions discharged alive
	<i>ICD10 codes</i>	See table of definitions
	<i>Process</i>	Comparative analysis by -weekday and weekend -area of residence -in hours and out of hours i) Simple ratio of total SEC deaths to population; ii) by ICD10 group iii) directly age-standardised to DH standardised population iv) for ≤74 years and >74 years
Comment		

Indicator: 14

Short title: VARIATIONS IN TIME TO CLINICAL ASSESSMENT

Full title: VARIATIONS IN TIMES FROM FIRST CONTACT WITH ANY EUCS SERVICE FOR SERIOUS, EMERGENCY OR URGENT CONDITIONS, AND CLINICAL ASSESSMENT, BY DEFINED COMPARATORS

For example:

- a) gp in hours vs. gp out of hours;
- b) weekdays vs. weekends;
- c) small group areas of residence covered by the system of emergency and urgent care

Aim	To deliver optimum processes of care equitably and consistently irrespective of extraneous factors such as: times of the day or day or the week or postcode area.	
Rationale	The equity indicators numbered 13-16 inclusive, focus on the variations in outcomes or processes due to differences in access and availability of care. A well-performing EUCS will deliver or be working to deliver the same processes of care at all times and in all places. A defining feature of emergency and urgent care is that many of the conditions for which help is sought, are time-sensitive. It is important therefore that EUCs can monitor variations in the processes of care, occurring for example, at different times of the day, days of the week, and postcode areas, or other potential influences, within their area of responsibility.	
Data sources	Local linked service data; For example, ED data; AS patient report forms; GP records; OOH records; Patient surveys	
Period	To be defined by the PCT or network (typically 4 weeks)	
Provider	All acute Trusts in PCT/network	
Construction	<i>Numerator</i>	Median and 90th centile of times from first contact (call or registration) to clinical assessment for all patients with indicator conditions resident in the area covered by the network i) For all services together ii) By services separately Comparative analysis of i) and ii) above by: iii) In-hours and out-of-hours iv) Weekends and weekdays v) Area of residence
	<i>Denominator</i>	N/A

	<i>ICD10 codes</i>	All emergency and urgent indicator conditions
	<i>Process</i>	
Comment	<p>The data should be available routinely from services. The indicator conditions might need to be identified on service records to ensure data capture.</p> <p>Weekday vs weekend analysis relies on: date of first contact, NHS number or name and age or dob, sex.</p> <p>Residence analysis relies on: date of first contact NHS number or name and age or dob, sex postcode sector. Residence fields would allow variations in distance from facility, and potentially variations by socio-economic factors, to be calculated.</p> <p>Data for timings for a comparative analysis of in-hours vs out of hours are not available routinely. May be held at service level, or available through PCT audit, and patient survey. May become available on e-health record in spine PCTs.</p>	

Indicator: 15

Short title: VARIATIONS IN TIME TO ADMISSION

Full title: VARIATIONS IN TIME FROM FIRST CONTACT WITH ANY EUCS SERVICE FOR SERIOUS, EMERGENCY OR URGENT CONDITIONS, AND ADMISSION TO AN INPATIENT BED, BY DEFINED COMPARATORS

For example:

- a) gp in hours vs. gp out of hours;
- b) weekdays vs. weekends;
- c) small group areas of residence covered by the system of emergency and urgent care

Aim	To deliver optimum processes of care equitably and consistently irrespective of extraneous factors such as: times of the day or day or the week or where the patient lives.	
Rationale	The equity indicators numbered 13-16 inclusive, focus on the variations in outcomes or processes due to differences in access and availability of care. A well-performing EUCS will deliver or be working to deliver the same processes of care at all times and in all places. A defining feature of emergency and urgent care is that many of the conditions for which help is sought, are time-sensitive. It is important therefore that EUCs can monitor variations in times along the patient journey, occurring for example, at different times of the day, days of the week, and postcode areas, within their area of responsibility.	
Data sources	Service-level linked data; Patient surveys. PCT audit of the pathway of patients admitted through ED and self-referred or transferred from any other EUC service	
Period	Annual	
Provider	Acute Trusts in the system	
Construction	<i>Numerator</i>	Median and 90th centile of times from first contact (call or registration) to admission for all patients with indicator conditions resident in the area covered by the network i) For all services together ii) By service separately Comparative analysis of i) and ii) above by: iii) In-hours and out-of-hours iv) Weekends and weekdays v) Area of residence
	<i>Denominator</i>	N/A
	<i>ICD10 codes</i>	All serious emergency and urgent conditions (see table of definitions
	<i>Process</i>	Comparative analysis
	Comment	The data are not currently available routinely. Could be obtained through local PCT audits of the patient journey or the use of e-health records. May be available in spine PCTs only.

Indicator: 16

Short title: VARIATIONS IN TIME TO DEFINITIVE CARE

Full title: VARIATIONS IN TIME FROM FIRST CONTACT WITH A EUCS SERVICE TO DEFINITIVE CARE FOR SERIOUS, EMERGENCY OR URGENT CONDITIONS,

For example:

- a) for patients having thrombolysis – first contact to needle time;
- b) for patients having percutaneous coronary intervention (pci) – first contact to Cath lab;
- c) for patients with serious head injury undergoing neurosurgery – first contact to theatre.

Aim	To ensure the patient receives the definitive care recommended for the indicator conditions, equitably and consistently irrespective of factors such as: different times of the day or day or the week, or where the patient lives.	
Rationale	The equity indicators numbered 13-16 inclusive, focus on the variations in outcomes or processes due to differences in access and availability of care. A well-performing EUCS will deliver or be working to deliver the same processes of care at all times and in all places. A defining feature of emergency and urgent care is that many of the conditions for which help is sought, are time-sensitive. It is important therefore that EUCs can monitor variations in times along the patient journey to definitive care, occurring for example, at different times of the day, days of the week, and postcode areas, within their area of responsibility.	
Data sources	Linked service level data; ED data; AS patient report forms; theatre books; GP and OOH records; NHSD records	
Period	Annual	
Provider	All acute Trusts in PCT/network	
Construction	<i>Numerator</i>	Mean (SD) time from first contact (call or registration) to definitive care
	<i>Denominator</i>	Recommended timings from first contact to definitive care
	<i>ICD10 codes</i>	All serious emergency and urgent conditions (see table of definitions)
	<i>Process</i>	Comparative analysis
Comment		

Patient Perspective Appendix

A toolkit for monitoring the patient perspective of the emergency and urgent care system

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1. The need for a toolkit

What is an emergency and urgent care system?

The Department of Health continues to propose changes to what they term both emergency^{1 2} and urgent care,³ defining urgent care as “the range of responses that health and care services provide to people who require – or who perceive the need for – urgent advice, care, treatment or diagnosis”. Emergency and urgent care is provided by a range of services including 999 ambulance, accident and emergency (A&E) departments, general practice (GP) both in and out of hours, pharmacy, NHS Direct, walk in centres, minor injury units, dental services, community mental health teams, and social care.³ It can also be called unplanned or unscheduled care.

Patients seeking urgent care may not attend or consult a single service. Instead they may make several contacts with the same or different services.⁴ For example, they may call NHS Direct, be directed to attend A&E, and then be admitted as an inpatient; or they may attend a walk in centre and then later contact the GP out of hours service. Each emergency and urgent care service may be effective but not operate as a system, ensuring the smooth and efficient transfer of patients along pathways involving more than one service. These individual services need coordination to ensure that they work together as a system.

Why measure the performance of the system from the patient perspective?

The patient perspective of health care is important as policy in England shifts towards a patient-led NHS.⁵ The Darzi report in 2008⁶ focused on the need for patients to be at the very centre of care and that measurement on quality of care should include patient views of success and quality of their experience.

Patients experience a system rather than simply the individual services within it. Commissioners and providers of emergency and urgent care services need to identify problems with their systems, and monitor the effect of any changes they make to their systems e.g. closure of an Accident and Emergency Department, opening of a Primary Care Centre, co-location of services etc.

2. Aim of this toolkit

The aim of the toolkit is to help those who manage the emergency and urgent care system to obtain the patient perspective of their system in a way which will offer valid and reliable data.

The main customers for this toolkit are Emergency and Urgent Care Boards who run Networks which bring together all stakeholders within a system and manage that system, and PCTs which commission services within a system.

3. How the toolkit was developed

Researchers at the University of Sheffield undertook focus groups and interviews with people who had made recent contact with the emergency and urgent care system.⁵ Based on this qualitative research, they identified the key characteristics of the system which were important to patients and developed a questionnaire. They then worked with an Emergency and Urgent Care Network to test this questionnaire and how best to administer it. They tested the use of a standard market research company telephone survey versus a 'gold standard' postal survey and found that

- A survey of the general population can identify recent users of the emergency and urgent care system.
- A standard market research company telephone survey using quota sampling was more representative and inclusive than a postal survey using random sampling. It was also more accurate in identifying specific service use (Table 1).
- Patient recall of having an urgent event worsened considerably after four weeks and therefore any survey with an aim of estimating use of the system must focus on a four week recall period. However, answers to satisfaction questions were consistent across a three month period of recall on the telephone survey. Therefore satisfaction can be measured for events occurring in the past three months.
- For every 1000 people who complete a questionnaire by telephone, 150 have used the system in the previous three months.

Toolkit page 2

Table 1: Rate per 1000 population per month using specific services in the system

Service	Postal survey	Telephone survey	Routine data provided by Network
GP out of hours	26	13	13
A&E	23	11	12
999	3	7	6
Urgent care centres (MIUs)	6	4	5

4. The toolkit

The toolkit includes

- Key requirements of the toolkit
- The need for ethics approval and research governance
- The questionnaire
- Guidance on sample sizes and related costs
- How to find a market research company
- How to identify an age-sex break down of your population
- Instructions for a market research company
- Analyses to request from the market research company

4.1 Key requirements

- Keep the research team (MCRU, University of Sheffield) informed of changes to your system
- A market research company must be employed to undertake this survey
- The sampling procedure as outlined in this document must be adhered to
- The survey must be administered by telephone

- The telephone questionnaire must include all the items. You can add extra questions at the end of the survey if you wish
- This toolkit is not subject to copyright but if you do wish to re-produce this, please make a courtesy contact to the MCRU

Keeping everyone informed

It is important to the success of this survey that all relevant parties are kept informed of progress. All departments in the Network/PCT should be made aware that a survey is being undertaken because patients may contact services and ask questions about the survey. You may want to send an email to staff, or put posters up in coffee rooms, providing information about the survey. In addition you may want to publicise the survey amongst the general population, which may have a positive impact on your response rates. For example, posters in GP surgeries and publicity in the local media.

Project team

Even though the survey will be undertaken by a market research company, we feel that it would be useful for you to set up a small project team (this could be as small as a couple of people). For example, the Director of Unplanned Care may want to take on a role overseeing the project, and a middle management member of staff may want to take on the responsibility of liaising with the market research company and ensuring the survey is undertaken using the guidelines within this toolkit.

Timing

The timing of the survey can be decided upon by you. We suggest that if you are using the survey to take account of a change within your Network, you should administer the survey just prior to the change (say the month before). In order to measure the impact of the change, administer the survey again approximately twelve months later.

4.2 Ethics approval and research governance

Approval is not required from an NHS Ethics Committee because no NHS records, facilities or staff, are used to recruit participants for this survey.* All participants are members of the general population.

No use will be made of NHS facilities to recruit patients and therefore research governance will not be required.

The market research company commissioned to use this toolkit must be a member of the **Market Research Society**. As such there are no issues in relation to data protection and patient confidentiality as companies must comply with the Market Research Society's code of conduct (<http://www.marketresearch.org.uk/standards/codeconduct.htm>) which ensures that research is carried out in a professional and ethical manner.

** The University of Sheffield is currently working with four Networks/PCTs to help them undertake this survey as part of a wider research study. This wider study has ethics approval from the University of Sheffield (NHS premises or staff are not used to recruit patients) and research governance from each PCT.*

4.3 The questionnaire

Core questionnaire

The questionnaire has a screening question to determine whether people have used the emergency and urgent care system in the previous three months. Only people who have used it then go on to complete a more detailed questionnaire about their most recent experience.

The questionnaire is in Appendix A in the form of a 'script' used by telephone interviewers.

The questionnaire covers:

- Questions to ensure that adults only are interviewed (aged 16+)
- Questions to select when an adult describes the system use of a child
- A screening question about use of the emergency or urgent care system
- Experience of using the system for the most recent event, focusing on the first three services contacted
- Satisfaction with using the system for the most recent event
- Socio-demographic information: age, sex, ethnicity

Making changes to the questionnaire

The generic terms for services are used in the questionnaire (e.g. A&E department). You may wish to name the service and include the name used by your local population so that it is instantly recognised by respondents (e.g. A&E department at the Northern General Hospital). The advantage of this approach is that you can be confident that respondents know which service is being described. However, this may not work if you have a lot of service use by your population outside of your system, that is, people on the border of your area may travel to hospitals not in your geographical patch. If you choose to name services then please change questions Q6 and Q8.

Extra questions

For every 1000 people who complete the questionnaire, 150 will have used the system in the previous three months and thus complete the more detailed questionnaire about their most recent experience. You may wish to ask a question or questions of all respondents which are relevant to the whole population. For example, you may wish to seek population views of access to dentists. Any additional questions may incur additional financial costs with the market research company; the amount is dependent on the number of additional questions included.

4.4 Guidance on sample sizes and related costs

A survey of 1000 people who answer the screening questionnaire will yield approximately 150 recent users of the system. This will be adequate to detect changes to you system (see sample size calculation below).

Say a change was made to the system, for example a large GP-led centre was set up with the intention of improving access to urgent care or an emergency department was closed for efficiency of the system. You could undertake a survey before the change and a survey a year after the change. If the intention of the change was to improve satisfaction entry into the system from a mean of 3.8 to a mean of 4.1, with a standard deviation of 0.9, you would need 142 system users to detect this effect size of 0.3 at the 5% level with 80% power. That is, a market research company telephone survey of 1000 members of the general population before and after the change would suffice because it would identify approximately 150 system users each time.

A telephone survey of 1000 people in 2007 cost £10k including VAT.

4.5 How to find a market research company*

Market research companies commissioned to undertake this survey must be members of the Market Research Society (MRS). In order to locate a market research company we suggest that you go to the MRS website: <http://www.mrs.org.uk/>

You will need to access the 'research buyers guide' through the following link:

<http://www.theresearchbuyersguide.com/index.php?p=home&SESSID=ot3f8n2rdl2s05sg9f20r80nl1>

You will need to register on this site in order to access a list of MRS members.

**On this occasion we are tendering for one company to undertake the surveys for all 4 sites. This will help to reduce our costs.*

4.6 How to identify an age-sex breakdown of your population

First you need to identify the geographical area covered by your system so that the market research company can locate telephone numbers within your area. This is best done by identifying the postcode sectors covered by your system e.g. DE1, DE2, SK43. You will need to make a decision about whether to include some postcode sectors on the border of your system. Postcodes of general practices within your system are a useful source of this information.

Market research companies will require an age-sex breakdown of the population within your emergency and urgent care system so that their quota sampling for the telephone survey can reflect this. You may have this information available to you as a PCT or Emergency and Urgent Care Network Board. If you do not, then a good source is the ONS (Office of National Statistics) website at www.statistics.gov.uk where census data for populations is available for different areas. Another useful source is your local authority.

4.7 Instructions for a market research company

1. Undertake a telephone survey of 1000 people in your geographical area. All 1000 people will complete a short screening questionnaire. If they have used the emergency and urgent care system in the previous three months they will complete a more detailed questionnaire. Approximately 15% (150) of people will need to complete the more detailed questionnaire.

2. Telephone numbers of people in your geographical area can be identified using the range of postcode sectors provided. The following approach can be taken to sampling: working with these postcodes, enter a common surname together with a postcode into the BT search engine of residential numbers at 'www.thephonebook.bt.com'. From that number, generate additional numbers by replacing the last two digits of the number with two new random digits. Replicate the process using different surnames and postcodes to generate sufficient telephone numbers to complete the survey.

An example:

Initial contact: Smith, A. (S1) Tel: 0114 1234567

Next contact: 0114 12345[XX]

Continue by replacing the last two telephone digits, and so on...

Brown, D (S5) Tel: 0114 7654321

Next contact: Tel: 0114 76543[XX]

Continue by replacing the last two telephone digits, and so on...

3. Use quota sampling to ensure that the profile of respondents is similar to your geographical area in terms of age and sex.

4. The survey is of health service use for the whole population including children. However, the telephone survey can only be undertaken with adults aged 16 and over. Therefore the script covers identification of people aged 16+ and numbers of children of different ages in the household to allow quota sampling of under 16s.

5. We recognise that different market research companies may have different ways of entering data. To maintain consistency across Networks we have produced a coded data entry template in SPSS. All variable names correspond to the question numbers on the questionnaire. An electronic version of the template will be sent to you, and should be forwarded to the market research company. Please ensure that the market research company use this template when entering the questionnaire data. The completed SPSS file should be returned to the MCRU following analysis by the market research company.

Here is an example of how the completed SPSS file might look:

ID	S1A	S1B	S1C	S1D	S1E1	S1E2
0001	1	.	2	0	.	.
0002	2	1	3	2	6	4
0003	1	.	2	1	1	.
0004	1	.	4	0	.	.
0005	1	.	2	1	10	.

4.8 Analysis plan

The market research company will undertake the analysis and write a report for you. Analysis should follow as detailed below:

A. Population

1. An age-sex breakdown of the 1000 respondents for comparison with your population. Check that the quota has been filled.
2. A frequency table of any question or questions you requested to be asked of all 1000 respondents. Some cross tabulations may be useful by socio-demographic characteristics: age, sex, and ethnic group.
3. The proportion of respondents reporting that they used the emergency and urgent care system in the previous three months (S2).
4. The proportion of respondents reporting that they used the emergency and urgent care system in the previous four weeks (S2 and Q2).

B. System users

Selecting users of the emergency and urgent care system in the previous three months, for the most recent event:

1. The length of pathways in your system including
 - The number of services used (Q7)
 - The mean number of services used (Q7)
 - The proportion using four or more services (Q7)
 - Mean length of time (minutes) taken from first service contacted to help wanted received (Q18). Days, hours and minutes must be transformed into minutes.

2. Movement between pathways

- The reason for moving along a pathway: why was a second or third service used? (Q11, Q14)

3. Experiences and satisfaction of system users

- The proportion seeking help in/out of hours (Q9, Q12, Q15)
- The proportion making contact with services via a) phone, b) internet, c) in person (Q10, Q13, Q16)
- The proportion feeling that they needed to contact too many services (Q19)
- The proportion reporting that their case was managed with sufficient urgency (Q17)
- The rating of their overall care (Q23)

4. Satisfaction domains

- Three system satisfaction domains have been identified: patient convenience, entry into the system, and progress through the system. Frequencies can be run for each item within a domain. An overall mean score can also be calculated. See SPSS syntax below.

Entry into the system (Q20):

- a. I did not know which service to go to about this problem
- b. I felt that the first service I tried was the right one to help me
- c. I felt sometimes I had ended up in the wrong place

Patient convenience (Q21):

- a. Travelling to the services I needed was easy
- b. I was told how long I'd have to wait
- c. Services had the information they needed about me
- d. I had to repeat myself too many times
- e. Services understood that I had responsibilities, like my need to look after my family

Progress through the system (Q22):

- a. My concerns were taken seriously by everyone
- b. I was made to feel like I was wasting everyone's time
- c. I had to push to get the help I needed
- d. I moved through the system smoothly
- e. It took too long to get the care needed
- f. I felt that no one took responsibility and sorted out my problem
- g. I saw the right people
- h. I felt I was given the wrong advice
- i. Services did not seem to talk to each other
- j. At each stage I was confident in the advice services gave me

SPSS syntax

```
COMPUTE entry = MEAN(Q20a,Q20b,Q20c) .  
EXECUTE .  
COMPUTE patient = MEAN(Q21a,Q21b,Q21c,Q21d,Q21e) .  
EXECUTE .  
COMPUTE progress = MEAN(Q22a,Q22b,Q22c,Q22d,Q22e,Q22f,Q22g,Q22h,Q22i,Q22j) .  
EXECUTE .
```

5. Problems with pathways

You may have some problem pathways. An example of a pathway is when a patient goes to their GP in hours, then to the walk in centre and then to A&E for the same problem. Unfortunately there are so many combinations of pathways that you are unlikely to have enough people on different pathways to look at satisfaction by pathway. However, you will have enough numbers to look at satisfaction for pathways with specific services on them, for example all pathways that include A&E. You may find that if a certain service is on a pathway then system satisfaction is lower than if it is not on a pathway. (Q8 and Q19, Q20, Q21, Q22, Q23).

SPSS syntax

```
COMPUTE A&E=0.  
IF (Q8a=4 or Q8b=4 or Q8c=4) A&E=1.  
EXECUTE.
```

5. Reporting results and dissemination

A market research company will administer the survey, undertake the analysis and produce a report of the findings.

Any data collected is co-owned between the Network/PCT and the MCRU.

The MCRU reserves the right to publish findings in academic journals and at conferences. However, the Network/PCT has the freedom to disseminate the findings how they wish.

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APPENDIX A
TELEPHONE QUESTIONNAIRE

Toolkit page 13

UNIVERSITY OF SHEFFIELD NHS RESEARCH VIA TELEPHONE

“I am [name of interviewer] calling from [name of market research company] on behalf of the University of Sheffield who are conducting research for the NHS. They are looking for views on getting help and advice on the day you need it for health problems. The information you give will help to plan health services in your area. It will take 10 minutes at the most. Can you help?

Thank you.

This is a genuine market research survey, which is conducted in accordance with the Market Research Society Code Of Conduct. No one will try to sell you anything during the interview or as a result of taking part and you will not at any stage be asked to provide any confidential information.

IF NECESSARY:

If you have any concerns about the validity of this research you can contact the Market Research Society on Freephone 0500 39 69 99

Health issues can be a sensitive area. In the unlikely event that any of our questions cause you distress you can stop the interview” [Interviewer – in the event of someone getting upset, please suggest that they can stop the interview and may wish to contact their GP].

Name _____

Postcode _____ (first part only e.g. DE5)

Telephone number _____

Date of interview _____

S1a Are you over 16?
Yes - go to S1c
No - go to S1b

S1b Can I speak to someone who is?
Yes - GO TO S1c
No - CLOSE (Do not count towards quota)

S1c How many adults (over 16 years of age) are there in total (including yourself) in your household?
Adults (write in) _____

S1d How many children under 16 years of age are there in your household?
Children under 16 (write in) _____

S1e What ages are your children
1st child _____
2nd child _____
3rd child _____
4th child _____
5th child _____
6th child _____

CHECK QUOTA OF INTERVIEWS WITH ADULTS VS CHILDREN

CODE **INTERVIEW WITH ADULT RESPONDENT** **.1**
 INTERVIEW ON BEHALF OF CHILD **.2**

IF CHILD INTERVIEW, SELECT ONE CHILD AT RANDOM

Say *"I would like to concentrate in this interview just on the experiences relating to one of your children. Can you please just think about your 1st/2nd/3rd etc child. I would just like you to focus on them for the rest of this interview.*

RECORD WHICH CHILD CHOSEN

1st child .1
2nd child .2
3rd child .3
4th child .4
5th child .5
6th child .6 write in name of child chosen _____

S2 In the last 3 months have you sought help for an urgent health problem in connection for yourself/your child _____ (name from above) (if child quota, referring to the specific child chosen)? (Interviewer note: this includes trying to contact a service such as a GP, accident and emergency, Chemist, 999 ambulance, dentist etc where you felt help or advice was needed on the same day)
Yes - GO TO Q1
No - GO TO Q24

CHECK IF ADULT/CHILD QUOTA

Q1 In the last 3 months about how many times have you sought help for yourself/for (name of child) an urgent health problem?
 _____ (write in number of times)

"I would like you to think about the most recent occasion when you have sought help for an urgent health problem for yourself/for (name of child)".

Q2 Thinking about the most recent time that help was needed urgently, how many weeks ago was that?
 Write in number of weeks _____

Q3 How long after thinking this health problem was urgent was help sought?
(read out, single code)
 Immediately .1
 Less than 2 hours .2
 Between 2 and 12 hours .3
 Between 12 and 24 hours .4
 More than 24 hours .5 > **ASK Q4**

Q4 How long after thinking about the health problem was the urgent help sought?
 _____ (write in verbatim)

Q5 Was the health problem ...(read out, single code)

An illness	.1
An injury	.2
Other	.3
Refused (do not read out)	.4

Q6 Still thinking about the most recent health problem, please tell me which of the following services were involved in giving help or advice.
Please include all those who you tried to contact, even if this was not successful?
(Read out, multi code possible)

GP in hours	.1
GP out of hours	.1
Accident and Emergency	.1
999 Emergency Ambulance	.1
Mental Health Crisis Team	.1
Walk-in Centre	.1
Minor Injuries Unit	.1
A Pharmacist or Chemist	.1
NHS Direct	.1
Other	.1

Q7 How many services were involved altogether?

For example, if you saw the GP, a chemist for a prescription, went back to see the GP again and then went to a hospital clinic for the same health problem, the number of services would be 4

Write in number of services _____

CHECK Q7. IF JUST ONE SERVICE USED ASK Q8A, USING JUST THE WORD SERVICE

IF MORE THAN ONE SERVICE USED THEN ASK Q8A USING PHRASE FIRST SERVICE, AND ASK Q8B, Q8C ETC UP TO THE FIRST THREE SERVICES THEY USE AT Q7

Q8a What was the service/first service you contacted or tried to contact?
(Read out, single code)

Q8b What was the second service?

Q8c What was the third service?

	1 st	2 nd	3 rd
GP in hours	.1	.1	.1
GP out of hours	.2	.2	.2
Accident and Emergency	.3	.3	.3
999 Emergency Ambulance	.4	.4	.4
Mental Health Crisis Team	.5	.5	.5
Walk-in Centre	.6	.6	.6
Minor Injuries Unit	.7	.7	.7
A Pharmacist or Chemist	.8	.8	.8
NHS Direct	.9	.9	.9
Other	.0	.0	.0

FIRST SERVICE

CHECK Q7. IF MORE THAN ONE SERVICE USED, SAY

"I would like you to think about the first service you used which was

_____ (Name of 1st service from Q8a)

Q9 When was help sought from _____ (name of 1st service from Q8a)?
(Read out, single code)

- Monday to Friday between 8.30am and 6pm .1
- Monday to Friday outside these hours .2
- Saturday or Sunday, anytime .3
- Bank holiday .4
- Can't remember .5

Q10 How did you contact them, or try to contact them?
(Read out, single code)

- By telephone only .1
- By telephone and in person .2
- In person only .3
- By Internet .4
- Other .5

**CHECK Q7. IF ONLY ONE SERVICE USED, GO TO Q17
OTHERWISE GO TO Q11**

SECOND SERVICE

Say "I would now like you to think about the contact you had with the second service, which was _____ (name of 2nd service from Q8b)

Q11 Why did you contact the second service _____ (name of 2nd service from Q8b)?
I will read out some options, please tell me which of these you think apply. You may think that more than one applies
(Read out, multi code possible)

I could not get access to the first service (name of 1 st service from Q8a)	.1
I was not satisfied with the response from the first service (name of 1 st service from Q8a)	.1
I was told to do so by the first service (name of 1 st service from Q8a)	.1
I wanted another opinion	.1
The treatment did not work	.1
The health problem changed	.1
The health problem got worse	.1
Other	.1

Q12 When was help sought from _____ (name of 2nd service from Q8b)?
(Read out, single code)

- Monday to Friday between 8.30am and 6pm .1

- Monday to Friday outside these hours .2
- Saturday or Sunday, anytime .3
- Bank holiday .4
- Can't remember .5

- Q13 How did you contact them, or try to contact them?
(Read out, single code)
- By telephone only .1
 - By telephone and in person .2
 - In person only .3
 - By Internet .4
 - Other .5

**CHECK Q7. IF ONLY TWO SERVICES USED, GO TO Q17
OTHERWISE GO TO Q14**

THIRD SERVICE

Say "I would now like you to think about the contact you had with that third service, which was _____ (name of 3rd service from Q8c)

- Q14 Why did you contact the third service _____ (name of 3rd service from Q8c)? I will read out some options – please tell me which of these you think apply. You may think that more than one applies
(Read out, multi code possible)

I could not get access to the first service (name of 1 st service from Q8a)	.1
I was not satisfied with the response from the first service (name of 1 st service from Q8a)	.1
I was told to do so by the first service (name of 1 st service from Q8a)	.1
I could not get access to the second service (name of 2 nd service from Q8b)	.1
I was not satisfied with the response from the second service (name of 2 nd service from Q8b)	.1
I was told to do so by the second service (name of 2 nd service from Q8b)	.1
I wanted another opinion	.1
The treatment did not work	.1
The health problem changed	.1
The health problem got worse	.1
Other	.1

- Q15 When was help sought from _____ (name of 3rd service from Q8c)?
(Read out, single code)
- Monday to Friday between 8.30am and 6pm .1
 - Monday to Friday outside these hours .2
 - Saturday or Sunday, anytime .3
 - Bank holiday .4
 - Can't remember .5

Q16 How did you contact them, or try to contact them?

(Read out, single code)

- By telephone only .1
- By telephone and in person .2
- In person only .3
- By Internet .4
- Other .5

OVERALL

Say "I would now like you to think about how your case was managed overall"

Q17 Do you think your case was managed with sufficient urgency?

(Read out, single code)

- Definitely not .1
- No I don't think so .2
- Yes I think so .3
- Yes definitely .4

Q18 How long did it take from the time the first service was contacted until the help you wanted was received? (answer may be in days/hours/minutes or a combination)

Write in

_____ days
 _____ hours
 _____ minutes

Q18a Still have not received the help they required .1

Q19 How do you feel about the number of services you had to contact? (read out, single code)

- Too many services .1
- Too few services .2
- The right number of services .3

Say "Again, I would now like you to think about how your case was managed overall. I am going to read out some statements. Please say if you strongly agree, agree, neither agree or disagree, disagree or strongly disagree with each one. If the statement is not applicable to you, please say. "

(read out, single code each statement)

Q20 "The following statements relate to ENTRY into the system"

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Not applicable
a. I did not know which service to go to about this problem	.1	.2	.3	.4	.5	.9
b. I felt that the first service I tried was the right one to help me	.1	.2	.3	.4	.5	.9
c. I felt sometimes I had ended up in the wrong place	.1	.2	.3	.4	.5	.9

Q21 ***"The following statements relate to PATIENT CONVENIENCE"***

	Strongly agree	Agree	Neither agree/ disagree	Disagree	Strongly disagree	Not applicable
a. Travelling to the services I needed was easy	.1	.2	.3	.4	.5	.9
b. I was told how long I'd have to wait	.1	.2	.3	.4	.5	.9
c. Services had the information they needed about me	.1	.2	.3	.4	.5	.9
d. I had to repeat myself too many times	.1	.2	.3	.4	.5	.9
e. Services understood that I had responsibilities, like my need to look after my family	.1	.2	.3	.4	.5	.9

Q22 ***"The following statements relate to PROGRESS through the system"***

	Strongly agree	Agree	Neither agree/ disagree	Disagree	Strongly disagree	Not applicable
a. My concerns were taken seriously by everyone	.1	.2	.3	.4	.5	.9
b. I was made to feel like I was wasting everyone's time	.1	.2	.3	.4	.5	.9
c. I had to push to get the help I needed	.1	.2	.3	.4	.5	.9
d. I moved through the system smoothly	.1	.2	.3	.4	.5	.9
e. It took too long to get the care needed	.1	.2	.3	.4	.5	.9
f. I felt that no one took responsibility and sorted out my problem	.1	.2	.3	.4	.5	.9
g. I saw the right people	.1	.2	.3	.4	.5	.9
h. I felt I was given the wrong advice	.1	.2	.3	.4	.5	.9
i. Services did not seem to talk to each other	.1	.2	.3	.4	.5	.9
j. At each stage I was confident in the advice services gave me	.1	.2	.3	.4	.5	.9

Q23 Overall, how would you rate the care you received? (read out, single code)

- Excellent .1
- Very Good .2
- Good .3
- Fair .4
- Poor .5
- Very Poor .6

CLASSIFICATION QUESTIONS

Thank you for your time. The next few questions are just for classification purposes.

Q24 Which of the following age ranges do you fit into? (read out, single code)

- | | |
|-------|----|
| 16-24 | .1 |
| 25-34 | .2 |
| 35-44 | .3 |
| 45-54 | .4 |
| 55-64 | .5 |
| 65+ | .6 |

Q25 What is your ethnic group (read out, single code)

- | | |
|------------------------|----|
| White | .1 |
| Black or Black British | .2 |
| Asian or Asian British | .3 |
| Mixed | .4 |
| Chinese | .5 |
| Other | .6 |

If other, how would you describe your ethnic group

Q26 Gender

- | | |
|--------|----|
| Male | .1 |
| Female | .2 |

