

**The Centre for
International
Public Health Policy**



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**Monitoring and surveillance of access to out-of-hours
health care in Scotland**

February 2010

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Please note:

The arrangements described in this article were correct at the time of writing (end 2008) but may potentially have changed since that date.

Summary

This article describes the issues that arise in monitoring access to out-of-hours health care in Scotland since the introduction of major changes in the contractual responsibilities of primary care practitioners. We evaluate the potential impact of these changes on the way that the population of Scotland now accesses out-of-hours services, and assess how this can be routinely monitored to ensure equity. Our key finding is that current monitoring systems have not kept pace with major changes to service delivery so that the impact on access by the population, particularly by specific groups, cannot be easily measured. Those measures that do exist focus on the 'opportunity' to access services as opposed to actual utilisation, main outcomes, or appropriateness of care in relation to individual patient need. We recommend the development of a consistent, standardised and compatible data set to be collected by all the main providers of out-of-hours care to facilitate routine monitoring of access to services by the population. This requires clear, specific guidance on the systems and data to be used to measure and monitor access.

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Introduction and background

This paper describes the issues and difficulties in monitoring access to out-of-hours health care in Scotland following changes in the contractual responsibilities of primary care practitioners. These have had a major impact on how services are delivered and have resulted in a plethora of new arrangements and providers.

Prior to 1st April 2004 General Practitioners (GPs) were responsible for providing primary health care services to their registered patients or for arranging cover 24 hours a day. This changed when the new General Medical Services (nGMS) contract implemented on that date, transferred this responsibility to health authorities. (Department of Health, 2003) The Primary Medical Services (Scotland) Act 2004 placed a duty on NHS boards to provide primary medical services to the resident population in the area that they covered. (Office of Public Sector Information, 2004)

The out-of-hours period is defined as 6.30pm to 8.00am on weekdays and all day at weekends and bank holidays. Some changes to the out-of-hours service preceded nGMS, including nurse triage in out-of-hours co-operatives and the introduction of NHS 24 in April 2001, the national telephone service providing 24 hour access to trained nurses. However, implementation of the new contract gave health authorities freedom to provide services through a variety of routes that increasingly moved away from traditional GP-led care. The nGMS contract guidance advises that 'Primary Care Organisations will be able to exploit a number of models for delivering out-of-hours care using various providers and professions.... Different models of care will be developed in different areas *shaped around local needs and circumstances.*' (Department of Health, 2003)

Instead of guaranteed access to their own GP (or another GP providing cover), patients can now access a range of out-of-hours providers. In Scotland, the main NHS providers of unscheduled health care during the out-of-hours period are the primary and secondary medical services which are the responsibility of the 14 territorial health boards as well as two special health boards (national organisations providing specialist services), namely the Scottish Ambulance Service (SAS) and NHS 24. Figure 1 shows the structure of the Scottish Government health directorates and NHS Scotland whilst Figure 2 illustrates a typical model of out-of-hours care before and after the new contract. It is intended that the main point of access to services for patients will be through NHS 24, but primary care out-of-hours centres, A&E departments and the SAS are often contacted first. The figure shows how NHS 24 rather than the GP is now the main route of access.

This loss of a standard, GP-led model of care and the introduction of a variety of services by health boards, may create differences in access to out-of-hours health care so we set out to evaluate the impact on the population. Equity of access is a key principle of the NHS, an objective that remains central particularly in the light of the Government's agenda to reduce health inequalities and depends on the ability to plan services for the whole population. In addition, high profile media tragedies have raised questions about the effectiveness of NHS 24, (Sheriffdom of Grampian, 2006) whilst in England an ongoing Care Quality Commission enquiry into out-of-hours provider Take Care Now has found that PCT monitoring of services may be inadequate. (Care Quality Commission, 2009) It is therefore the responsibility of

health boards, NHS Scotland and the Scottish Government to ensure that all providers provide data to facilitate adequate monitoring of patient access to out-of-hours care, and to use this data to address known variations by populations.

Yet the 2007 Audit Scotland report which reviewed systems for monitoring primary out-of-hours services noted variable practices by health boards and little monitoring of the impact on related services. The report authors made recommendations for improvements to national performance monitoring and benchmarking though provided no detailed guidance on data that should be collected for this purpose. (Audit Scotland, 2007)

A number of studies have attempted to use routine data to assess changes in out-of-hours services and have commented on the inadequacy of information. Between 2002 and 2004 Lattimer and colleagues evaluated the introduction of NHS Direct (a similar nurse-led telephone service to NHS 24 but for England and Wales) to a number of areas in England. They aimed to measure the impact and management of the demand for out-of-hours care and the impact on other immediate care NHS services. They requested individualised data from ambulance trusts, A&E departments, out-of-hours primary care centres and NHS Direct. This was to include all new attendances, emergency admissions, calls, presenting complaint, triage category, call times data, patient's age and sex, referral route, and disposition. The authors noted *'a degree of difficulty in obtaining useable, complete and timely data'* and concluded that *'work is needed to establish a minimum common data set for unscheduled care.'* They highlighted that *'the data requirements for the evaluation were substantial, and analysis was limited by the availability of data'*, although did not discuss what these data requirements were. They suggested that in the meantime *'guidance about how to make the best of routinely collected data would be welcome.'* (Lattimer et al., 2004)

In an assessment of the impact of NHS Direct on the demand for out-of-hours primary and emergency care Munro also noted that the lack of complete data limited their study. (Munro et al., 2005)

Back in Scotland, Heaney and colleagues set out to evaluate NHS 24 activity and its impact on other services providing unscheduled care (primary care out-of-hours services, A&E and SAS). Activity data (such as numbers of telephone calls, GP visits, patient attendances) were obtained from primary care out-of-hours services in four health boards. In addition data were collected from eight A&E departments in three board areas. SAS data were analysed to assess total activity, timing and source of calls, reasons for and urgency of calls, and outcome/disposition by board. In the discussion of their evaluation they noted that *'an ongoing difficulty for the monitoring of services is the quality of routine data collection within NHS Scotland. Data was inconsistent between areas and had been collected with little consideration as to its use beyond the immediate care of the patient. Inexplicable gaps and peaks in the data were observed and there were frequent changes in coding systems.'* (Heaney et al., 2005)

Aim

To evaluate how changes in the delivery of out-of-hours health care services have affected access, and how this can be routinely monitored to ensure equity.

Objectives

1. To develop a framework for measuring access to out-of-hours health care services.
2. To identify what standards are set for out-of-hours services and how performance is monitored, and who is responsible for this.
3. To compare surveillance mechanisms against the Framework for Access to assess their ability to monitor and measure access – with respect to a discussion of relevant literature.
4. To identify the data and information systems available for monitoring out-of-hours care.
5. To summarise our findings regarding access to out-of-hours health care services following the introduction of the nGMS contract and to formulate recommendations based on these findings.

Methods

We employed a mixed methods approach as follows:

1. Identification and application of a tool by which to measure access to out-of-hours health care services.
2. Identification of key policy documents, literature searching and directly contacting individuals and organisations with a role in out-of-hours care to identify current standards and performance monitoring systems in Scotland, systems of accountability and responsibility, and data and information systems available for monitoring out-of-hours care.
3. Application of the tool to surveillance mechanisms for out-of-hours primary medical services.

Figure 1: Structure of the Scottish Government Health Directorates and NHS Scotland

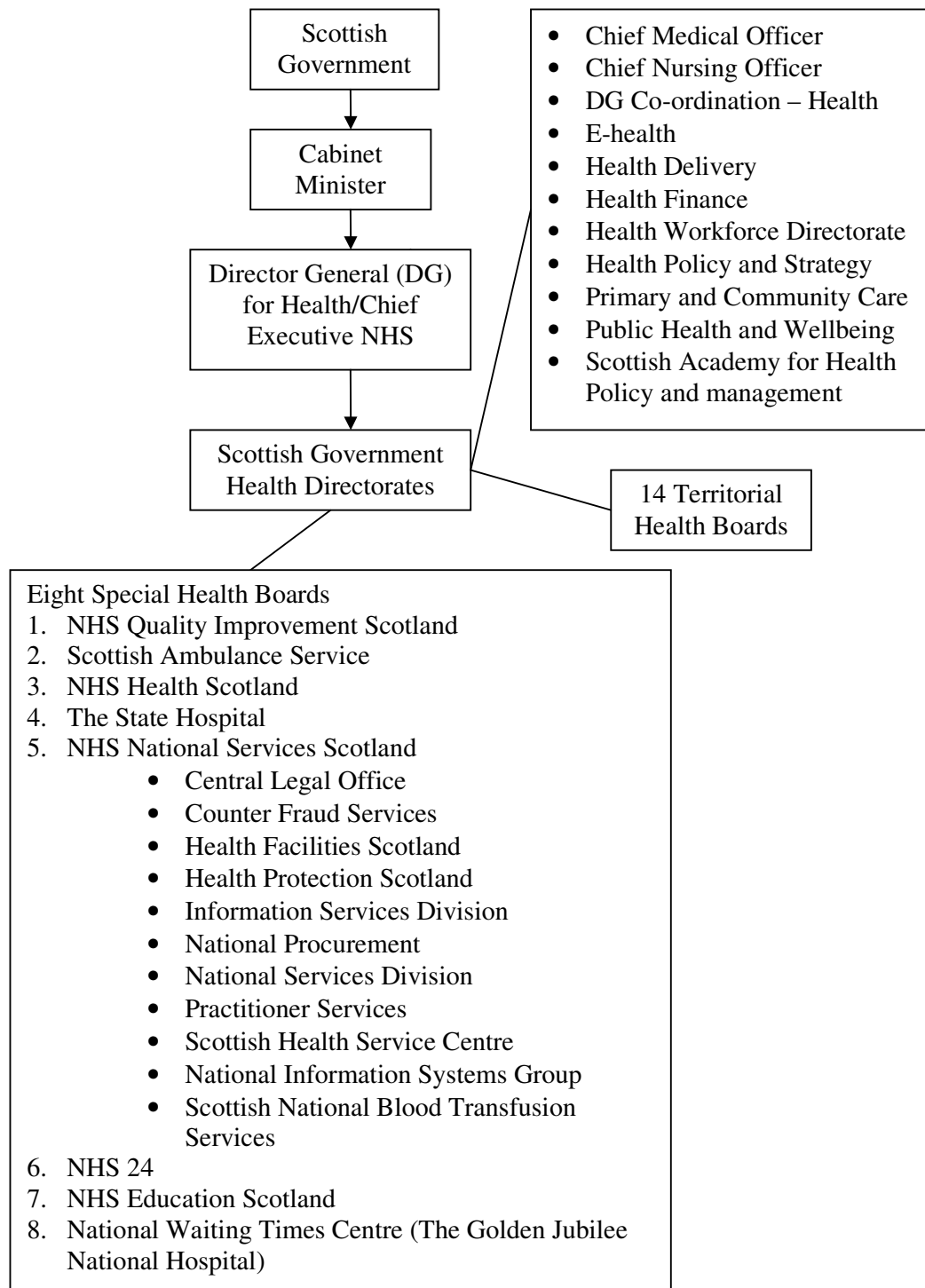
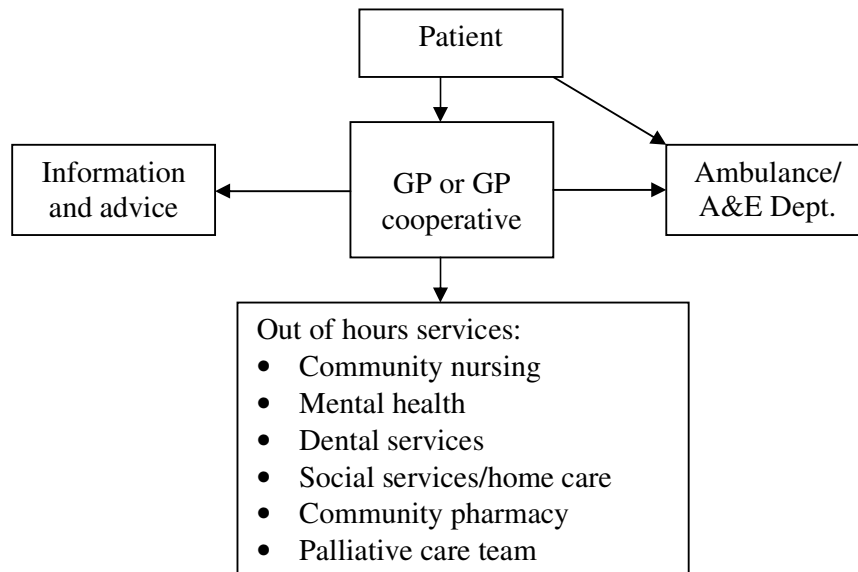
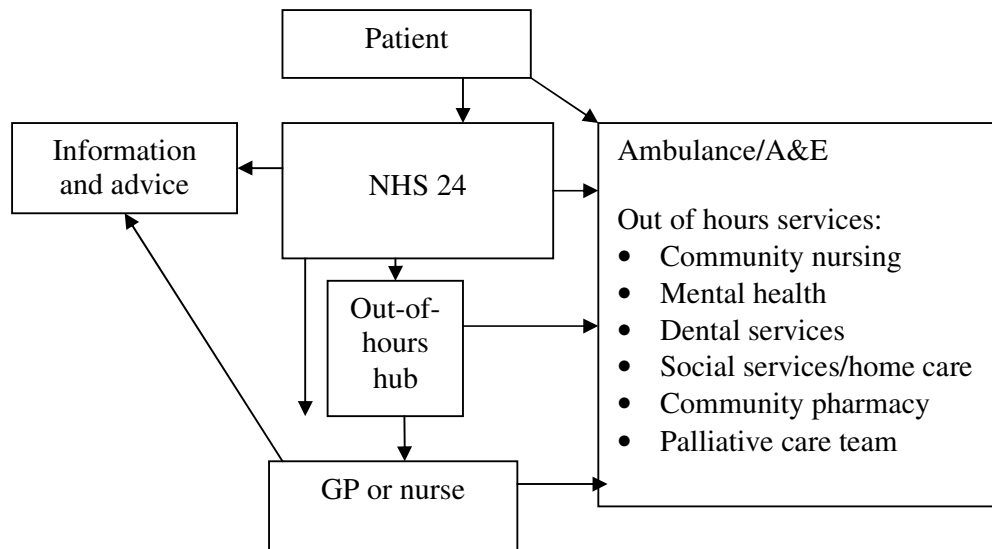


Figure 2: Out-of-hours care before and after the nGMS contract

1. Out-of-hours care in Scotland before the introduction of the nGMS contract



2. Out-of-hours care after introduction of the nGMS contract



Adapted from Audit Scotland 2007

Results

1. A framework for measuring access to out-of-hours health care services

A tool by which to monitor access should consider inputs, resources and expenditure, adjusted for population needs, processes of care and outcomes. Therefore in this project we set out to evaluate data collected by out-of-hours service providers against a set of criteria, i.e. a Framework, to assess measures of access in relation to population needs. Firstly a suitable tool had to be identified. A number of frameworks have been proposed. (Aday and Andersen, 1974; Gulliford et al., 2001; Rosen et al., 2001; Goddard and Smith, 2001; Macfarlane et al., 2005) There is a great deal of interaction between the components of any singular model so approaches that measure individual aspects of access in isolation are limited. We decided therefore to use the Framework developed by Macfarlane, based on previous work and the wider literature, which reflects access as a *continuum* with four dimensions. (Macfarlane et al., 2005) This comprises:

- **Need** – access to health care should be appropriate to population-based need
- **Opportunity** – availability/supply of services, and whether this is adequate for a given level of need
- **Utilisation** – depends on availability/supply, but also on affordability, physical accessibility and acceptability to users
- **Outcome** – health gain or health maintenance with the objective that health services provided are both relevant to individual needs and effective

Having identified our tool our method was therefore to apply this Framework to measures of out-of-hours health care in order to evaluate access. Table 1 demonstrates how the Framework may be applied to a sample of such measures.

Table 1: Example of the Framework for Access applied to measures of out-of-hours health care

Need	Opportunity	Utilisation	Outcome
Demographics, e.g. socio-economic status, geographical area, such as rural or urban	Number of GPs/other primary care services	Consultation/ call rates	Clinical outcomes including survival
Disease epidemiology	Distribution of SAS/A&E resources Time to access services (response/waiting times) Patient awareness of services/information provided Distance from services Appropriateness and acceptability of services	Treatment/ referral rates	Patient satisfaction

It should be noted that indicators in the table are *measures* rather than causal factors. For example, consultation rates may be used to measure utilisation, but these may be determined by patient satisfaction with a previous episode or distance from services. There may be other factors that restrict access such as financial costs incurred by the patient, and individual/community factors (such as support networks, cultural issues). It is important to distinguish between the concept of *absolute* access which refers to the overall availability of services, and *relative* access which refers to the different experiences of various population groups. (Rosen et al., 2001)

2. Standards, performance monitoring, and accountability for out-of-hours services

2i. A description and evaluation of the standards for out-of-hours services, and accountability

The remit of NHS Quality Improvement Scotland (QIS) is to improve the quality of health care in Scotland and one way it approaches this is by producing standards of care against which health board performance is monitored. In response to the changes following the nGMS contract, QIS published standards for 'The Provision of Safe and Effective Primary Medical Services Out-of-Hours' in August 2004. (NHS Quality Improvement Scotland, 2004) There are three standards, each of which contains one or more statements, which in turn each include criteria which must be met in order to achieve the standard. The standards are as follows and are described in full in Appendix 1.

- Standard 1 - Accessibility and availability at first point of contact
- Standard 2 - Safe and Effective Care
- Standard 3 - Audit, Monitoring and Reporting

The then Scottish Executive Health Department issued a letter (HDL(2004)41) establishing that compliance with the standards was a statutory requirement for all providers of out-of-hours primary medical services from 2005. (Scottish Executive, 2004) Whether territorial health boards provide services directly or through contracts with other providers, they are responsible for reviewing performance of all out-of-hours services in their area against the standards and for reporting to NHS QIS. (NHS Quality Improvement Scotland, 2004)

The standards were developed by the QIS Primary Medical Services Out-of-Hours Project Group and a reference group produced self-assessment guidance for boards. Subsequently territorial health boards carried out self-assessments of their performance and from September 2005 to April 2006 a QIS review group appraised each board's performance against the standards. These findings were then published and compiled to produce a national overview of performance. Boards produced individual action plans to address areas of non-compliance and were subsequently reassessed by QIS with the process completed by December 2007. Follow-up reports state that health boards are '*responsible for ensuring compliance against these criteria, and continuing to monitor (their) own progress on performance against the standards.*' Finally, a national overview of the follow-up of boards was published. (NHS Quality Improvement Scotland, 2008)

The QIS standards aim to make services '*accessible, available and acceptable to patients*' and Standard 1 is specifically about accessibility and availability at first point of contact. On examination, criteria used to evaluate the standards indicate that these primarily focus on the existence of systems being in place to achieve this aim (for example, Criteria 1(a)1 is that '*arrangements are in place for patients or their representatives to access care by telephone*'). However, because of the variety of factors which affect utilisation, reliance on the existence of arrangements alone will not necessarily ensure that access is equal and appropriate to need.

Some standards aim to ensure that health boards carry out population planning of services. Criteria 1(a)1 and 2 require boards to identify and meet the needs of the whole population which they serve, and again they are required to demonstrate that arrangements are in place to do this. However, although the QIS process describes the systems in use for assessing population needs it does not review the data collected by each health board for this.

The self-assessment document provides little guidance to boards about how criteria will be met. Guidance for Criterion 1(a)1 asks boards how they assess the needs of those using the out-of-hours service they provide. Examples of evidence for meeting the criterion are 'needs assessment within five years' and 'provider profiling including: disease prevalence, workload statistics, population and demography, rural/urban/mixed.' Following the first round of assessments, only one health board (NHS Dumfries and Galloway) achieved full compliance with this criterion and eight boards (excluding Argyll and Clyde) required follow-up. Most boards' reports noted the use of historical primary care out-of-hours data in planning changes to services, and the national report states that '*most services ... review their current activity and contacts, and a few utilise clinical coding of patient contacts to help produce more detailed data for analysis.*' However, only five of the fifteen boards' reports specifically referred to the use of data from other sources, such as information from alternative out-of-hours providers to plan and monitor services, i.e. NHS 24, SAS and A&E.

It was suggested by QIS that undertaking comprehensive public health needs assessments would ensure identification of all patient groups. Ethnic minorities, migrant workers and travellers were all cited as potential service users whose needs were not addressed by most health boards. There is evidence that changes to out-of-hours services may disproportionately affect certain groups, including lower socio-economic groups, older people, patients with communication difficulties and those living in rural areas. (Knowles et al., 2006; Campbell et al., 2006) Criterion 1(a) 4 refers to the need to remove some of the barriers to access ('*Access ... is not compromised by physical, language, cultural, economic and other barriers*'). Rural demography is included within the self-assessment guidance for Standard 1, but the QIS reports do not describe monitoring of utilisation by these groups. Little further reference is made to what routine data may be used to measure and monitor population access to services.

Criteria 1(a)3 and 4 aim to ensure that services are accessible to patients, but there is little evidence that these measures will achieve this. The self-assessment questions for these criteria do not require boards to evaluate the extent to which their systems are

effective in providing equitable access. Criteria 2(a)1 and 2 relating to Patient Focus allow for patient involvement in both service development and in their own care, but will only be relevant for patients already accessing services, as opposed to those who do not. The remaining criteria within Standard 2 (Safe and Effective Care) have limited relevance to addressing the needs of people whose access has been reduced as a result of the new systems of care.

Criterion 2(a)5 requires that clear lines of accountability are in place within health boards to monitor out-of-hours care provision, but the detail of what should be produced for this purpose and whether population data on access should be included is not provided. Neither do criteria within Standard 3 (Audit, Monitoring and Reporting) refer to the need to routinely assess population utilisation.

In summary, the standards do not conform to a framework for ensuring equity and fairness of access to and provision of services and their focus is on proxy measures of quality.

2ii. A description and evaluation of how performance for out-of-hours services is monitored and accountability

Territorial and special health boards are accountable to the Scottish Government through the Government Health Directorates and the Chief Executive of the NHS, who is also Director General for Health (see Figure 1). The main method of managing and monitoring services provided by the health directorates are through compliance with HEAT targets (Health Efficiency Access and Treatment). These comprise a set of 30 objectives, developed by the directorates and agreed with the Cabinet Minister for Health and Wellbeing, against which all territorial health boards are assessed. NHS 24 and SAS have their own sets of HEAT targets. The full set of targets for 2008 are shown in Appendix 2, but Table 2 lists those most relevant to out-of-hours care.

Table 2: HEAT targets most relevant to accessing out-of-hours care, 2008

<p><i>Territorial Health Boards</i></p> <p>A3 - To respond to 75% of Category A calls within 8 minutes from April 2009 onwards across mainland Scotland</p> <p>A7 - NHS Boards will achieve agreed reductions in the rates of attendance at A&E, from 2006-07 to 2010-11; and from end 2007 no patient will wait more than 4 hours from arrival to admission, discharge or transfer for accident and emergency treatment</p> <p><i>NHS 24</i></p> <p>A1 – 90% calls to be answered within 30 seconds</p> <p>A2 – 90% GP priority calls responded to within 20 minutes</p> <p>A3 – 90% GP routine calls responded to within 60 minutes</p> <p><i>SAS</i></p> <p>H1 - Rates of survival of cardiac arrest on arrival at hospital</p> <p>A1 – Proportion of Category A incidents reached within 8 minutes (mainland boards)</p> <p>A2 - Proportion of Category B incidents reached within 19 minutes (mainland boards)</p> <p>A3 - Proportion of all emergency incidents reached within 8 minutes (island boards)</p>
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HEAT targets are aligned to the national indicators and targets which are part of the National Performance Framework. This national framework comprises a set of objectives, targets and outcomes which underpin the delivery of the Government's agenda. (Scottish Government, 2008) HEAT targets form the basis of each health board's Local Delivery Plan, against which performance is assessed annually.

Planning and monitoring of out-of-hours care is primarily undertaken by the Primary and Community Care Directorate. The two relevant committees are the Out-of-Hours Strategy Group (chaired by the Medical Director of Fife Out-of-Hours services) and the Peak Planning Group (chaired by the head of Primary Care, Primary and Community Care Directorate, Scottish Government). The former group provides a forum for discussing alternative models of provision of primary care out-of-hours, and the latter for planning service provision during national holidays. Both groups include representation from the territorial health boards' out-of-hours services, SAS, NHS 24, the British Medical Association, and Scottish Government. They work in collaboration with the Out-of-Hours Operational group, an informal group consisting of out-of-hours clinical leads and managers from the territorial health boards and representatives from SAS and NHS 24. None of these groups has formal responsibility for routine measurement and monitoring of all of the components of out-of-hours health care and access, but the Primary and Community Care Directorate does monitor the NHS 24 and SAS HEAT targets through monthly reports. The area health board targets are monitored by different health directorates across the government.

In addition the Information Services Division (ISD) of National Services Scotland collects a limited dataset for A&E services mainly for the purpose of measuring performance against government waiting time HEAT targets, but data are not obtained from other out-of-hours providers. ISD's function is to provide advice and support to NHS Scotland and the Scottish Government in the use of health information. However, there is no national routine data collection system for out-of-hours provision.

3. Application of surveillance mechanisms against the Framework for Access to assess their ability to monitor and measure access - application of HEAT targets and QIS standards

We applied the Framework for Access described in Section 2 to the HEAT targets and QIS standards in relation to out-of-hours services to identify the following:

- i. What components of the Framework *are* directly monitored by performance targets and standards
- ii. What components of the Framework *are not* directly monitored by performance targets and standards
- iii. Further requirements to monitor equity of access to out-of-hours services by the population

i. What components of the Framework *are* directly monitored by performance targets and standards

As described, the four dimensions of the Framework for Access are: Need, Opportunity, Utilisation and Outcome. HEAT targets and QIS standards focus mostly on measuring the 'opportunity' to access services rather than actual use and outcomes.

However, health boards are required to undertake some assessment of population need and patient satisfaction through Criteria 1(a)1 and 3(a)3.

Relevant HEAT targets relate mainly to waiting/response times for A&E, SAS and NHS 24. However, SAS target H1 (Rates of survival of cardiac arrest on arrival at hospital) gives a measure of outcome, and the service hopes to meet targets through better response times and improving bystander cardio-pulmonary resuscitation (for example through training volunteers). A number of other targets, although less directly relevant to out-of-hours care, provide some measure of service utilisation such as NHS 24 targets H1 (increase call volume) and A6 (increase visits to website), but are limited in their scope.

Literature relating to out-of-hours primary and community care in Britain provides evidence of the positive relationship between access and outcome measures. There are a number of conditions for which response times are important for both survival/clinical outcome and patient satisfaction. A study using data collected by the SAS showed that faster ambulance response times improve survival from cardiopulmonary arrest for patients who require defibrillation. (Pell et al., 2001) Time from arrest to early defibrillation is the most important determinant of survival from cardiac arrest (Evans, 1998), but basic life support performed prior to this and early pre-hospital thrombolysis can also reduce mortality. (Cummins et al., 1991; Morrison et al., 2000). Speed of response and waiting times are also strongly associated with patient satisfaction as confirmed by Hurst. (Hurst, 2006)

It is acknowledged that geographical distance from services can impact on health outcome. 'Distance decay' refers to the phenomenon that living further from services reduces the likelihood of using them. (Mungall, 2004; Baird and Wright, 2006) For example uptake of breast screening has been found to decrease in line with the distance from facilities. (Haiart et al., 1990; Maheswaran et al., 2006) Colorectal, breast and stomach cancers are more likely to be diagnosed later in those who live further from services, but 'settlement size' was not associated (Campbell et al., 2000).

With regard to emergency care, Nicholl and colleagues examined category A (life-threatening) 999 ambulance calls where the patient was reported to be unconscious, not breathing or suffering acute chest pain (cardiac arrests were excluded), and found a significant relationship between distance from hospital and risk of mortality. (Nicholl et al., 2007) The strongest association was for respiratory emergencies. Looking specifically at trauma and road traffic accidents, two studies found no effect of longer pre-hospital times on outcome. (McGuffie et al., 2005; Jones and Bentham, 1995) Mortality from asthma however has been shown to increase with travel time to the nearest hospital, though not to the nearest GP. The reasons for this are unclear, and could include patient health-seeking behaviour and GP referral habits, as well as longer travel times. (Jones et al., 1999)

Patterns of utilisation of out-of-hours services may be different for rural and urban populations. Campbell and colleagues found from focus group work with urban and rural residents, that while some patients reported using A&E and ambulance services as their first point of contact, those in rural areas often delayed seeking help until their own GP was available. (Campbell et al., 2006) This indicated that this population tended to prioritise personal relationships with GPs over immediate access, so service

changes could impact on utilisation and outcomes. A study by Turnbull also found geographical variation, with patients from urban areas having higher call rates, though deprivation was found to be an even greater determinant for the higher rates in urban areas. (Turnbull et al., 2008) An evaluation of NHS 24 in Scotland found lower levels of satisfaction among respondents from rural areas. (Heaney et al., 2005)

Knowles found that certain populations made less use of NHS Direct: these included males, older people, those without access to a car or telephone, those who did not own their home, people with lower education levels, and those who had difficulty using a telephone due to a hearing or language problem. (Knowles et al., 2006)

A study of data from the British General Household Study found that A&E use was higher for poorer individuals, whilst NHS Direct use was higher in more affluent populations, and seemed to disproportionately serve populations with the lowest expected need. (Shah and Cook, 2008) The authors concluded that changes in provision and investment in either service impact on population subgroups differently and that current national policy may widen inequities in access to emergency care.

In summary, literature shows that population use of out-of-hours services and outcomes may be affected by a range of factors including distance and response times, awareness of and ability to use facilities, patient preferences and experiences, and professional practices. The impact of these factors on utilisation and outcomes is complex and not fully understood and may evolve as new models of provision become established. Equity of access can therefore only be assessed by direct monitoring of each component of the Framework for Access.

ii. What components of the Framework *are not* directly monitored by performance targets and standards

Despite the QIS standards and HEAT targets there are significant gaps in measures to monitor service provision, for example staff numbers and distribution of services, utilisation and clinical outcomes.

Out-of-hours service workforce

None of the targets or standards specifically refers to monitoring the out-of-hours workforce, an important factor for provision and access to services. Health boards are responsible for planning out-of-hours services for their areas, including the production of workforce plans as part of their Local Delivery Plans. (Scottish Government, 2007). Yet there are difficulties in calculating the level of provision to ensure equitable access. In the past when GPs were the main entry point the number of doctors needed for a given population could be used as a basis for population planning, but the multi-disciplinary nature of service provision makes this more complex. Therefore each component of the entire out-of-hours system must be taken into account in planning the overall service. In order to do this boards need to work with national organisations but there may be issues where performance targets for each agency differ in their focus with reference to equitable distribution of services for defined geographical populations. An example is the transfer of ambulances to urban areas to meet response time targets, potentially at the expense of rural communities. As SAS HEAT targets are monitored at national rather than local level there is no direct incentive to ensure equitable distribution for smaller geographies,

and the strategy of moving vehicles to more densely populated urban areas may make objectives more achievable. (The Press and Journal, 2008)

The out-of-hours workforce of each of the main providers is as follows:

NHS 24 workforce

NHS 24 has over 900 whole-time equivalent (WTE) staff, over 700 of which are frontline (call-handlers, nurse advisors etc). Staff are generally based in one of three main centres where calls are initially taken, or in one of five local centres where calls can be received from the main centres. The local centres are hosted by health boards and staff should have knowledge of other out-of-hours services in the area. (NHS 24(a), 2008)

Scottish Ambulance Service (SAS) workforce

SAS has over 3,500 WTE staff, most of whom are frontline workers (e.g. paramedics). It operates through six divisions which each cover a number of health board areas, providing services from over 150 locations. Workforce planning takes account of factors such as geographical distance and changes to services which may impact on levels of demand (for example arrangements for transport to tertiary units). (SAS(a), 2008; ISD 2008)

Primary Care workforce

There are over 4,000 WTE GPs in Scotland. We used NHS Scotland Workforce Statistics compiled by ISD and the General Register Office for Scotland (GROS) population estimates for health board areas to calculate the average number of patients per GP at board level. Excluding Highland, Orkney, Shetland, and Western Isles board areas, the number of patients per GP in 2004 ranged from 1,141 to 1,595, with higher patient/GP ratios in more densely populated areas. Scotland has smaller average list sizes than other parts of the UK, but the rate of increase in WTE GPs up until 2005 was much lower than for other medical staff. (RCGP, 2004; ISD, 2008; GROS 2008)

Monitoring the utilisation and outcomes of out-of-hours care

A number of organisations have assumed increased responsibility for delivering out-of-hours health care. The utilisation of and outcomes from out-of-hours care for the whole population can therefore only be properly measured by collecting and collating information from each organisation consistently, but there is no system for this at present.

Data relating to activity by primary care out-of-hours centres are not collected nationally so cannot be compared with national information from SAS and NHS 24. A limited dataset is collected from each A&E department centrally.

Changes to information collection systems and the lack of a common data set further impede the measurement of access to out-of-hours health care. The data systems that could potentially be used are described in Section 4.

iii. Further requirements for monitoring population access to out-of-hours services

Whole System Monitoring

Changes to out-of-hours services affect patient groups differentially, potentially leading to significant inequalities making it essential to monitor the whole system. The current fragmented provision of services may encourage patients to access services inappropriately or use a number of services instead of one. For example, patients who contact NHS 24 and are told to wait to be called back may turn to an A&E department or telephone for an ambulance instead. Or for example an organisation may triage a patient and direct them towards another service, who may in turn re-triage them back to the initial provider or on to a third agency. As described there is evidence that different patient groups have preferences for certain services. Further, variation in the configuration of services between geographical areas may influence patterns of use.

Only by monitoring patient use and flows between each of the major providers can we assess whether total provision meets population needs. The different models of provision mean that comparisons of utilisation and outcomes between areas can only be made if the whole system is monitored and measured in a standardised way.

Health board monitoring

Monitoring of access should be undertaken at health board level for both the whole geographical population (absolute access) and for sub-groups within it (relative access) in order to assess equity. As Macfarlane notes, waiting times (in this case response times/call handling times etc.) are measures of absolute access, and while these are important, they do not ensure equity. (Macfarlane et al., 2005)

At national level, HEAT targets may be achieved by responding within target times to emergencies in urban areas where there are dense population groups without meeting the targets for smaller, rural groups. Therefore it is important that health boards monitor response times for their rural populations. Currently NHS 24 routinely submits this data to health boards, but SAS and A&E departments do not (though some boards may have individual arrangements for this).

4. Data and information systems for monitoring out-of-hours health care

There is no central co-ordination of the development of out-of-hours data systems, nor an agreed common dataset of items that each organisation should collect. Data collections are largely determined individually by each agency. This section provides an overview of the systems used to collect data. A list of the specific data items collected by each organisation is provided in Appendix 3.

NHS 24

Patient information is collected using the Patient Relational Management (PRM) System. NHS 24 staff also have access to a Knowledge Management System (KMS) and the Emergency Care Summary (ECS). The KMS tool provides clinical information to aid decision making during a consultation. ECS accesses information from GP IT systems on each registered patient, detailing prescribed medications and allergies. This information is stored centrally with the Community Health Index

(CHI) database and imported by NHS 24 and out-of-hours primary care centres for use in consultations (who receive the updated database daily). The CHI population register in use in health care in Scotland uniquely identifies an individual, but is not yet available from all systems.

Calls are initially taken in the main centres and if necessary passed to a nurse or other professional in a main or local centre. If further management is required, such as a GP consultation, a primary care out-of-hours centre within the appropriate health board area is informed and the patient's care is directed by this centre.

On receiving a call, a call handler enters data onto the PRM system and where appropriate passes this on to a nurse/other professional who adds further information. All data entered onto the system are captured, with an electronic trail of who entered data and when.

NHS 24 has a secure IT link, developed and supplied by Adastralink, with the out-of-hours hubs and some other primary care out-of-hours centres (using both Adastralink and Taycare systems). This link is used to pass information collected by NHS 24 to primary care for both immediate use in the out-of-hours period and to send on to the patients' GP. The link can also be used by NHS 24 to receive information from the hubs, for example special notes about individual patients can be sent from GPs to local hubs, which then become available to NHS 24. In the case of referrals to A&E departments and SAS, summaries of consultations are sent by fax or telephone.

Scottish Ambulance Service (SAS)

SAS currently operates two data systems which collect information on out-of-hours contacts. The 'Command and Control' system, in use since February 2006, collects most of the data relating to the daily operation of the service. When calls are received, data are entered into the system by the call handler with further information recorded from a reporting sheet completed by paramedics/ambulance operators (with a copy also given to A&E departments).

An incident number is produced for each call which can be used to link data from 'Command and Control' to the 'Clinical' system (and can link to NHS 24 records for patients in contact with both services) developed to record more detailed clinical data such as diagnosis and interventions.

Until 2006 a more limited dataset was collected which included aggregated data based on numbers of calls and which did not include patient identifiers. This is held as a historical database and may permit trend analysis back to 1999.

Accident and Emergency Departments

A&E departments in Scotland use a variety of electronic information systems. Nine of the 14 health boards use the nationally procured Emergency Department Information System (EDIS) and it is hoped to extend this coverage depending on the contractual obligations of current A&E department systems.

Data are collected from all A&E departments through the ISD A&E data mart, in operation since December 2006. Departments extract data from their own systems and send this monthly to ISD. Most A&E units hold individual patient level data, though

some facilities with less developed systems only hold aggregated data. As the system was established primarily to monitor performance against waiting time targets, only those items relevant to waiting times have to be collected by A&E departments, with all other items optional – see Appendix 3. The National Clinical Dataset Development Programme (NCDDP) have produced data standards for A&E ‘core’ data and for waiting times data.

Prior to the introduction of the A&E data mart, waiting times information was collected by two methods, Weblogik and the Annual Waiting Times Survey. Weblogik was an online reporting tool which required health boards to submit a limited dataset relating to A&E attendances in their area for individual patients electronically. It was commissioned by the government and was not subject to validation checks.

The Annual Waiting Times Surveys collected information on patients accessing A&E departments on annual census days from 1994 to 2006. Information was collected through a survey form which requested a number of data items for each patient (new attenders and unplanned returns) seen in unscheduled care settings. The survey period took place in April for a term of either three or seven days, depending on the year.

A&E information is also collected by ISD via ISD(S)1 data (Hospital Activity Statistics). This is routine data, aggregated monthly or quarterly to provide activity information about hospital beds, inpatients, outpatients, day cases, day patients, haemodialysis patients, ward attendees, patients seen by Allied Health Professionals and other technical department staff and cancellations. Data on (new and all return) patients seen in A&E are included.

It is worth noting that most A&E data are routinely reported in terms of *numbers* of new patients and total attendances rather than *population rates* due to the difficulty of accurately identifying a denominator population for A&E departments. Also the numbers of units from which data has been collected has expanded over time, for example there are more small unscheduled care units, such as those run by GPs and nurses.

Primary Care Out-of-Hours centres

Each health board has a single primary care out-of-hours hub to coordinate the services for the area it serves. Hubs and NHS 24 are linked electronically and information is passed to the hub for any NHS 24 contact by a patient from its health board area. The hub can use this information in the management of the patient if local assessment is required (e.g. a GP consultation), but also passes it on to the patient’s registered GP. In some board areas, primary care centres other than the out-of-hours hub also have an electronic link to NHS 24.

There is currently no national collation of data obtained locally by out-of-hours primary care services. Locally, Adastra and Taycare systems are used by all centres in Scotland. Taycare is used by NHS Tayside, NHS Borders and NHS Forth Valley and Adastra systems are used by all other health boards. Adastra is a privately owned company which provides ‘*unscheduled and urgent primary care solutions.*’ Its website claims that its ‘*urgent care operational and clinical case management application*’ is the ‘*core operational and clinical IT system for all but a handful of the*

90 or so operational hubs providing services across the UK. Adastra provides other IT related services to out-of-hours organisations, including training, project management, and the application which links NHS 24 to primary care out-of-hours services. (Adastra, 2008)

These systems allow access to the Emergency Care Summary and the input of notes relating to all out-of-hours contacts. Because systems are linked to NHS 24, data items collected by NHS 24 are available for all patients who access out-of-hours centres directly (which some patients prefer). Also, GPs can pass patient information to the hubs, which is then available to NHS 24.

Overview of data items

The individual data items collected by all of the main providers of out-of-hours care were plotted according to provider and the results of this exercise can be seen in Appendix 3. It can be seen that there is some overlap between the data sets of each organisation. Yet in practice comparison may not be possible due to the use of different data standards, and also depends on the accuracy of coding. The CHI population register uniquely identifies an individual and could be key in tracking person-based utilisation across health care providers but is not yet available from all systems.

Conclusions and recommendations

Recent developments have radically transformed the provision of out-of-hours health care in Scotland and the way patients access services. While patterns of provision have become more complex, information systems to monitor the impact of these changes on how patients access services have not developed accordingly. Surveillance systems and mechanisms are fragmented with no single body collecting and using the data available.

Standards produced by NHS QIS aimed to ease the transition to the new systems of primary out-of-hours medical care provided by health boards following the nGMS contract. HEAT targets represent a system for performance measurement, and allow for some assessment of the provision of out-of-hours care by NHS 24, SAS and A&E departments. However, none of the standards, targets or monitoring mechanisms are able to provide information on whether the new services satisfy a key principle of the NHS – equity of access.

Whilst QIS standards provide territorial health boards with a framework against which they can benchmark services provided to their populations, this is only monitored through self-assessment and not reported nationally. Though the standards aim to ensure that processes are in place to provide equity of access, there is no requirement to routinely monitor this, and little detailed practical guidance.

HEAT performance targets allow routine monitoring of the organisations providing the majority of out-of-hours health care but at present enable little beyond an assessment of waiting and response times. Targets for NHS 24 and SAS are monitored nationally by the Scottish Government rather than by individual health boards, but no such data is collected for primary medical out-of-hours services. These

omissions make HEAT targets of limited use in evaluating the impact of service changes on equity of access.

Information can be obtained for some aspects of access from current data and monitoring systems but is incomplete. Each of the main out-of-hours care providers collects data on each patient contact, but this potentially useful data can only be used to measure access if combined across agencies. In order to achieve this there needs to be a consistent, standardised common data set, with clear standards for data collection and coding.

In summary, we found that it is not currently possible to assess the impact of changes in the delivery of out-of-hours health care on equity of access for patients. Information systems need to keep pace with developments to ensure that appropriate services are maintained for the whole population.

Recommendations to improve the monitoring of access to out-of-hours services

From our analysis we produced the following recommendations for NHS Scotland to improve monitoring access to out-of-hours services. The first is relatively simple and low cost but could produce large gains in information, whilst those following are likely to require a greater investment.

Our recommendations are as follows:

1. To provide clear guidance to health boards on the requirements for routine monitoring of out-of-hours health care. Such requirements should be mandatory.
2. This guidance should include ensuring that HEAT targets are monitored for all groups within the population, but should also place an emphasis on the reporting of population data from all major access points to out-of-hours care.
3. Consideration to the development of a consistent standardised common data set to facilitate measurement of patient access to include the whole out-of-hours system to be collected by all major providers.
4. Consideration to the development of national collation of data from each out-of-hours service provider.
5. Consideration to methods of linking individual patient data between main out-of-hours providers in order to monitor service utilisation.

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List of organisations consulted in the compilation of this report

Audit Scotland
Community Pharmacy Scotland
Fife Primary Care Emergency Service
Information Services Division (ISD) Scotland
Lothian Unscheduled Care Service
Medical Care Research Unit, University of Sheffield
NHS 24
NHS Quality Improvement Scotland (QIS)
NHS National Services Scotland
NHS Tayside
School of Nursing and Midwifery, University of Southampton
Scottish Ambulance Service (SAS)
Scottish Government
Scottish Clinical Information Management in Practice (SCIMP)
West Lothian Social Care Emergency Team

Appendix 1: QIS Standards

Source: The Provision of Safe and Effective Primary Medical Services Out-of-Hours, NHS Quality Improvement Scotland 2006

The national overview cites three standards, each of which contains one or more statements, which in turn each include a number of criteria which must be met in order to achieve the standard.

Standard 1 – Accessibility and availability at first point of contact

Standard statement 1(a) - Out-of-hours services are available and accessible to patients and their representatives.

- 1(a)1 Arrangements are in place to identify the needs of those potentially using these services.
- 1(a)2 Arrangements are in place to meet the needs of those potentially using these services.
- 1(a)3 Arrangements are in place for patients or their representatives to access care by telephone (in the first instance).
- 1(a)4 Access to, and delivery of services, is not compromised by physical, language, cultural, economic and other barriers.

Standard 2 – Safe and effective care

Standard statement 2(a) - The service provider has a comprehensive, patient-focused healthcare governance programme in place.

Patient Focus

- 2(a)1 Throughout the service, work is undertaken in partnership with individuals, communities and community planning partners in the design, development and review of services. The results of this work are acted upon and feedback is provided to all those involved.
- 2(a)2 Information is made available by the provider for the patient and their representatives regarding any care or treatment given.

Clinical Governance

- 2(a)3 There are clear, cohesive plans across the service that direct and support policy development and service delivery both internally and through delivery partners.
- 2(a)4 Service providers operate a system of risk management to ensure that risks are identified, assessed, controlled and minimised.
- 2(a)5 Providers of out-of-hours services have a system in place to report to NHS Board clinical governance committees regularly.
- 2(a)6 Arrangements are in place to communicate, inform and co-operate with key professionals, external parties and voluntary agencies.

Staff Governance

- 2(a)7 Staff involved in out-of-hours care meet employment requirements, including qualifications.
- 2(a)8 Staff are competent to perform their duties.

Corporate Governance

- 2(a)9 All out-of-hours providers have systems in place to ensure financial probity. Standard statement.

2(b) - Clinical guidelines are readily available to support clinical decision-making and facilitate delivery of quality services to patients.

- 2(b)1 Procedures are in place to ensure quick and easy access to evidence-based clinical guidelines to support clinical decision-making.
- 2(b)2 Patients are assessed and responded to, based on clinical need and professional judgement.
- 2(b)3 The service has drugs which are in date and equipment which is regularly maintained.

Standard statement 2(c) - Information gathered during care out-of-hours is recorded (on paper or electronically) and communicated to those NHS professionals involved in the patient's ongoing care.

- 2(c)1 Systems are in place for the completion, use, storage and retrieval of records including compliance with the Data Protection Act 1998.
- 2(c)2 Systems are in place for receiving and communicating information to inform patients' ongoing care, by the next working day.
- 2(c)3 Systems are in place to ensure that patients are aware of, and agree to, the sharing of information about them and their care with other health professionals.

Standard 3 – Audit, Monitoring and Reporting

Standard statement 3(a) - A provider-specific quality assurance framework is in place to support routine audit, monitoring and reporting of performance.

- 3(a)1 A set of provider-specific key performance indicators (patient-focused public involvement, clinical and organisational) are in place.
- 3(a)2 Comments, complaints and compliments are recorded, regularly reviewed and action taken.
- 3(a)3 The service provider takes action to identify patient views and satisfaction levels.
- 3(a)4 A report on performance and services is published annually and is available to users of the service and those contracting services.

Appendix 2: HEAT TARGETS

HEAT Targets, Territorial Health Boards (Scottish Government, 2008)

Health Improvement

H1 - Reduce mortality from Coronary Heart Disease among the under 75s in deprived areas.

H2 - 80% of all three to five year old children to be registered with an NHS dentist by 2010/11.

H3 - Achieve agreed completion rates for child healthy weight intervention programme by 2010/11.

H4 - Achieve agreed number of screenings using the setting-appropriate screening tool and appropriate alcohol brief intervention, in line with SIGN 74 guidelines by 2010/11.

H5 - Reduce suicide rate between 2002 and 2013 by 20%, supported by 50% of key frontline staff in mental health and substance misuse services, primary care, and accident and emergency being educated and trained in using suicide assessment tools/ suicide prevention training programmes by 2010.

H6 - Through smoking cessation services, support 8% of your Board's smoking population in successfully quitting (at one month post quit) over the period 2008/9 - 2010/11.

H7 - Increase the proportion of new-born children exclusively breastfed at 6-8 weeks from 26.6% in 2006/07 to 33.3% in 2010/11.

Efficiency and Governance

E1 - Universal utilisation of CHI (Community Health Index).

E2 - NHS Boards to achieve a sickness absence rate of 4% from 31 March 2009.

E3 - NHS boards to ensure that all employees covered by Agenda for Change have an agreed KSF (Knowledge and Skills Framework) personal development plan by March 2009.

E4 - NHS Boards to deliver agreed improved efficiencies for 1st outpatient attendance Did Not Attend, non-routine inpatient average length of stay, review to new outpatient attendance ratio and day case rate by March 2011.

E5 - NHS boards to operate within their agreed revenue resource limit; operate within their capital resource limit; meet their cash requirement.

E6 - NHS boards to meet their cash efficiency target.

E7 - To increase the percentage of new GP outpatient referrals into consultant led secondary care services that are triaged online for clinical priority and appropriate recipient service to 90% from December 2010.

Access to Health Services

A1 - Ensure that anyone contacting their GP surgery has guaranteed access to a GP, nurse or other health care professional within 48 hours.

A2 - The maximum wait from urgent referral to treatment for all cancers is two months.

A3 - To respond to 75% of Category A calls within 8 minutes from April 2009 onwards across mainland Scotland.

A4 - As a milestone in achieving 18 weeks referral to treatment, no patient will wait longer than 15 weeks from GP referral to a first outpatient appointment from 31 March 2009.

A5 - As a milestone in achieving 18 weeks referral to treatment, no patient will wait longer than 15 weeks for inpatient or day case treatment from 31 March 2009.

A6 - As a milestone in achieving 18 weeks referral to treatment, no patient will wait longer than 6 weeks for one of the 8 key diagnostic tests from 31 March 2009.

A7 - NHS Boards will achieve agreed reductions in the rates of attendance at A&E, from 2006/7 to 2010/11; and from end 2007 no patient will wait more than 4 hours from arrival to admission, discharge or transfer for accident and emergency treatment.

Treatment

T1 - By 2008-09, we will reduce the proportion of older people (aged 65+) who are admitted as an emergency inpatient 2 or more times in a single year by 20% compared with 2004/05 and reduce, by 10%, emergency inpatient bed days for people aged 65 and over by 2008.

T2 - QIS (Quality Improvement Scotland) clinical governance and risk management standards improving.

T3 - Reduce the annual rate of increase of defined daily dose per capita of anti-depressants to zero by 2009/10, and put in place the required support framework to achieve a 10% reduction in future years.

T4 - Reduce the number of readmissions (within one year for those that have had a psychiatric hospital admission of over 7 days by 10% by the end of December 2009).

T5 - To reduce all staphylococcus aureus bacteraemia (including MRSA) by 30% by 2010.

T6 - To achieve agreed reductions in the rates of hospital admissions and bed days of patients with primary diagnosis of Chronic Obstructive Pulmonary Disease, Asthma, Diabetes or Coronary Heart Disease, from 2006/7 to 2010/11.

T7 - Improvement in the quality of healthcare experience.

T8 - Increase the level of older people with complex care needs receiving care at home.

T9 - Each NHS Board will achieve agreed improvements in the early diagnosis and management of patients with a dementia by March 2011.

NHS 24 HEAT Targets (NHS 24(b), 2008)

Health Improvement

H1 – Increase Breathing Space population coverage/call volume (contributes to Scottish Government target to reduce suicide rate).

Efficiency and Governance

E1 – Patient’s CHI record accessed and utilised for every clinical telephone contact to NHS 24, where there is an available CHI record and it is relevant to the call.

E2 – Reduce and sustain % days lost due to sickness.

E3 – Ensure all employees covered by Agenda for Change have agreed Knowledge and Skills Framework Personal Development Plan.

E4 – Operate within agreed financial limits.

E5 – Meet cash efficiency target.

Access to Health Services

A1 – 90% calls to be answered within 30 seconds.

A2 – 90% GP priority calls (where face-to-face assessment within the hour is required and it is not safe to travel, or where urgent specialist telephone assessment is required) responded to within 20 minutes (the time between the call handler receiving the call and the nurse adviser beginning the consultation).

A3 – 90% GP routine calls (patient is deemed fit to travel for assessment, or home assessment is required in more than an hour) responded to within 60 minutes.

A4 - 99% IT data systems working at all sites.

A5 - 99% Telephony systems working at all sites.

A6 – Increase number of hits on the NHS 24.com website (to increase accessibility to health information and self-help care).

Treatment

T1 – Improve measure of performance against QIS standards for patient safety and clinical governance.

T2 – Number of upheld complaints less than 0.03% of calls.

T3 – ECS record is accessed where patient consent is given and where available for every clinical telephone contact to NHS 24.

SAS HEAT Targets (SAS(b), 2008)

Health Improvement

H1 - Rate of survival of cardiac arrest on arrival at hospital.

Efficiency and Governance

E1 – Operate within the revenue and capital resource limits; meet the cash requirement.

E2 – Cash releasing savings achieved.

E3 - Rates of sickness absence.

E4 – Number of Patient Transport Registrations where CHI number is used.

E5 – Number of available staff covered by Agenda for Change with Knowledge and Skills Framework Personal Development Plans.

Access to Health Services

A1 – Proportion of Category A (life threatening) incidents reached within 8 minutes (for mainland boards).

A2 - Proportion of Category B (serious but not life threatening) incidents reached within 19 minutes (for mainland boards).

A3 - Proportion of all emergency incidents reached within 8 minutes (for island boards).

A4 – Proportion of Priority 1 (cancer, cardiology, mental health and renal) patients at hospital 30 minutes or less before appointment time (relating to the Patient Transport Service).

A5 – Proportion of Priority 1 patients picked up by the Patient Transport Service within 30 minutes of agreed time.

Treatment

T1 – Improve health outcomes for patients through compliance with NHS QIS standards for patient safety and clinical governance.

T2 – Proportion of emergency calls treated at scene (in order to reduce hospital admissions).

Appendix 3: Individual data items collected by organisations providing out-of-hours care

Key: C = data item collected
M = data item mandatory - applies to A&E data mart only
O = data item optional

Purpose of data	Data Item	A&E data mart (ISD)	A&E data from ISD(S)1	Scottish Ambulance Service	NHS 24	Out-of-hours Primary Care Centres	
						Adastra	Taycare
<i>Patient identifiers/demographics</i>	Initials					C	
	First name			C	C	C	C
	Middle name			C	C		C
	Alternative name				C		
	Surname			C	C	C	C
	Maiden name					C	
	Gender			C	C		C
	Age			C		C	C
	Year of birth	O					C
	Date of birth			C	C	C	C
	CHI no.	O				C	
	Unique case record no.	M					C
	NHS 24 no.					C	
	Taycare call no.						C
	SAS Incident no.			C	C		
	Home address			C	C	C	C
	Home postcode			C	C	C	C
Registered GP					C	C	
Patient namesake					C		
<i>Chronological information</i>	Arrival date/time	M				C	C
	Date/time call received					C	C
	Date/time of first ring			C			
	Date/time call taking commenced			C			
	Date/time 'what's the problem?' established			C			
	Date/time of call for performance ('clock start')			C			
	Date/time resource allocated			C			
	Date/time call appears on vehicle's mobile data terminal			C			
	Date/time crew mobile			C			
	Date/time of estimated pickup			C			
	Date/time crew arrived at scene			C			
	Date/time started work			C			
	Date/time consultation started					C	C
	Date/time call record was created				C		
	Date/time the priority was changed				C	C	
	Date/time the ECS was accepted				C	C	
	Date/time the ECS was rejected				C		
	Date/time the ECS was viewed				C		
	Date/time the special note was viewed				C		
	Date/time the user closed call to the queue				C		
	Date/time the next user picked the call from the queue				C		
	Date/time the call report was viewed				C		
	Date/time Patient Medical History viewed				C		
	Date/time the Patient Medical History/ ECS was added to or amended				C		
	Date/time the decision support protocol was launched and completed				C		
	Date/time of early exit from a decision support protocol				C		

Purpose of data	Data Item	A&E data mart (ISD)	A&E data from ISD(S)1	Scottish Ambulance Service	NHS 24	Out-of-hours Primary Care Centres	
						Adastra	Taycare
	Which user has viewed the ECS				C		
	Special notes imported from the GP				C		
	Which user viewed the special note				C		
	Which user created the call record				C		
	Which user viewed a call record report				C		
	Which user viewed the Patient Medical History				C		
	Which user added to or amended the Patient Medical History/ECS				C		
	Which decision support protocol was used				C		
	Which user used the decision support protocol				C		
	Reason for an early exit from a decision support protocol, and which user did this				C		
	Reason for regrading a protocol disposition and which user did this				C		
	Which user entered the clinical summary				C		
	Which user viewed/ added to 'comments' (relevant, non-clinical, free text info.)				C		
	Which user added additional dispositions				C		
	Professionals who attended patient (by specialty)		C				
	'Patient flow'	M					
	Reason for wait >4 hours	M					
	The service provider which the call record was sent to via Adastra or fax				C		
	Which user closed the call				C		
	Call complete/no further action						C
	Which user viewed/ edited a closed record				C		
	Duty clinician						C
	Vehicle used			C			
	Dispatch centre vehicle originated from			C			
	Risk/hazard assessment inc. violence, weapons			C			
	Information given to allow patient consent			C			
	Details of major incident or industrial accident			C			
	Emergency services in attendance			C			
	Reason for late hospital handover			C			
	Reason for missing response time target			C			

Notes:

- Where more than one organisation collects the same item, this may be collected/coded in different ways. Some of the items in the table are not mutually exclusive as a specific data item may be collected by one dataset but be part of another data item in a different dataset, e.g. clinical information items may be separate in some sets, but be part of a free text item in another.
- If patients contacting NHS 24 and are put through to a primary care out-of-hours centre, information collected initially by NHS 24 is passed to the primary care centre.
- SAS also collect data on pickup, delivery and appointment times for non-emergency patient transport, but is not included.
- The Adastra system may be modified by individual out-of-hours centres, and so may vary between centres.
- If NHS 24 does not have a CHI record for a patient, the following items (under patient identifiers/demographics) are not collected: middle name, CHI number, patient namesake.