Executive Summary

Introduction

This is the final report of the evaluation of NHS 111, a new telephone based service designed to help people access appropriate healthcare for urgent medical problems. NHS 111 was developed in response to a review of urgent care that highlighted problems the public encounter when trying to access urgent care. The objectives of the NHS 111 service were to simplify access to non-emergency health care by providing a memorable number – 111 – that was free to the caller, provide consistent clinical assessment at the first point of contact, and route customers to the right NHS service, first time. The service is available 24 hours a day, 365 days a year to respond to requests for healthcare where the situation is not life-threatening and callers are unsure about what service they need, or they need to access care out of hours. The expected benefits of the new service are that it should improve the user experience by providing a modern entry point to the NHS and easy access to more integrated services; and improve efficiency in the emergency and urgent care system by matching patient needs to the right service.

The purpose of the evaluation was to assess the extent to which this new service achieved its objectives and was a useful and cost effective addition to the emergency and urgent care system in England.

The NHS 111 service

We evaluated the first year of operation of NHS 111 in four pilot sites. The key features of the service are:

- Calls to NHS 111 are assessed by a trained, non-clinical call adviser using the NHS Pathways clinical assessment system to determine both the type of service needed and the timescale within which help is required.
- The call handling system is electronically linked to a skills based directory of local services so that callers can be advised about the appropriate services available at the time of their call.
- Where possible, appointments can be made with the correct service at the time of the call.
- Calls that require further clinical assessment can be transferred to a clinical nurse advisor within the same call.
- If a call requires an emergency ambulance response, a vehicle can be dispatched without the need for further triage.
**Evaluation methods**

We conducted a mixed methods study assessing processes, outcomes and costs to address a range of objectives. We used a controlled before and after design to measure the impact of NHS 111, comparing changes over time in the four pilot sites and three control sites which did not establish NHS 111. Seven main approaches were used:

1. A descriptive analysis of the first year of operation of the four pilot sites to assess service use, referral patterns and achievement of quality standards.

2. Two postal surveys of users of the NHS 111 service at three months and nine months post implementation to assess users’ experiences and satisfaction.

3. A controlled before and after population telephone survey to assess changes in satisfaction with the emergency and urgent care system and awareness of NHS 111.

4. A controlled before and after study spanning two years before and one year after the introduction of NHS 111 using routine data to assess the impact of NHS 111 on use of services in the emergency and urgent care system.

5. A small exploratory expert panel review of NHS 111 cases to assess the accuracy of call dispositions and achievement of the “right place first time” objective.

6. A qualitative interview study with key stakeholders to assess the issues associated with implementation of NHS 111 in local health economies.

7. A cost-consequence analysis to assess the costs associated with providing NHS 111 and the impact on costs of the emergency and urgent care system.

**Findings**

**NHS 111 operation**

NHS 111 was established in four pilot sites - one ambulance service-provided site and three NHS Direct-provided sites. This was a considerable achievement by commissioners and service providers, particularly given that it occurred in the context of major reconfigurations of healthcare commissioning and demands for resource reduction in the NHS. We measured NHS 111 activity using routinely available data. Over 353,000 calls were answered by NHS 111 in the first year, and by the end of the year over 80% of these calls were being triaged. Numbers of calls triaged varied from 3,000 to 10,000 per month by site. All four pilot sites met and exceeded the national quality standards for abandoned calls and proportion of calls answered within 30 seconds. All of the pilot sites made some call backs for clinical advice but this accounted for less than 2% of answered calls. The proportion of calls transferred for further clinical advice within NHS 111 was a third higher in the three NHS Direct-provided sites than the ambulance service-provided site. Call episode times ranged from 6.5 to 13 minutes, with the shortest time in the ambulance service-provided site. Where calls resulted in a patient being referred to a service, in all of the sites the largest proportion was directed to primary care and 9%-13% required an emergency ambulance response. NHS 111 operations are described in detail in Chapter 5 of the main report.
**Users’ views of NHS 111**

The response rate to the nine month survey was 41% (1769/4265). Overall satisfaction with NHS 111 was very good, with 73% (1255/1726) of respondents reporting that they were very satisfied and a further 19% that they were quite satisfied with the new service. Satisfaction levels were lower for some aspects of the service than others, in particular relevance of questions asked and advice given. A large proportion of respondents (85%) indicated that NHS 111 had enabled them to contact the right place first time but this may not have occurred for at least 2% of users. The majority of respondents (86%) indicated that they complied with all of the advice given, and 65% indicated the advice given had been very helpful. Respondents were largely clear about when to use NHS 111 but there was evidence to suggest that respondents in two sites were less clear. There was no difference in findings between the three month and nine month surveys. Users’ views are described in detail in Chapter 6 of the main report.

**Impact on perceptions of the emergency and urgent care system**

There was no evidence that NHS 111 changed perceptions of urgent care for recent users of emergency and urgent care (based on perceptions of 2237 recent users of emergency and urgent care). The population surveys showed no change in satisfaction with urgent care or the NHS following the introduction of NHS 111 (based on perceptions of 28,071 members of the general population). The population surveys showed a high level of awareness about the new service in two pilot sites (>70% of the population had heard of NHS 111) with much lower awareness in the other two sites (<50%). Impact on perceptions of the emergency and urgent care system is described in detail in Chapter 7 of the main report.

**Impact on use of the emergency and urgent care system**

Impact on the emergency and urgent care system was assessed by measuring monthly activity for five key services: emergency department attendances; urgent care services attendances/contacts (e.g. GP out of hours, walk in centres); calls to the NHS Direct 0845 telephone service; calls to the emergency ambulance service and ambulance service incidents for two years before and one year after implementation of NHS111 in each pilot site and a matched control site. A time series regression analysis was conducted to compare changes in activity in pilot sites with changes in control sites to identify changes associated with the introduction of NHS 111. This analysis took into account other factors that affect system activity such as seasonal fluctuations and changes made to other services in the system. This analysis was conducted for the five key services for all pilot sites combined (5 models) and also for the five key services for each of four pilot sites individually (20 models). We report here the statistically significant differences, that is, the differences which were unlikely to have occurred by chance.

For all sites combined, there was no statistically significant change in emergency ambulance calls, emergency department attendances or urgent care contacts/attendances. However there was a statistically significant reduction in calls to NHS Direct of 193 calls per 1000 NHS 111 triaged calls per
month and an increase in emergency ambulance service incidents of 29 additional incidents per 1000 NHS 111 triaged calls per month. For individual sites, there was a statistically significant a) reduction in calls to NHS Direct in three sites, b) reduction in urgent care contacts/attendances in one site, c) reduction in ambulance calls in one site and increase in one site and d) increase in emergency ambulance service incidents in one site. This is described in detail in Chapter 8 of the main report.

**Expert panel review**

A panel of five clinicians examined a non random sample of 54 NHS 111 cases including those where there appeared to be a problem pathway based on responses to the user survey. In this highly selected group there was a high level of agreement that the call assessment processes were achieved and overall calls were judged to have received the right clinical disposition and achieved the objective of "right place, first time". The panel identified issues for further investigation including the number and relevance of questions asked in assessment, the accuracy of clinical advice, triage to emergency ambulance dispatch and referral pathways to clinical services. The expert panel review is described in detail in Chapter 9 of the main report.

**Implementation in local health economies**

Stakeholders involved in designing and implementing NHS 111 were generally enthusiastic about the service and believed that patient benefits could be achieved, but were less confident about the likely impact on the wider emergency and urgent care system. The national roll out was seen as key to delivering benefits, allowing better publicity and thus higher use of NHS 111. Key issues identified by these stakeholders for consideration by future commissioners and providers were the importance of: publicising the service, working hard to obtain clinical engagement, developing an accurate directory of local services, and integrating electronically with services in the urgent care system. The stakeholder interviews are described in detail in Chapter 10 of the main report.

**Economic evaluation**

A cost analysis was conducted comparing the costs of providing the NHS 111 service in the pilot sites with the costs of changes occurring in the emergency and urgent care system once NHS 111 was in operation. For this analysis, the changes in activity in the five emergency and urgent care services listed earlier were used to calculate monthly service and system costs for all sites combined and also for each individual pilot site. An ‘implementation analysis’ was also conducted to estimate the total economic impact of the national roll out of NHS 111 taking into account plans that NHS 111 would replace the NHS Direct 0845 service and provide all GP out of hours call handling.

The analysis for all sites combined estimated that NHS 111 would cost an extra £307,000 per month in these sites and that this might vary between saving £118,000 and costing £733,000. The likelihood that the service would be cost saving was 21%. The likelihood of the service being cost saving in
individual pilot sites ranged from 7% to 81%. These costs were partly due to increased use of other services within the emergency and urgent care system following the introduction of NHS 111.

A simplistic economic analysis of the likely effects of national implementation of NHS 111, costing the impact of replacement of NHS Direct 0845 calls and GP out of hours call handling, and assuming similar effects on the emergency and urgent care system identified in the cost analysis above, identified that NHS 111 could potentially save the NHS money. Assuming 7.8 million NHS 111 calls per year, the estimated monthly cost impact to the NHS would be a saving of £2.5million, although this could vary between a saving of £12million and an additional cost of £7million. These estimates are based on considerable assumptions and limited cost data and should be treated with caution. An important assumption is that the types of people calling NHS 111 will remain the same when the NHS Direct 0845 service is closed. The economic evaluation is described in detail in Chapter 12 of the main report.

Comparison of models

Although the four pilots in the evaluation operated differently to some extent, they seemed to produce the same lack of measurable benefit in terms of improving urgent system user satisfaction and reducing use of emergency care services. The NHS Direct-provided models utilised clinical advice more frequently and directed a larger proportion of callers away from a service contact, but this did not seem to result in any significant shift in wider urgent care system use or cost savings. Overall, we could not detect any clear evidence of the superiority of one type of model over another. This may be because the optimum model does not yet exist or that there is no single “best” model. This is discussed in more detail in Chapter 13 of the main report.

Conclusions

NHS 111 providers in four pilot sites successfully established new services. The key findings of the evaluation are:

- All pilot sites operated to national quality standards and were well used by their target population.
- Some integration between services was achieved, for example, the ability of NHS 111 call advisors to dispatch an ambulance without further triage and the links in some pilot sites that allowed appointments to be made with urgent care services during the initial call to NHS 111. There was scope for further development of integration between services.
- Users were satisfied with the new service and both an expert panel and user survey identified the need to review the relevance of questions asked by NHS 111 and the advice given for some types of calls. There is scope for further refinement of assessment and referral pathways.
- One year after launch, the pilots had not delivered the expected benefits in terms of improving satisfaction with urgent care or improving efficiency by directing patients to urgent rather than
emergency care services. There was evidence of a reduction in calls to NHS Direct but an increase in emergency ambulance incidents.

- The primary economic analysis based on the pilot site activity identified a low probability of cost savings to the emergency and urgent care system. However, a simplistic analysis of the national implementation of NHS 111, with the service replacing the NHS Direct 0845 service and handling all GP out of hours calls, showed that NHS 111 may result in cost savings to the NHS. This is based on considerable assumptions and limited cost data.

- There was no clear evidence of the superiority of one type of model.

The lack of impact of NHS 111 in its first year in the pilot sites could be explained by the small ‘dose’ of NHS 111 within the emergency and urgent care system or the early stage of development at which it was evaluated (one year). It takes time for early problems to be identified and resolved, for a new service to become established with users, and for reflection on how the service can be improved. However, it cannot be assumed that increase in use, and time, will produce expected benefits. The evaluation has identified issues which could increase the likelihood of achieving expected benefits. These include:

- A review of the call assessment process to ensure that relevant questions are asked; pathways are improved, particularly those resulting in the need for an emergency ambulance; and attention is given to further integration with other services.

- Exploration of how the service will deal with increased and probably different demand when it replaces the NHS Direct 0845 number.

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