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Evaluation of NHS Direct "referral" to community pharmacists

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Abstract

Objectives To evaluate a pilot scheme of referrals from a nurse-led telephone helpline (NHS Direct) to community pharmacists.

Methods A multi-method approach, including analysis of routine data from NHS Direct, postal surveys of NHS Direct callers, analysis of anonymised transcripts of calls, a postal survey of callers referred to pharmacists, and face-to-face interviews with NHS Direct nurses.

Setting Essex, Barking and Havering.

Key findings During the first three months of the pilot scheme, 6% (1,995/31,674) of NHS Direct calls triaged by nurses were logged as referred to pharmacists. This built on an existing foundation of informal referral to pharmacists of 4%. There was no measurable change in callers' views of the helpfulness of advice, enablement, or caller satisfaction associated with the scheme. Conditions sent to pharmacists included skin rash, cough, sore throat, stomach pain, and vomiting and/or diarrhoea. 86% (54/63) of callers referred to pharmacists during the scheme felt the referral was very or quite appropriate and 75% (48/64) attempted to contact a pharmacist. In general, those who did so found the experience a positive one: 65% (31/48) spoke to the pharmacist, and 80% (28/35) of people expressing an opinion were satisfied with the advice offered, but the lack of privacy in the pharmacy was of some concern. Although routine data indicated high usage of the scheme, nurse referral of callers to pharmacists declined over time. Their initial enthusiasm diminished due to concerns about the appropriateness of guidelines, their lack of understanding of the rationale behind some referrals, and the lack of feedback about the appropriateness of their referrals.

Conclusions The evaluation of the pilot scheme has generated a range of recommendations for the wider national roll-out of the scheme, including revision of the guidelines and review of NHS Direct nurse training for referral to pharmacy. NHS Direct and pharmacists should consider how to strengthen the system of pharmacist feedback to NHS Direct.

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Introduction

NHS Direct, the national nurse-led telephone helpline, was announced in the White Paper "The New NHS: modern, dependable" in December 1997, with the aim of providing "easier and faster advice and information for people about health, illness and the NHS so that they are better able to care for themselves and their families".[1] By November 2000 the telephone service was available across England and Wales, and a similar service for Scotland, NHS 24, became available in 2002.[2]

Calls to NHS Direct for advice are handled by nurses who triage each call using computer decision support software. The primary endpoints of the triage are direct connection to the emergency ambulance service, or advice to attend an accident and emergency (A&E) department, contact a family doctor, or care for the problem at home. Calls for health information rather than advice are connected to a health information service. By 2001, the service in England was handling about five million calls per year.

Evaluation of NHS Direct[3–5] has shown that it is a popular and well-used service which callers find helpful and reassuring.[6] Call rates run at about one-third the level of out-of-hours general practice, and the pattern of use is predominantly as an out-of-hours service, with relatively high call rates for young children and young women, and lower

than expected call rates for older adults. The great majority of callers are seeking advice on the immediate management of a wide range of mainly minor illnesses and injuries.

Not all callers have been happy with the service. Important sources of dissatisfaction have included difficulties in getting through, delay in being able to speak to a nurse,[7] and the number of questions asked.[3] Some evidence suggests that the introduction of NHS Direct was associated with halting the upward trend in demand for out-of-hours general practice, but it has had no measurable impact on overall demand for ambulance or accident and emergency services.[8] The limited evidence available indicates that serious adverse clinical outcomes associated with NHS Direct are rare.[5]

The NHS Direct pilot pharmacy scheme

In mid-1999, Essex NHS Direct, with the Essex Local Pharmaceutical Committees, and support from the National Pharmaceutical Association and the Royal Pharmaceutical Society, proposed that NHS Direct should introduce the additional endpoint of advice to consult a pharmacist. Previous research into how and why patients seek advice from pharmacists suggested that such a development would be acceptable and helpful to patients.[9–12] The NHS Executive accepted this proposal and Essex NHS Direct established a pilot scheme in which referral to a community pharmacist was added to the existing range of triage endpoints.

A team from the Department of Medicines Management at Keele University was commissioned to review the computer protocols then in use at Essex NHS Direct. The team consisted of an academic pharmacist, a management consultant, two general practitioners, two pharmacists, a public health doctor and a data analyst.[13] It took a working definition that community pharmacy referral could be valuable if the appropriate treatment was a medicine only available from a pharmacy, significant additional advice would be available from a pharmacist, there was low clinical risk associated with referral, or the condition would routinely be dealt with by a pharmacist. It identified a "substantial opportunity" for introducing the pharmacy endpoint and, in all, 182 opportunities for referral to pharmacy were identified in 68 of the software guidelines.[13] The decision support system was modified and local briefing sessions, run by the local NHS Direct pharmacy project manager and attended jointly by NHS Direct nurses and community pharmacists, were provided to explain the pilot scheme. The new system was introduced in March 2000.

A number of other countries — including Canada, Australia, New Zealand and Switzerland — have established national or sub-national telephone triage services along the lines of NHS Direct, and informal referral to community pharmacy to obtain medication is common. However, we are unaware of any other system which has established formal protocols for referring callers to community pharmacy for advice or further care.

The aim of this study was to evaluate the addition of community pharmacy to the existing range of NHS Direct advice, in terms of the experiences of callers and the effects on other immediate care services.

Methods

Use of the pharmacy endpoint

Call logs generated by the decision support software were used to study the change in referral patterns before and after the introduction of the pilot scheme. We obtained anonymised records of all calls received by Essex NHS Direct during the first three months of the scheme, and for the same three months in the previous year. The pattern of referrals in these two time periods was compared using the χ^2 statistic.

Benefits to callers

Since the primary purpose of the scheme was to improve the service to callers, we undertook a postal survey of callers before and after the scheme. The survey included questions on a number of potentially measurable benefits to callers: the perceived helpfulness of advice given by NHS Direct; feeling more able to look after themselves or their health problem (enablement); satisfaction with NHS Direct; and use of other services. We also asked about the nature of the advice, the action taken, details of any subsequent visit to a pharmacy, and basic demographic information.

The questionnaire was based on that used in a survey of callers to first wave NHS Direct sites,[6] and included the Patient Enablement Instrument (PEI) addressing the ability of patients to deal with their problems.[14] This was originally developed to measure quality of care in general practice, with a focus on health gain, and although it has been validated for assessing routine general practice consultations it had not been used before with NHS Direct callers.

We had intended to select a random sample of 1,500 callers in February 2000, before the scheme began, and a similar number afterwards, to include only callers who could have been advised to contact a pharmacist (those triaged using one of the 68 guidelines adapted for the scheme). Unfortunately, at the time of the "before" survey we lacked ethical approval for the study in all areas served, and were therefore able to identify only 810 callers in the month before the scheme began. Questionnaires were posted to these callers by Essex NHS Direct staff in the second week of March 2000. For the "after" survey, questionnaires were posted to 1,460 callers in May, June and the first two weeks of July 2000. Up to two reminders were sent to non-respondents. To preserve confidentiality questionnaires were posted by NHS Direct staff, and were returned by respondents to the research team in reply-paid envelopes. Data were entered into SPSS, and the χ^2 and *t*-test used to test for changes after the introduction of the scheme.

Sample size calculation

Our primary outcome was the degree to which the addition of a pharmacy endpoint to NHS Direct improved the ability of patients to deal with their problems. For 80 per cent power and 5 per cent significance level, 1,005 respondents were needed in each time period to detect a minimum

improvement of half a point in the PEI score (standard deviation of 4 points). Assuming a survey response rate of 70 per cent, a sample size of 1,500 individuals was needed in each period. Under the same assumptions, 1,150 individuals in each period would be sufficient to detect a change from 53 per cent "very satisfied" with NHS Direct (as observed in first wave sites) to 60 per cent "very satisfied".

Description of calls referred to the pharmacist

We planned that NHS Direct staff would identify a random sample of 200 callers referred to pharmacists and provide anonymised call transcripts for analysis. In practice, however, callers referred to pharmacists could not be reliably identified from routine call logs because the records were inaccurate, so staff had to listen to the entire tape of each sampled call and transcribe only those which actually mentioned pharmacy. Due to the difficulties in locating calls, we reduced the number of transcripts required and did not use random sampling. For each call transcript provided, a single researcher (AOC) read the transcript and recorded the problem presented, how the pharmacy endpoint was introduced to the caller and the caller's reaction to the advice.

Users' views of being advised to contact a pharmacist

The questionnaire to callers included a four-page section for completion only by callers who had been advised to contact a pharmacist. Since we could not know in advance what proportion of callers this might be, we planned to survey an additional sample of 200 callers in the "after" period, for whom the log recorded that the caller had been triaged to pharmacy.

NHS Direct nurses' views of the scheme

Eight months after the introduction of the scheme, a member of the research team (EK) visited Essex NHS Direct. Nine nurses — the majority of those on duty at the time — agreed to be interviewed about their experience of the scheme. Interviews took place in a quiet part of the workplace and lasted about 15 minutes each. Notes of each interview, made during and after the interview, were read and reread to identify common themes.

Ethical approval

Ethical approval for the study was granted by Trent Multi-centre Research Ethics Committee and sought from the five local research ethics committees in Essex, Barking and Havering. Three local committees gave approval in time for the "before" survey, so only the populations covered by these committees could be included. This amounted to about one-third of the population covered by Essex NHS Direct.

Results

Use of the pharmacy endpoint

In the first three months of the scheme, 6.3 per cent (1,995/31,725) of triaged calls were logged as referred to pharmacists (Table 1). Compared with the same period in the previous year, the proportion of callers directed to "routine GP" fell by about 5 per cent and the proportion to "self care" by about 4 per cent, while the proportion directed to "immediate GP" rose by 3 per cent. The first two changes might have been expected since callers directed to pharmacy would previously have been directed to self care or routine GP care. Because Essex NHS Direct also extended its handling of calls for local GP out-of-hours services in May 2000, a second analysis restricted to in-hours calls (ie, 8am to 6pm on weekdays) was also undertaken, which showed similar changes. Although the observed changes cannot simply be attributed to the pharmacy scheme, since casemix and other variables may also have changed between the two time periods examined, the figures in Table 1 give some indication of the size of effect that the new endpoint might have on patient flows to self care or general practitioners.

Benefits to callers

The "before" survey achieved a response rate of 63 per cent (508/801), and the "after" survey 60 per cent (876/1,450),

Table 1 Advice logged as given to triaged calls before and after pilot scheme.

	March to May 1999		March to May 2000	
	Number of calls	% of calls	Number of calls	% of calls
Pharmacist	–	–	1,955	6.2
A&E	1,247	9.2	3,130	9.9
GP immediate or within 4 hours	1,760	12.9	4,906	15.5
GP within 24 hours	1,958	14.4	4,492	14.2
GP routine	1,395	10.3	1,641	5.2
Self care	6,963	51.2	14,946	47.1
Other, including 999	281	2.1	655	2.1
All calls	13,604	100.0	31,725	100.0

after removal of those returned by the Royal Mail. There were no differences between respondents in the two time periods in terms of the caller's age (40.8 v 40.7 years), age of leaving full-time education (17.2 v 17.3 years), gender (79 per cent v 77 per cent female), whether or not the patient paid for prescriptions (66 per cent v 63 per cent free), when the call was made (79 per cent v 78 per cent out-of-hours) or for whom the call was made (45 per cent v 47 per cent for the caller themselves).

Advice received

Before the scheme began, 4 per cent of callers reported that they had been advised to contact a pharmacist (Table 2), suggesting an existing informal practice of referral to pharmacists. There was a statistically significant change in advice reported by callers between the two time periods. After the scheme began, more callers were recommended to contact a GP urgently or a pharmacist, and fewer to contact a GP in the next few days or to self care, than beforehand, which is consistent with the expected substitution of pharmacy for the "routine GP" and "self care" endpoints. However, the change did not remain constant over time: the proportion of callers directed to pharmacy decreased as the scheme progressed, from 12 per cent in May, to 7 per cent in June and 3 per cent in July.

Helpfulness, enablement and satisfaction

Callers' views of how helpful they found NHS Direct advice did not change after the scheme began (Table 3). There was weak evidence that enablement reduced over time, but completion of the six enablement questions was poor (14 per cent to 29 per cent of respondents did not complete some questions in this scale). The proportion of callers feeling much better able to cope with their illness, or feeling much more confident about their health, decreased so that the total enablement score fell slightly.

Nor do the results in Table 3 indicate any measurable change in overall satisfaction: the proportion of callers who strongly agreed that they were generally satisfied with the service was 49 per cent before and after the scheme (95 per cent confidence interval for change in satisfaction −5 per cent to +6 per cent). A statistically significant change in views occurred in relation to the waiting time to speak to a nurse, suggesting an improvement in this aspect of the service over time, although this is unlikely to be related to the pharmacy scheme.

Impact on other services

The actions taken by callers following their contact with NHS Direct are shown in Table 4. The small changes in service use evident here were not large enough to reach statistical significance, and in particular there was no evidence of a change in callers' use of pharmacists before and after the scheme.

Description of pharmacy calls

We examined anonymised transcripts of 93 calls made once the scheme began which were both logged as referred to a pharmacist and which included a mention of visiting a pharmacy. Two-thirds (66/93) of these concerned children rather than adults.

Condition and reason for calling

The conditions included skin rash (31 calls), cough (9), sore throat (9), stomach pain (8), vomiting and/or diarrhoea (6), insect bite or sting (4), constipation (3), chest pain (3), sunburn (3) and others such as hay fever, back pain, knee pain, joint pain, threadworm, teething, earache, fever, flu and sore eyes. In 32 calls it was not clear why the call to NHS Direct had been made. Reasons that were clearly stated included: a desire for a diagnosis, for example whether spots were chickenpox (20 calls); relief from symptoms (16 calls); advice on whether a doctor was needed (10 calls); and advice on whether a condition was contagious (4 calls). Although all calls were triaged as calls for nurse advice, 11 involved a question about a medication; these related mainly to issues of appropriateness, availability and adverse effects.

Interaction between nurse and caller

In 75 calls, the nurse introduced the pharmacy referral by suggesting the caller should "speak to a pharmacist", and sometimes emphasised that it was important to speak to

Table 2 Advice reported by callers before and after pilot scheme.

	Before		After	
	Number	%	Number	%
Contact a pharmacist	19	4	59	7
999 or A&E	87	18	154	18
GP immediately	99	20	201	24
GP in 24 hours	90	19	157	19
GP in next few days	73	15	104	12
Self care	119	24	160	19
Total	487	100	835	100

$\chi^2 = 12.7$, df = 5, $P = 0.026$.

Table 3 Benefits reported by callers before and after the scheme.

	Before		After		*P* value
	Number answering question	%	Number answering question	%	
Helpfulness					
Very helpful	507	64	866	63	0.56
Enablement					
Much better able to cope with life	382	12	649	9	0.40
Much better able to understand the illness/problem	424	25	713	22	0.57
Much better able to cope with illness/problem	416	26	693	19	0.02
Much better able to keep yourself healthy	368	11	610	8	0.47
Much more confident about your health	414	15	710	11	0.05
Much more able to help yourself	450	17	743	13	0.20
	Mean	SD	Mean	SD	
Mean enablement score	2.98	3.31	2.62	3.09	0.10
Satisfaction*					
It was difficult to get through on the telephone	462	9	805	6	0.58
I had to wait a long time to speak to the nurse	461	16	807	14	0.04
I think the nurse was understanding	485	94	835	94	0.88
I was given exactly the right amount of advice needed	474	81	825	81	0.96
I was given clear advice about when to get more help	469	86	818	88	0.76
The advice I was given worked well in practice	455	81	791	82	0.85
I felt reassured and worried less	473	81	829	81	0.93
I was generally satisfied with the service	487	90	829	90	0.95

*Satisfaction data relate to % of respondents who agreed or strongly agreed with statement.

the pharmacist rather than counter staff; in 12, the nurse suggested the caller "visit a chemist" for a medication. Sometimes the nurse also offered a rationale for the advice: for example, that the pharmacist could look at a rash (15 calls), recommend a treatment (45), or provide a specific medication (17).

In the majority of calls the caller raised no objection to the pharmacy referral, although in some cases practical objections were expressed, such as already having seen a pharmacist, already having the required medication, not wanting medication, or being too ill to travel. In six cases, callers expressed a preference for seeing a health professional (usually their GP) other than a pharmacist.

Users' views of being advised to contact a pharmacist

Our "after" survey identified 59 callers (in 876 respondents) who reported that they were advised to contact a pharmacist. The additional survey of 200 calls logged as referred to pharmacy identified only a further nine such callers in 65 respondents. Of these 68 callers, 64 gave details of the action they took, and of these fewer than half actually spoke to a pharmacist (Figure 1).

Appropriateness of and compliance with advice

Of those callers recommended to contact a pharmacist during the pilot scheme, 46 per cent (29/63) felt that the

Table 4 Contacts with other services reported by callers before and after the scheme.

	Before % (n = 503)*	After % (n = 852)*
999	3	3
A&E	13	16
GP urgent	26	27
GP in 24 hours	16	19
GP in next few days	13	12
Contact a pharmacist	6	6
Self care	37	33
Other	7	4

*Some respondents reported more than one contact with services.
$\chi^2 = 10.7$, df = 7, $P = 0.15$.

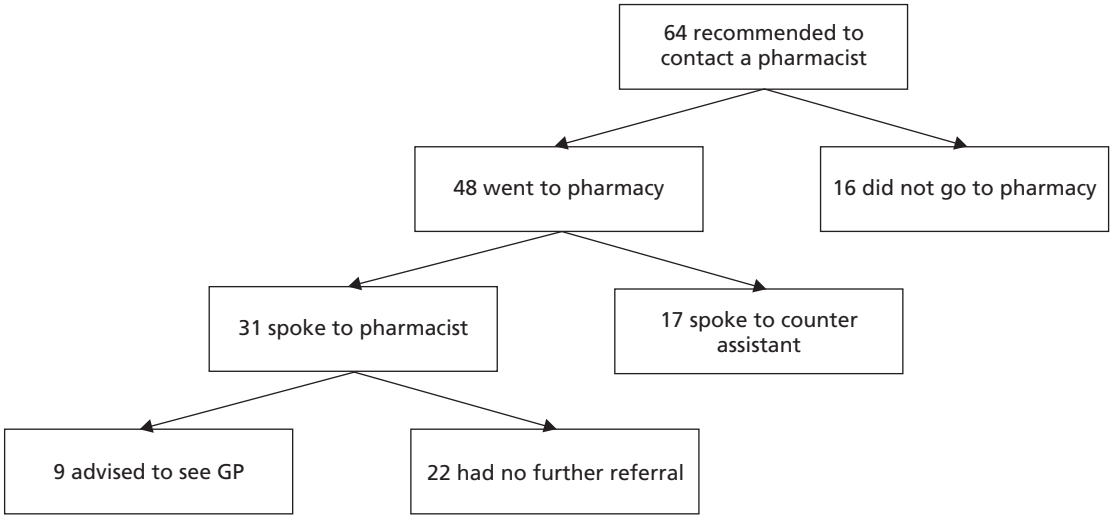

Figure 1 Attrition from the pharmacy scheme.

advice was very appropriate, 40 per cent that it was quite appropriate, and 14 per cent that it was not appropriate; 75 per cent (48/64) did attempt to contact a pharmacist. Among those who did not, five said it was inconvenient, four said the patient's health improved, three that the patient's health deteriorated, two that they went to their GP instead, one did not agree with the advice given and felt that the problem was more serious than NHS Direct believed, one had the medication needed at home, and one had already been to the pharmacist.

The pharmacy visit

Of the 48 people who did attempt to go to a pharmacy, 67 per cent (32/48) did so in under four hours; 75 per cent (36/46) visited their usual pharmacy; 33 per cent (16/48) got there on foot and 63 per cent (30/48) by car; and 91 per cent (40/44) had a travel time of under 10 minutes. Two-thirds of respondents (31/48) who went to the pharmacy spoke to the pharmacist. When they spoke to a pharmacist, three-quarters (24/30) told the pharmacist that they had been referred from NHS Direct. Almost two-thirds (19/31) were recommended a product by the pharmacist and a further six people were recommended a medication by the counter staff. 71 per cent (34/48) spent some money at the pharmacy, and 29 per cent (14/48) did not.

Outcomes

Only 39 people completed the question about the helpfulness of advice given at the pharmacy because some felt that the question was not applicable to them: 38 per cent (15/39) found the advice very helpful, 56 per cent quite helpful and 5 per cent unhelpful, which may suggest that this advice provided "added value", following the original advice from the NHS Direct nurse. Seventy-eight per cent (31/40) acted on all of the advice, 20 per cent on some of it and 2 per cent did not act on the advice.

Of the 48 people who went to a pharmacy, 18 (38 per cent) subsequently went to see a GP about the same problem and a further 4 (8 per cent) intended to see a GP. Eight of those who went on to their GP did so on the advice of the pharmacist. Satisfaction rates for different aspects of the pharmacy service were reasonable, except for privacy, which prompted dissatisfaction from about a quarter of those who visited (Table 5). If these 48 people had the same problem again, 31 per cent reported they would follow the advice given by the pharmacist, 29 per

Table 5 Satisfaction levels with different aspects of attending the pharmacy.

	Very satisfied or satisfied	Acceptable	Dissatisfied or very dissatisfied	n = 100%
Privacy	30%	46%	24%	37
Time with pharmacist	66%	26%	9%	35
Advice given	80%	17%	3%	35
Location of pharmacy	76%	24%	0%	37
Opening hours	65%	27%	8%	37
Counter staff	65%	35%	0%	31
Waiting time	73%	24%	3%	37

cent would go to their GP, 15 per cent would call NHS Direct, 6 per cent would speak to a pharmacist, 6 per cent would manage the problem themselves, or use a combination of these things.

NHS Direct nurses' views

At the start, all the nurses we interviewed had been enthusiastic about the pharmacy scheme, feeling that it could be valuable in offering an alternative source of easily accessible care to callers while reducing unnecessary visits to GPs. Eight months on, however, most felt that their practice was "no different to what we did before". Many also had specific concerns about the operation of the scheme. In particular, they felt that some of the guidelines were inappropriate, in that many calls for which pharmacy was the recommended advice could be managed by self-care. The result was that nurses overrode the system, "downgrading" the advice to self-care while it was recorded as a pharmacy endpoint in the software log. All nurses interviewed had wanted to downgrade a pharmacy referral to self-care at least once and for the majority of nurses this had been a frequent occurrence.

Over half of the nurses felt that there was a lack of information on the computer screen giving the rationale behind the software recommendation to send a patient to a pharmacist, which reinforced their belief that some guidelines were inappropriate. The majority saw a pharmacy referral as a way to obtain medication, rather than advice, from the pharmacist. Additionally, some nurses felt that there had been insufficient training on the scheme, or wanted feedback to know whether their referrals to pharmacy had been appropriate.

Discussion

Summary of findings

Taken together, the findings reported above suggest that the pilot scheme was only partially implemented, with initial enthusiasm for the scheme giving way to declining use of the pharmacy endpoint over time. That this was not reflected in the routine log data is the result of operational policies which prevented the recording of "downgrading" of the advice given. Although the pharmacy endpoint was used less than expected as time went by — and, overall, no more often than informal advice to consult a pharmacist had been given prior to the scheme — when it was used, it seemed acceptable to callers. We found no clear evidence that the scheme either reduced or increased caller satisfaction or enablement. In practice, about half of those advised to speak with a pharmacist actually did so, and these callers were generally satisfied with their consultation, though the lack of privacy in the pharmacy emerged as a particular concern for about one-quarter. About one-third of those speaking to the pharmacist also consulted their GP about the same condition, suggesting that the pharmacy endpoint did not always substitute for GP care.

In general, call transcripts showed the pharmacy endpoint being used as intended. The rationale for the referral was frequently framed simply in terms of obtaining a medication, rather than consulting a health professional. On the whole, callers seemed receptive to the advice offered, except in cases where they had already visited the pharmacy, or had a strong prior preference for seeing their GP. We have previously noted this as one reason for "non-compliance" with NHS Direct advice.[5] Of those callers advised to contact a pharmacist, over 80 per cent thought the advice was appropriate and 75 per cent followed it, being more likely to follow it if they thought it appropriate, with compliance similar to that found for advice in NHS Direct generally.[5] Among calls directed to a pharmacist, it is notable that many (about one third) concerned rashes, whereas only one in seven of all calls to NHS Direct concern any skin problem.[4] Nurses had a clear and understandable rationale for the pharmacy referral of rashes – to allow visual examination – which they communicated to callers.

Our findings raise the question of what would have happened had the implementation of the scheme been complete rather than partial. The routine call data suggested that, overall, the triage software may have disposed about 6 per cent of callers to pharmacy, and had this recommendation been accepted by nurses and acted on by callers in all such cases, NHS Direct referrals to routine (but not urgent) GP care may have fallen by about a half. In practice, since neither compliance nor substitution of care are complete, actual attendances for routine GP appointments would have fallen to a much lesser degree. Although these observations are speculative, they indicate that a vigorous and sustained implementation of the pharmacy scheme could have a small, but worthwhile, effect in reducing the number of NHS Direct callers who go on to consult their GP.

Why was the scheme only partially implemented? The interviews with nurses suggested a number of relevant contributory factors, including disagreement with some of the guidelines, alongside a feeling that nurses should have been involved with revising the system; unclear rationale for the advice to visit a pharmacist, both in a general sense (what does a pharmacist offer?) as well as in specific guidelines (what can the pharmacist offer this caller?); uncertainty over the role of pharmacists, which could not be reduced with experience because of the lack of an effective system of feedback from pharmacists (or audit with pharmacists) over whether specific referrals were indeed appropriate; and, in cases where the pharmacy visit appeared optional, a concern on the part of nurses to balance the potential benefits of any visit against the degree of inconvenience or cost entailed for the patient. Interestingly, many of these issues had been raised by nurses before the pilot began.[15] In retrospect, it may be that the extent to which the new endpoint represented not simply a change to computer protocols but a change to existing clinical practice was underestimated in this project. This recognition might have led to greater nurse involvement at the outset.

Strengths and weaknesses of this study

The strength of this evaluation lies in the multi-method approach, with each sub-study addressing a specific aspect of the scheme and the results taken together giving a consistent and complete picture of what happened. The partial implementation of the scheme led to particular difficulties in the evaluation in sampling the appropriate callers for surveys and transcripts. However, this could not have been known in advance, nor indeed might it have become known in the absence of the evaluation. The Patient Enablement Instrument we used had not been validated in the NHS Direct context and the extent of missing data limited its value in this study. Nonetheless, there is clearly a need to develop sensitive measures of health gain in the context of telephone health care services, and this instrument may yet prove useful. Rather than developing a new tool specifically for telephone health care research, it might be useful to formally test the validity of this tool as part of a larger postal questionnaire. In addition, given other changes occurring at the site during our evaluation, the use of control sites would have strengthened confidence in our findings.

Implications for policy

Although our evaluation did not demonstrate measurable benefits for callers, this is not proof that there were none. It is likely that callers found using their local pharmacy more speedy and convenient than a GP visit, and satisfaction with the advice received was generally good. The majority of those visiting a pharmacy bought a product, suggesting that callers as well as nurses may have associated a visit to the pharmacy with access to medication rather than diagnosis or general health advice, and this is consistent with evidence that advice given in community pharmacies focuses mainly on product recommendation and use.[16] However, visiting the pharmacy for advice may not suit everyone,[10,17] and a quarter of those advised by NHS Direct to visit a pharmacy did not do so. In addition, such a referral may not be suitable for some callers or conditions, given the evident concern over a lack of privacy.

For the NHS, reducing pressure on GP surgery time is a major objective of the policy, and service users themselves regard community pharmacy as an alternative to "bothering the doctor".[9,10] Some studies of the expansion of the role of pharmacists have found a decrease in use of other services, although authors of a systematic review in this area concluded that more rigorous research was needed.[18] Such findings suggest that, if implementation issues can be ironed out, there may be scope for pharmacy referrals by NHS Direct to reduce demand for general practice.

Finally, it is important to consider the workload implications for pharmacists. Other findings from this evaluation indicated a willingness on the part of community pharmacists to see a greater role for pharmacy in the system of first contact care, in principle, although there were reservations over how this should operate in practice.[19] Pharmacists in Essex had positive views of NHS Direct and the pilot scheme, but little experience of referrals in practice. If the scheme were fully implemented, our results suggest that pharmacists' workload might not greatly increase since informal referral already occurs, some referred callers will not comply, and others will not speak to the pharmacist even if they do visit the pharmacy.

Future implementation of the pharmacy scheme

There is a clear commitment to integrate NHS Direct with community pharmacy nationally, along the lines piloted in Essex. The NHS Plan promised that by 2002, "NHS Direct will refer people, where appropriate, to help from their local pharmacy" (paragraph 12.5),[20] and an increased role for community pharmacy in providing care and advice was also confirmed in "Pharmacy in the Future".[21]

The findings reported here suggest that modifications to the scheme could increase the likelihood of a successful national implementation. First, the triage guidelines for pharmacy referral should be reviewed and revised with NHS Direct nurses to give an explicit rationale for both nurse and caller. Secondly, NHS Direct nurse training should be reviewed to ensure that nurses understand the skills and roles of community pharmacists. One possibility is a short nurse placement in community pharmacy during induction; training may also need to be ongoing. Thirdly, there would be value in exploring the involvement of pharmacists in clinical audit activities in NHS Direct. Finally, it is important that the software in use allows the actual advice given to the caller to be accurately logged.

Such modifications may clearly be helpful to the development of an effective system of referral. However, the longer term outcomes of introducing the pharmacy endpoint into NHS Direct are as yet unknown. As a fully-implemented system is introduced nationally, it will be important that further evaluation occurs to determine the costs and benefits to callers and the NHS, the impact on other services, and the safety and appropriateness of the advice provided both by NHS Direct and by community pharmacies.

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