A national survey of audit activity across the primary-secondary care interface

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Abstract

***Objective*—To document the nature of audit activity at the primary-secondary care interface; to explore participants' experiences of undertaking such interface audit; to identify factors associated with these experiences; and to gather views on future interface audit activities.**

***Design*—A three phase national survey by postal questionnaire with a cascade sampling approach.**

***Setting*—England and Wales.**

***Results*—Response rates were: 65% to the first questionnaire; 34% to the second questionnaire; and 45% to the third questionnaire. 56% of the audits covered some element of management of patients or disease; only 33% of the audits were within a single topic area. Most audits had more than one trigger: for 61% the trigger was a perceived problem; for 58% it was of mutual interest. Only 18% of audits were initiated collaboratively; doctors were the most frequent initiators (72%), and most audits (63%) involved collaborative groups convened specifically for the audit. 58% of groups had between three and eight members, 23% had 12 or more. Doctors were the most frequent group members. There was differential involvement of group members in various group tasks; the setting of guidelines was highly dominated by doctors. Of reportedly complete audits, only two fifths had implemented change and only a quarter had evaluated this change. There was widespread feeling of successful group work, with evidence of benefit in terms of the two sectors of care being able to consider issues of mutual concern. Levels of understanding of the group task and of participation were positively related to the duration of meetings. Joint initiation of audits facilitated greater understanding of the group task. Larger group sizes allowed primary and secondary carers to discuss issues of common concern; however, larger groups were more likely to experience disgreements. Having previously worked with group members increased trust and good working relations. The main lessons learnt from the experience included the importance of setting clear objectives and good communications between primary and secondary carers. Factors identified as important for future audit activity at the primary-secondary care interface included commitment, enthusiasm, time, and money.**

***Conclusions*—Audit at the primary-secondary care interface is taking place on a wide scale and has been an enjoyable experience for most of the respondents in this study.**

***Implications*—Despite being a positive experience most audits stopped short of implementing change. Care must be taken to complete the audit cycle if audit at the primary-secondary care interface is to move beyond the roles of education and professional development and to fulfil its potential in improving the quality of care.**

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Keywords: audit, primary-secondary care interface

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Introduction

Health care in the United Kingdom National Health Service (NHS) is clearly divided into primary and secondary care and there is only a limited amount of face to face contact between healthcare professionals from the two sectors. In contrast, patients often cross backwards and forwards across the interface between the two sectors. Certain elements of the structure, process, and outcome of care that patients receive become more prominent as patients move backwards and forwards. At its best, movement between the sectors will be totally seamless with the care of a patient totally coordinated as they move from their own home, through primary care services into secondary care and back again. At its worst, care at the interface may suffer from problems such as inadequate sharing of relevant information about patients, and unplanned discharge from or readmission to secondary care. The process of care for clinical conditions for which patients require referral, the referral process itself, and communication across the primary-secondary care interface will all have the potential to affect the quality of the care that patients receive. For that reason they form legitimate topics for audit. Box 1 summarises the components of primary and secondary care and of the interface between the two sectors.

Although there is no clear consensus, there are three important facets to the definition of interface audit as given in box 1. Firstly, in common with other types of audit, it is deemed to have successfully occurred only if all stages within the audit cycle, including change and re-evaluation, have been completed. Secondly, there must be active involvement of both sides of the primary-secondary interface. One way audits of activity across the interface are specifically excluded; these can be more

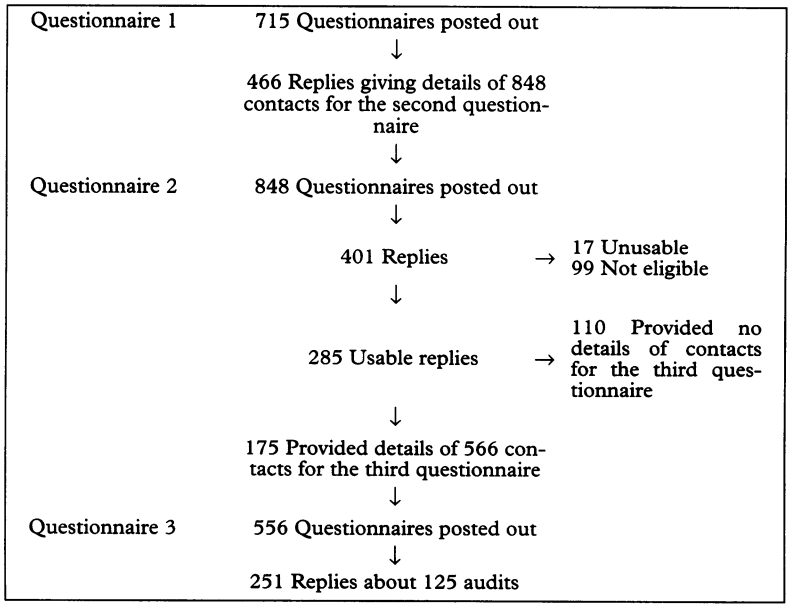
- Primary care is the health service sector providing most of the medical services at the first point of contact for the population; comprised of general practice and community services
- Secondary care is the health service sector based in hospitals; patients do not have direct access to secondary care; most patients are referred to secondary care by general practitioners
- The primary-secondary care interface is a concept rather than a physical structure; it is composed of the multiple potential points of contact between the two sectors (there is only a limited amount of face to face contact between healthcare professionals from the two sectors; by contrast, patients often cross backwards and forwards across the interface between the two sectors as a result of referral to, and discharge from, secondary care)
- Audit of the primary-secondary care interface has been defined as "complete audit cycles conducted by professionals from both primary and secondary care working together as a team to improve quality"[1]

Box 1 Information about the primary-secondary care interface.

judgmental than useful[2] and are limited in their effectiveness as changes identified by one side for the other are unlikely to be implemented. Finally, audit should seek to improve quality of care rather than being primarily an educational experience.

There are several potential benefits of successful audit activities across the primary-secondary care interface. Although the main aim is an improvement in the quality of patient care there may be additional benefits. Collaborating in an audit will bring together groups of healthcare professionals who might not otherwise meet, thus providing the potential for interchange on a broader range of topics and for improved communication and understanding between the two sectors of the health service. However, Baker,[1] in his analysis of interface audit, is not optimistic about current practice and suggests that, although one way audit and quality assessment projects are commonplace, bonafide interface audits are rare. Case reports of interface audit suggest that they encounter difficulties with issues such as defining common aims, multidisciplinary membership, controlling group size, and meeting deadlines.[3] However, there seems to be little systematically gathered data on audit activity across the primary-secondary care interface.

Our study therefore aimed to explore audit activity across the interface between primary and secondary care in England and Wales. The objectives were (within a survey by a national postal questionnaire that used both closed and open questions): to document the focus of current audit activity across the primary-secondary care interface; to explore participants' experiences of undertaking such audit; to identify factors associated with these experiences; and to gather views on possible future audit activities and the means by which such audits could be fostered.



Box 2 Summary of the survey by postal questionnaire.

Methods

A three phase national postal questionnaire survey was initiated in mid-1993 with a cascade sampling approach, in which respondents to each round of the survey generated the sampling frame for the subsequent round. In each phase a single reminder (including a duplicate questionnaire) was sent to non-responders after three weeks. Box 2 shows the phases of the survey.

The first questionnaire was posted in June 1993. It asked for brief details of complete or ongoing interface audits and the names and addresses of appropriate contacts. It was sent to groups and individual people identified through previous networking, as well as the chairpeople of Medical Audit Advisory Groups and Medical Audit Committees, medical audit facilitators, directors of public health, academic departments of general practice, regional advisers in general practice, faculty secretaries of the Royal College of General Practitioners, and general managers of Family Health Services Authorities. The responses were used to generate the list of recipients for second phase questionnaires.

The second questionnaire was sent out in October 1993. It gathered details about the audit topic and the structure and organisation of the audit group (box 3). Respondents were asked to supply the names and addresses of all their interface audit group members.

All those thus identified were sent the third questionnaire in January 1994. This gathered information about individual group members, their opinions of participating in an interface audit and their views on subsequent interface audit activity (box 4). In two questions (4,5) respondents were asked to answer on a five point Likert scale (strongly agree to strongly disagree). Six open ended questions (8, 9, 11, 12, 13, 14) examined: the lessons learnt from participating in an interface audit; the impact of working with people known previously; suggested topics for future audits; and the factors which would facilitate and encourage interface

1 What was the title of the audit?
2 Which categories were covered by the audit? (explicit list)
3 What was the trigger for initiating the audit? (explicit list)
4 Which steps of the audit cycle has the group covered? (explicit list)
5 What type of group was involved with the audit? (explicit list)
6 Which specialties were represented in the audit group? (explicit list)
7 Which specialties provided input for the audit without being part of the group? (explicit list)
8 How many people were there in the audit group altogether?
9 Who initiated the audit?
10 What was the status of the initiator?
11 What was the initiator's role in the audit group?
12 Did the audit involve setting explicit guidelines for care or performance?
13 Who was involved in setting guidelines? (explicit list)
14 Was a literature search carried out?
15 Who undertook the data collection? (explicit list)
16 Has the data been analysed?
17 Who analysed the data? (explicit list)
18 Is the audit now complete?
19 How long did it take? Or
20 How long has the audit been taking place for up to now?
21 At what time of day did the meetings usually take place?
22 How long did meetings usually last?
23 How frequently did the groups meet?
24 How many meetings have been held to date?
25 Where were the meetings held?
26 Did the audit require funding?
27 Where did the funding come from?

Box 3 Summary of questionnaire 2: details of audits taking place at the interface between primary and secondary care.

audit in the future. These responses were read, common themes were identified, and codes were developed and applied.

To examine whether subjective experiences of interface audit were related to characteristics of the audit itself and of the group, factual data from the second questionnaire and information on experiences from the third questionnaire were combined. We considered three specific areas:

- Who initiated the audit: this was examined as we anticipated that collaboratively initiated audits, with input from both primary and secondary care, would be more successful.[1,2]
- Duration of meetings: lack of time for audit is often offered as a reason for not participating in audit activity,[4,5] so we tested whether duration of meetings was associated with views of success.
- Group size and composition: this has often been seen as crucial to the way in which an audit group operates and has been a reason for highlighting the importance of having a skilled small group leader.[6] Scott and Marinker[7] see groups that are too small as limiting creativity and allowing strong personalities to dominate whereas too large a group leads to erosion of cohesion. They suggest that eight is the optimum number. Larger groups may not operate as well as smaller groups.[8] Large groups may also lead to practical difficulties — for example, in arranging meetings. Although it will be possible to conduct interface audits within a small group, interface groups are more likely than non-interface groups to be large and we wanted to explore the consequences both of this and the effect of previously knowing other group members

The data were analysed with the statistical package for social sciences.[9] The χ^2 test was used to test the significance of associations. When a linear trend in percentage agreement was expected — for example, for group size and duration of meeting — the Mantel-Haenzel χ^2 was used.[10]

Results

RESPONSE RATES AND RESPONDENTS

Box 2 shows that the first questionnaire was sent to 715 contacts and generated 466 replies (response rate 65%). These produced 848 contacts for the second questionnaire from whom 401 questionnaires were returned (response rate 47%). However, 17 were unusable and a further 99 did not fit our definition of interface audit, leaving a usable sample size of 285. One hundred and seventy five of the 285 valid responses to the second questionnaire provided contact details for their group members; this gave 556 names for the third questionnaire. From these we obtained 251 replies (response rate 45%) reporting on 125 audits. The median response rate per reported audit was 47% (the number of respondents ranged from zero to five). In both the second and third questionnaires non-response rates varied from question to question. Therefore, when the number of respondents to a given question was less than that for the corresponding questionnaire as a whole, the appropriate denominator is given in the text and tables.

Of the respondents to the third questionnaire 119 (47%) were based in primary care, 116 (46%) were from secondary care, 10 (4%) were from public health, and six (2%) came from other sectors or were in posts spanning sectors. Most respondents were doctors (139 of 251(55%)); 78 (31%) responses came from principal general practitioners and 61 (24%) from hospital doctors, with the Medical Audit Committee and staff of the Medical Audit Advisory Group each making up about 9%. There were very few hospital nurses or midwives (4 (1.6%)), or practice or community nursing staff (10 (4.0%)); only one reply was received from a practice manager (0.4%).

AREAS COVERED BY THE AUDIT (QUESTIONNAIRE 2; QUESTION 2)

Table 1 shows the areas covered by the audits. When allowance was made for audits covering more than one area, 155/276 (56%) contained some element of management of patients or disease. Ninety two (33%) of the audits were within a single area; 74 (27%) within two; 53 (19%) within three; and 57 (21%) covered four or more topic areas.

1 What was the topic of the audit which involved both primary and secondary care?
2 Please indicate your status. (explicit list)
3 Did you have a specific role within the group and if so, what?
4 Listed below are some statements relating to group work: to what extent do you feel the following statements are true of your experiences within the interface audit group?
a The task of the group was well understood.
b The task of the group was accepted by its members.
c There was a high level of participation in the group.
d The group took no longer than necessary to complete its tasks.
e Every idea was given a hearing.
f There were few disagreements in the group.
g Any disagreements were effectively resolved.
h Decisions reflected a consensus of group opinion.
i The group enjoyed the experience of working together.
5 Listed below are some statements about interface audit: to what extent do you feel the following statements are true of your experiences within the interface audit group?
a The group provided a forum for discussion relating to aspects of care other than the audit topic.
b A number of possible topics for another interface audit were discussed.
c The meetings led to closer working relations between primary and secondary care.
d The meetings provided clinicians from both primary and secondary care with the opportunity to discuss areas of common concern.
e Meetings stimulated learning.
f Group members enjoyed meeting colleagues, especially those from another discipline.
g Finding somewhere neutral for the meetings was a problem.
h There was disagreement over who should be responsible for funding the audit.
i Deciding who should be responsible for data collection was a problem.
j Identifying which party should be responsible for the analysis was a problem.
k There was disagreement about the ownership of the data.
l Confidentiality of data between primary and secondary care was an issue.
m It was difficult to establish common goals between the different parties to the audit.
n The computer systems between primary and secondary care were not compatible.
o The physical distance between group members created problems
6 If you had known what the experience of interface audit would be like before this audit would you still have participated?
7 Would you participate in another interface audit in the future?
8 What were the main lessons learnt from the experience?
9 Would you do anything differently if you had another chance and if so what?
10 Did you know any of the other members of the group before the audit?
11 Did you think this was helpful to the group work?
12 Why/why not?(to clarify 11)
13 What interface audit topics would be of interest to you in the future?
14 What do you consider would be important factors in facilitating interface audit in the future?
15 What do you think would encourage more audit to take place at the interface between primary and secondary care?

Box 4 Summary of questionnaire 3: experiences with audits taking place at the interface between primary and secondary care.

INITIATION OF THE AUDIT (QUESTIONNAIRE 2; QUESTIONS 3, 9, 10)

In the question asking about the trigger for initiating the audit, it was possible to endorse more than one response, therefore the percentages total more than 100%. Most audits had more than one trigger. For 170/277 (61%) respondents a "perceived problem" was at least part of the reason for undertaking audit; for 160 (58%) the topic was of "mutual interest" but only 26 (9%) respondents endorsed economic reasons as a trigger. Only 51/281 (18%) audits were initiated collaboratively, with primary care initiating 111 (40%) and secondary care initiating 92 (33%). Management or other groups were responsible for initiation in 27 (10%) cases. Most initiators of audits were doctors (178/247 (72%)); the only other sizeable category of staff initiating audits was audit support personnel (41 (17%)).

Table 1 Areas covered by interface audits (n=276) (questionaire 2; question 2)

Topics	*Audits n (%)*
Management of patient or disease only	40(15)
Referral only	10(4)
Discharge only	11(4)
Communications only	14(5)
Use of secondary resources only	9(3)
One other only	7(3)
Management of patient or disease + any one of the other categories	115(42)
Other combinations of two or more categories	69(25)

COMPOSITION OF AUDIT GROUPS (QUESTIONNAIRE 2; QUESTIONS 5, 6, 8)

Most audits (178/283 (63%)) involved collaborative groups set up specifically to conduct the audit with Medical Audit Advisory Groups involved in 148 (52%) audits and Medical Audit Committees involved in 92 (33%). Most groups (160/274 (58%)) had between three and eight members. Although groups of two were rare (14 (5%)), groups of nine to 11 (37 (14%)) and 12 or more (63 (23%)) were not uncommon. Table 2 shows the representation of healthcare professions within interface audit groups. As with initiation, doctors dominated. The next largest groups were primary and secondary audit support staff. The total number of disciplines per audit ranged from two to 19. Eighty five (30%) audits had an equal number of primary and secondary specialities.

INVOLVEMENT IN TASKS WITHIN THE AUDIT (QUESTIONNAIRE 2; QUESTIONS 6, 7, 13, 15, 17)

We asked about task allocation: who was involved in setting guidelines (table 2), data

Table 2 Representation of healthcare professions within interface audit groups: overall, in setting guidelines, and in data collection (questionnaire 2; questions 6, 13, and 15)

Healthcare profession	Audits in which each was represented (n (%))		
	Overall representation (n=285)	Setting guidlines (n=158)	Data collection (n=252)
Secondary care:			
Hospital doctor	257(90)	131(83)	61(24)
Hospital nurse or midwife	79(28)	33(21)	24(10)
Hospital manager	43(15)	14(9)	6(2)
Hospital professions allied to medicine	77(27)	47(30)	17(7)
Audit support staff	167(59)	35(22)	105(42)
Others	63(22)	30(19)	42(17)
Primary care:			
Principal general practitioner	262(92)	129(82)	96(38)
Practice nurse	52(18)	21(13)	27(11)
Community nurse or midwife	58(20)	15(10)	16(6)
Practice manager or receptionist	48(17)	7(4)	58(23)
Community professions allied to medicine	40(14)	25(16)	7(3)
Audit support staff	116(41)	29(18)	69(27)
Others	72(25)	26(17)	31(12)

Percentages do not add up to 100 because of representation of multiple professions in groups and activities.

collection (table 2), and data analysis. We also asked who had input into the audit without being a group member. Although the setting of guidelines was dominated by doctors, the largest share of data collection (by percentage of audits) was undertaken by audit support staff in secondary care (105/252 (42%) audits). In 20/38 (53%) audits involving primary care receptionists, they took part in data collection only and were not reported to be members of the audit group; the corresponding figure for practice managers was 17/47 (36%). Data analysis was dominated by secondary (92/207 (44%)) and primary (64/207 (31%)) care audit support staff.

DURATION OF MEETINGS (QUESTIONNAIRE 2; QUESTION 22)

For 125/260 (48%) groups the average duration of meetings was less than one hour; for 74 (29%) meetings generally lasted 60 to 90 minutes, and for the remaining 61 (24%) the average meeting took over 90 minutes.

PROGRESS ROUND THE AUDIT CYCLE (QUESTIONNAIRE 2; QUESTIONS 4, 18)

Table 3 shows that the questionnaire set out nine steps of the audit cycle[11] and how many of these steps were completed by audits that were reportedly complete, in progress, or incomplete. Of completed audits, almost all had collected and analysed data relating to practice after standards had been set or agreed. Three quarters had suggested changes, but only two fifths had implemented change and only a quarter had evaluated change.

EXPERIENCES OF INTERFACE AUDIT (QUESTIONNAIRE 3; QUESTIONS 4, 5.)

Table 4 shows that there were widespread feelings of successful group working. Table 5 shows the experiences of interface audit, and although none of the statements show unanimity, most reflect a positive view (for those statements phrased negatively low percentage responses indicate positive views). Only one quarter to one third of respondents did not agree with the three statements: "meetings provided clinicians from both primary and secondary care with the opportunity to discuss areas of common concern"; "group members enjoyed meeting colleagues, especially those from another discipline"; and "meetings stimulated learning". However, 94/248 (38%) did not agree with the statement "meetings led to closer working relations between primary and secondary care". Infrastructure barriers were also identified — in particular, problems with incompatible computer systems.

Table 3 Number (%) of audits completing steps of the audit cycle by whether the audit was reported to be complete or not (questionnaire 2; questions 4 and 18)

Step	Audit complete (n=177)	Audit incomplete (n=154)	All audits (n=271)
1 Observe practice	105 (90)	130 (84)	235 (87)
2 Set or adapt standards	91 (78)	115 (75)	206 (76)
3 Collect data	116 (99)	141 (92)	257 (95)
4 Data analysis	115 (98)	105 (68)	220 (81)
5 Compare practice with standard	89 (76)	62 (40)	151 (56)
6 Suggest change	87 (74)	73 (47)	160 (59)
7 Implement change	46 (39)	42 (27)	88 (33)
8 Evaluate change	29 (25)	19 (12)	48 (18)
9 Review standard or reaudit	26 (22)	15 (10)	41 (15)

FACTORS INFLUENCING VIEWS OF INTERFACE AUDIT

Duration of meetings (questionnaire 2; question 2, questionnaire 3; questions 4, 5)

Overall 90% of respondents thought that the "task of the group was well understood". The longer the meeting, the greater the agreement with this statement: 65/68 (96%) in groups whose meetings lasted over 90 minutes; 86/93 (93%) in groups with meetings of 60 to 90 minutes' duration; and 73/87 (84%) in groups whose meetings lasted less than 60 minutes (χ^2 for trend 6.23, P = 0.01). Duration of the meetings was also significantly associated with positive responses about high levels of participation; 57/67 (85%) respondents from groups with the longest meetings agreed, compared with 71/93 (76%) from groups with medium duration meetings, and 61/87 (70%) of those whose meetings lasted less than one hour (χ^2 for trend 4.65, P = 0.03). Similarly, the longer the meeting the greater the opportunity for discussion of topics of common concern. Of respondents from groups whose meetings lasted more than 90 minutes 60/69 (87%) were in agreement with the statement "meetings provided clinicians from both primary and secondary care with the opportunity to discuss areas of common concern", compared with 74/90 (82%) from groups whose meetings lasted 60 to 90 minutes and 58/84 (69%) from groups with meetings of less than one hour's duration (χ^2 for trend 7.58, P = 0.006). However, it seems possible that some groups' meetings may have been protracted by discussion of issues about confidentiality of data. Only 6/83 (7%) respondents from groups with short meetings agreed that "confidentiality of

Table 4 Respondents positively endorsing statements about experience of interface audit group work (questionnaire 3; question 4)

Statement	Agree and strongly agree n/total (%)
The task of the group was well understood	225/250 (90)
The task of the group was accepted by its members	225/250 (90)
Decisions reflected a consensus of group opinion	208/247 (84)
Every idea was given a hearing	201/248 (81)
The group enjoyed the experience of working together	199/248 (80)
Any diagreements were effectively resolved	184/237 (78)
There was a high level of participation	190/249 (76)
There were few diagreements in the group	177/248 (71)
The group took no longer than necessary to complete its tasks	154/246 (63)

Table 5 Respondents positively endorsing statements about experiences of working across the interface (questionnaire 3; question 5)

Statements	Agree and strongly agree n/total (%)
Meetings provided clinicians from both primary and secondary care with the opportunity to discuss areas of common concern	193/245 (79)
Group members enjoyed meeting colleagues, especially those from another discipline	184/238 (77)
Meetings stimulated learning	173/250 (69)
The group provided a forum for discussion relating to aspects of care other than the audit topic	162/244 (66)
The computer systems between primary and secondary care were not compatible	79/127 (62)
Meetings led to closer working relations between primary and secondary care	154/248 (62)
A number of possible topics for another interface audit were discussed	132/231 (57)
The physical distance between group members created problems	56/240 (23)
It was difficult to establish common goals between the different parties to the audit	46/247 (19)
Confidentiality of data between primary and secondary care was an issue	32/239 (13)
There was disagreement over who should be responsible for funding the audit	23/201 (11)
Finding somewhere neutral for the meeting was a problem	23/231 (10)
Deciding who should be responsible for data collection was a problem	21/242 (9)
There was disagreement about the ownership of the data	20/244 (8)
Identifying which party should be responsible for the analysis was a problem	20/238 (8)

data between primary and secondary care was an issue", compared with 13/87 (15%) from medium length meetings, and 13/67 (19%) from the longest meetings (χ^2 for trend 4.80, P = 0.03).

Initiation of audit (questionnaire 2, question 9, questionnaire 3, questions 4, 5)

Joint initiation of an audit seemed to facilitate greater understanding of the group task; 48/49 (98%) respondents from audits initiated collaboratively were in agreement with the statement "the task of the group was well understood". The corresponding figures for audits initiated by secondary and primary carers were 66/72 (92%) and 98/111 (88%), respectively, whereas only 11/16 (69%) in other solely initiated audits agreed (χ^2 11.97, P = 0.007). Audits initiated solely by someone outside the primary or secondary care sectors were more likely to experience problems with confidentiality of data (6/16 (38%)); the corresponding figures for audits initiated by primary carers, secondary carers, and collaboratively were 12/108 (11%), 8/68 (12%), and 6/45 (13%), respectively (χ^2 8.60, P = 0.04).

Group size and composition (questionnaire 2; question 8, questionnaire 3; questions 4, 5, 10, 11)

Not surprisingly, the larger the group the greater the opportunity for primary and secondary care specialists to discuss matters of common concern. Of the people from groups of nine or more 88/101 (87%) responded positively to the statement "meetings provided clinicians from both primary and secondary care with the opportunity to discuss areas of common concern", as opposed to 61/77 (79%) from groups of six to eight, and 44/67 (66%) from groups of two to five (χ^2 for trend 10.81, P= 0.001). Group size also influenced the likelihood of disagreement within the group although there was no significant linear trend. Of people in groups of two to five 57/69 (83%) thought that there had been few disagreements versus 51/78 (65%) in groups of six to eight, and 69/101 (68%) in groups of nine or more (χ^2 6.09, P = 0.05).

In the third questionnaire respondents were also asked to indicate whether they had known other members of the group before the audit. Of the respondents 226/250 (90%) had previous knowledge of at least one other group member. Of these, 214/226 (95%) thought that this was helpful to the way the group worked. One hundred and ninety seven respondents gave reasons for their answers, with some mentioning more than one reason. Previous knowledge of other group members was said to lead to good working relations (57 (29%)), efficiency (50 (25%)), shared understanding (49 (25%)), and trust (47 (24%)).

LESSONS LEARNT FOR THE FUTURE OF INTERFACE AUDIT (QUESTIONNAIRE 3; QUESTIONS 6, 7, 8, 9)

In an open ended question respondents were asked to state the main lessons learnt from their experience; 203 (81 %) questionnaires contained responses to this question. The issues identified were the importance of setting clear objectives (54 (27%)); the importance of primary-secondary communication (40 (20%)); the importance of primary-secondary understanding (32 (16%)); the need for adequate resources (26 (13%)); and the importance of multidisciplinary working (24 (12%)). When asked, in a further open ended question, what they would do differently in a future interface audit, 54/159 (34%) said they would not do anything differently. However, 50 (48%) of the 105 who would make some changes said that they would ensure that objectives were more clearly specified, 25 (24%) would make organisational changes, and 24 (23%) would aim to improve communications. In response to the question "If you had known what the experience of interface audit would be like before this audit would you still have participated?" 235/251 (94%) said that they would. Of all respondents 242/251 (96%) stated that they would participate in another interface audit in the future.

FUTURE INTERFACE AUDIT ACTIVITIES (QUESTIONNAIRE 3; QUESTIONS 13, 14, 15)

Five topics dominated as favourites for future interface audit: referrals and admissions (45/179 (25%)); management of chronic diseases (44 (25%)); discharge procedures (30 (17%)); communications (20 (11%)); and the management of various specific conditions (20

Table 6 Main factors facilitating future interface audit and encouraging more interface audit (questionnaire 3; questions 14 and 15)

Factors	Respondents n/total (%)
Facilitating future interface audit:	
Commitment and enthusiasm	52/208 (25)
Money	50/208 (24)
Time	44/208 (21)
Clear purpose	43/208 (21)
Manpower	36/208 (17)
Improved communications	31/208 (15)
Common objectives	26/208 (13)
Encouraging more interface audit:	
Money	57/210 (27)
Improved communications	44/210 (21)
Evidence of benefit	43/210 (20)
Time	41/210 (20)
Manpower	20/210 (10)

Respondents could endorse more than one factor; therefore the total is greater than 100%.

(11%)). These represent the areas in which primary and secondary care are most likely to meet, and reflect current interface audit activities (table 1). In answer to open ended questions about factors which would facilitate future interface activity and factors which would encourage interface audit activity to take place in the future, the most common responses were commitment, money, time, and improved communication (table 6).

Discussion

We have produced a detailed picture of aspects of the structure and process of a sample of audit activity across the primary-secondary care interface in England and Wales. Because it involves bringing together people who might not usually meet and who come from different sectors of the health service, interface audit could potentially have problems with either the structure or process of the audits. However, for the respondents in this study this did not seem to be the case. In general, respondents were positive about their experiences of interface audit, would still have participated even with the benefit of hindsight, and would take part in another interface audit. This suggests that any difficulties encountered do not deter participants unduly. Another marker of success is the extent of improved collaboration between primary and secondary care. Although some did not think that interface audit led to closer working relations between primary and secondary care, fewer reported problems such as data confidentiality or difficulty establishing common goals. This suggests that those cultural differences that produce barriers between primary and secondary care can be successfully overcome within the process of interface audit.

Although it is possible to draw out several messages for those undertaking or considering interface audit, it is necessary to be aware of the strengths and weaknesses of this study in two particular areas: the sampling approach and the representativeness of respondents. The main strength of the cascade sampling approach that we used is in providing an appropriate sampling frame when no other explicit list of appropriate people exists. We did not have, and still do not know of, any comprehensive register of interface audits that we could have used; this made the cascade approach the only choice. However, with this technique it is difficult accurately to target questionnaires and therefore usable response rates are lower than in an orthodox postal questionnaire survey. The problem of targeting is shown by the fact that of the audit groups identified by respondents to the first questionnaire and subsequently surveyed in round two, a quarter were not interface audits according to our definition and others were only at a planning stage and could not therefore be expected to provide us with any information on group structure and process. Also, we cannot know what proportion of all interface audits our 285 responses to round two represent. Moreover, responses to each phase of the survey may not be representative of all interface audits. It is possible that those audits that regarded themselves as successful were more likely to respond (although non-response bias may occur no matter what sampling strategy is adopted); it is therefore possible that our findings may represent an optimistic view of interface audit. Indeed, the generally positive views elicited by this survey contrast with the more negative experiences reported elsewhere.[3 12] However, the respondents were not unanimous in their endorsement of interface audit. In particular their experiences were significantly associated, as anticipated, with aspects of the group structure and process. By their nature interface audit groups tend to be larger than small group theory suggests is optimal but among the respondents to this survey this did not seem to cause problems. Increasing group size was positively associated with discussion of matters of common concern although it was also associated with more disagreement. Although we did not enquire about group leadership, these results would support the importance of skilled small group leadership in such groups.[3 6 7]

Lack of time is often given as a reason for not being involved in audit[4 5] and doctors view audit as time consuming.[12] Our findings suggest that longer meetings are beneficial in fostering good understanding and allowing for interchange of ideas; this suggests that protected time for audit meetings may be necessary if audit of this kind is to achieve its full potential. Sufficient time was one of the factors identified by respondents as likely to facilitate further interface audits.

With the initiation of the audits coming equally from primary and secondary care, collaboration between the sectors seems to be taking place. The same is not necessarily true at an interdisciplinary level; the audits that we identified were numerically dominated by doctors. Without a more detailed knowledge of each audit it is difficult to set this in perspective but it does suggest the scope for greater involvement of other healthcare professionals. This could be seen as a general message and not specific to interface audit; none the lessit is more likely to be an issue at the primary-secondary care interface as there are more disciplines that are potential stakeholders and that could therefore have a legitimate input into the audit process.

Those who provide an input to the audit process but are not full members of the group are likely to be disenfranchised. This lack of involvement is a potential barrier to implementing any changes suggested and thus to improving the quality of care, the ultimate aim of any audit activity. The importance of multidisciplinary involvement in interface audits is also acknowledged by the report of the United Kingdom Regional Clinical Audit Coordinators. (Audit at the interface. Internal working party report to the regional audit coordinators, 1995.)

The findings on progress around the audit cycle are complex to interpret. The 22% of completed audits that had gone through all the steps of the audit cycle, including reauditing, clearly had the potential to use audit to improve quality of care. Similarly, just over a quarter of incomplete audits had got as far as implementing change. However, almost two thirds of audit groups that reported their work as complete had stopped short of implementing change. It has been suggested that failure to "close the audit loop" means that audit is rendered nearly useless and a waste of time and money. Authors have decried the failure of audit to get as far as the remedial action of suggesting and implementing change.[13 14] Our findings measure, and endorse, for interface audit what Baker[1] and others have said about this failure. The amount of money already spent on audit has been questioned on the grounds of lack of evidence of effectiveness.[15] The ultimate criteria of success of audit has to be improved quality of care. Although our findings show it to be an enjoyable educational exercise with the potential to improve communication and professional development, to move interface audit beyond this future initiatives must emphasise the importance of completing the audit cycle.

None the less, we conclude that interface audit is occurring, is enjoyable, and has the scope to improve the quality of care. But with most audits stopping short of implementing change, the activity seems currently to be limited in its achievement of this goal. If interface audit is to be effective in improving the quality of care, barriers to implementing and evaluating change must be identified, and strategies developed to overcome these barriers.

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