IN BRIEF

- Clinical audit can alter clinical practice and improve patient care.
- Clinical audit can improve knowledge.
- Clinical audit can identify areas for further continuing professional development.
- Collaborative audit has the added benefit of peer review.
- Clinical audit should involve the whole dental team.

General dental practitioners' experiences of a collaborative clinical audit on antibiotic prescribing: a qualitative study

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Objective To evaluate general dental practitioners' experiences of a multi-collaborative antibiotic prescribing audit.
Design Qualitative analysis of compulsory post-audit group report data collection forms and individual practitioners' post-audit evaluation forms.
Subjects Information was collected from 175 general dental practitioners in the North West of England who participated in the audit.
Method The general dental practitioners were divided into groups of 8–10 to undertake the audit. Information from compulsory post-audit group reports was transcribed and analysed. The information was categorised into a number of areas including changes in practice, patients' expectations, training and quality of service. On completion of the audit individual practitioners were asked to complete an evaluation form on the audit process.
Results 141 (80.5%) individual evaluation forms were returned. Over 90% of GDPs felt that the audit process was easily understood and the majority of the practitioners thought the audit was worthwhile. Approximately 69% of participants felt that the audit had helped to change their antibiotic prescribing practices. Analysis of the post-audit group report data collection forms revealed more than 100 statements. The most common areas were changes required in practice, patients' expectations, increased training and quality of service.
Conclusion The collaborative clinical audit project was seen to be a worthwhile learning experience by the participating general dental practitioners. The audit encouraged GDPs to change their antibiotic prescribing practices and thereby improve patient care. GDPs also highlighted the need for continuing education in the prescribing of antibiotics.

Clinical audit has been defined as the systematic critical analysis of the quality of dental care, including the procedures and processes used for diagnosis, intervention and treatment; the use of resources and the resulting outcome and quality of life as assessed by both professionals and patients.[1] It has been suggested that the criteria for undertaking audit are that the issue to be addressed should be:

'A common, significant or serious problem; any changes following audit should benefit patients and lead to greater effectiveness; that the issue is relevant to professional practice and that there is realistic potential for improvement.'[2]

Clinical audit was introduced into UK general dental practice in 1995 for individual practitioners and this was followed in 1997 by collaborative audit, which can be undertaken by a number of general dental practitioners (GDPs), either within the same practice or involving a number of practices. Funding for clinical audit from the Department of Health is available to all GDPs on the list of a Health Authority. The local assessment panel (LAP) grants approval for funding if the project is considered appropriate. Although funding has been available to all GDPs, anecdotal evidence suggests that only a small proportion of GDPs have participated in clinical audit in the past. One explanation could be that audit is perceived to be a difficult process with no benefit to the practitioner. It has been reported in medical practice that the main barriers to clinical audit are lack of funding, lack of advice in project design and analysis, problems between groups and group members and professional isolation.[3]

Clinical audit is the central pillar of clinical governance, a Terms of Service requirement for all GDPs in NHS dental practice.[4] Therefore all dentists who provide general dental services are required to participate in a rolling programme of clinical audit. GDPs are required to undertake a total of 15 hours of audit in each successive period of three years and will receive funding.[4] Participation in clinical audit is also accepted by the General Dental Council as verifiable Continuing Professional Development within its re-accreditation scheme. It is therefore important to make audit 'user friendly', but also educationally worthwhile and of benefit in improving patient care.

It has also been suggested that clinical audit in dental practice can be used to provide identification of continuing professional development.[5] Many clinical audits reported in medicine have focused on the process of audit, rather than the structure and outcomes.[6] Most clinical audits in general dental practice, under the NHS scheme, have looked at the structure and process aspects of practice, with recurring audits concerning radiographs.[7] The results of some dental audits carried out in general dental practice have reported positive outcomes for patient care.[8–11]

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There has been little research published, however, on GDPs' experiences of clinical audit. The aim of this study was to evaluate GDPs' experiences of a multi-collaborative audit of antibiotic prescribing.

METHOD

All 932 general dental practitioners (GDPs) working within South Cheshire, North Cheshire, Liverpool, Wirral Sefton, and St Helens and Knowsley Health Authorities were invited to participate in an audit of antibiotic prescribing under the NHS National Clinical Audit and Peer Review scheme. The GDPs were divided into groups of eight to ten and provided with data collection forms and instructions on how to complete the audit. Each of the groups was assigned a trained audit facilitator to advise and oversee the audit.

The structure and process of the audit have been previously described.[11] On completion of the audit, each group submitted a report and summary of the completed audit project and a post-audit information form, required under the NHS Clinical Audit in General Dental Practice scheme. Individual GDPs were also asked to complete a post-audit evaluation form.

Qualitative analysis of group reports, summary of the completed audit project and post-audit information forms

In order to maintain the anonymity of the reports and forms, details of individual dentists or the audit groups were removed before analysis. The compulsory summaries of the completed audit project and post-audit information forms asked practitioners questions about the audit process, procedures and outcomes. Questions relating to training, changes in practice administration, the value of audit and benefits to the patients and practice were highlighted. The comments made by each group on these specific questions were transcribed and then analysed for themes.

Analysis of individual practitioner audit evaluation forms

Following the final audit meeting individual dentists were asked to complete an anonymous evaluation form consisting of eight questions. Questions one to seven were concerned with the audit process and outcome and were scored on a yes/no basis. The final question asked the practitioners for their opinion of the value of the audit; this was scored on a Likert five-point scale. The information collected from the evaluation forms was numerically coded and entered into a statistical package for Social Sciences (SPSS) database and analysed.[12]

RESULTS

The total number of practitioners who took part in the study was 175. Each of the 26 groups of GDPs completed the compulsory summary of the completed audit project and the post-audit information forms, required under the NHS National Clinical Audit Scheme in general dental practice. One hundred and forty one (80.6%) of the participating GDPs returned the post audit evaluation forms.

Analysis of the qualitative data from the compulsory group audit report forms

More than 100 statements relating to the dentists' experience of the clinical audit were selected and categorised into themes. The themes were grouped into areas of professional development, education and training, changes required to practice and quality of service to patients.

• Professional development

The majority of the group reports had comments relating to the effect of the audit on the professional development of the practitioners. Most of the groups found that their knowledge had increased and that group discussions during the audit were of benefit.

'Very useful. All participants considered themselves to be well informed regarding current antibiotic practice. It soon became apparent their knowledge and prescribing patterns had fallen behind.'(group 2)

'General practice can be isolated and out of date clinical practice can carry on without awareness. Informed discussion with other dentists is an excellent way to upgrade skills.'(group 20)

'Eye opening has caused considerable discussion amongst audit members and their dental team, not just in the dental context but with an overview of antibiotic usage in general.' (group 8)

'Increased everyone's personal knowledge.' (group 10)

'Discussion with other group practitioners was helpful, particularly when reviewing data.' (group 16)

• Education and training

The success of the educational element of the audit process was established with practitioners also identifying further training issues, not only for themselves, but also for medical practitioners.

'Without the direct lecture and peer group discussion change would not have occurred.' (group 19)

'Considered more valuable than postgraduate courses on the same.' (group1)

'Section 63 course is required to alert other practitioners to the findings of this audit.'(group 11)

'Reinforcement on up to date prescribing protocols would be beneficial on a periodic basis.' (group14)

'Medical colleagues need advice on the need for antibiotic prophylaxis.'(group 4)

'GP's need to be told that antibiotics will not help toothache.' (group 16)

Practitioners recognised that patient expectation of antibiotics could cause inappropriate prescribing. Practitioners therefore identified the need to educate patients on the clinical indications for antibiotics.

'Education of patients as to the need for antibiotics.' (group 6)

'Some patients are conditioned to receive antibiotics and are disturbed if they do not receive them.' (group 14)

'The audit has helped us to improve our patient understanding of antibiotics.' (group 4)

• Changes required in practice

The main area of change related to GDPs' organization of emergency appointments. Many groups recognised the need to increase the time allocated to patients with a dental emergency to allow active treatment.

'Altering time allocated to emergencies.'(group 1)

'Increased emergency time to provide active treatment rather than passive prescription. Reception and support staff educated to achieve this.' (group 9)

'Shorter waiting lists for GA.' (group 26)

'NHS funding for emergency treatment needs changing to allow more time.' (group 15)

A number of groups saw that the routine measurement of temperature in patients with an infection was important in the decision as to whether to prescribe antibiotics.

'Temperature measurement should be normal practice.' (group 21)

'Use of a thermometer to measure patient's temperature before prescribing.' (group 22)

Most groups recognised the importance of disseminating the results of the audit to other practice members and establishing a practice protocol on antibiotic prescribing.

'Discussion with colleagues has lead to practice changes.' (group 2)

'Practice protocol established.' (group 12)

'All staff know antibiotics must be limited to specific cases.' (group 13)
'Information of best prescribing disseminated with other practice members.' (group 23)

• Quality of patient care

All the groups felt that as a result of the audit and the educational component, their prescribing practices had become more rational and appropriate, giving rise to improved patient care.

'Most valuable time spent – prescribing to patients improved.' (group 24)
'More active treatment meant a reduction in antibiotics prescribed.' (group 18)
'Clinical prescribing has changed for the better.' (group 21)
'It has stopped prescription provision as a result of patient request.' (group 11)
'Prescribing awareness has been increased.'(group 9)
'It has raised more questions over the quality of care given to the management of uncooperative patients with toothache. (group 26)'
'Better clinical practice'.(group 18)

Analysis of the individual post audit evaluation forms

The results of the individual evaluation forms are shown in Table 1. Over 90% of the respondents felt that the audit process was easy to understand and that the educational content was useful. Ninety-seven participants (68.8%) stated that the audit had caused a change in their prescribing patterns. Only 27.6% (39) of respondents, however, discussed the audit with members of the dental team.

During the audit 82% (116) of the participants felt pressure from patients to return to their previous prescribing practices. Figure 1 shows that the majority of practitioners felt that the audit was worthwhile.

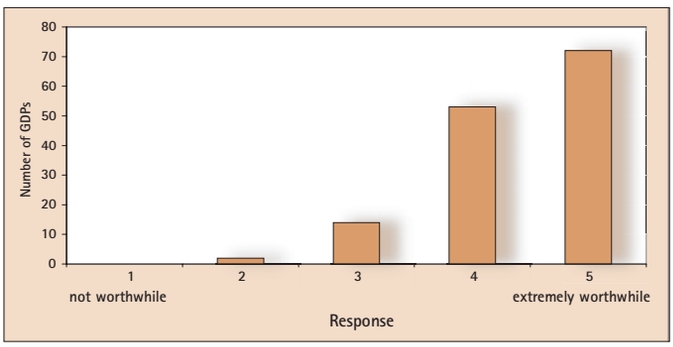

Figure 1 GDPs' evaluation of the audit

DISCUSSION

In this investigation current practice was observed prior to audit. GDPs then received feedback from opinion leaders with an educational component and issuing of guidelines, before embarking on the audit. This process, along with the individual learning experience of collecting data, analysis and discussion of individual practitioners' results within the audit groups, was well received by participants. The pooling of the audit results helped the practitioners to see the benefits of changing their prescribing rationale and the effect this could have on improving patient care. Some GDPs felt that the structure and process used in this audit had been more valuable than a postgraduate course on the same subject.

The results showed that GDPs recognised that changes were required in practice management to enable them to change their antibiotic prescribing practices. It appeared that under their current systems there was little time available to actively treat emergency patients. The problem of insufficient time being allocated to emergency patients has been highlighted where over 60% 'double-booked' pain patients with routine patients.[13] It has been recommended that specific time on a daily basis is set aside to allow for active treatment to be undertaken.[13] This was an approach that many practitioners indicated they would adopt following the audit. It has been shown previously that this audit led to a more rational and appropriate use of antibiotics by GDPs for many clinically presenting conditions in general dental practice.[11]

The majority of the audit groups felt it was important to disseminate the information gained from the audit to the whole dental team, in order to institute changes in clinical practice. Disappointingly the results of the post audit evaluation showed that only 27.6% of GDPs had discussed the audit with the dental team. This is an area that requires further investigation.

The audit groups also suggested that general medical practitioners should be made aware of the indications and prescribing regimes for dental infections and prophylaxis. This view was in agreement with the conclusion of a study that compared general dental and medical practitioners' antibiotics prescribing habits.[14] The audit groups also felt there was a requirement to educate patients concerning the use antibiotics in the treatment of dental infections. This strategy has been shown to be effective in general medical practice.[15]

The authors accepted that the information collected from the group reports and post-audit information forms was based upon an amalgamation of the thoughts of each individual in the group. It could be argued that the final comments reported and analysed related more to the individual group leaders who completed the forms on behalf of each group. It was for this reason that the individual GDPs audit evaluation forms were devised and analysed. The results from the evaluation forms, for the most part, supported the qualitative results from the group reports, with the majority of practitioners feeling the audit was worthwhile to complete.

This study supports the view[16] that a well planned, relevant, funded collaborative audit project supported by trained facilitators can be a worthwhile positive experience for GDPs and can evoke changes in clinical practice.

Table 1 GDPs' evaluation of the audit process (n=141)

Question	Yes (%)	No (%)
Did the introductory meeting explain the nature of the audit ?	97	3
Were the information and data collection forms easy to understand?	95	5
Was data collection easy?	99.3	0.7
Did you discuss the audit with your practice team?	95.7	4.3
Was the content of the educational component useful?	97.1	2.9
Did the educational component and the following audit group meeting cause perceptible changes in your prescribing patterns?	68.8	31.2
Following your audit group meeting did you fully understand the audit process?	90.8	9.2
Did you discuss any changes in your prescribing with your practice team?	27.6	82.4
Have you been aware during the audit of pressure from patients to return to your previous prescribing patterns?	82.3	17.7

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