The British Asthma Guidelines – Their production, dissemination and implementation

AN ARTICLE FOR RESPIRATORY MEDICINE ON BEHALF OF THE BRITISH ASTHMA GUIDELINES CO-ORDINATING COMMITTEE

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Introduction and Background

The first British guidelines on the management of asthma were published in the British Medical Journal (1,2) in 1990 as two papers, one on the management of chronic persistent asthma and the other on the management of acute severe asthma in adults. Other asthma guidelines had been published previously by a group of respiratory specialists from Australia and New Zealand (3) and by an international group of respiratory paediatricians who made recommendations on the management of asthma in children (4). The initial British guidelines were supported by five fully referenced background papers (5-9). In the same year, the Canadian asthma guidelines were published (10) and since 1990, asthma guidelines have been published in many other countries, including an international consensus report on the diagnosis and management of asthma (11) and a National Heart, Lung and Blood Institute/WHO workshop report – The Global Strategy on Asthma Management and Prevention (12). Two of these guidelines have been revised, the International Paediatric Guidelines in 1992 (13) and the British Asthma Guidelines (which now include advice on asthma in children) in 1993 (14) and again in 1997 (15).

PRODUCTION OF THE BRITISH ASTHMA GUIDELINES

The processes involved in producing the three versions of the British Guidelines have been similar and have been fully described (16). A number of chest physicians including academic, teaching hospital and district general hospital consultants, general physicians, general practitioners, paediatricians and practice nurses were invited to participate. Participants were intended to encompass the range from academic to district general hospital practice and primary care and to reflect the geographical and age ranges of respiratory medical practitioners in Great Britain. In 1990, the participants included medical journal editors and patients, and by 1997 the 37 participants represented seven British societies, colleges, associations and groups involved in asthma care. On each occasion, colleagues selected because of their particular expertise, were asked to prepare succinct draft statements on topics to be included in the guidelines, together with more extensive fully referenced background papers designed to support those inevitably didactic short statements. These statements and background papers were reviewed by all participants, and where appropriate, suggested changes were made to the draft which were then incorporated into draft guidelines. These were discussed first in small groups and then in the plenary session of all participants during a two day meeting at which the final draft guidelines were agreed. For the first guidelines in 1990, the final draft was circulated to all members of the British Thoracic Society with a questionnaire, and then presented to a meeting of over 300 members of the British Thoracic Society at the Annual Summer Meeting. The questionnaire responses from 357 chest physicians indicated over 80% thought the guidelines were appropriate, acceptable and achievable.

There were four reasons for reviewing the British guidelines in 1992. The first two concerned β-agonist therapies. Controversy regarding the safety of regular β-agonist therapy was raised by the publication of two papers (17,18) following the publication of the first guidelines, and there was also concern over the role of long-acting inhaled β-agonists which became available after the publication of the 1990 guidelines. The other reasons arose from criticisms levelled at the 1990 guidelines. First, they did not include the management of asthma in children, deliberately excluded because of the recent publication of the international guidelines (15) and second, they were too long, and although published in a widely read medical journal (1,2) were not particularly user friendly. The revised guidelines (14) included advice on the management of asthma in children and also six single paged charts which summarized the advice for adults and children and which were designed for use in the general practice or hospital out-patient setting.
consultation setting, the medical admission unit or medical wards of an acute hospital, and the accident and emergency department. Areas of uncertainty or controversy were highlighted in these guidelines (14).

The second revision (15), published in 1997 was undertaken using identical processes, but this time it was felt there was insufficient new data to warrant a paper which would act as a commentary on the 1993 guidelines. As with the 1990 guidelines, the evidence on which these guidelines were based has been published as state of the art reviews (19–26).

The current method of producing British Asthma Guidelines, based upon state of the art reviews, critically reviewed by the experts, and with gaps in the literature being filled by consensus reflecting agreed current best practice, is different from that recommended by a number of other guidelines authorities (27,28). It remains a matter of opinion whether one method is superior. The results of guidelines produced in different ways for managing asthma are very similar (15,29–31). On which evidence the NHS Executive have based their recent decision that the development of guidelines in future should lie with Royal Colleges (32) is not clear.

IMPLEMENTATION OF GUIDELINES

Irrespective of the method of production of guidelines, an evaluation of a variety of clinical guidelines by Grimshaw and Russell in 1993 (33) showed that following their introduction, the majority were associated with significant improvements in both the process and the outcome of care. Success is only likely if the production of guidelines is followed by adequate dissemination of their content by educational activities which are designed to increase health professionals knowledge and understanding of the recommendations (34). This in turn needs to be followed by interventions designed to lead to a change in health professional behaviour. Studies of asthma management in primary care have suggested that taking guidelines down to a practice level with local education and the prompting of doctors during consultations about questions to ask of patients and action to be taken, may improve outcomes (35). The practice of audit of asthma management has also been shown to be associated with alterations in doctor behaviour and improvements in the process of care and outcomes (36,37).

Prior to the 1997 publication of the Position Statement and revision of the British Asthma Guidelines, a coordinating group of physicians representing the British Thoracic Society (BTS) the National Asthma Campaign (NAC) and the General Practitioner in Asthma Group (GPiAG) proposed a dissemination project which would utilize mailings to health professionals, the media, and educational meetings, and at the latter examples of good practice related to implementation of guidelines would be presented and discussed. It was also suggested that the impact of the dissemination process would be evaluated by surveying representative health professionals working in primary care, both before and after the dissemination project.

Whilst the guidelines were produced independently by professional bodies with the only financial support coming from the British Thoracic Society, The National Asthma Campaign and the Royal College of Physicians of London, additional funding was needed for the dissemination project. Members of the Guidelines Committee approached colleagues in the pharmaceutical industry and eventually 10 companies with interests in asthma joined a consortium to aid in the dissemination and implementation of the guidelines. The consortium pooled its ideas, expertise and resources and a Guidelines Project Manager was appointed in October 1996 and based in the National Asthma Campaign Head Office. The companies involved are listed in the acknowledgements.

Objectives

The objectives of the project are summarized in Table 1. To achieve these objectives involved mailings to health professionals, production of specific educational materials, utilization of the medical and lay press and a series of meetings with doctors and nurses working in primary care.

Methods

MAILINGS

A launch mailing was sent to approximately 60 000 health professionals. The material mailed consisted of the publication itself (a supplement to Thorax), information about planned guidelines meetings (for general practitioners and practice nurses), a card to be returned by those wishing to receive a number of charts summarizing the guidelines main recommendations, and for chest physicians, an offer of a newly commissioned set of 12 slides containing the key points contained in the guidelines revision and information about successful implementation strategies. A follow-up mailing was sent to approximately 45 500 general practitioners and practice nurses offering additional charts.

MEETINGS

A total of 19 meetings were organized by a medical communications agency (Professional Medical Communications Limited) between mid-March and mid-May 1997 at a series of sites throughout the U.K. All the meetings were approved for the post-graduate education allowance (2 h health promotion) and apart from one held in the afternoon, ran from 7.30-9.30 pm. Each meeting was chaired by a local asthma expert and two presentations on the guidelines were given by a consultant chest physician covering adult management, and by a consultant paediatrician who addressed the subject of asthma in children. After questions to these presenters, there was an open forum, aimed at discussing local implementation of the guidelines with a panel consisting of local asthma interested doctors, practice nurses, specialists and public health doctors.
TABLE 1. The project objectives

<table>
<thead>
<tr>
<th>Objective</th>
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<tbody>
<tr>
<td>To maximize awareness of and interest in the new British Asthma Guidelines amongst healthcare professionals</td>
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<tr>
<td>To highlight areas of change between the 1993 and 1997 guidelines and the rationale behind these changes</td>
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<tr>
<td>To encourage implementation of the guidelines in clinical practice</td>
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<td>To establish the new guidelines as an indispensable resource for the Primary Care Team in their every day management of asthma</td>
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<tr>
<td>To maintain and sustain interest in the guidelines</td>
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Key Messages

| Rationale for revision of the guidelines |
| Identification and summary of the key changes between the 1993 and 1997 guidelines |
| Primary reasons for the key changes identified |

Key elements of the communication programme

| Raise awareness of the guidelines |
| Encourage adoption of the guidelines in clinical practice |
| Monitor progress |

Additional objective

| Evaluate effectiveness of this communication/promotion exercise |

MEDIA

Medical press

A communications agency (Shire Hall Communications) was commissioned to communicate the launch of the guidelines to as wide as possible medical audience via the medical press. To ensure accurate reporting and maximum coverage, the agency arranged one to one briefing meetings with editors and a medical member of the guidelines co-ordinating group.

Lay media activities

The press office at the National Asthma Campaign was commissioned to carry out a lay media launch of the guidelines to reach as wide a patient audience as possible via the lay media. These activities involved general preview news releases prior to the launch of the guidelines, the development and issue of a series of targeted news releases (containing national and regional statistics and comments), circulation of lists of local spokespeople, press releases regarding local meetings, and the special targeting of lay national medical journalists.

EVALUATION

In order to assess the impact of the new guidelines on both general practitioners and practice nurses (who were regarded as our primary audience), a market research company (PMSI UK Ltd.) was commissioned to undertake two surveys, one just before publication of the new guidelines (in December 1996/January 1997) and another 5 6 months after publication (in May/June 1997).

In the initial prepublication survey, a representative 401 general practitioners and 101 practice nurses were interviewed. In the post-publication survey, a different 409 general practitioners and 104 practice nurses were interviewed.

Results

MAILINGS

The launch mailing of 60 828 copies of the Thorax supplement together with an offer of summary charts and slide sets, resulted in 5632 requests for summary charts (a 9.3% response rate) and 294 requests for slides sets from the 792 chest physicians (consultants, senior registrars and registrars) mailed (a 37.1% response rate). The follow-up mailing to 45 562 general practitioners and practice nurses led to 3345 responses (a 7.3% response rate).

MEETINGS

Invitations to the 19 regional meetings were mailed to approximately 14 000 general practitioners around the country and this attracted 1713 positive responses (12.5% response rate). From these a total of 1197 general practitioners and practice nurses attended these meetings, an average of 63 attendants per meeting (against a target of 65). All delegates were asked to complete a questionnaire at the end of the meeting and 928 did so, (only receiving their PGE attendance certificate once they had done so). Results of participants views on the differing parts of the meeting programme are shown in Table 2.

MEDIA

Medical press

Assessment of the media coverage included the circulation and audiences of the journals covering the guidelines, quantity of coverage (a number of the target publications ran more than one feature-length article on the guidelines) and how many of the key messages contained in the guidelines were mentioned in each article. Key messages included: (i) The importance of making the correct diagnosis (including the differentiation of asthma from chronic...
TABLE 2. Assessment of the value of the regional meetings

<table>
<thead>
<tr>
<th>(a) Chairman's introduction</th>
<th>Very useful</th>
<th>Quite useful</th>
<th>Neither nor</th>
<th>Not useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b) Asthma in adults</td>
<td>31.6%</td>
<td>54.9%</td>
<td>12.7%</td>
<td>0.7%</td>
</tr>
<tr>
<td>(c) Asthma in pre-school children</td>
<td>55.9%</td>
<td>41.7%</td>
<td>2.3%</td>
<td>0.2%</td>
</tr>
<tr>
<td>(d) Panel discussion on local implementation of guidelines</td>
<td>56.9%</td>
<td>38.8%</td>
<td>4.0%</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

The questionnaires were completed by 928 of the 1197 participants, and are a composite response from attendees at all the meetings.

TABLE 3. Opportunities to see key messages in the medical press

<table>
<thead>
<tr>
<th>Readership figures</th>
<th>Key Message 1</th>
<th>Key Message 2</th>
<th>Key Message 3</th>
<th>Key Message 4</th>
<th>Key Message 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>General practitioner press</td>
<td>17</td>
<td>9</td>
<td>7</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Nursing press</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Pharmacy press</td>
<td>5</td>
<td>3</td>
<td>—</td>
<td>5</td>
<td>3</td>
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</tbody>
</table>

Lay press

The guidelines launch 'story' was taken up more enthusiastically regionally than nationally. Whilst covered in the national newspapers and in two women's magazines, it was covered by one regional television station, 24 regional radio programmes and in 30 regional newspapers. Eighty-seven percent of the regional television and radio reports included comments from a British Asthma Guidelines' spokesman and 96% included all the key messages. Comparable figures for regional newspapers were 90% for both inclusion of a spokesman's comments and containing all the key messages.

EVALUATION

In the initial prepublication survey (PMSI U.K. Ltd. Generator for GPs December 1996, Jn 9612, and Generator for Practice Nurses, January 1997, Jn 3001), the vast majority of general practitioners (n=352, 88%) and practice nurses (n=89, 88%) were aware of the current British Thoracic Society Asthma Guidelines. Three hundred and twenty-eight general practitioners (82%) and 80 nurses (79%) stated that they adhered to the guidelines and over half of all general practitioners (230, 57%) and nurses (62, 62%) felt that these guidelines had affected their approach to asthma management to some or a greater extent. As far as two of the main issues which were covered in the guidelines revision were concerned ('gaining control' and 'self management plans'), 68% of general practitioners (274) and 63% of nurses (64) were already starting with high doses of inhaled steroids and subsequently stepping down, and the general practitioners considered that on average 55% of their patients currently had self-management plans to indicate what they should do if their asthma worsened. Practice nurses believed that this mean figure was as high as 60%. However, the wide range of answers (from 0 to 100%) would indicate that the concept of self-management plans was not clearly defined in the question or that there was an extremely large variation in clinical practice.

In the postpublication survey (PMSI U.K. Ltd., Generator for GPs May 1997, Jn 9705 and Generator for Practice Nurses May 1997, Jn 3002) 94% of the general practitioners (384) and 86% of the nurses (89) were aware that the guidelines had been revised. When asked what they thought were the main elements of the revised guidelines, over half the general practitioners (230, 60%) and nurses (50, 57%) specifically mentioned 'gaining control/stepwise approach'. More mention of 'the introduction of long acting inhaled beta-agonists' was made by general practitioners (142, 37%) than by nurses (26, 29%), while slightly more mention of obstructive pulmonary disease COPD); (ii) The need to gain control of asthma and a stepwise approach to treatment; (iii) Recognition that the guidelines had been revised and that new drugs had been included; (iv) Specific management techniques for the under 5's; (v) The use of self-management plans.

Results are shown in Table 3.

The communications agency estimate that the editorial achieved would have required an expenditure of £89 053 to be spent on advertising to generate the same amount of coverage.
‘the management of children’ was made by nurses (18, 20%) than by general practitioners (58, 15%). Somewhat disappointingly, there was little mention of ‘self-management plans’ and none of ‘the importance of correct diagnosis’ by either group. When specifically asked the more stringent question, ‘Approximately what percentage of diagnosed asthmatics are provided with written advice about personal medication regimes and signs that suggest asthma is worsening?’, answers again ranged from 0 to 100% with means of 26% from general practitioners and 45% for nurses.

EXPENDITURE

The budget for the dissemination project agreed by the sponsors totalled £420 000. This included £71 000 for the production of the *Thorax* supplement itself, approximately £95 000 for the two mailing programmes, £33 000 for market research and £134 000 for the meetings programme.

Discussion

There is a current obsession with the methodology involved in the production of clinical guidelines, with the NHS Executive clearly laying out responsibilities for the Royal Colleges (development of guidelines), the clinical outcomes group (endorsement) and the NHS Executive (commending endorsed guidelines to the service) (32). It is difficult to imagine that in this process, the NHS Executive really meant to exclude specialist societies, medical research charities and patient organizations, (such as the British Thoracic Society and National Asthma Campaign), but the current interest in methods of producing guidelines could usefully be offset by greater interest in the dissemination and implementation of their recommendations in clinical practice.

No one in the Asthma Guidelines Co-ordinating Group anticipated that the project described in this paper would alone change health professional behaviour, but as a dissemination project it seems to have been reasonably successful. Complex guidelines were broken up into a smaller number of key messages and these seem to a varying extent to have been successfully distributed and heard. This must provide a helpful substrate for subsequent local efforts at implementation. Evaluation of the project by survey of primary care health professionals obviously only offers a limited insight into the process of transfer and acquisition of knowledge by doctors and nurses. The geographical and demographic samples for both the pre- and postpublication surveys were representative of the total U.K. mainland general practitioners and practice nurses. A breakdown into the number of years qualified, practice list size, number of doctors in practice and funding status, did not enable any additional conclusions to be drawn regarding the impact of the dissemination project. The profile of the practice nurses did not include details of whether they had received any specific asthma management training and with hindsight it would have been helpful to establish whether or not practice nurses who had undergone formal evaluative training, performed in any different way.

The majority of general practitioners and practice nurses were already aware of the previous British Asthma Guidelines and most reported that they adhered to the guidelines and that these had changed their practice. This confirms earlier reports indicating both widespread awareness of the British Asthma Guidelines and their reported usefulness (38, 39).

In the postpublication survey following the 1995 revision, just under a third of general practitioners (30%) and over a half of the nurses (53%) felt that the revised guidelines had affected their approach to asthma management to some or to a greater extent over the preceding 6 months. Thirty-one percent of the general practitioners and 15% of the nurses who were aware that the guidelines had been revised felt that their approach to asthma management had not been affected at all; some of these might already have anticipated some of the revised recommendations and altered their clinical practice in advance of the publication. There was an undoubted improvement in the approach to achieving control of asthma and following production of the revised guidelines, 82% of general practitioners and 74% of nurses reported that they now started with high inhaled steroid doses and then stepped down to achieve better control of asthma (with the prepublication figures being 68% and 63%).

The figures for patients receiving self-management plans remains disappointing with around a third of general practitioners and one-fifth of nurses thinking that none of their patients have written advice about their personal medication regime including signs that suggest their asthma is worsening. However, of those general practitioners and nurses providing written advice, the perception was that one-quarter to one-third of patients now receive more detailed written self-management advice regarding the way they can alter treatment according to the clinical situation. Despite this, there clearly remains much work to do in implementing the concept of written guided self-management plans, plans which have now been shown to be helpful in reducing asthma related morbidity (40–42).

In the U.K. as elsewhere, the prevalence of asthma has been rising. However, despite the increased numbers of those suffering from this condition, there are now some indications of improved outcomes with the death rate having progressively fallen over the last 5 years, and with there being some evidence that the previously increasing hospitalization rate for asthma might now be levelling off for some ages in some areas. How much apparent improvement reflects enhanced primary care, the increased use of well-trained practice nurses, activities of the National Asthma Campaign, the availability of better drugs, or the impact of the British Asthma Guidelines is impossible to unravel. However, the carefully produced, regularly revised, authoritative evidence based British Asthma Guidelines have provided the basis for much of the audit that has been undertaken on asthma management (43–45), and formed the basis for the teaching of nurses, doctors and others.

The production and dissemination project described in this paper will only be successful if there is continued activity to implement the recommendations contained in the guidelines in day to day clinical practice. Those involved
in commissioning, funding and developing asthma guidelines in the future must include recommendations for dissemination and an evaluative approach towards their implementation.

Acknowledgements

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