A novel method of guideline development for the diagnosis and management of mild to moderate

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SUMMARY

Background. *There are large numbers of clinical guidelines available covering many clinical areas. However, the variable quality of their content has meant that doctors may have been offered advice that has been poorly researched or is of a conflicting nature. It has been shown that local involvement in guideline development increases the likelihood of their use.*

Aim. *To develop a guideline to be used by general practitioners in six practices in Birmingham from existing evidence-based guidelines.*

Method. *Recommendations from the four most cited international hypertension guidelines, and the more recently published New Zealand guidelines, were divided into subject areas and tabulated to facilitate direct comparison. Where there was complete or majority (×3/5) agreement, the recommendation was taken as acceptable for inclusion in the new guideline. Where there was disagreement (X2/5), recommendations were based on the best available evidence following a further MEDLINE literature search and critical appraisal of the relevant literature. Each recommendation was accompanied by a grade of evidence (A–D), as defined by the Canadian Hypertension Society, and an 'action required' statement of either 'must', 'should', or 'could', based on the Eli-Lilly National Clinical Audit Centre Hypertension Audit criteria. The recommendations were summarized into a guideline algorithm and a supporting document. The final format of both parts of the guideline was decided after consultation with the practice teams. The practices individually decided on methods of data collection.*

Results. *The guideline was presented as a double-sided, A4 laminated sheet and an A4 bound supporting document containing a synthesis of the original guidelines in tabular form, a table of the resulting recommendations, and appendices of current literature reviews on areas of disagreement. The content of the final Birmingham Clinical Effectiveness Group (BCEG) guideline differed minimally from any of the original guidelines.*

Conclusion. *The main strength of this method of guideline development may lie, not in the actual content of the resulting guideline, but in the strength of ownership felt by the BCEG and the practices following its development. While the full process is unlikely to be possible for general practitioners working outside an academic environment, the techniques used could provide a framework for practitioners to adapt national and international guidelines for use at a local level.*

Keywords: guidelines; hypertension; local adaptation.

Introduction

THE aim of guideline development is to improve the effectiveness of health care by summarizing the research evidence to give a consistent basis for clinical decision making.[1] There has been a large increase in the number of clinical guidelines available in recent years, covering many clinical areas.[2] Most existing guidelines have been developed for general practitioners (GPs) and the primary health care team to enable them to manage the increasing range of conditions with which primary care is now expected to cope.[3] However, the sheer quantity of guidelines available, and the variable quality of their content, have meant that doctors may have been offered advice that has been poorly researched[2] or is of a conflicting nature.[4] The quality and content of a guideline may be improved by the consideration of the following issues in development:

- the membership of the development group; e.g. a panel of experts at either a national[5] or a local level,[6]
- whether the recommendations are to be achieved with or without formal group techniques (e.g. the Delphi process or nominal group technique[7]),
- how to be explicit about the strength of the research findings on which the subsequent recommendations are based.[8-10]

Other groups who have considered these issues include the North of England Evidence Based Guideline Development Project.[11]

The Birmingham Clinical Effectiveness Group (BCEG) was established within the Department of General Practice at The University of Birmingham in August 1996 as part of a project funded by Birmingham Health Authority. The project aims to adapt existing evidence-based guidelines on common clinical conditions for local use within six inner-city practices. The NHS Executive stated that health authorities could use methods such as guidelines and clinical audit to promote and monitor changes in health care delivery.[12] This project combines the development of guidelines with local adaptation and audit of their implementation to improve clinical outcomes. Practices involved in the BCEG project were identified by the health authority as those

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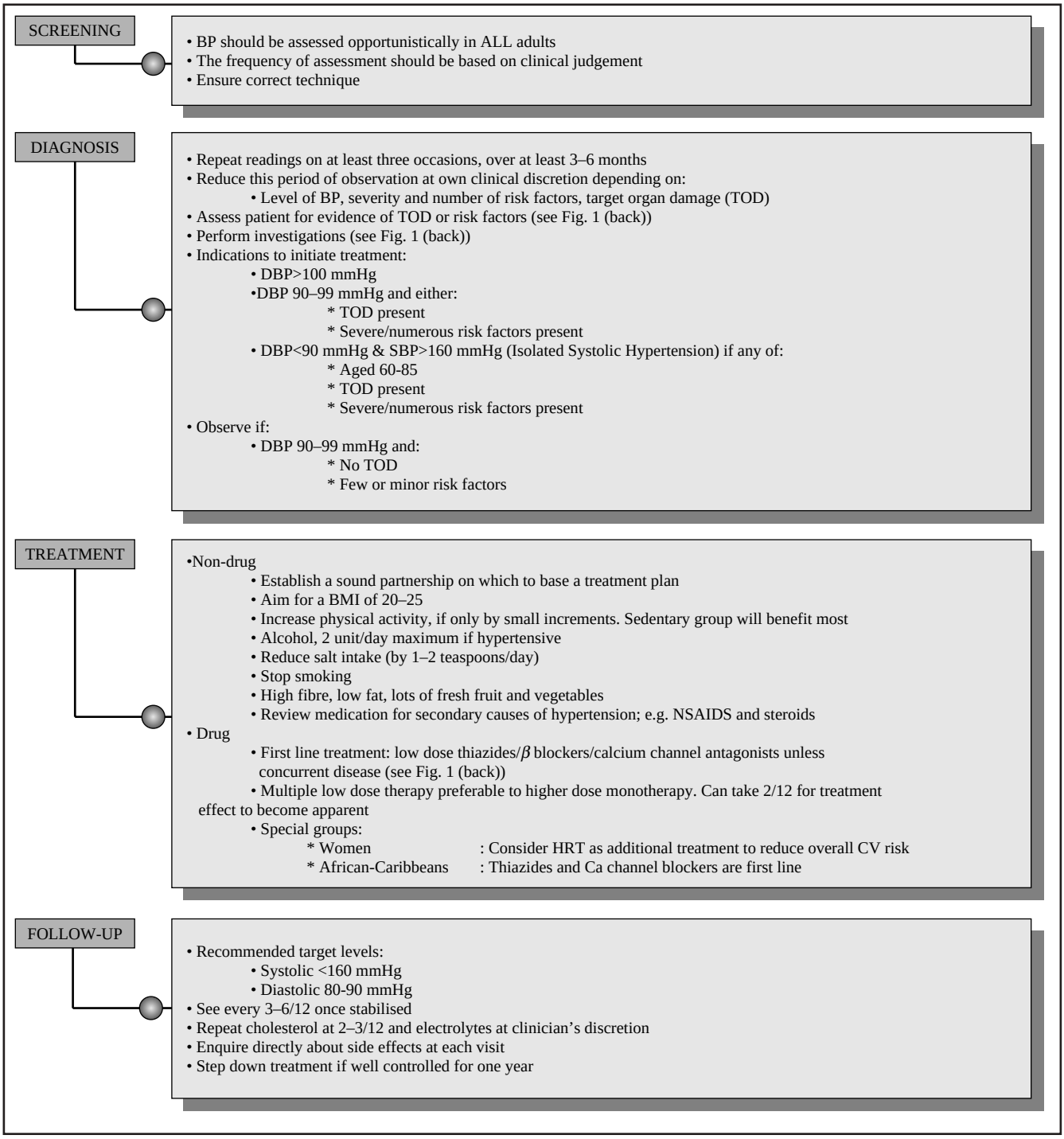

Figure 1. Guideline algorithm (front). The management of mild–moderate in primary care.

that had expressed a commitment to improve service delivery, but whose day-to-day clinical commitments in areas of high morbidity had made this difficult in the past. In each of the six practices, a clinical research fellow (CRF), who works for five sessions in the practice and five sessions in the Department of General Practice, is involved in facilitating the implementation of the guidelines.

The initial clinical area chosen was hypertension, as this was known to be an area of diverse clinical practice.[4] While it was known that guidelines already existed, it was not clear to what extent these were evidence-based, nor to what degree they were being followed within the CRF's practices. GPs often complain that the clinical areas in which they need most help are precisely the areas where there are several conflicting guidelines available.[2] This paper reports on the process used for the development of the BCEG guideline for the diagnosis and treatment of mild to moderate hypertension.

RISK FACTORS TO ASSESS

Diseases
- Dyslipidaemia
- Diabetes mellitus
- Higher BP within range
- Duration BP raised

Lifestyle
- Obesity
- Physical inactivity
- Excess alcohol intake
- Excess salt intake
- Smoking

Non-modifiable factors
- Increasing age
- Strong family history of Prem. CHD
- Male
- African-Caribbean race

INVESTIGATIONS

- Urinalysis
- Urea & creatinine
- Random serum glucose
- Random cholesterol
- ECG

TARGET ORGAN DAMAGE (TOD)

History/exam in investigative proof of:
- Ischaemic heart disease
- Heart failure
- CVA/TIA
- Renal impairment
- Peripheral vascular disease (PVD)
- Retinal damage/changes

Aim: To reduce the death rate of stroke in people aged 65-74 by at least 40% by the year 2000 (i.e. from a rate of 265 per 100 000 population in 1990 to a rate of no more than 159 per 100 000 population).

Health of the Nation targets, DoH

Table to assist choice of drugs in cases with co-existing disease

Co-existing disease	Diuretic	β Blocker	ACE Inhibitor	Ca++ Antagonist	α_1 Blocker
Diabetes	Caution	Caution	Yes	Yes	Yes
Gout	No	Yes	Yes	Yes	Yes
Dyslipidaemia	?Indapamide	Caution	Yes	Yes	Yes
IHD	Yes	Yes	Yes	Yes	Yes
Heart failure	Yes	No	Yes	Caution	Yes
Asthma	Yes	No	Yes	Yes	Yes
PVD	Yes	Caution	Caution	Yes	Yes

Table to illustrate the impact of treating hypertension and the effects of of smoking

Hypertensive patient who is also	Number needed to treat to prevent one event; i.e. death or CV morbidity per year
Aged 30–49	218
Aged 70–79	34
Smoker aged 60–79	38
Non-smoker aged 60–69	100

Figure 1. (continued). Guideline algorithm (back). The management of mild–moderate hypertension in primary care.

Method

Literature searches using the MEDLINE and BIDS databases were undertaken to find the most cited international hypertension guidelines. The four most cited guidelines identified were: WHO;[13] British Hypertension Society;[5] American Joint National Committee of Detection, Evaluation and Treatment of High Blood Pressure;[14] and the Canadian Hypertension Society Consensus Conference.[8-10] The New Zealand guideline for management of mildly raised blood pressure[15] was also included for analysis as it had been published more recently yet was already being cited widely within evidence-based medicine documents.

The information from each guideline was divided into the following areas: screening, diagnosis, investigation, treatment/management/harm, and follow-up. Information regarding these areas was extracted from each study guideline and the resulting information tabulated to facilitate direct comparison.

The BCEG guideline recommendations were developed from the information in the tables using the following criteria:

- In areas where there was complete or majority (≥3/5) agreement, the recommendation was taken as acceptable for inclusion in the new guideline.
- Where there was disagreement (≤2/5), recommendations were based on the best available evidence following a MEDLINE literature search and critical appraisal of the relevant literature.

Two pieces of information were given with each recommendation: a grade of evidence (A–D), as defined by the Canadian Hypertension Society,[8-10,16] and an 'action required' statement of either 'must', 'should', or 'could', based on the Eli-Lilly National Clinical Audit Centre Hypertension Audit criteria.[17] For areas where no research evidence was available, a 'conflict'/'no conflict' rating was given, emphasizing that the recommendation was a consensus statement based on the majority view of the original five guidelines.

The recommendations were summarized into a guideline algorithm, and a supporting document was produced containing the table and appendices covering the major areas of conflict, which were the effects of salt, alcohol, and exercise on hypertension.

The final format of both parts of the guideline was decided after consultation with the practice teams, to seek their opinions, answer any queries, and enhance a feeling of ownership. For example, after discussion, the section on drug choice in hypertension with co-existing disease was summarized more clearly,

and the algorithm was supplied in a laminated form to prevent physical deterioration. Practice staff were asked to decide how they would like to record data, and the guidelines were implemented from March 1997 using strategies appropriate to the needs of each practice and shown to be effective.[18]

Results

The guideline consisted of 42 recommendations in tabular form. This was presented as a double-sided A4 laminated sheet for day-to-day use (Figures 1 and 2), and an A4 bound supporting document containing a synthesis of the original guidelines in tabular form, a table of the resulting recommendations, and appendices of current literature reviews on areas of disagreement.

After consultation on possible methods of data collection, two practices had computer templates developed for them, three wanted Lloyd-George cards (which were designed by the BCEG and produced by the Birmingham MAAG), and the last practice opted to use existing cards.

The final BCEG guideline differed minimally from any of the original guidelines. In fact, a significant feature in comparing the five guidelines was the high level of agreement between them. Notably, all guidelines emphasized the importance of a full assessment and treatment of blood pressure in the context of overall cardiovascular risk. It is recognized as good practice in guideline development to make the quality of evidence, on which each recommendation is based, explicit.[19] This puts clinicians in a better position to make informed decisions on whether to apply particular recommendations to individual patients and may enhance a guideline's utility. Only the Canadian guidelines had used this approach, and we used the same categories.

Disscussion

The main strength of this method of guideline development may lie, not in the actual content of the resulting guideline, but in the strength of ownership felt by the CRFs and the practices following its development. This in itself has ensured enthusiastic use of the guidelines by the CRFs and may have encouraged use in the practices. Strategies employed for implementation have included: holding meetings (professional peer review, organized group meetings within practices, and opportunistic one-to-one meetings), use of the specifically developed computer templates and cards (patient-specific reminders), and audit and feedback of results.[18]

While it is likely to be impossible for GPs working outside an academic environment to use the full guideline development process, the techniques used, such as comparing existing guidelines for areas of agreement, could provide a framework for practitioners to adapt national and international guidelines for use at a local level. This process could be undertaken within a primary health care team to provide a sense of involvement, by the adaptation of the guideline local to their practice, without having to undertake the intensive and time-consuming tasks of searching and appraising literature.

Other methods of local development have been reported; for example, using focus groups.[20] This was thought to be an effective way of developing consensus guidelines and found to be beneficial in other ways; for example, by reducing professional isolation and encouraging peer review. If guidelines are to be developed in this way, the procedures used must be explicit, and there must be multidisciplinary input, otherwise the guidelines cannot be externally validated and their status will not be clear.[21,22] An alternative model of local adaptation of nationally developed guidelines has been suggested,[22] using multidisciplinary groups, as a way of combining the positive attributes of both levels of development.

We would commend the process of synthesis of existing guidelines used in the current study, with only modest further research into areas of disagreement, for the development of locally produced guidelines. This method will be particularly useful in clinical areas where there are existing evidence-based guidelines.

One measure of the perceived usefulness of the BCEG hypertension guidelines has been their adoption by Birmingham MAAG and the Birmingham Hypertension Society. It will be necessary, however, to ensure review of the guidelines on a regular basis in order to ensure their continuing accuracy and relevance.

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