The use of clinical guidelines for asthma, diabetes, and hypertension in primary health care

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Abstract

Objective. To investigate which clinical guidelines primary health care staff refer to regarding asthma, diabetes, and hypertension, the number of existing guidelines, and the organizational level at which they were drawn up, and whether there are different guidelines for the same disease, either in different primary health care centres or within individual centres.

Design. The study is descriptive. Data were obtained by telephone interviews and by procuring clinical guidelines regarding asthma, diabetes, and hypertension from primary health care centres.

Setting. Forty-one primary health care centres in one county in southeastern Sweden.

Study participants. General practitioners and registered nurses in primary health care.

Results. The telephone interviews showed that the staff referred to several guidelines covering each of the three diseases and these guidelines had been drawn up at five different organizational levels. The length of the clinical guidelines varied from 1 to 257 pages, and the number of guidelines for each disease ranged between 1 and 5.

Conclusion. It was found that there were several documents covering the same disease that primary care staff referred to as ‘guidelines’, and that the length of the guidelines varied and they had been drawn up at different levels. A finding with possible serious consequences was that an old version of an asthma guideline was used in all primary health care centres in the study.

Keywords: asthma, clinical guidelines, diabetes, hypertension, primary health care
care centre. In Sweden, the director is usually a general practitioner, and this person has responsibility for the organization, as well as economic and medical issues at the centre. All 42 directors in the county received the enquiry, and only one declined to participate. Thereafter, a registered nurse telephoned and asked whether the centre had specialized clinics for patients with asthma, diabetes, and hypertension. During the past 20 years, specialized clinics for the above diseases have been introduced into primary health care in Sweden. The objective is to increase patients’ knowledge about their disease and its treatment, and to encourage them to observe their symptoms, record the effect of the treatment, and take responsibility for their medication. Nurses with special training are in charge of these clinics, under the supervision of the local general practitioner. With the exception of emergency visits and yearly routine follow-up visits to their physician, all patient visits take place in these specialized clinics.

Following agreement to participate in the study, telephone interviews were carried out with the staff who were responsible for the specialized clinics. The interviewer was a registered nurse with training in interview techniques, and she used a structured interview form. During this phase, four of the specialized clinics dropped out of the study: three diabetes clinics and one hypertension clinic.

In the second part of the study, three primary health care centres were selected, designated centres A, B, and C in this paper. These centres were chosen based on their geographical location: two of them were situated in two different urban areas (A, B) and one in a rural area (C).

Permission to carry out this part of the study was obtained from the director of each of the participating centres. The staff at each centre were informed about the study at their weekly staff meeting, and those not present at the meeting were informed individually at a later time.

All documents the staff referred to as being used as clinical guidelines for the diseases asthma, diabetes, and hypertension were procured. Each guideline that was identified was designated a number. If identical guidelines were used at different centres, they received the same number.

In the present study, clinical guidelines are defined as written documents that staff members say they refer to in their clinical practice decisions. The procured guidelines were classified into five different levels, according to where they had been drawn up. International, developed through an international collaboration: national, developed by a Swedish authority or organization; county, developed by one of Sweden’s county councils; local, developed by a primary health care centre; internal, produced by the centre itself.

Results

One hundred and fifteen of 138 (83%) registered nurses and 33 of 57 (58%) general practitioners were interviewed by telephone. It was found that 35 (85%) centres had a specialized clinic for asthma, all 41 had a specialized clinic for diabetes, and 18 (44%) had a specialized clinic for hypertension.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Asthma</th>
<th>Diabetes</th>
<th>Hypertension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>(n = 35)</td>
<td>(n = 38)</td>
<td>(n = 17)</td>
</tr>
<tr>
<td>International</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>National</td>
<td>5</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>County</td>
<td>35</td>
<td>38</td>
<td>5</td>
</tr>
<tr>
<td>Local</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Internal</td>
<td>5</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>67</td>
<td>26</td>
</tr>
</tbody>
</table>

Numbers of participating primary health care centres are in parentheses.

The general practitioners and registered nurses in the centres with a specialized clinic for asthma and/or diabetes referred to between one and three clinical guidelines per disease. In one hypertension clinic the staff did not refer to any guideline. All centres with specialized clinics for asthma and diabetes referred to the county council’s own clinical guidelines. At five centres with a specialized clinic for hypertension the staff referred to the county council’s guidelines. Within the centres, the staff referred to guidelines developed at five different levels (Table 1).

We identified 15 different clinical guidelines in the three centres that the staff reported referring to in their clinical practice. The length of the guidelines varied from one page (four guidelines, numbers 3, 6, 10, 13; Table 2) to 257 pages (one guideline, number 7; Table 2). Differences between the centres were apparent regarding the clinical guidelines used on the one hand, and the number of guidelines for the different diseases on the other. For asthma, each centre referred to two clinical guidelines, one of which was identical at the different centres. The majority of guidelines used were for diabetes (Table 2). In Centre A, five clinical guidelines for diabetes were identified, in Centre B there were two, and in Centre C there were four guidelines for the same disease, one of which was identical at the three centres.

Guidelines for asthma

The county council’s clinical guideline was used at all three centres; this was an old version that also referred to chronic obstructive pulmonary disease (county level, guideline number 8). One of the centres, Centre A, also referred to the most recently produced guideline version from the county council (county level, guideline number 1), and Centre C referred to a clinical guideline that had been developed at their own centre (internal level, guideline number 12). Centre B also referred to a patient education document for adults published by a pharmaceutical organization (national level, guideline number 9) (Table 2).

Guidelines for diabetes

The county council’s clinical guideline was used at all three centres (county level, guideline number 2) and was the latest published version. Staff at Centre A also referred to a guideline
that was developed at their own centre (internal level, guideline number 3), as well as to three international consensus documents (international level, guidelines number 4, 5, and 6). Centres B and C used a clinical guideline that was developed by another primary health care centre in the county council (local level, guideline number 10), and Centre C also had two guidelines of its own (internal level, guidelines number 13 and 14) (Table 2).

**Guidelines for hypertension**

An extensive clinical guideline was used by centres A and B; this had been published by a pharmaceutical organization (national level, guideline number 7). Centre B also used part of a handbook developed at national level (guideline number 11). Centre C referred to a clinical guideline based on a lecture about hypertension (local level, guideline number 15) (Table 2).

**Discussion**

Based on the results of this study it is clear that there are several clinical guidelines in the county council investigated that were developed at different organizational levels. There is no reason to believe that this condition is unique for this particular county council; the situation is probably similar in a number of Swedish counties. In accordance with the definition of guideline presented earlier, this study identified 15 clinical guidelines for the diseases in question at three centres. These identified clinical guidelines were written recommendations that the staff reported using, or that were accessible for them to use, when making decisions about care in clinical practice. Taking into consideration that these 15 clinical guidelines concern three common diseases, we are of the opinion that this large number brings several questions to the fore: (i) What standards should be before a guideline is used in clinical practice? (ii) Should several different guidelines regarding the same disease be allowed in clinical practice? (iii) Should individual centres be allowed to develop their own guidelines? (iv) Should the county council control the development of clinical guidelines?

Our findings are not unique; in a study carried out in the UK, 45 different guidelines for depression were identified. The authors concluded that at the local level staff should focus on dissemination and implementation strategies rather than developing their own guidelines [8]. In our study it was common for the centres to develop their own guidelines or to use guidelines developed by other centres. This can have serious consequences due to the use of methodology that may be of poor quality, as pointed out by Hasenfeld et al. [10].

The observation that an old version of the county council’s asthma guideline was found at all three centres is remarkable. A routine is needed that will ensure that outdated guidelines are removed before new ones are implemented. Only the most recent version should be accessible in clinical practice. Shekelle et al. [11] investigated the issue of how often guidelines ought to be updated and concluded that updates should be performed at 3-year intervals. However, our study showed that even though there was an updated version of a guideline, it was not implemented in all centres. These results elucidate difficulties in the implementation process.

Nearly half of the identified clinical guidelines comprised a maximum of only two pages, and classifying these documents as guidelines is questionable according to several authors [12–14]. A conceivable limitation in the present study could be the definition of ‘clinical guideline’ that was used, i.e. all written documents the staff says they refer to in their clinical practice decisions. In an earlier study, Shaneyfelt et al. [15] concluded that quality is based on the extent of the guidelines. However, our interest in this phase was not in judging the quality of the clinical guidelines [16,17]. Using our definition, an important problem was elucidated. There were several documents that staff referred to as ‘clinical guidelines’. A question of current interest is how staff choose which guideline to follow, or do they mix them? And further, what are the consequences regarding the quality of treatment and care?

One limitation of the study could be the drop-out for the interviews, which was 17% for registered nurses and 42% for general practitioners. The latter rate is high, possibly as a consequence of the fact that not all the centres had a general practitioner, responsible for the specialized clinics, who agreed to participate in this part of the study. However, the

**Table 2** Identified and procured guidelines for asthma, diabetes, and hypertension (*n* = 15), at three primary health care centres

<table>
<thead>
<tr>
<th>Primary health care centre</th>
<th>Disease</th>
<th>Guideline number</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>Asthma</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diabetes</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Hypertension</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Asthma</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diabetes</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Hypertension</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Asthma</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diabetes</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Hypertension</td>
<td>X</td>
</tr>
</tbody>
</table>

Guidelines for asthma, diabetes, and hypertension

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fact that the staff who were in charge of the specialized clinics were interviewed gives the study validity and reliability.

In the second part of the study, three centres were included, and it should be noted that these were not randomly selected. Although the results can therefore not be generalized, they are nevertheless of interest. It should also be mentioned that the collection procedure itself could have weaknesses. For example, one possible source of error could be that we procured clinical guideline material that was chosen by the staff themselves, and this could have resulted in a selection of identified guidelines. Appleton and Cowley [18] made this observation earlier in a study in which they also pointed out other risks in collecting existing clinical guidelines. For example, uncertainty as to whether the whole or only parts of the guidelines were obtained, or if there were errors in the material. This is essential when the aim is to judge the quality of different clinical guidelines, but this was not our objective here.

The present study is a first attempt to look at this issue in Sweden. Further research is needed.

References


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