Reviewer's report

Title: Type II diabetics in primary care: profiles of healthcare utilisation

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Reviewer: Rolf Wahlstrom

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Type II diabetics in primary care: profiles of healthcare utilisation

Comments on submitted manuscript (12-11-02)

General

The authors aim to describe profiles of health care utilisation by patients with type 2 diabetes, in order to inform decisions on disease management programs and modes of remuneration for primary care practices. They utilise a very useful data source with many advantages, but also obvious limits.

Clearly, medical management, quality improvement and cost containment is on the top agenda worldwide. The general aim is therefore very relevant, although there are some aspects of these quite problematic issues that are not brought up in the article and that need to be further elucidated in order to put this study in the right context and draw the relevant conclusions.

The main aspect that need further elaboration is the old question of demand and need. At the end of the background section the authors define the knowledge gap as follows: “... we do not know whether diabetes patients with a high healthcare need related to diabetes also have a higher need for healthcare in general and, if so, whether this is equally true for all diabetes patients.” Directly after this the authors state: “The objective of this study was therefore to empirically develop profiles of healthcare use of type II diabetics based on both the total healthcare utilisation and diabetes-related healthcare utilisation in primary care;”. The obvious problem here is that healthcare utilisation is not equal to need of healthcare. It is too well known that part of health needs do not result in provision of healthcare and some of the provided healthcare is rather a result of demand than real need.

Therefore the authors need to provide a much stronger argument for the assumption that the kind of profiles they aim to describe can be used for the purpose they suggest.

Major compulsory revisions

Abstract

Need to be revised after revisions in the main text as suggested above and below.

Background
Would be useful to include more from the literature on remuneration and DMP systems in relation to measurements of utilisation and outcome of diabetes care.

Methods

Study design:
The database (LINH) covers 90 practices, but only 48 practices participate in the study. More detailed explanation of reasons for exclusion is needed. It should also be explained why the authors choose to accept the underrepresentation of single-handed practices.

Patient and disease characteristics:
Definition of diabetes-related comorbidity: It is not clear to me why K99.06 (peripheral diabetic angiopathy) is not mentioned although it appears in Additional file 1. Contrarily, S97 (diabetic foot) does not appear in Additional file 1.

Statistical analyses: I'm not familiar with LCA (other than reading about it), but the presentation of the different approaches and steps seems adequate. If there is further need to fully assess the accuracy of the analyses, a statistician with experience of these methods should be consulted.

Results

The six profiles seem to be acceptably coherent just looking at the different estimate levels and given the mostly quite narrow CIs. However, the labelling can be questioned as well as the confounding factors.

Profiles of diabetes-related primary healthcare utilisation:
Table 1: In my interpretation, the most striking difference between the profiles is the very few contacts with primary care nurses in profile 2. The next most striking difference is the higher frequency of home visits by both doctors and nurses in profile 1, while the higher frequency of contacts with primary care nurses in profile 3 relate to contacts in the surgery. For me another way of labelling the profiles would come closer to the findings, for example: Profile 1 (Profile 2 in the article) – low utilisation (all contacts = 2.1), only GP in surgery; Profile 2 (Profile 3 in the article) – high utilisation (all contacts = 6.8), both GP and nurse in surgery; Profile 3 (Profile 1 in the article) – high utilisation (all contacts = 7.6), both GP and nurse and both in surgery and home visits. Labelling the profiles in this way also corresponds more closely to the way the profiles are labelled for total healthcare utilisation.

Specific comment: It is incorrect to state that the second profile was characterised by “a relatively low number of consultations with GPs in the surgery” as it is shown in Table 1 that this profile actually had the highest number of GP consultations in surgery (contacts and telephone consultations) – 1.93 vs. 1.40 in profile 1 and 1.89 in profile 3.

Table 2 and 3: The summary of results as presented seems generally accurate, although it is surprising that there is a higher OR for oral medication only in profile 1 when compared to profile 3 (Table 3), although the descriptive statistics
show almost the same frequency (61.3 and 61.6%, respectively). I understand that this is related to differences in frequency of no medication, but it still conveys a message that is difficult to interpret.

Specific comment: second paragraph, second sentence: change to “… of both oral medication only and in combination with insulin …”.

Profiles of total primary healthcare utilisation:

The labelling would be more informative with slight changes: Profile 1 – low utilisation (all contacts = 5.4), only GP in surgery; Profile 2 – medium-high utilisation (all contacts = 9.7), both GP and nurse in surgery; Profile 3 – high utilisation (all contacts = 17.5), particularly GP in surgery and home visits by both GP and nurse, high prescription rate.

Comparing membership of profiles …:

If the diabetes-related primary care profiles were relabelled as suggested above, this comparison would be more straightforward, although Table 4 would of course be the same.

Specific comment: In the last sentence of this section the authors announce comparison of all three diabetes-related profiles with the total high-utilisation profile, but they only mention two of them (profile 1 and 3).

Discussion

Profiles of diabetes-related primary care utilisation:

This whole section could be condensed and be less speculative.

1st paragraph: The expression “from the literature” is not adequate as the reference is a report from a government agency (RIVM). Younger patients as a suggested explanation for low utilisation (profile 2) can only be a minor reason as the majority of patients in profile 2 and 3 are still 55 years of age or older (78.1 and 82.5%, respectively).

2nd paragraph: The final comment on impact of availability of primary care nurses should be further elaborated and the alternative analyses mentioned in the section Strengths and limitations should be presented in the Results. The reader needs to see more detailed information whether this contextual factor does or does not have an explanatory property.

Specific comment, 3rd sentence: it is stated that “… the patients … report the lowest prevalence …” What is meant by ‘report’ here. Isn’t data source what the GP has entered into the medical record and not something ‘reported’ by the patient?

3rd paragraph: The comparisons with findings in Ref #10 seem problematic. As far as I understand, the reference article shows total health care utilisation, which should be more clearly stated in the text. The authors’ final conclusion about support for their own findings is incomprehensible to me. Which “two much smaller groups of relatively high healthcare utilisation” do the authors refer to? And what is meant by “presence or absence of home visits”? In Ref #10, there is no group with total absence (lowest: 7%) or full presence (highest: 31%) of home
care. There were other more striking differences like contacts with secondary care (0-100%) and hospital stay (3-68%).

Determinants of diabetes-related primary healthcare profile membership:

The comparison with findings in Ref #10 is a bit problematic also here. Apart from diabetes type, El Fakiri et al found an association between profiles of higher utilisation and patients’ expressed wellbeing, which is closer to a need-based utilisation.

The discussion in the 2nd paragraph is important, but should better be moved to a separate section on implications of the findings. There it could be further discussed to what extent the findings can at all be helpful for DMP development and remuneration models. Can characterisation of a patient to a certain profile at all be useful? How can remuneration be modified based on the “strongest indicators”, namely age and type of medication? Could it be useful to relate to the well-known framework of pre-disposing, enabling and need factors, as was done in Ref #10?

Strengths and limitations:

The authors adequately mention limitations in the information about exact content of the contacts and state that it is “hard to make inferences about the effect … on patient outcomes”. I would prefer the word ‘impossible’. See also comment above on the need of separate analyses for practices with or without a primary care nurse.

Conclusions:

The second sentence points to the underlying problem with the whole approach. It is not possible to explain the determinants of the profiles by patient and disease characteristics only, as commented above. Therefore, I don’t think that the findings pose more difficulties for future development of DMPs than were there already before the study.

The last sentence is not semantically correct. I think the authors intend to state that ‘This fact should be taken into account in the remuneration systems of DMPs.’ However, to make this conclusion, more should have been discussed about this issue as mentioned above.

Acknowledgements

How was the study financed?

Minor essential revisions

Title:

It is generally not accepted as proper to use the expression ‘diabetics’. Should be changed to ‘Patients with type 2 diabetes’. This way of writing has correctly been used in many parts of the text, but with several exceptions.

Type of study should be made clear in the title according to the journal’s guidelines.

Title page:
VU should be explained.
E-mail addresses should be added to all authors according to the journal’s guidelines.

Background:
First section: The last sentence mentions “current literature”. However one of the articles (Lemmens et al 2005) is a review of studies published up to 2001 and does not inform about current research foci. It is further not clear what the authors mean by ‘refining these issues’. Which issues more specifically and how do they relate to the focus of the present study?
Second section: The first sentence states that ‘Research showed …”, but the reference is to an analytical position paper.

Tables:
Should be numbered with Arabic numerals according to the journal’s guidelines.

References:
The authors have not followed the journal’s guidelines in the following aspects:
-- Journal names should be abbreviated;
-- Volume numbers should be in bold;
-- Printed books should be defined in the following order: City of publication: Publisher; Year (#14,15,16,17,21,23).
Additionally there are several other errors:
Missing information: #6 (Pubmed adds publication date and ‘Epub ahead of print’)
Author name misspelt: #6 (second author should also be Lemmens)
Incorrectly capitalised words in title: #1,2,3,26
Non-capitalisation of name of organisation: #14 (both ICPC and WONCA; also wrong spelling of Organization)
Non-capitalised abbreviated words in journal names: #9,10
Full stops in journal names: #11,12
Comma after journal name: #25
Unexplained abbreviations: #14,23
Not fully translated Dutch titles: #23 (compare #14,17)
Reference number in italics: #12

Spelling and punctuation:
There are several examples of extra space between words.
Spelling should be consistent (Either British or US English). The word ‘utilisation’ is spelt both with an s and with a z, even in the same sentence (see the last sentence of the whole manuscript).
Abstract: Add full stop after the last sentence in Background.

Background: second section, next to last sentence: Change first words to: Sixty percent of ...

Discussion; Profiles of diabetes-related primary care utilisation, third paragraph, 4th sentence: full stop missing.

Discussion; Association diabetes-related and total primary healthcare utilisation, title: add ‘between’ after “Association”;
- same section, 3rd sentence: write ‘previous’ instead of ‘earlier’; 5th section: add ‘utilisation’ after “total primary healthcare”; last sentence: insert a comma after comorbidity and delete brackets as this information is essential.

Authors’ contributions: Third sentence: should be ‘and’ between CD and TH.

Acknowledgements: Should be full stop after the sentence.

Tables: No capital T in title of Table 1.

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Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.