Dear Editor,

We send you our revised manuscript that we have amended according to the comments of the two reviewers. In this cover letter (please see pages 2-8) we give a point-by-point response to the concerns.

We look forward to hearing from you.

On behalf of the research group
Yours sincerely,

Klaus Eichler

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Author's responses to reviewers' comments for BMC Family Practice (05oct2006)

Re: Barriers to apply cardiovascular prediction rules in primary care: a postal survey

Reviewer Leif Erhardt:

Reviewer LE:

1. The paper uses a preset questionnaire, which has not been tested for internal consistency and validity. This needs to be addressed and discussed.

Authors reply: We agree with the reviewer. Our questionnaire was not formally tested for internal consistency and validity. However, we judge the face validity of our instrument as adequate. We choose a thorough, stepwise development process (literature search; interactive workshop; focus group discussion; pilot testing) that included experts from the health care system and experienced general practitioners. To
address the lack of formal testing for internal consistency and validity we have amended the Discussion section accordingly."Our questionnaire was not formally tested for internal consistency and validity. However, we judge the face validity of our instrument as adequate. We choose a thorough, stepwise development process (literature search; interactive workshop; focus group discussion; pilot testing) that included experts from the health care system and experienced general practitioners."(See page 9, para 2)

Reviewer LE (continued):
2. The risk algorithms used were varying (5 different) despite the setting of a small European country. Why and how could that affect the outcome? SCORE shows CV death and other (risk algorithms?; the author) CHD fatal and non-fatal events etc please discuss! In clinical practice doctors feel that they do not need risk assessment tools since they (rightly) can find very low-risk and very high-risk individuals without them. The problem is in the middle range with small changes of several risk variables. The authors do not discuss this.

Authors reply: We judge the diversity of applied prediction rules among those respondents who use them "often" as a sign that it is unclear which prediction rule is to be used at all. We have amended the Discussion section accordingly."In addition, the application of more than five prediction rules with partly diverse outcomes may reflect a general uncertainty even among "often-users" which prediction rule to apply for daily practice."(See page 10, para 1) We have added the different outcomes for the mentioned prediction rules in Table 2. (See page 20, Table 2) We agree with the reviewer, that risk estimation is specifically difficult if several risk factors are mildly or moderately elevated. We have amended the Discussion section accordingly."Risk estimation without prediction rules may be specifically difficult if several risk factors are mildly or moderately elevated."(See page 10, para 2)

Reviewer LE (continued):
3. By giving predefined questions rather than collecting free and open questions we may introduce bias. Also doctors give their perceptions by answering these questions, which may be different from reality. Was there any way to control the validity of the answers?
Authors reply: We have controlled the validity of the answers using two approaches: (1) During the pilot testing we interviewed the participating physicians about their understanding and perceptions of the content of the questions. Unclear wording was amended accordingly and integrated in the final form of the questionnaire. (2) We have used one open-ended question in our questionnaire ("Are there other reasons why you never or rarely use prediction rules? If yes, please write these reasons down in the space below."). This open-ended question did not reveal different reasons for "rarely" or "never" use of prediction rules compared to the predefined categories. (2): We have added this information to the Methods section (Questionnaire development) accordingly:" We interviewed the participating physicians about their understanding and perceptions of the content of the questionnaire. Unclear wording was amended accordingly and integrated in the final form of the questionnaire."(See page 5, para 2) (2): We have added this information to the Results section:"The open-ended question for other reasons did not reveal different information compared to the predefined categories."(See page 8, para 2) (2): We also have amended the Appendix (Questionnaire) accordingly and added the open-ended question:"Are there other reasons why you never or rarely use prediction rules? If yes, please write these reasons down in the space below."(See page 24; 4)

Reviewer Signe Flottorp:
Reviewer SF:
1. In general, a weakness of surveys with questionnaires is that the responses are limited to the pre-specified categories, as long as there are no open-ended questions. In addition the interpretation of the response alternatives may of course vary among respondents. Although the questionnaire used in this study was developed in a process involving both experts and practitioners, these methodological problems using questionnaires in postal survey could be mentioned/assessed.

Authors reply: We agree with the reviewer. Please see our amendments above.

Reviewer SF (continued)
2. In the Discussion, page 9 3 paragraph it is stated that ".aspects of environment and society (like
Authors reply: In the Discussion (page 9, para 3) we have quoted some terms from the cited references (like "marketing efforts of pharmaceutical industry"). Neither do these terms directly derive from our Results section or figure 2 nor are they quoted from our questionnaire. To resolve this misunderstanding we have amended the Discussion section accordingly: “Our data fit well with recent qualitative research identifying obstacles to apply cardiovascular risk tables in routine general practice (Ref 7, 9). In those studies barriers related to the instrument (like distrust in the validity of prediction rules), to aspects of environment and society (like marketing efforts of pharmaceutical industry) and to practice routine (like management of single risk factors) were some of the relevant factors. These obstacles were among the most frequent reasons for non-application in our study.”(See page 10, para 1)

Reviewer SF (continued):
3. The rate of "rarely" or "never" users of CV prediction rules is beyond the results of recent cited surveys, but fits well with the results of a postal survey among Norwegian GPs, where 24% said they estimated CV risk when antihypertensive or cholesterol-lowering treatment was being considered. (Fretheim A, Havelsrud K, Flottorp S, Oxman AD. Pavirker takster og refusjonsregler praksis? [Do fees and regulations for reimbursement influence practice?]. Tidsskr Nor Laegeforen 2003; 123: 795-6)
Authors reply: This reference underlines that our findings are not limited to a region with intermediate cardiovascular risk in Central Europe. We have added this piece of information to the Discussion section: "The rate of "rarely"- or "never"-users was 74%, which is beyond the results of about 50% reported in recent surveys (Ref 4, 5) but fits well with the results of a postal survey among Norwegian general practitioners (Ref 10)." (See page 10, para 1)

Reviewer SF (continued):
4. In the last paragraph in the Discussion it is stated that specific tailored interventions are under evaluation in controlled trials (with ref. to Fretheim et al). The results of Fretheim's study are now published. Fretheim et al found that there was no statistically significant difference between the intervention and control group with regards to how often the doctors reported having done formal risk assessment (17.2 % vs. 14.6 %; p=0.90)(Fretheim, A, Oxman A D, Havelsrud K, Treweek S, Kristoffersen DT, Bjorndal A.: Rational Prescribing in Primary Care (RaPP): A Cluster Randomized Trial of a Tailored Intervention. PloS Med 2006; 3(6): e134.)
Authors reply: We have updated the Discussion section accordingly: “Specific tailored interventions to overcome barriers (like educational outreach visits with audit and feedback as well as computerised reminders linked to the medical record system) have been evaluated in a recent controlled trial (Ref 18). The intervention had no or little impact on the frequency of formal risk assessment.” (See page 12, para 1)

Additional revisions made by the authors:
1. We have updated the reference “Eichler K et. al.: [Cardiovascular prediction rules: Problems for application in practice. - Results of a workshop.] manuscript submitted 2006)”. The manuscript is now in press and we have cited it accordingly. (See page 5, para 1, Ref 8 and References, Ref 8)
2. We have introduced two additional subheadings in the Discussion section to improve orientation for the reader.”Validity of the findings”(See page 9, before para 2) "Estimation of cardiovascular risk”(See page 10, before para 2)