Author's response to reviews

Title: An electronic clinical trial tool to recruit large patient samples and assess selection bias in general practice research

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Authors’ comments to the reviewers

Dear Editor,

While one of the reviewers completely agreed with our revised version, Dr. Peter Embi has still two major concerns, which he now presented in more detail in his review. Although his point of view and his suggestions are in some contrast to our understanding, we have tried to apply his comments to our paper. Therefore, we had to re-write extensive parts of the paper. To make the reviewers’ and editors’ work easier, we have marked all passages, which are either new or have been moved within the text, in bold type.

The most important change of the present version is that we have clarified the type of study, according to Dr. Embi’s suggestions. As can be seen in the Introduction (page 4, lines 4ff) and in the Methods section (page 8, lines 13ff), we made clear that (1) the intervention was our CTA-type recruitment tool and its implementation in the general practice setting, (2) the research subjects were the practice personnel (doctors and nurses) and (3) the outcomes of our approach have been measured as the “recruitment rates” and the “selection bias” produced by the practice personnel. That is to say, we no longer analyse recruitment rates and the detection of selection bias as an advantage of the recruitment software, but as the performance of the practice personnel. We defined now more precisely the measures (outcomes) against we evaluated their performance (page 8, lines 16ff).

Throughout the revision of this paper, it became more and more clear to the authors that the word “recruitment” needed to be defined more precisely. In the literature, recruitment is often restricted to the identification and referral of patients to an external centre for clinical studies. In our case, the recruitment process encompasses the inclusion, exclusion, contact and enrolment of patients for the osteoporosis study. This definition is made clear in the Methods section (page 6, line 22 ff) and includes a new table (Table 1).

In the Results section, we now look more closely at the recruitment rates achieved by individual practices in addition to viewing the recruitment process in the entire sample of practices as a whole (our approach in the previous version). We present this data in a completely new table (Table 2). Here, data from the individual practices is presented, including the number of CTA-identified patients, the number of study enrollees, the according recruitment rates and the percentage of the target (n=200 enrollees per practice), which the practice personnel
in each practice was able to achieve. The text corresponding to this new table can be found on page 10, lines 6 ff.

In contrast to our former paper, we have become much more aware that a standard target of 200 patients per practice is not appropriate for this kind of study. Due to the very large discrepancy in the number of CTA-identified patients (range 162 – 1,316), some practices would have been able to meet the target of 200 enrollees by surveying 15% of the CTA-identified patients whereas other practices could not have met the target even if they had enrolled 100% of the CTA-identified patients.

The goal of the osteoporosis study was to recruit and survey a representative sample (regardless of age, sex, weight, or health risks) of older women and men about their osteoporosis risks. A low recruitment rate in individual practices (8 practices recruited less than 5%; 8 practices recruited between 5 - 15%) may be a strong indicator of selection bias. It seems unlikely that a very small sample of patients can really be representative of all older patients visiting their general practitioner. Rather, the very low enrolment rate (in spite of an ample number of possible enrollees in most practices) may be a sign that the practice staff selected patients according to criteria outside the study protocol; i.e. patients who are intelligent or easygoing and friendly, patients who visit the practice during “slow” hours (i.e. disease management afternoons) or patients for whom osteoporosis is an important issue. We discuss this now in the Discussion section on page 14, lines 1ff.

Although it was possible to detect and describe an age and gender selection bias in our study, we now conclude that a shorter feedback loop between the study centre and the participating practices would make it possible to counteract this selection bias by changing the recruitment strategy. This is discussed on page 14, lines 21ff.

At this point, we should frankly discuss that our study is only an observational study without a control group. Although we are convinced that the recruitment rates realized in our study are—if not optimal—at least acceptable, we can confirm this statement only by historical comparisons. This is discussed as a limitation in the Discussion section (page 11, lines 33ff).

The second issue Dr. Embi raised was the “intention to treat” analysis. Indeed, since the CTA-identification in two practices did not function for more than half of the study period, we did not have the data available to calculate the recruitment rates or the selection bias. Therefore, we still prefer to exclude these two practices from the analysis (described on page 9, lines 10ff).