Reviewer's report

Title: Screening for type 2 diabetes in a high-risk population: study design and feasibility results of a population-based randomized controlled trial

Version: 2  Date: 15 February 2012

Reviewer: Justin Basile Echouffo-Tcheugui

Reviewer's report:

- Major Compulsory Revisions

1- General comments

a. The authors might want to consider writing two different small but clear papers, as the current presentation is very confusing. One on the trial methods, and another on the uptake and yield of screening. Otherwise, if they choose to stick to one paper, they should then make sure that the presentation is done in a manner that allows understanding.

2- Methods

a. How were the participants contacted? How were the eligible individual identified? This should be stated early enough in this section to allow the reader to clearly follow.

b. No detail is given by the authors on randomization. How was this done? Was it a simple or a stratified randomization, individual or group randomization, one to one or a different type of randomization? Was there any blinding? What steps were taken by the authors to prevent or minimize contamination?

c. Which biological method was used to measure fasting plasma glucose?

d. Regarding the intervention, how were the screen-detected people group treated or managed? Are they being managed according to the national guidelines in the Netherlands? This should be clearly stated.

e. The sample size calculation is unclear. Is the expected rate of cardiovascular derived from the hospital registry for non-fatal events, fatal events or both? The authors talk about a 20% reduction. This is a reduction in what? Non –fatal events? cardiovascular mortality? A composite outcome? This should be clarified. What is the basis of the estimate of the contamination rate?

f. The presentation about the first year is very confusing; this can be done in a much better way. The source of participants to this study should have been mentioned at the beginning of this methods section, not after having presented everything else. This section should be re-written.

g. Please clearly state what the questionnaire was all about. What information
were the authors trying to obtain with the questionnaire?

h. The authors should make it crystal clear to the reader that participants were either directly invited or invited only after having given their consent. This is far from being clear in the current presentation.

3- Results

a. The authors mention the costs of various screening strategies in the results, but nowhere in the methods section did they talk about costs as an outcome of this study.

b. As this seems to be a paper on the uptake and yield of screening, can the authors investigate the determinant of attendance more analytically, using regression analysis for example?

c. Why merging the results and the discussion sections? These should be separate.

4- Discussion

a. Can the authors clearly justify their approach to screening? There several risk scores developed and validated on the Dutch population that could have achieved better results. Why not using them, especially as they are questionnaire based?

b. The power calculation was adjusted based on the results of the feasibility phase, but the authors do not tell us how?

- Minor Essential Revisions

1- Abstract

a. In the results section of the abstract, first sentence: which respondents are the authors talking about? Respondents to what?

b. The authors state that “6% of people had hyperglycemia”. Is this just diabetes or is it any form of hyperglycemia (impaired fasting glycemia included)? This figure does not square with figures included in Table 2

c. In the conclusion section, the authors talk about “systematic screening for type 2 diabetes”. What does systematic screening mean? Does is mean universal or targeted or population-based?

2- Introduction

a. The authors should not say “Screening for diabetes fulfills many of the Wilson & Junger criteria”. It is diabetes that fulfills the criteria. Furthermore, the authors should clarify what these criteria are used for; many readers will not be familiar with these.
b. There are much better references for substantiating the fact that the effectiveness of screening has not been established than the ones used by the authors (references 5 to 8). Please see an example of a reference below:

3- Methods
a. Is this screening program about diabetes only or also about cardiovascular disease? Is there evidence on the effectiveness of screening for cardiovascular disease using the SCORE risk tools? Can the authors make it clear for the readers what the components of the SCORE model are (i.e. the various risk factors used for calculating the disease probability)?

4- Results
a. Table 2: what was the proportion of people in the screening group with a SCORE score greater or equal to 5%?

Level of interest: An article of importance in its field

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

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests