

## PROSPERO International prospective register of systematic reviews

---

### **Evidence review of the effectiveness and cost effectiveness of service models or structures aiming to manage tuberculosis in hard-to-reach groups, including a qualitative description of these service models or structures**

*Charlotte Heuvelings, Sophia de Vries, Patrick Greve, Benjamin Jelle Visser, Saskia Janssen, Sabine Belard, Lianne Cremers, Rene Spijker, Martin Grobusch*

---

#### **Citation**

Charlotte Heuvelings, Sophia de Vries, Patrick Greve, Benjamin Jelle Visser, Saskia Janssen, Sabine Belard, Lianne Cremers, Rene Spijker, Martin Grobusch. Evidence review of the effectiveness and cost effectiveness of service models or structures aiming to manage tuberculosis in hard-to-reach groups, including a qualitative description of these service models or structures. PROSPERO 2015:CRD42015017865 Available from [http://www.crd.york.ac.uk/PROSPERO\\_REBRANDING/display\\_record.asp?ID=CRD42015017865](http://www.crd.york.ac.uk/PROSPERO_REBRANDING/display_record.asp?ID=CRD42015017865)

#### **Review question(s)**

Which service models and service structures are most effective and cost-effective at supporting TB identification and management of hard-to-reach groups? How can these service models and organisational structures be qualitatively described?

The following service structures will be explored:

- Type of healthcare worker (any person who was used to deliver the intervention) used to identify and manage TB in hard-to-reach groups.
- Setting used to identify and manage TB in hard-to-reach groups.

Who is responsible for the commissioning and delivery of TB services?

What (if any) theories or conceptual models underpin the service models/organisational structures?

What specific individuals or populations are targeted by the interventions?

How does engagement in various service models/organisational structures differ by group/subgroup (in terms of hard-to-reach group, age, or gender)?

#### **Searches**

Data Bases Health:

- EMBASE
- MEDLINE
- MEDLINE In-Process

Search terms

1. 'tuberculosis / TBC/ TB' 2. 'hard to reach groups /

population / people' 3. 'vulnerable groups / population / people / poor / poverty / overcrowded / excluded populations'

4. 'homeless / hostels / shelters / poor / poverty' 5. 'drug\* / substance\* use\* / abuse\* / addict\* / dependent / problem\* /

---

disorder\*' 6. 'Alcohol\* use\* / abuse\* / problem\* / addict\*' 7. 'sex-worker / prostitute\* / transactional sex' 8. 'prison\* / inmate / detainee\* / detention / jail / imprisonment' 9. '\*migrant\* / illegal / Roma\* / gips\* / gyps\* / international student / expat\*' 10. 'child\*' 11. 'HIV / AIDS co-infection' 12. 'RCT / \*Controlled Trial' 13. 'Cohort stud\*' 14. '\*review\*' 15. '\*report\*' 16. 'Case stud\* / report\*' 17. 'intervention\*' 18. 'case finding (active or passive)' 19. 'case management / strategy / polic\*' 20. 'prevention' 21. 'control' 22. 'management' 23. 'treat\*' 24. 'Service model\* / delivery / health care service\* / urban health service\*' 25. 'General practice / physician / GP / family practice / nurse lead' 26. 'Social work\* / outreach / volunteer\*' 27. 'Rehab\* centre / pharmacy / ambulatory care / mobile clinic' 28. 'DOTS / directly observed therapy / adherence / patient compliance' 29. 'Telemedicine / telephone medicine' 30. 'Incentives / support' 31. 'Screening / counselling' 32. 'Chest X-ray/ radiography / CXR / diagnostic test / Mantoux / skin test / TST / GeneXpert / sputum smear / culture' 33. 'Health education / promotion' 34. 'Service provider' 35. 'Provider initiated / voluntary / patient initiated'

We will conduct five separate search strategies; the first two search strategies (one qualitative and one quantitative search) will be exactly the same searches as performed for the evidence reviews for the NICE guidelines. For these OECD countries, the searches will span from August 2010 till present (December 2014, with an update performed in the last contract month), without language barriers.

### **Types of study to be included**

(cost-)effectiveness study, or any other type of quantitative/qualitative primary research, or a systematic

### **Condition or domain being studied**

Tuberculosis public health interventions

### **Participants/ population**

Hard to reach groups in European Union and OECD, like (illegal) migrants, sex workers, homeless, substance abusers, prisoners, HIV positive people and the children of these groups

### **Intervention(s), exposure(s)**

The reviews aim to collect evidence on all areas of interventions and service models related to identification and management of TB in vulnerable and hard-to-reach populations, as defined in the systematic reviews by NICE.

- Improve coverage and uptake of screening and active case finding by:

- using more convenient locations (like specialised TB clinic, centres for the homeless, large general practise, port of arrival, schools, syringe exchange programmes, mobile clinic)
- using peers or staff from the same hard to reach group (as case managers or health advisors)
- using small monetary incentives or food vouchers
- identifying more members of hard to reach groups

- IPT combined with methadone treatment for drug users

- Directly Observed Therapy (DOT(S)) by peers and in more convenient locations
- Family based DOT(S) programme
- Legal detention to manage active TB
- Social care support
- Enhanced case management
- Directly Observed Preventive Therapy (DOPT) plus incentives

Additionally, we aim at considering the following additional interventions:

- General interventions to improve the situation for the vulnerable and socially disadvantaged groups, e.g. provision of housing, nutritional programmes, addressing challenges related to immigration from high-TB burden countries, addressing inequalities and socioeconomic deprivation
- Case finding, contact tracing and screening programmes, by classic or innovative interventions for active case finding to reduce delays in case detection and limit further transmission
- Case holding and treatment interventions to maximise treatment initiation, adherence and completion
- Use of peer support, incentives, and other means to increase effectiveness of any interventions aimed at case finding, case holding or case management
- The existence of programs aimed collaborations with, or interventions aimed at, alternative, traditional, and / or spiritual medicine in TB treatment. This could be a problem that could be an obstacle in the control in TB in mainly immigrants and asylum seekers originating from non-western countries
- Programmes aimed at detection of patients from vulnerable or hard-to-reach populations who were lost to follow-up will be included as well.
- Treat comorbidities including HIV, diabetes, hepatitis, substance use disorders
- Continuity of care in the public sector for prisoners released from prison
- Improve living conditions and nutrition for prisoners
- General policies, health system organisation and structure of services that are aiming at enhancing access of care of specific targeted vulnerable groups, to make health care (including TB services) less hard to reach for these individuals

As this is a follow-up on the review done by NICE the following inclusion criteria will be used:

- Have a focus on TB services of any kind;
- Are conducted in any of the EU/EEA countries, the 5 candidate countries and the other OECD countries
- Are published in 2010 or later for the OECD countries;
- Are published in 1990 or later for the EU/EEA countries and the 5 candidate countries;
- Include data from any hard-to-reach group
- Present qualitative and/or quantitative empirical data;

- Discuss an intervention relating to one of the following: identifying TB cases; managing TB cases; design of service models, and;
- is a (cost)-effectiveness study, or any other type of quantitative primary research, or a systematic review.

Studies focussing on the detection and management of latent TB infection are not in the scope of this review.

### **Comparator(s)/ control**

Not relevant

### **Context**

The research needs to take place in an EU or OECD country and focus on any of the earlier mentioned hard to reach groups

### **Outcome(s)**

#### **Primary outcomes**

The most (cost-)effective service models and service structures at supporting TB identification and management of hard-to-reach groups

#### **Secondary outcomes**

Who are responsible for putting these service structures in place and organise them.

### **Data extraction, (selection and coding)**

Following PRISMA guidelines, study selection will be performed by two separate review authors. Three authors will screen titles and abstracts independently in parallel for matching our research objectives. Consequently, full versions of potentially relevant articles will be retrieved to assess eligibility. All full-text articles will be double screened. Data will be collected from each publication and captured using the data extraction forms, according to the type of study. Data will be extracted from text, tables and figures. The data extraction forms will be completed independently by two review authors for a randomly selected sample of 10% of records. For the other records, the tool will be completed by one reviewer and checked by another, with any disagreements resolved by discussion or consultation of a senior study investigator.

### **Risk of bias (quality) assessment**

In concordance with PRISMA guidelines and the NICE guidance document, methodological quality and risk of bias will be assessed separately for each eligible study. Two review authors will pilot-test the tool independently on five randomly selected studies. Quality assessments will be performed independently by two review authors for 10% of the included studies, for the remaining 90% of the records the tool will be completed by one reviewer and checked by another, disagreements will be resolved by discussion or consulting the third review author.

### **Strategy for data synthesis**

We will decide to perform a meta-analysis according to the quality assessment scores and risk of bias assessments. If studies do not support meta-analysis, data will be synthesized narratively. Overall strength of the evidence will be assessed and reported in an additional file. Strength analysis will be performed by the reviewer who performed the data extraction and quality assessment for the respective studies.

### **Analysis of subgroups or subsets**

Every subgroup will be analysed separately (see previous answer)

### **Contact details for further information**

Charlotte Heuvelings

Baljuwplein 29-II

3033 XB Rotterdam

The Netherlands

lotjeh@hotmail.com

**Organisational affiliation of the review**

Center of Tropical Medicine and Travel Medicine, Department of Infectious Diseases, Division of Internal Medicine, Academic Medical Center, University of Amsterdam, Meibergdreef 9, 1105 AZ, Amsterdam, the Netherlands

www.amc.nl

**Review team**

Dr Charlotte Heuvelings, AMC  
Dr Sophia de Vries, AMC  
Dr Patrick Greve, AMC  
Dr Benjamin Jelle Visser, AMC  
Dr Saskia Janssen, AMC  
Dr Sabine Belard, AMC  
Miss Lianne Cremers, AMC  
Mr Rene Spijker, AMC  
Professor Martin Grobusch, AMC

**Collaborators**

Mr Andreas Sandgren, ECDC

**Details of any existing review of the same topic by the same authors**

Not by the same authors but this review is a follow up of:

Identifying and managing tuberculosis among hard-to-reach groups. Public health guidance, PH37 - Issued:

March 2012. NICE – National Institute for Health and Care Excellence. Available at:  
<http://guidance.nice.org.uk/PH37>

**Anticipated or actual start date**

15 December 2014

**Anticipated completion date**

01 June 2015

**Funding sources/sponsors**

European Centre of Disease Prevention and Control

**Conflicts of interest**

None known

**Language**

English

**Country**

Netherlands, Sweden

**Subject index terms status**

Subject indexing assigned by CRD

**Subject index terms**

Cost-Benefit Analysis; Disease Management; Humans; Tuberculosis

**Stage of review**

Completed and published

**Date of registration in PROSPERO**

24 March 2015

**Date of publication of this revision**

11 April 2017

**Details of final report/publication(s)**

Effectiveness of interventions for diagnosis and treatment of tuberculosis in hard-to-reach populations in countries of low and medium tuberculosis incidence: a systematic review

Heuvelings, Charlotte C et al.

The Lancet Infectious Diseases , 2017, [http://dx.doi.org/10.1016/S1473-3099\(16\)30532-1](http://dx.doi.org/10.1016/S1473-3099(16)30532-1).  
[http://thelancet.com/journals/laninf/article/PIIS1473-3099\(16\)30532-1/fulltext](http://thelancet.com/journals/laninf/article/PIIS1473-3099(16)30532-1/fulltext)

**DOI**

10.15124/CRD42015017865

**Stage of review at time of this submission**

	<b>Started</b>	<b>Completed</b>
Preliminary searches	Yes	Yes
Piloting of the study selection process	Yes	Yes
Formal screening of search results against eligibility criteria	Yes	Yes
Data extraction	Yes	Yes
Risk of bias (quality) assessment	Yes	Yes
Data analysis	Yes	Yes

---

**PROSPERO**

**International prospective register of systematic reviews**

The information in this record has been provided by the named contact for this review. CRD has accepted this information in good faith and registered the review in PROSPERO. CRD bears no responsibility or liability for the content of this registration record, any associated files or external websites.

---