# **Tuberkulose in der Schweiz**
## Leitfaden für Fachpersonen des Gesundheitswesens

Sehr erfolgreiche 1. Auflage 2014

Projekt: 2. Auflage 2018: **Aktueller Stand**

Prof. Dr. Otto Schoch
Ärztlicher Berater Kompetenzzentrum Tuberkulose
Lungenliga Schweiz
Facharzt Pneumologie und Leitender Arzt
Klinik für Pneumologie und Schlafmedizin KSSG

LUNGENLIGA SCHWEIZ
LIGUE PULMONAIRE SUISSE
LEGA POLMONARE SVIZZERA
LIA PULMUNARA SVIZRA

**Handbuch Tuberkulose**
Publikationen, Broschüren, Informationsblätter FAQ und Hilfsmittel online
Literaturdatenbank
Bildgalerie
Filmmaterial
Publikationen BAG
Publikationen SEM
Publikationen WHO
Publikationen SAMW

# Handbuch Tuberkulose

*Aktualisiert im November 2014*


## Handbuch Tuberkulose - revidierte Kurzversion 2014

*Leitfaden für Fachpersonen des Gesundheitswesens*

Kurzversion in deutscher Sprache - pdf-Ausgabe (Version vom November 2014)

Kurzversion in deutscher Sprache - online-Ausgabe (Version vom November 2014)

**AKTUELL**
- 27. Tuberkulose-Symposium in Magglingen
- Alternative zum Lieferengpass von Tuberkulin in der Schweiz
- Bestehender Lieferengpass von Tuberkulin
- **Alle News zeigen**

**QUICKSTART**
- Handbuch Tuberkulose
- Kant. Fachstellen Tuberkulose
- Tuberkulose-Meldeformulare BAG
- Modellformulare
- Statistiken
- Lungenliga Schweiz
- Schweizerische Gesellschaft für Pneumologie (SGP)

**WEITERE INFORMATIONEN**

**Bestellen Sie die Broschüre:**
Tuberkulose. Diagnose, Behandlung, Vorbeugung

# Tuberkulose in der Schweiz: Was ist 2018 neu ?


**Organizational authors**
Federal Office of Migration
Federal Office of Public Health
Nationales Zentrum für Mykobakterien
Pediatric Infectious Diseases Group of Switzerland
Swiss Association of Cantonal Officers of Health
Swiss College of Primary Care Physicians
Swiss Lung Association
Swiss Society for Infectious Diseases
Swiss Society for Pediatric Pulmonology
Swiss Society of Respiratory Diseases

**Person-authors including representatives of organizational authors**
Jürg Barben, Christoph Berger, Erik C Böttger, Jean-Marie Egger, Peter Helbling, Jean-Paul Janssens, Chung-Yol Lee, Jesica Mazza-Stalder, David Nadal, Stefan Neuner-Jehle, Laurent Nicod, Valeria Reho, Hans L Rieder, Otto D Schoch, Claire-Anne Siegrist, Alexander Turk, Jean-Pierre Zellweger, Stefan Zimmerli




Neu angefragte Organisationen:

Swiss National Accident Insurance SUVA

Swiss Society for Hospital Hygiene

State Secretariat for Migration (Name neu)

Zurückgetreten als Autoren:

**Hans L. Rieder**

David Nadal, Claire Ann Siegrist

NEU> *Nicole Ritz*

Chung Jol Lee > *Jan van Overbeck*

Valeria Reho > *Annette Kohler Doser*

Jean-Pierre Zellweger

NEU als Autoren zugesagt

*Brigitte Merz, SUVA*

*Matthias Schlegel, Spitalhygiene*

*Bea Začek, Lunge Zürich*

# Tuberkulose in der Schweiz: Inhalt 1



1. **Rolle des Arztes**

2. **Epidemiologie**

   Aktualisiert mit den neuesten Daten BAG / WHO

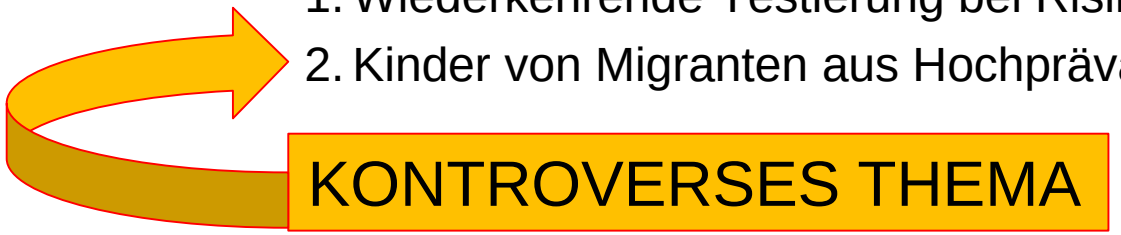
3. **Transmission, Pathogenese und klinische Präsentation**
   1. Transmission
   2. Pathogenese
   3. Klinische Präsentation
   4. Radiologische Präsentation

   Komplexere radiologische Techniken (zB CT Thorax) wurden eingebaut

# Tuberkulose in der Schweiz: Inhalt 2



4. **Infektion mit *Mycobacterium tuberculosis***
    1. Infektion und Forschreiten zur Erkrankung
    2. Indikation für die Testung auf Infektion bei Asymptomatischen Personen
        1. Wiederkehrende Testierung bei Risiko-Angestellten
        2. Kinder von Migranten aus Hochprävalenzländern




    3. Indirekte Immunologische Tests zur Diagnose der Infektion mit *M.tbc*
        1. Tuberkulin Hauttest
        2. Interferon Gamma Release Assay
    4. Auswahl des Testverfahrens
    5. Behandlungsoptionen für die Behandlung der Infektion mit *M.tbc*

# Tuberkulose in der Schweiz: Inhalt 3



**5. Umgebungsuntersuchungen**

Detaillierte Handlunsanweisungen unverändert

Neuer Textabschnitt:

Diskussions-Abschnitt mit Hinweisen auf Limitationen von Umgebungsuntersuchungen, insbeondere Durchführbarkeit von Testierungen und präventiven Therapien im Kontext der Asylverfahren

# Tuberkulose in der Schweiz: Inhalt 4



**6. Umgebungsuntersuchungen**

Detaillierte Handlunsanweisungen unverändert

*Neue Textabschnitte:*

Diskussions-Abschnitt mit Hinweisen auf Limitationen von Umgebungsuntersuchungen, insbeondere Durchführbarkeit von Testierungen und präventiven Therapien im Kontext der Asylverfahren

Kommunikationskonzept / Öffentlichkeitsinformation versus ärztliche Schweige- resp. Geheimhaltungspflicht werden diskutiert

# Tuberkulose in der Schweiz: Inhalt 5



6. **Diagnose der Tuberkulose**
    1. Vorgehen bei Patienten mit möglicher Tuberkulose
    2. Gewinnung von Proben zur Untersuchung
    3. Mikrobiologische Techniken
        1. Mikroskopie
        2. Genetische Amplifikation und Xpert® MTB/RIF assay
        3. Mykobakterielle Kultur und Resistenzprüfungen

# Tuberkulose in der Schweiz: Inhalt 6



7. **Behandlung der Tuberkulose**
    1. Standard Behandlungsschema
    2. Therapie der resistenten Tuberkulose
    3. Spezielle Situationen
    4. Follow-up unter Therapie

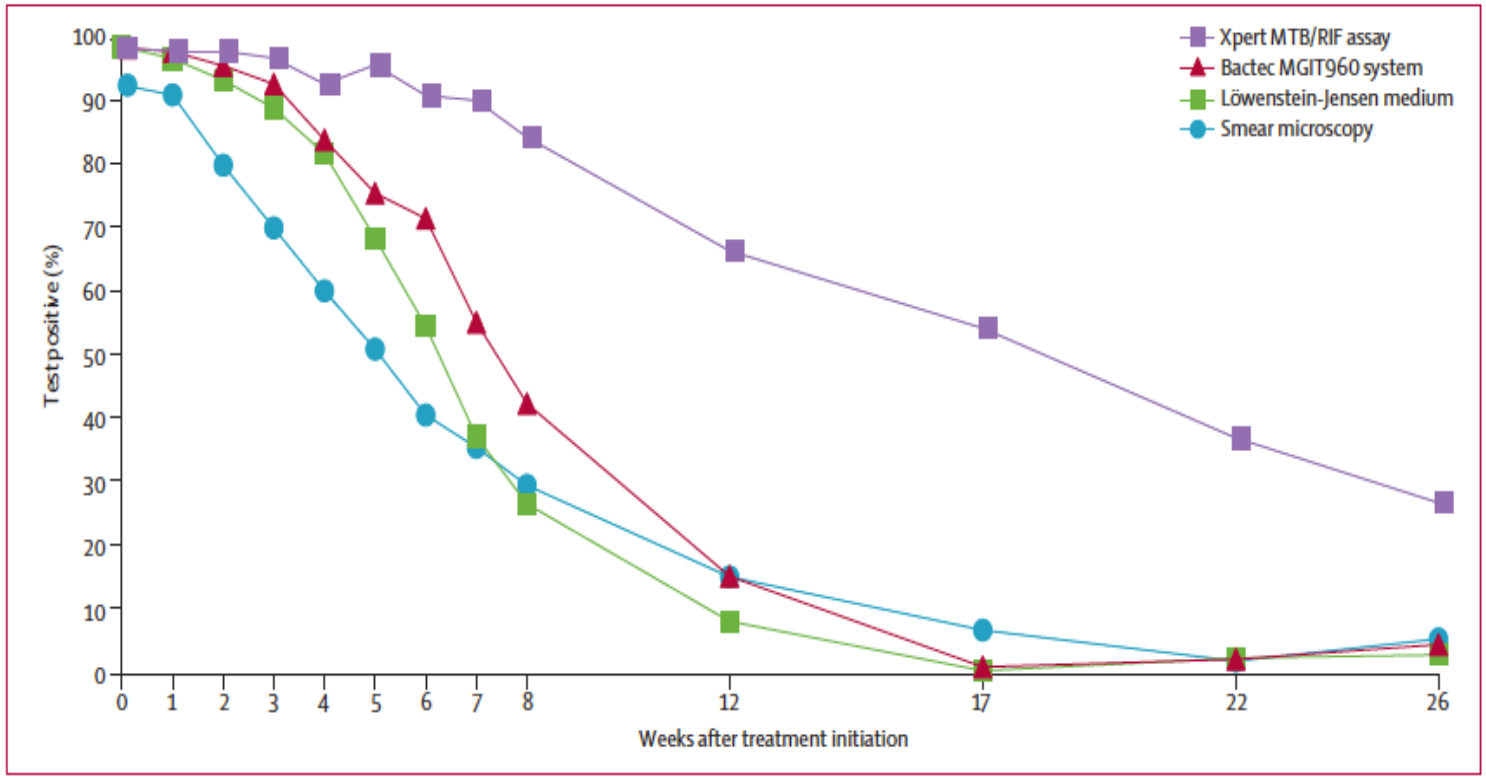



*Figure 1:* Qualitative data for all tests at baseline and follow-up visits

# Tuberkulose in der Schweiz: Inhalt 7



## 7. Behandlung der Tuberkulose

### 5. Isolation

Airborne isolation (in the hospital or chronic care facility) includes the following:

- **A single patient-room with toilet and shower and with closed doors**, ideally equipped with special air handling and high ventilation capacity: Monitored negative pressure relative to the surrounding area, six air exchanges per hour, air exhaustion directly to the outside or recirculated after HEPA filtration before return. These technical specifications are **recommended** for patients with non-resistant tuberculosis (i.e. should be used if available), and **mandatory** for patients with multidrug resistant tuberculosis (i.e. patients are transferred to an institution with available technicalities).
- If negative pressure or ventilation with HEPA filtration is unavailable, regular air exchange by hourly opening of windows is recommended as an alternative.
- For **nursing staff and visitors**, wearing a mask type N95 or a Filtering Face Piece FFP2 (according to Norm EN 149) or higher-level respirators, fitted properly prior to room entry and removed after leaving the room is recommended.
- **Patients leaving the ventilated room** for examinations (e.g. radiography or for a walk outside the hospital) should wear a surgical mask inside of the institution for source containment.
- Every medical institution treating patients with tuberculosis is obligated by law* to implement measures against transmission of tuberculosis and to have a respiratory protection program.

For more detailed information see American guidelines published by the Centers for Disease Control and Prevention (CDC): Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007) at https://www.cdc.gov/infectioncontrol/pdf/guidelines/isolation-guidelines.pdf

* Verordnung vom 19. Dezember 1983 über die Verhütung von Unfällen und Berufskrankheiten (VUV)

# Tuberkulose in der Schweiz: Inhalt 8



7. **Behandlung der Tuberkulose**
    5. Isolation
        1. Isolation bei Patient mit möglicher Tuberkulose

            Prinzip:

            Wenn der **Xpert MTB/RIF negativ** ist braucht es keine Isolation

            *(Ausnahme: Sehr hohe klinische Tuberkulose Wahrscheinlichkeit)*

        2. Isolation bei Patienten mit bestätigter Tuberkulose

            Prinzip:

            Isolation soll bevorzugt im häuslichem Umfeld stattfinden

# Tuberkulose in der Schweiz: Inhalt 9



7. **Behandlung der Tuberkulose**
    5. Isolation
        1. Isolation bei Patient mit möglicher Tuberkulose
        2. Isolation bei Patienten mit bestätigter Tuberkulose

           Prinzip:

           Isolation soll bevorzugt im häuslichem Umfeld stattfinden

Isolation (in the hospital or at home) for **patients on treatment** is stopped if the following conditions are met:

- The medications are well tolerated.
- Treatment adherence and stable accommodation are assured.
- The continuation of treatment has been organized and the necessary arrangements have been made.
- Cough has been decreasing in frequency, and is now rare or absent.
- There is a clinically observable response to treatment.
- There is no evidence or suspicion of drug resistance (unless treated accordingly).

# Tuberkulose in der Schweiz: Inhalt 11



**8. Meldesystem, Überwachung und Erfassen der Behandlungsresultate**

1. Meldesystem und Überwachung
2. Erfassen und Auswerten der Behandlungsresultate

> Seit 2016 obligatorische Erfassung der Behandlungsresultate

> Zuständigkeit beim BAG, systematisches Erfragen der Resultate 1 Jahr nach Therapiebeginn (sensible Keime) respektive 2 Jahre nach Therapiebeginn (MDRTB)

# Tuberkulose in der Schweiz: Inhalt 12



**9. BCG Impfung**

Nur <1jährige Kinder, welche in ein Land mit hoher Tuberkulose-Prävalenz auswandern (nicht Ferien, Verwandte etc.)

Alternative: Impfung im Land der Zuwanderung

**10. Tuberkulose und Asylsuchende**

Kein ***obligatorisches*** Screening mittels www.tbscreen.ch mehr

Obligatorische Einzelinformation mit Pflegeperson und Angebot zur individuallen Beurteilung mittels www.tbscreen.ch

PIGS schlägt Vorgehen zur LTBI Diagnostik bei Kindern vor, BAG lehnt diesen Vorschlag ab

KONTROVERSES THEMA

# Tuberkulose in der Schweiz: Inhalt 13



11. Finanzielle und Gesetzliche Aspekte
    1. Krankenkasse
    2. Unfallversicherung
    3. Öffentliche Gesundheitsbehörden
    4. Arbeitgeber
    5. Privatpersonen
    6. Spezielle Situationen
        1. Tuberkulose bei Asylsuchenden
        2. Illegaler Status / sans-papiers
        3. Direkt überwachte Therapie
12. Nützliche Adressen
    1. Brochuren und Druckerzeugnisse
    2. Internetlinks und Adressen
    3. **Tuberkulose HOTLINE 0800 388 388**


# Vielen Dank für die Aufmerksamkeit !

UNIVERSITÄT BERN

# Neue Wege in der Schulung von TB-Patienten für die Sputum-produktion

**Prof. Dr. med. Lukas Fenner**

Kantonsarzt, Kanton Solothurn; und
Institut für Sozial- und Präventivmedizin, Universität Bern

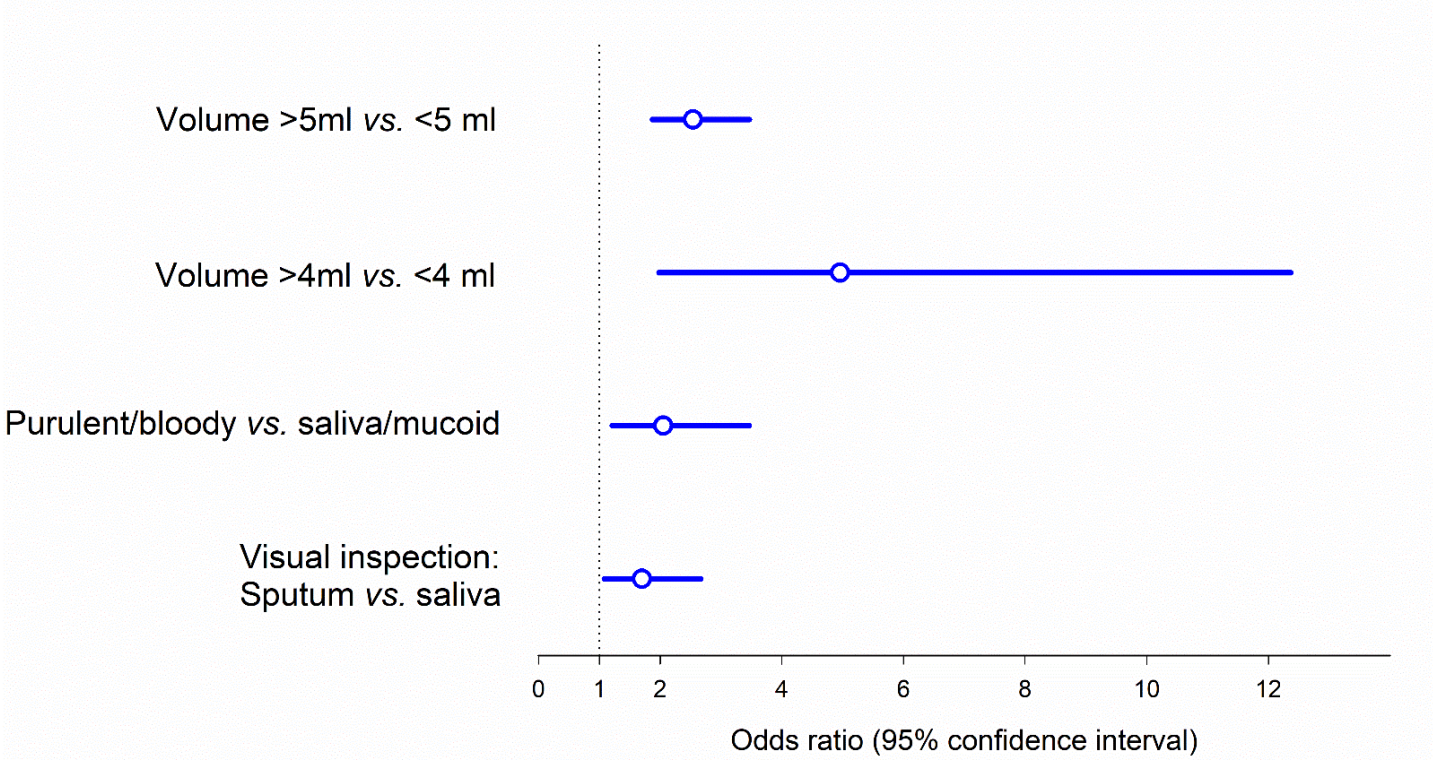
27. Tuberkulose-Symposium, Magglingen, 22. März 2018

# Outline

- ✓ Bedeutung der Sputum-Qualität für die Diagnostik
- ✓ Video statt verbale Instruktionen: Beispiel aus Tanzania
- ✓ Evaluations-Studie einer Video-Instruktion in Tanzania
- ✓ Überblick über Sputum Sammel-Methoden
- ✓ Zusammenfassung & Schlussfolgerungen

# Primäre Diagnostik im Labor

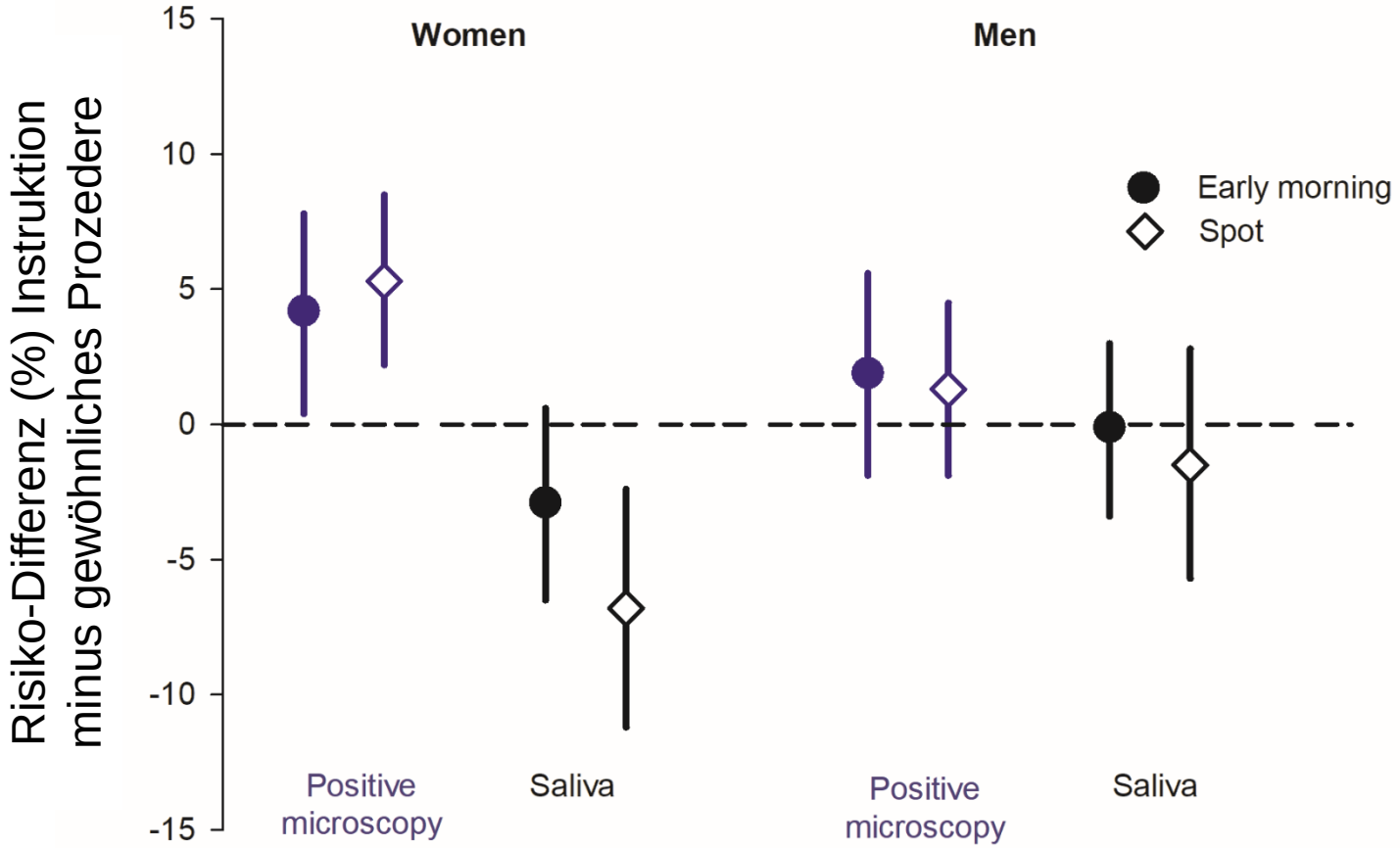
# Diagnostische Ausbeute ist abhängig von der Qualität des Sputum




**Wahrscheinlichkeit für positive Smear Mikroskopie im Sputum**

Warren et al., *Am J Respir Crit Care Med* 2000
Khan et al., *Trop Med Int Health* 2009
Ho et al., *Int J Tuberc Lung Dis* 2015

# Effekt von einfachen verbalen Instruktionen auf Sputumproduktion



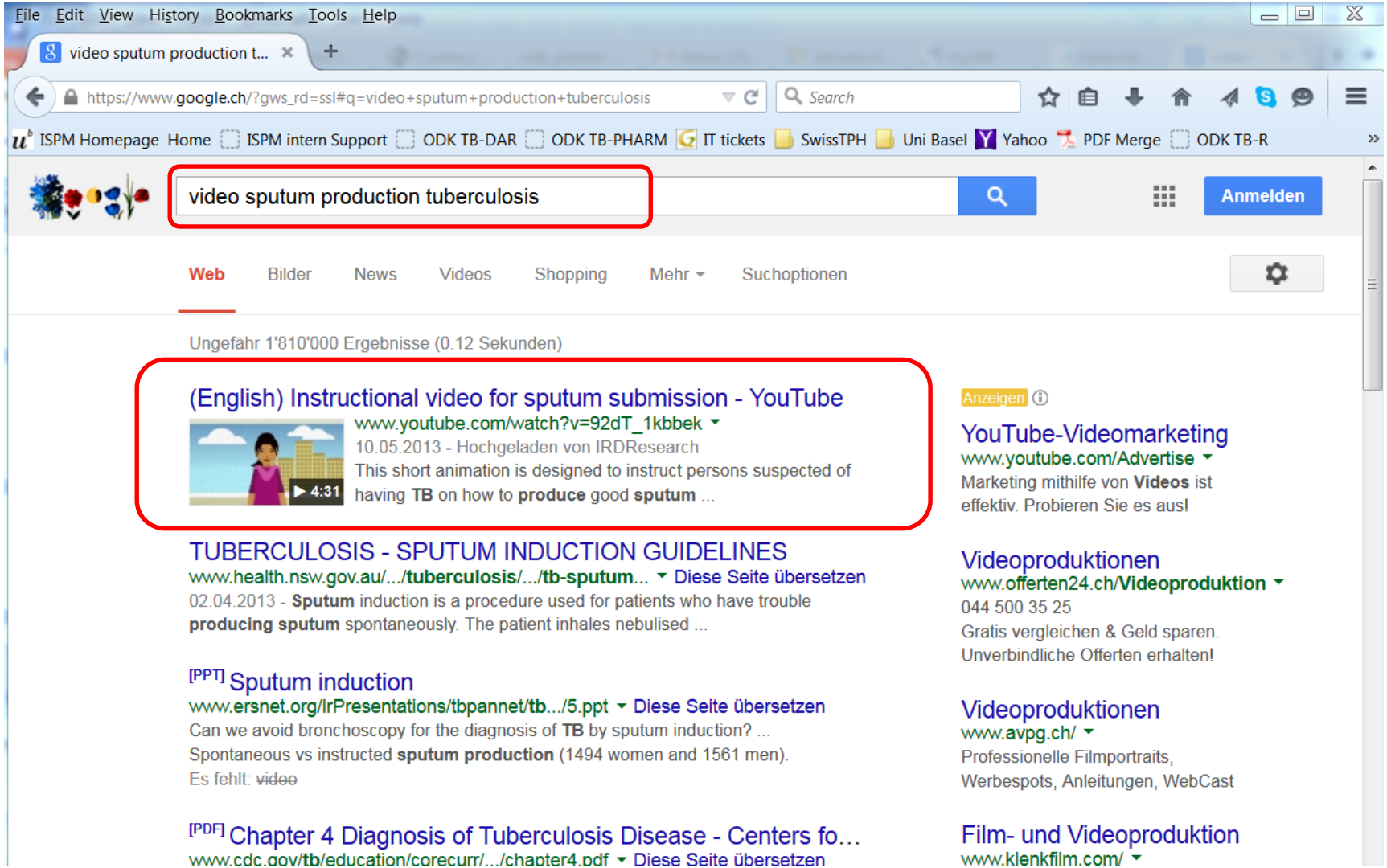

**Pragmatischer Randomisierter Klinischer Trial in Pakistan, 2005**
**n=749 (Intervention), n=745 (Kontrollen, Routine)**

Khan et al., *Lancet Infect Dis* 2007

# Hintergrund

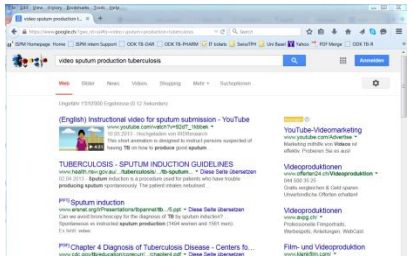
- Instruktionen, wie man ein qualitativ gutes Sputum für die Mikroskopie produziert, sind oft in den NTP Manuals enthalten, aber schwieriger in die Praxis umzusetzen.
- Es braucht simple Tools, um die Sputum-Produktion (und somit die Diagnostik) zu verbessern, z.B. Video Instruktionsmaterial.
- **Ziel: Herstellung eines Instruktions-Videos für Tanzania und Randomisierter Klinischer Trial als Pilot, um den Effekt des Videos auf die TB-Diagnostik (Smear Mikroskopie) zu evaluieren.**

# Alles begann mit einer Google search …



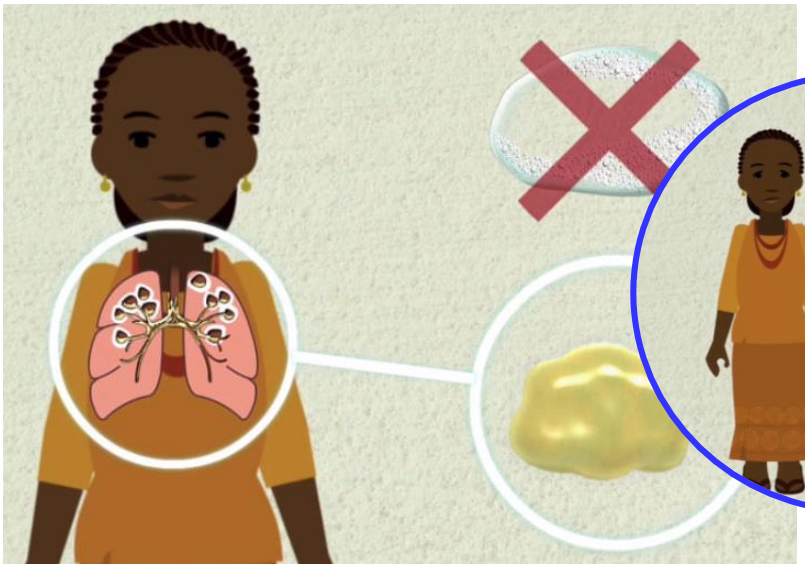
# Vom Design zur Evaluations-Studie …

- Kontakt mit den Produzenten der Englischen Version in Pakistan (Interactive Research & Development, IRD), TB-REACH grant
- Übersetzung, Voice-Over-Aufnahmen, Design der Animations-Figuren/Landschaften
- Iterativer Prozess mit den wichtigsten Stakeholders an Meetings über einen Zeitraum von 10 Monaten
- Kollaboration zwischen dem NTP, Ifakara Health Institute, WHO Tanzania, IRD
- Finanziert durch das NTP Tanzania
- Produktion einer DVD, Evaluationsstudie (Teil einer MSc. Thesis in Public Health)





# Instructional video “on how to produce a good sputum sample for better diagnosis”: Die Tanzania Version



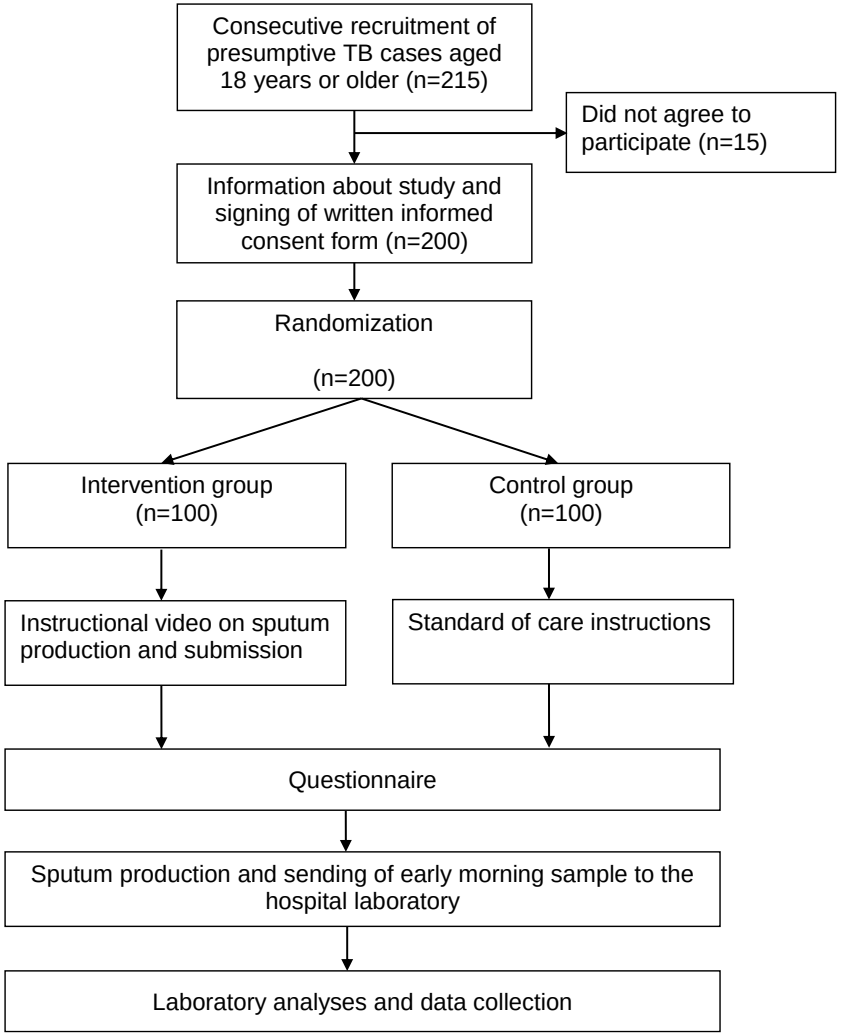


***https://vimeo.com/88749231*** ***oder*** ***http://youtu.be/2sd2d2_pNBA***

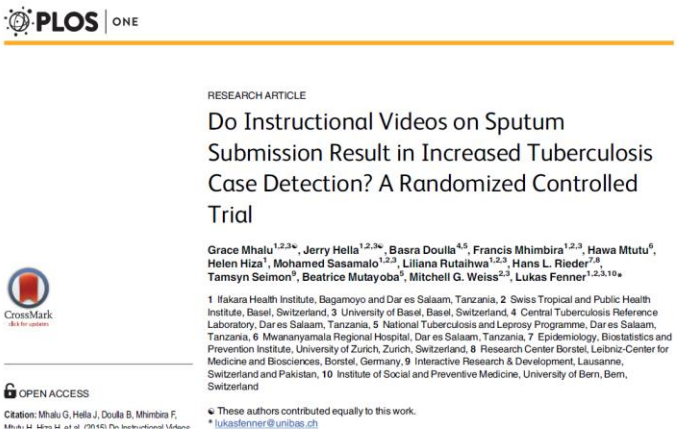
# Studien Methoden

- **Studienort**: Outpatient Clinic (öffentlich), Mwananyamala Regional Hospital, Dar es Salaam, Tanzania
- **Zeitpunkt**: Rekrutierung zwischen 1. und 30. Mai 2014
- **Zielgruppe**: Personen ≥18 Jahre mit TB-Symptomen (“TB suspects”), → Randomisierung
- **Interventions-Gruppe**: Instruktions-Video (individuell)
- **Kontroll-Gruppe**: Standard of care Instruktionen
- Sammlung von “early morning” Sputum bei beiden Gruppen, und Erfassung von epidemiologischen Daten
- Verblindetes Testen der Sputum (Fluoreszenz-LED, Volumen, Qualität)

# Randomisierung von “TB suspects” in die Intervention- oder Kontrollgruppe




Grace Mhalu, Erst-Autorin



PLOS ONE

RESEARCH ARTICLE

Do Instructional Videos on Sputum Submission Result in Increased Tuberculosis Case Detection? A Randomized Controlled Trial

Grace Mhalu[1,2,3☯], Jerry Hella[1,2,3☯], Basra Doulla[4,5], Francis Mhimbira[1,2,3], Hawa Mtutu[6], Helen Hiza[1], Mohamed Sasamalo[1,2,3], Liliana Rutaihwa[1,2,3], Hans L. Rieder[7,8], Tamsyn Seimon[9], Beatrice Mutayoba[6], Mitchell G. Weiss[2,3], Lukas Fenner[1,2,3,10]*

1 Ifakara Health Institute, Bagamoyo and Dar es Salaam, Tanzania, 2 Swiss Tropical and Public Health Institute, Basel, Switzerland, 3 University of Basel, Basel, Switzerland, 4 Central Tuberculosis Reference Laboratory, Dar es Salaam, Tanzania, 5 National Tuberculosis and Leprosy Programme, Dar es Salaam, Tanzania, 6 Mwananyamala Regional Hospital, Dar es Salaam, Tanzania, 7 Epidemiology, Biostatistics and Prevention Institute, University of Zurich, Zurich, Switzerland, 8 Research Center Borstel, Leibniz-Center for Medicine and Biosciences, Borstel, Germany, 9 Interactive Research & Development, Lausanne, Switzerland and Pakistan, 10 Institute of Social and Preventive Medicine, University of Bern, Bern, Switzerland

☯ These authors contributed equally to this work.
* lukasfenner@unibas.ch

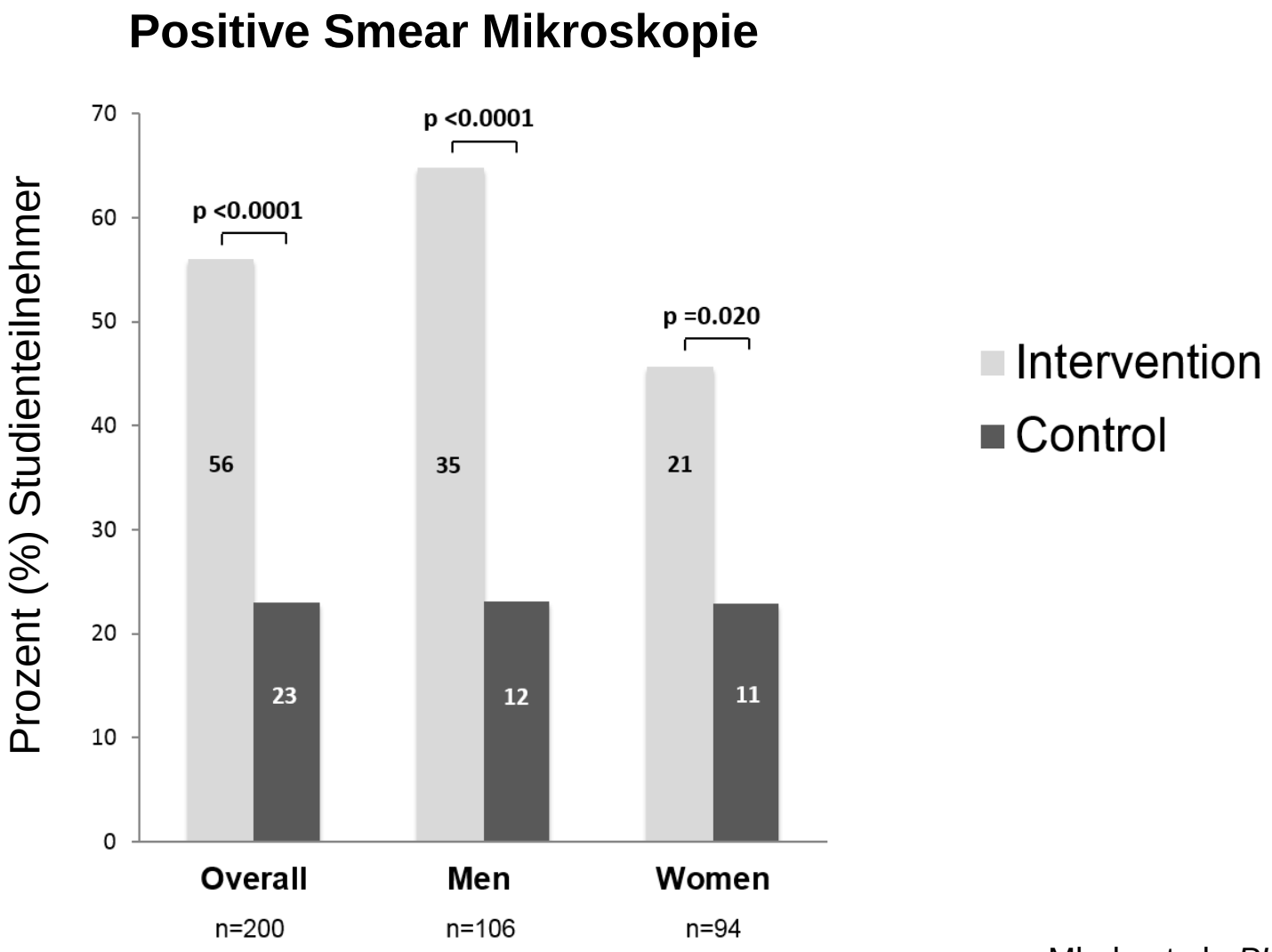
OPEN ACCESS

Citation: Mhalu G, Hella J, Doulla B, Mhimbira F,

# Patienten-Charakteristika

| **Charakteristika** | | **Intervention** | **Kontrolle** |
|---|---|---|---|
| **Anzahl Patienten**, n | 200 | 100 | 100 |
| **Age groups**, years, n (%) | | | |
| 18–27 | 39 (19.5) | 14 (14) | 25 (25) |
| 28–37 | 64 (32) | 33 (33) | 31 (31) |
| 38–47 | 53 (26.5) | 33 (33) | 20 (20) |
| 48–57 | 20 (10) | 8 (8) | 12 (12) |
| >57 | 24 (12) | 12 (12) | 12 (12) |
| **Sex**, n (%) | | | |
| Male | 106 (53) | 54 (54) | 52 (52) |
| Female | 94 (47) | 46 (46) | 48 (48) |
| **HIV status**, n (%) | | | |
| Negative | 102 (51) | 45 (45) | 57 (57) |
| Positive | 49 (24.5) | 30 (30) | 19 (19) |
| Test not done | 42 (21) | 23 (23) | 19 (19) |
| Unknown status | 7 (3.5) | 2 (2) | 5 (5) |
| **Educational level**, n (%) | | | |
| Primary school | 121 (60.5) | 65 (65) | 56 (56) |
| Secondary school | 56 (28) | 23 (23) | 33 (33) |
| College | 13 (6.5) | 5 (5) | 8 (8) |
| No formal education | 10 (5) | 7 (7) | 3 (3) |

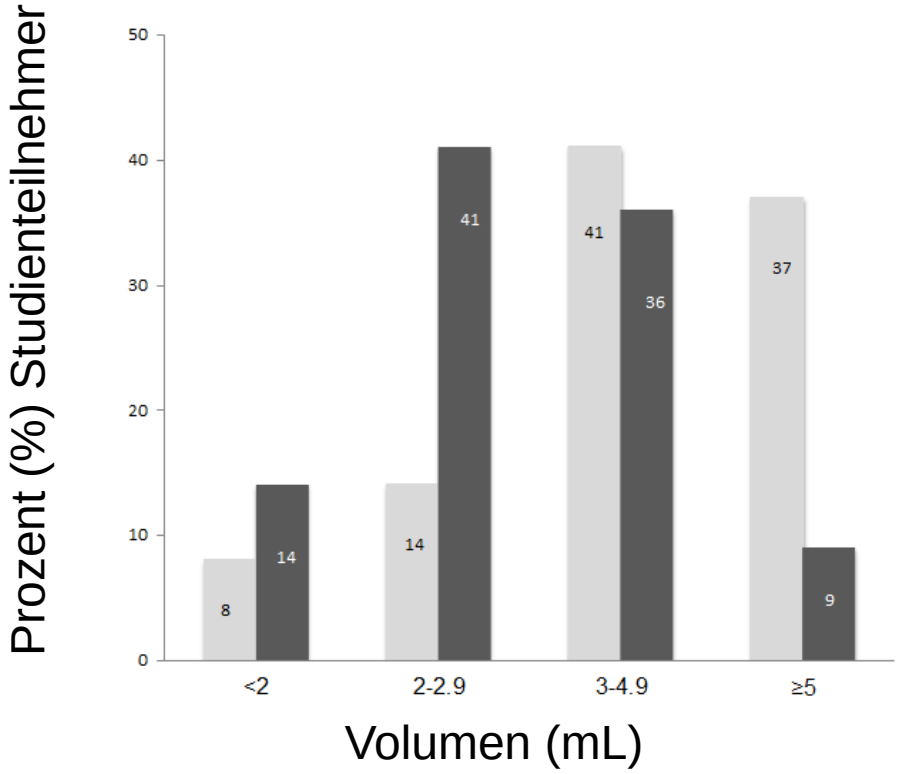
# Evaluations-Studie: Resultate (1)



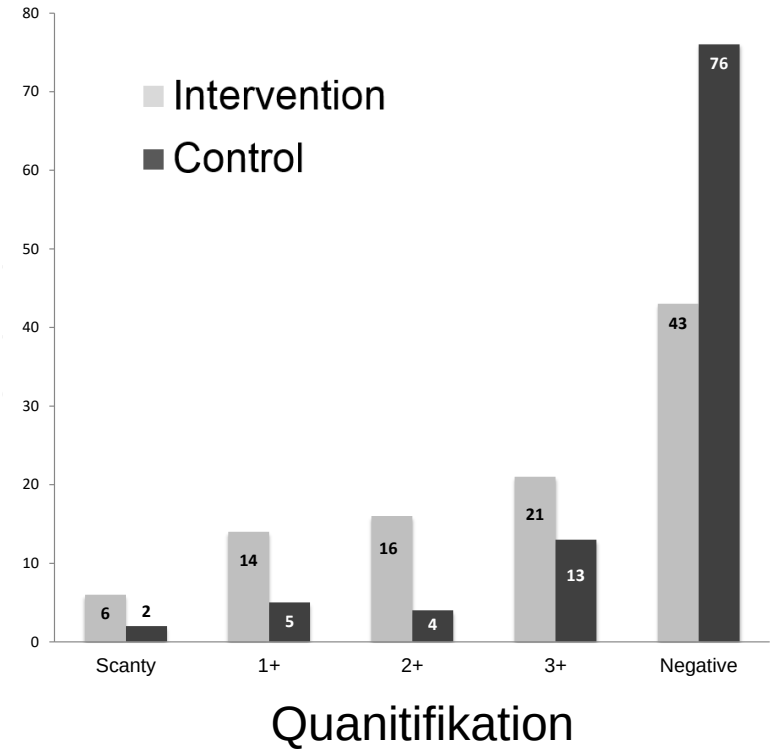

Mhalu et al., *PLoS ONE* 2015

# Evaluations-Studie: Resultate (2)

## Sputum Volumen



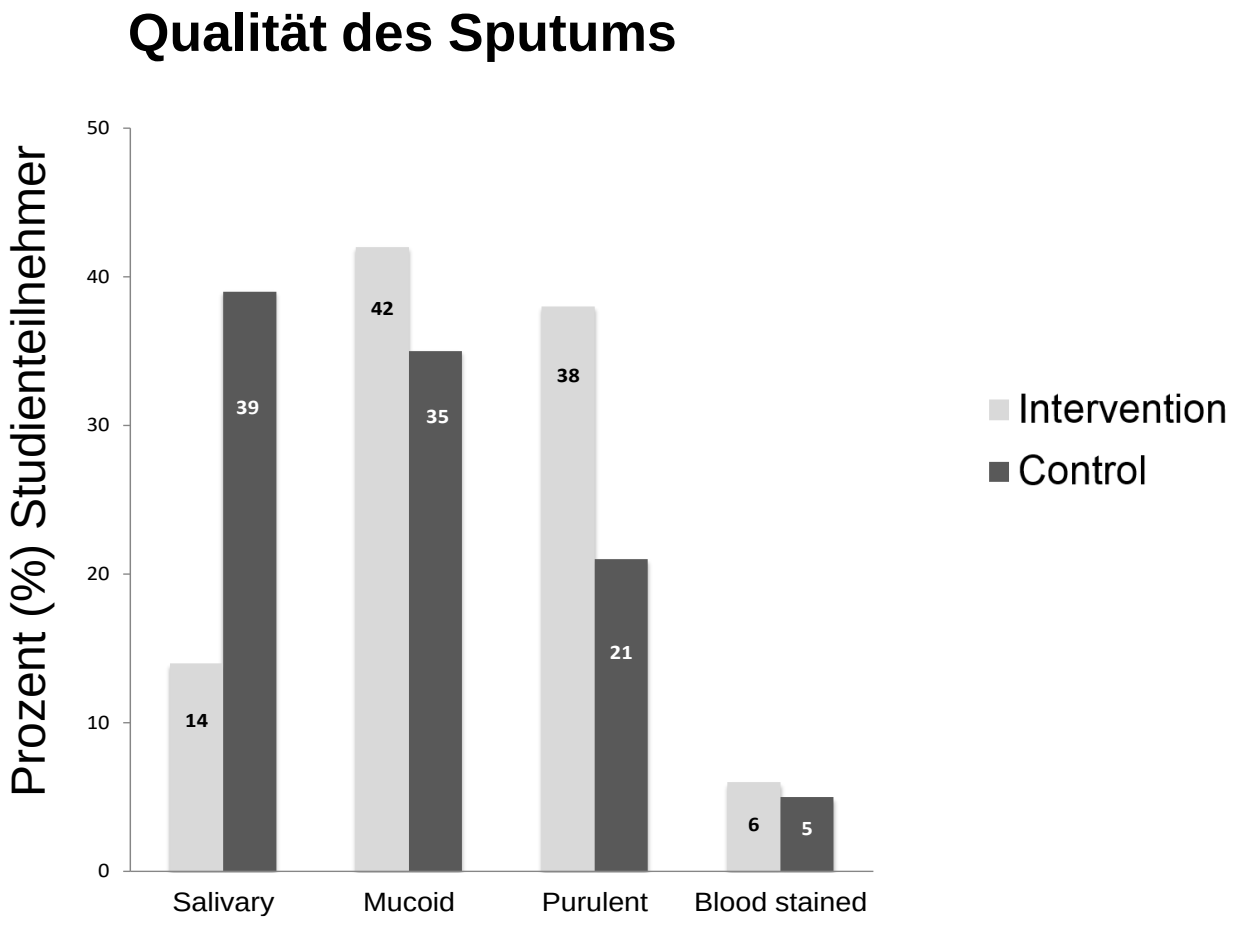

## Quantitatives Smear Mikroskopie Resultat




*P* value across groups >0.001

Mhalu et al., *PLoS ONE* 2015

# Evaluations-Studie: Resultate (3)




*P* value across groups >0.001

Mhalu et al., *PLoS ONE* 2015

# Evaluation des Instruktion-Videos (Interventions-Arm)

- 73/100 haben das Video sehr gut verstanden
- 3/100 haben das Video überhaupt nicht verstanden
- 92/100 haben das Video für zukünftige Verwendung empfohlen
- 79/100 sagten aus, dass das Video auch anderen Patienten helfen würde

# Einsatz des Videos im realen Leben …


# Vergleich von Sputum Sammel-Methoden für die TB-Diagnostik

Gepoolte Sammlung vs. spot

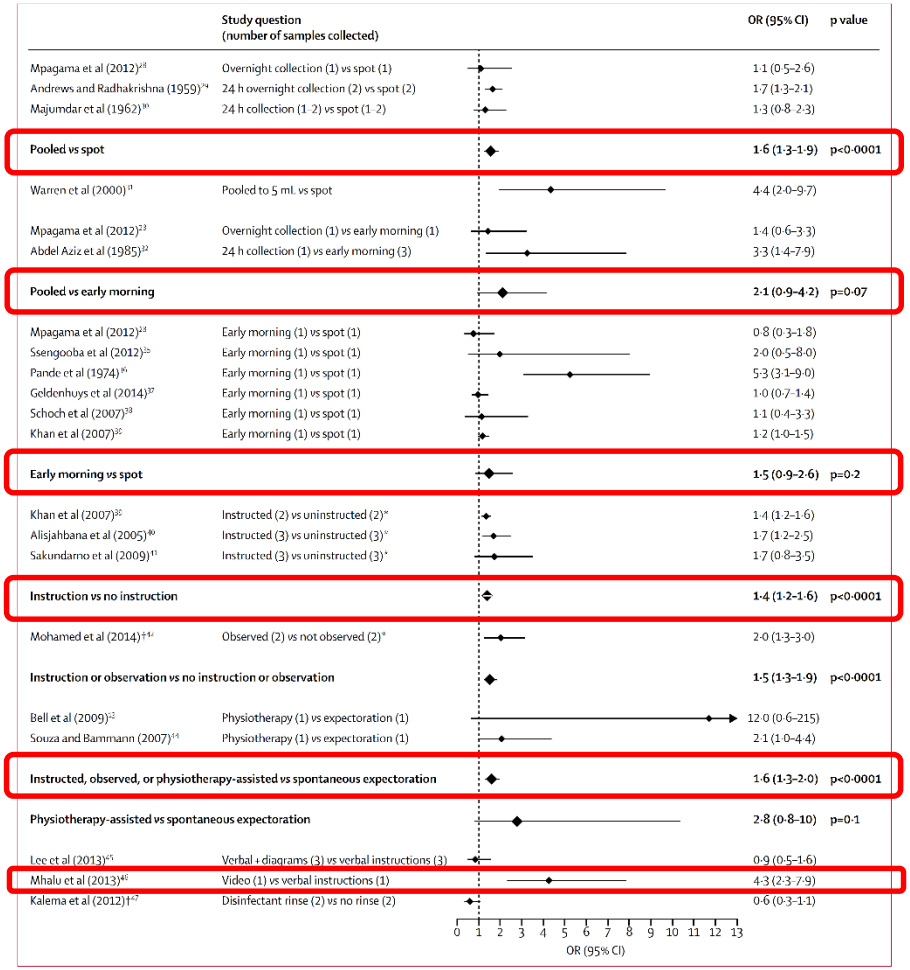
Gepoolte Sammlung vs. early morning

Early morning vs. spot

Instruktion vs. keine

Physio vs. keine

Mhalu et al.




**Systematic review and pairwise and network meta-analysis für Smear Mikroskopie:** Odds Ratios (95% confidence intervals)

Datta et al., *Lancet Global Health* 2017

# Vergleich von Sputum Sammel-Methoden für die TB-Diagnostik

Gepoolte Sammlung vs. spot

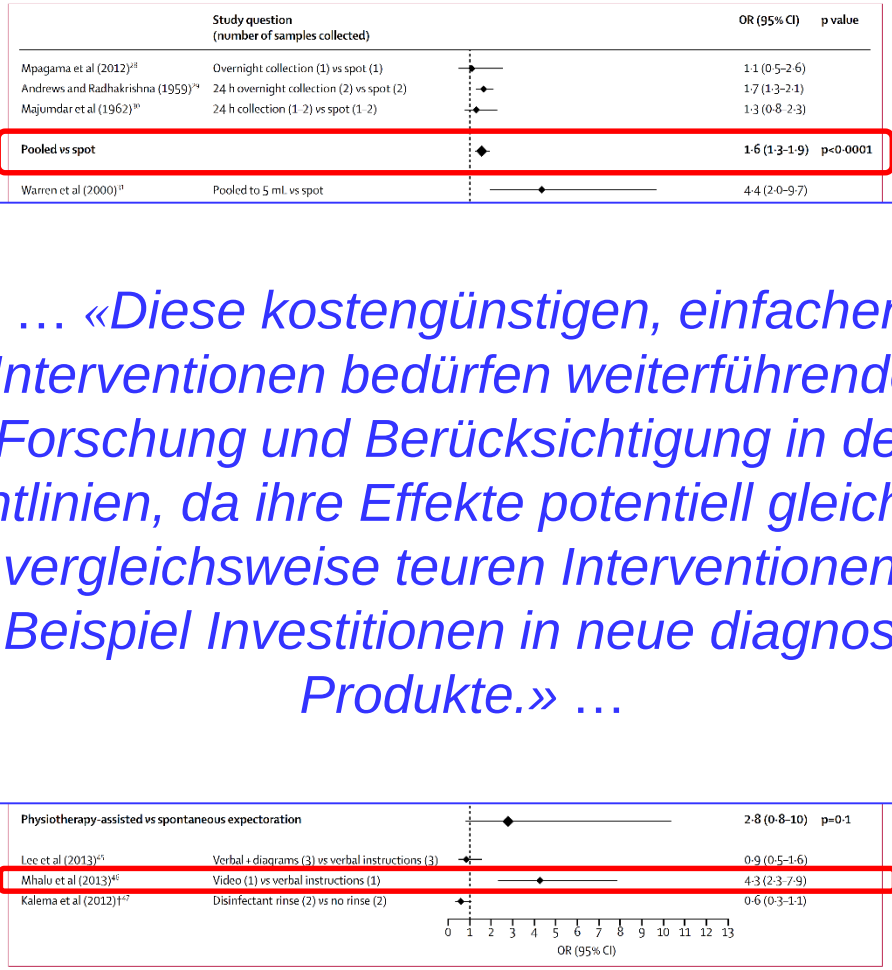
Gepoolte Sam vs. early

Early

Instruktion vs

Physio vs

Mhalu et al.




… «*Diese kostengünstigen, einfachen Interventionen bedürfen weiterführender Forschung und Berücksichtigung in den Richtlinien, da ihre Effekte potentiell gleich sind zu vergleichsweise teuren Interventionen wie zum Beispiel Investitionen in neue diagnostische Produkte.*» …

**Systematic review and pairwise and network meta-analysis für Smear Mikroskopie:**
Odds Ratios (95% confidence intervals)

Datta et al., *Lancet Global Health* 2017

# Zusammenfassung

Instruktionen für die Sputumproduktion mittels Videos verbessern die Sputum-Qualität → TB-Diagnostik.

Solche kostengünstigen Strategien sollten Teil eines diagnostischen Algorithmus und guter klinischer Praxis sein in Hoch-Inzidenz Ländern → auch in der Schweiz?

Video-Material kann weiter verbessert und auf andere sprachlich-kulturelle Umgebungen angepasst werden, und der Effekt in grösseren Studien bestätigt werden.

Auch simple und kostengünstige Interventionen haben das Potential, die “case detection” zu erhöhen → Transmission reduziert.

# Danksagung


- **Ifakara Health Institute, Tanzania** – Grace Mhalu, Khadija Said, Jerry Hella, Francis Mhimbira
- **Mwananyamala District Hospital,** Dar es Salaam, Tanzania
- **Swiss Tropical and Public Health Institute** – Mitchell G. Weiss
- **Hans L. Rieder**, Epidemiology, Biostatistics & Prevention Institute, Zürich
- **National Tuberculosis and Leprosy Programme, Tanzania**
- **WHO Country Office, Tanzania**
- **Interactive & Development, Pakistan/Switzerland/UK** – Tamsyn Simon
- **In Tune for Life, London, UK**
- **Institute of Social and Preventive Medicine**, University of Bern

LUNGENLIGA
ST.GALLEN – APPENZELL

# Heim für jugendliche Asylsuchende in St.Gallen

# TB-Meldung:

## TB-Fall 1 in Asylzentrum1

18-jähriger Asylsuchender, aus Eritrea, seit dem 25.11.2015 im Asylzentrum 1

Hospitalisiert und isoliert ab dem 03.02.2017

Behandlung mit Rimstar ab dem 04.02.2017

**<u>Laborbefund vom Sputum</u>:**

| | |
|---|---|
| Direkt-Mikroskopie: | negativ |
| Xpert® MTB/RIF: | MTB **positiv** |
| | RIF-Resistenz negativ |

# Evaluation im  Asylzentrum 1



**Evaluation der Kontakte vom  03.11.2016 - 03.02.2017**

**Befragung:**
- Indexpatient (IP) mit seinem Betreuer während dem Spitalaufenthalt
- Zentrumsleiter, Gesundheitsbeauftragte, Lehrer der Schulklasse

**Erschwerte Situation im Asylzentrum 1 (AZ 1):**
Umstrukturierung des Asylzentrums 1, d h. Transfer aller Asylsuchenden in andere Zentren bis Anfang März  2017, Personalreduktion

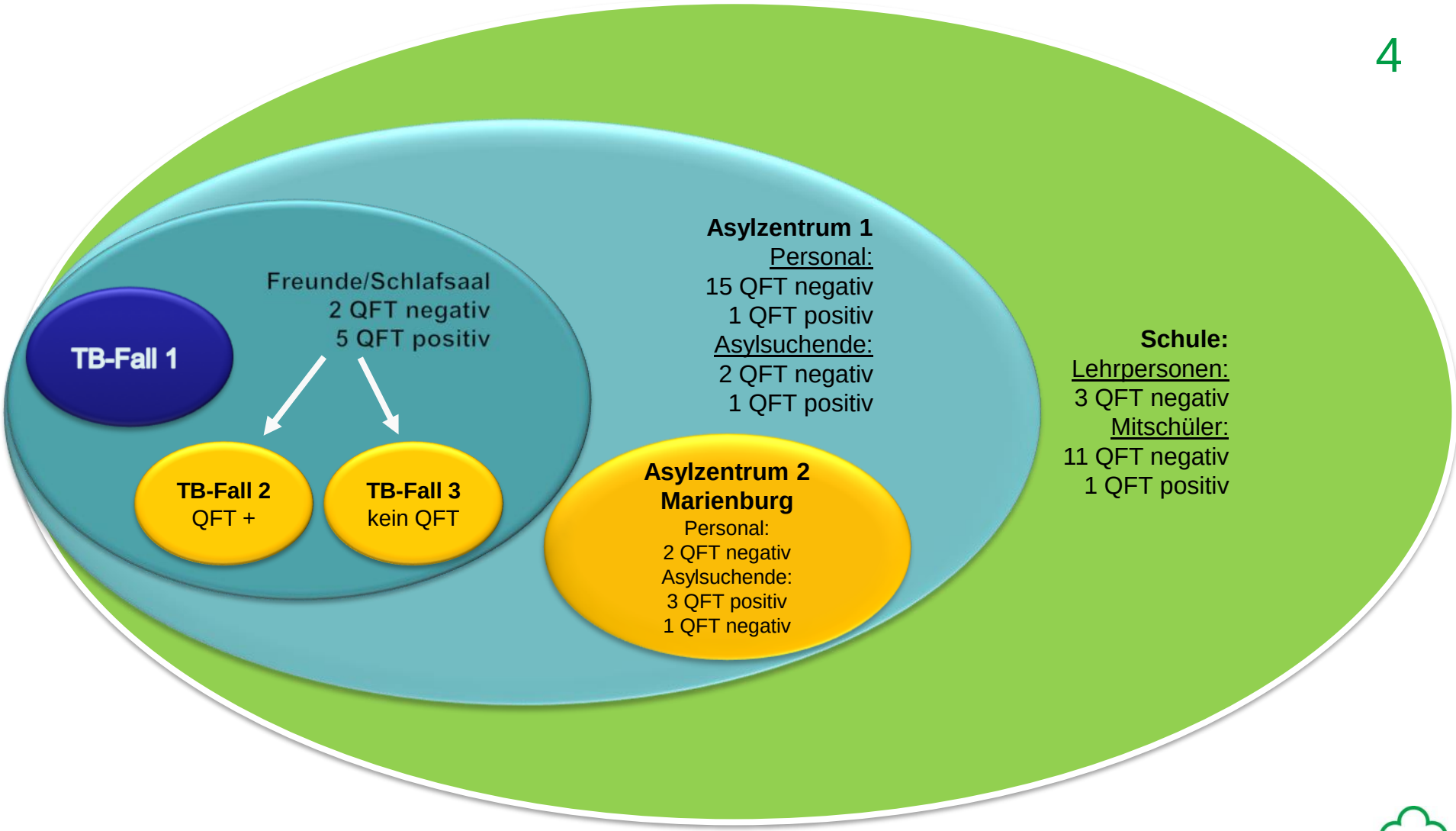
<u>Einteilung  der Kontakte > 40 Stunden in folgende Gruppen:</u>

(Testierung vom 04.04.- 12.04.2017)

1. Freunde / Schlafsaal  7  (**5** +/ 2-)  Personen
2. Asylzentrum 1  19  (**2** +/17-) Personen
3. Schule  15  (**1**+/14-)  Personen
4. Asylzentrum 2  6  (**3** +/ 3-)  Personen

# UU beim TB-Fall 1:





# Auswertung der UU Testierung vom TB-Fall 1:



**47 Personen sind getestet worden**:

- Personal: 20 negative QFT + 1 positiver QFT
- Asylsuchende: 16 negative QFT + 10 positive QFT und 2 neue TB-Fälle

Zusammenfassung:

- Im Asylzentrum 2 wurden 2 neue TB-Fälle entdeckt und es konnten prozentual mehr positive QFT ermittelt werden. Die Asylsuchenden wohnten vor der Umstrukturierung im AZ 1
- Je enger die Kontakte zu dem TB-Fall 1 waren, desto mehr positive QFT konnten wir nachweisen
- Der TB-Fall 1 und TB-Fall 2 sind miteinander befreundet und hatten im AZ 1 im gleichen Schlafsaal übernachtet
- Der TB-Fall 1 und TB-Fall 3 hatten im AZ 1 für 4 Monate den gleichen Schlafsaal (Juni-Oktober 2016) übernachtet
- Das Personal durfte grosszügig getestet werden, da grosse Ängste / Unsicherheit bestanden

# TB-Fall 2 Asylzentrum 2



16-jähriger Asylsuchender, aus Afghanistan, Transfer vom Asylzentrum 1 ins Asylzentrum 2 am 26.01.2017

Hospitalisiert und isoliert ab dem 12.04.2017

Behandlung mit Rimstar ab dem 13.04.2017

**<u>Laborbefund Sputum</u>**:

| | |
|---|---|
| Direkt-Mikroskopie: | **positiv** |
| Xpert® MTB/RIF: | MTB **positiv** |
| | RIF-Resistenz negativ |

# TB-Fall 3 Asylzentrum 2



17-jähriger Asylsuchender, aus Somalia, Transfer vom Asylzentrum 1 ins Asylzentrum 2 am 04.10.2016

Hospitalisiert und isoliert ab dem 20.04.2017

Behandlung mit Rimstar ab dem 21.04.2017

**Laborbefund Sputum**:

| | |
|---|---|
| Direkt-Mikroskopie: | **positiv** |
| Xpert® MTB/RIF: | MTB **positiv** |
| | RIF-Resistenz negativ |

# Evaluation mit Kantonsärztin



**Folgende Situation erwartete uns  im Asylzentrum 2:**

- Die Kontakte zu den 2 TB-Fälle konnten nicht klar abgegrenzt werden, wir konnten die Kontakte > 8 Std. nicht herausfiltern
- 70 % der Asylsuchenden im AZ 2 wohnten vorher im AZ1
- Die 2 TB-Fälle lösten grosse Unsicherheit und Ängste unter dem Personal und den Asylsuchenden aus (99 Asylsuchende und 69 Personal)
- Es war unklar, ob es noch mehr TB-Fälle im Asylzentrum gab
- Politischer Druck aufgrund von Angst / Unsicherheit

→ am 27.04.2017 veranlasste die Kantonsärztin eine ausserordentliche Sitzung vor Ort, anwesend:

- Geschäftsführer Trägerverein Integrationsprojekte St. Gallen (TISG)
- Zentrumsleiter
- Hausarzt
- Gesundheitsbeauftragte
- Lungenliga SG-Appenzell

# Auftrag von der Kantonsärztin an die Lungenliga St.Gallen-Appenzell



**Folgende Personen sind zu Testen:**

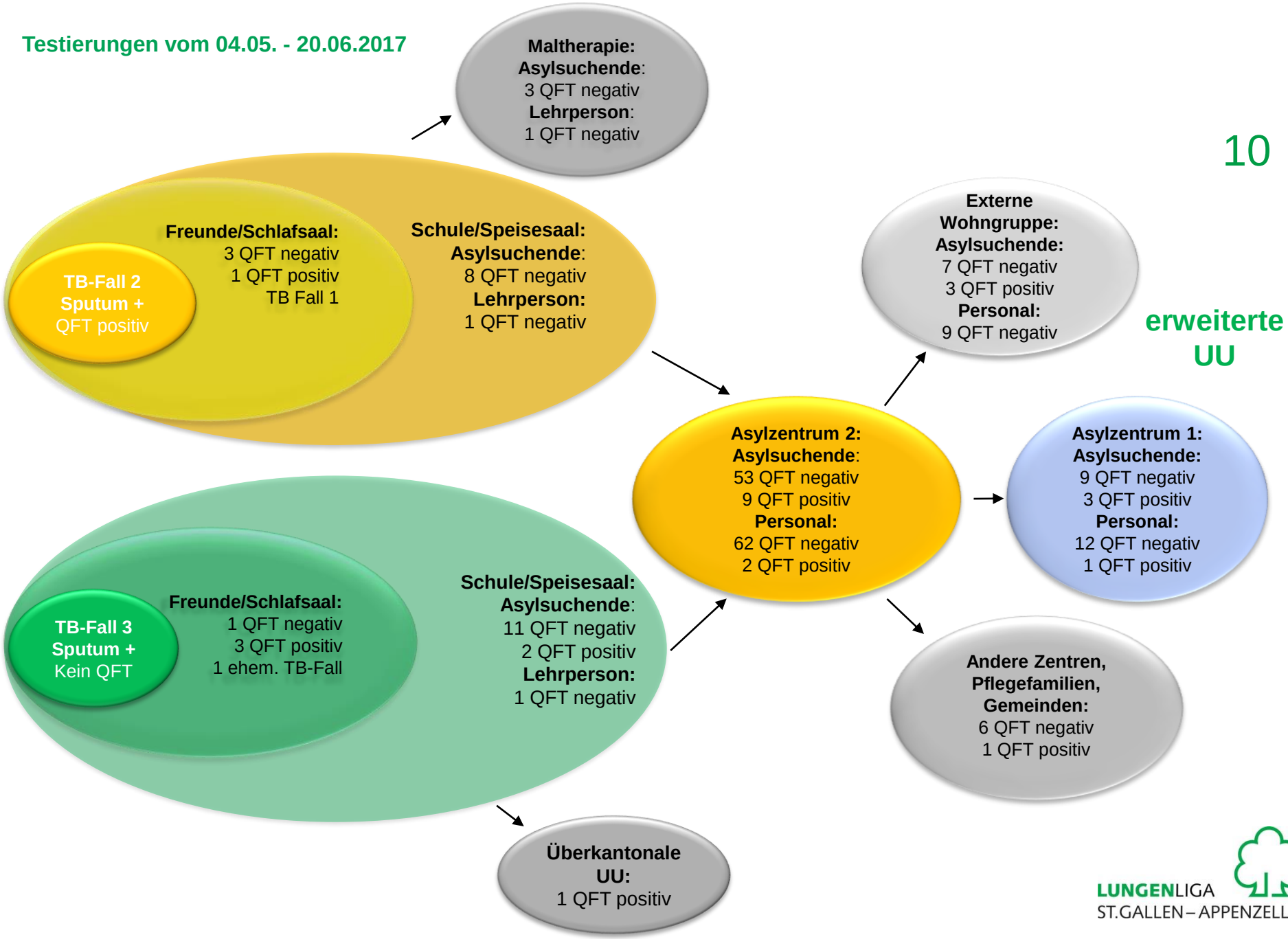
1. Alle Asylsuchende und das Personal vom AZ 2 (92 + 67)
2. Externe Wohngruppen (10 + 9)
3. Alle Transfers der letzten 3 Monate des AZ 2 (7)
4. Persönliche Kontakte ausserhalb des Asylzentrums (1)

→ die Kontaktpersonen sind so schnell wie möglich zu Testen
(Die Inkubationszeit 2 Monaten wird nicht eingehalten,
resp. z.T. schon vorbei)

→ Transfersperre aller Asylsuchenden im AZ 2 und in externe Wohngruppen ab sofort (27.04.2017)

→ nur mit Erlaubnis dürfen die Asylsuchenden das AZ 2 verlassen
(bis die Testresultate der QFT vorliegen)

## Testierungen vom 04.05. - 20.06.2017



# DNA-Fingerprinting für *M. tuberculosis*



Wurde im Auftrag von Prof. Dr. med. O. Schoch veranlasst.

- TB-Fall 1: →
- TB-Fall 2: → Übereinstimmender Fingerprinting
- TB-Fall 3: → keine Übereinstimmung mit den beiden Isolaten

# Gesamtauswertung aller Testierungen:



258 Personen sind getestet worden:

- **Personal: 110 getestete Personen**
  106 QFT negativ + 4 QFT positiv

  präventive Therapie: 2 x mit Erfolg abgeschlossen
  1 x Abbruch, 1 x keine Therapie

- **Asylsuchende: 148 getestete Personen**
  117 QFT negativ + 31 QFT positiv

  Präventive Therapien: 31 Therapien begonnen
  23 x mit Erfolg abgeschlossen (mit DOT)
  5 x Transfer in Gemeinde s/s mit Einnahme (erfolgreich abgeschlossen)
  3 x Therapien vorzeitigt beendet (untergetaucht, 2 Wochen vor Therapieabschluss)

→ Im Auftrag der Kantonsärztin wurde auch bei den präventiven Therapien eine DOT ausgeführt, bei den TB-Fällen ist dies Pflicht.

→ Den behandelnden Ärzten wurde jeden 2. Monat ein Kontrollblatt zur Bestätigung der AB-Therapie versandt.

# Fazit:



- 20 % der getesteten Asylsuchenden wiesen einen positiven QFT aus
- 80% der LTBI-Therapien konnten mit Erfolg abgeschlossen werden
- Auf eine 2. Testierung wurde anhand der Resultate verzichtet (negative Röntgenbefunde  und DOT der LTBI-Therapien)
- Die Testierung verursachte viel Stress und Angst bei den Asylsuchenden
- Der TB-Fall war für uns eine grosse Herausforderung gewesen, daraus resultieren folgende Fragen:
  - Wie hätte man die TB-Fälle früher erkennen können?
  - Wie ist der Wissensstand der TB in den kantonalen Asylzentren?
  - Wie kann die Lungenliga unterstützend mitwirken?

## Umsetzung / Plan:

- Weiterbildung der Gesundheitsbeauftragten in den kantonalen Asylzentren
  (mit Unterstützung der Kantonsärztin und Prof. Dr. med. O. Schoch)

# Leben heisst atmen

Vielen Dank für Ihre Aufmerksamkeit

# Transmission de TB entre requérants d'asile à Genève

Prof Jean-Paul Janssens

Hôpital Cantonal Universitaire, Genève

HUG Hôpitaux Universitaires de Genève

LUNGENLIGA SCHWEIZ
LIGUE PULMONAIRE SUISSE
LEGA POLMONARE SVIZZERA
LIA PULMUNARA SVIZRA

UNIVERSITÉ DE GENÈVE

# Tuberculosis cluster in an immigrant community: case identification issues and a transcultural perspective

A. Tardin[1], M. Dominicé Dao[2], B. Ninet[3] and J.-P. Janssens[4]

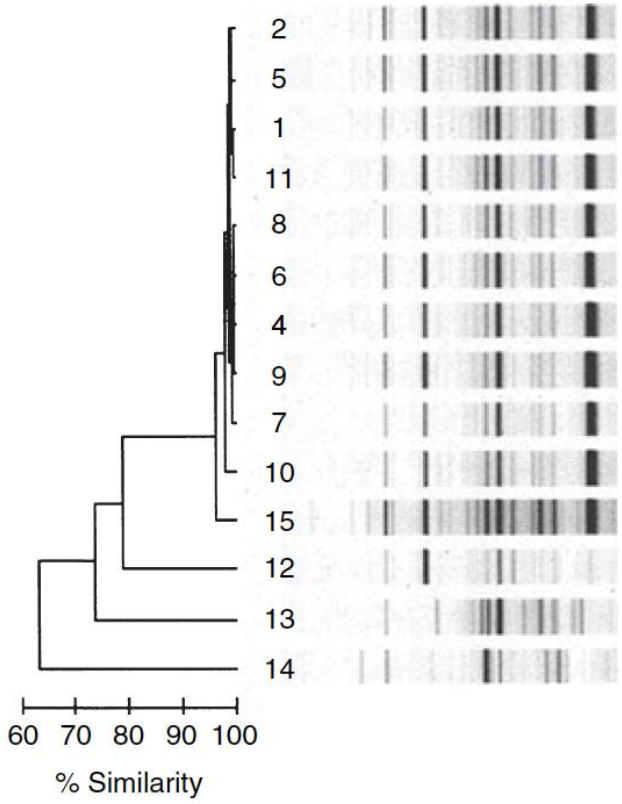
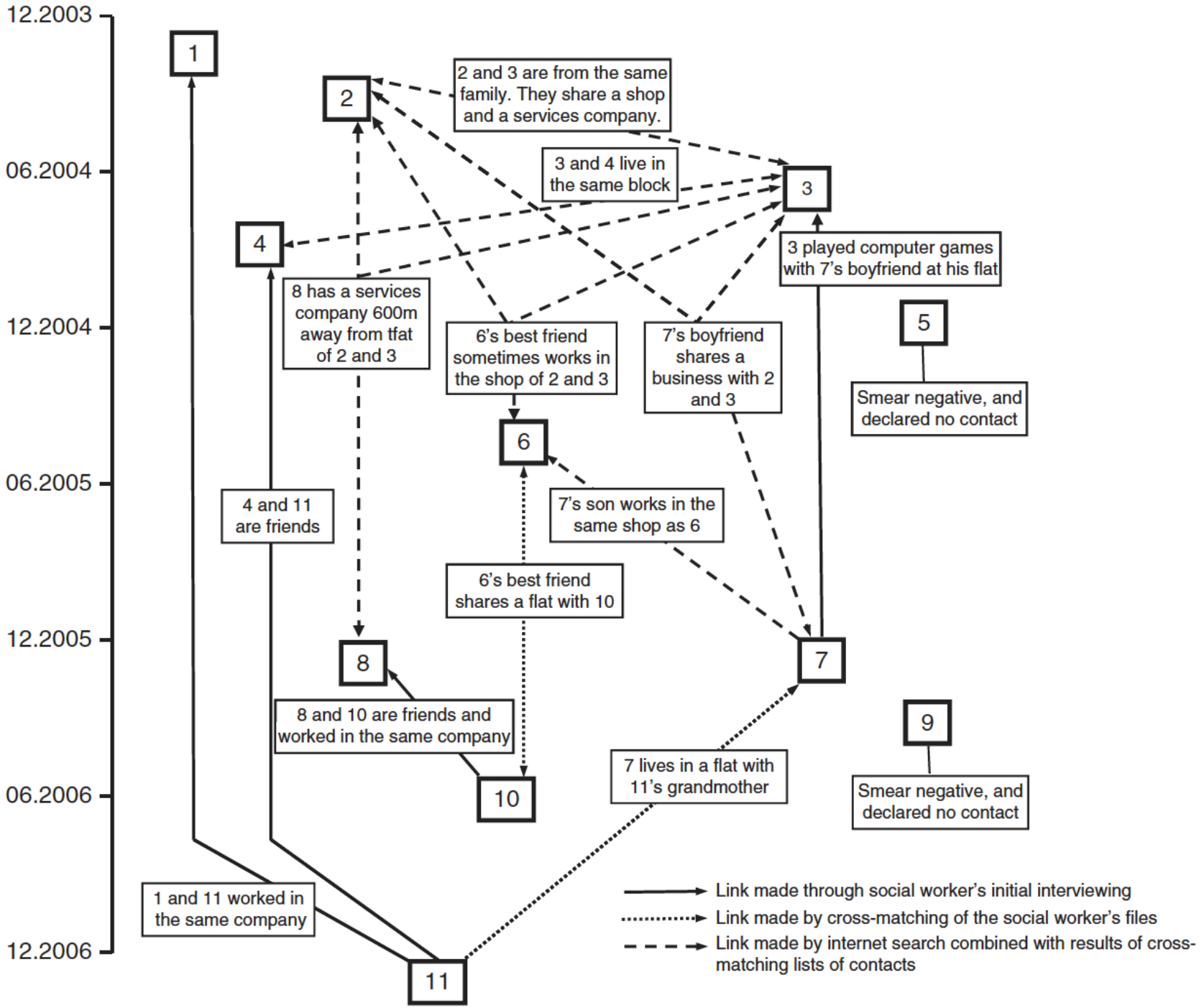



**Figure 1** Rep-PCR analysis of 14 immigrant isolates. The Dendrogram and gel-like images were generated on coded DNA samples by Bacterial Barcodes Inc. (Biomérieux).

Tropical Medicine and International Health

VOLUME 14 NO 9 PP 995–1002 SEPTEMBER 2009


12.2003
06.2004
12.2004
06.2005
12.2005
06.2006
12.2006
1
2
2 and 3 are from the same family. They share a shop and a services company.
3 and 4 live in the same block
3
4
3 played computer games with 7's boyfriend at his flat
8 has a services company 600m away from tfat of 2 and 3
6's best friend sometimes works in the shop of 2 and 3
7's boyfriend shares a business with 2 and 3
5
Smear negative, and declared no contact
6
4 and 11 are friends
7's son works in the same shop as 6
6's best friend shares a flat with 10
8
7
8 and 10 are friends and worked in the same company
10
7 lives in a flat with 11's grandmother
9
Smear negative, and declared no contact
1 and 11 worked in the same company
11
Link made through social worker's initial interviewing
Link made by cross-matching of the social worker's files
Link made by internet search combined with results of cross-matching lists of contacts

# Le signal d'alarme

- L'analyse des cas de TB survenus à Genève montre une surreprésentation des erythréens  ayant résidé dans 2 foyers pour requérants d'asile à Genève
- Chacune de ces situations a fait l'objet d'un contrôle d'entourage et d'informations sur site
- 11 cas ayant séjourné en foyer et traités pour une TB en 8 mois environ (7 au Foyer A; 3 au foyer B)
- Souches envoyées al Laboratoire national de référence pour genotypage (MIRU-VNTR)

# La casuistique

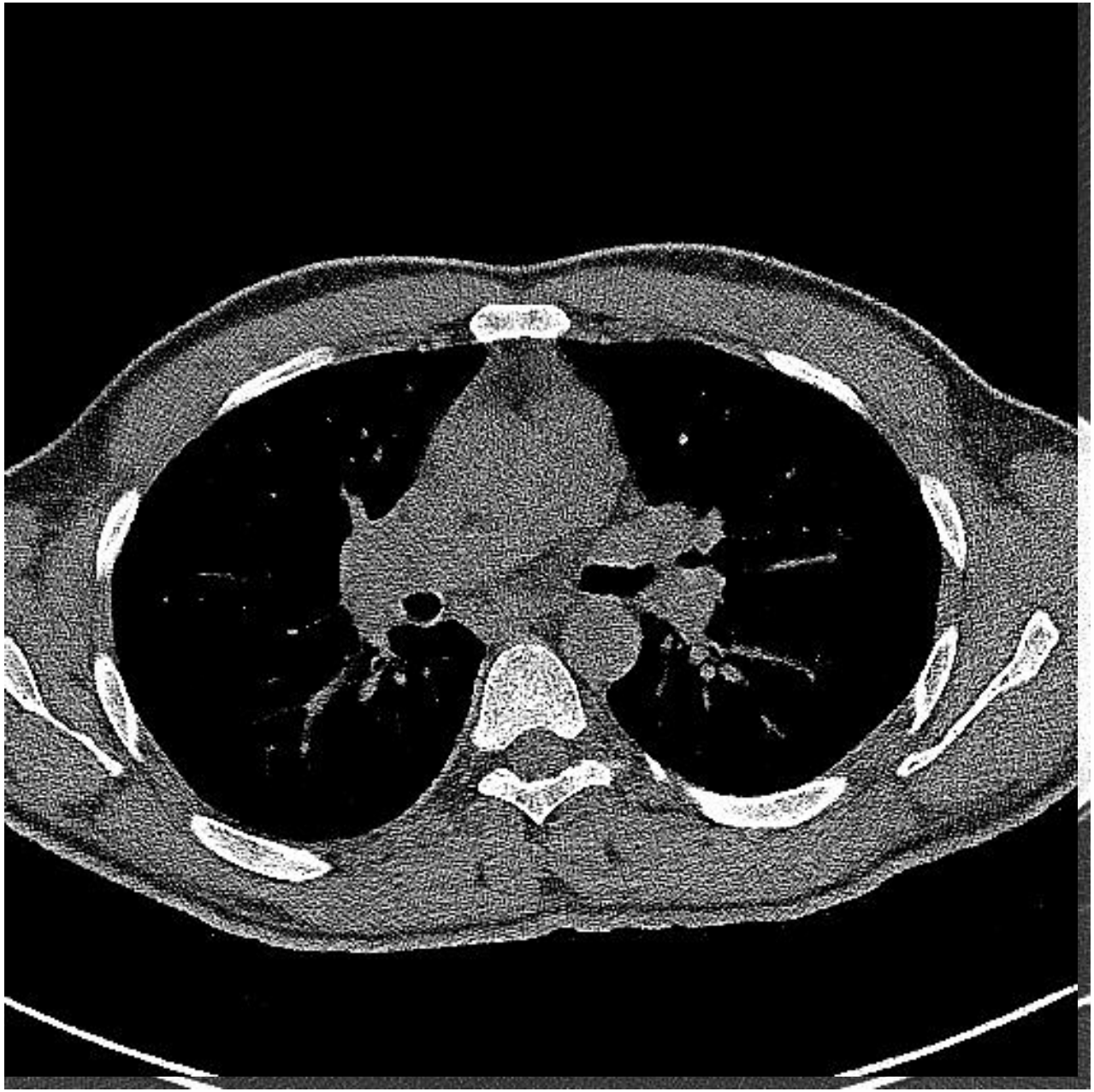
# Cas N°1 (ZA)

- 1994 (22 ans)
- Vit au Foyer A, 1è etage.
- Arrivée en CH: Sept 2015
- Pas de contage connu du patient. VIH neg
- 07.10.2016: **TB pulmonaire S+,** PCR +, rpoB non muté, C+

ZA 1994

# Cas N°2 (+ 2 mois)(TE)

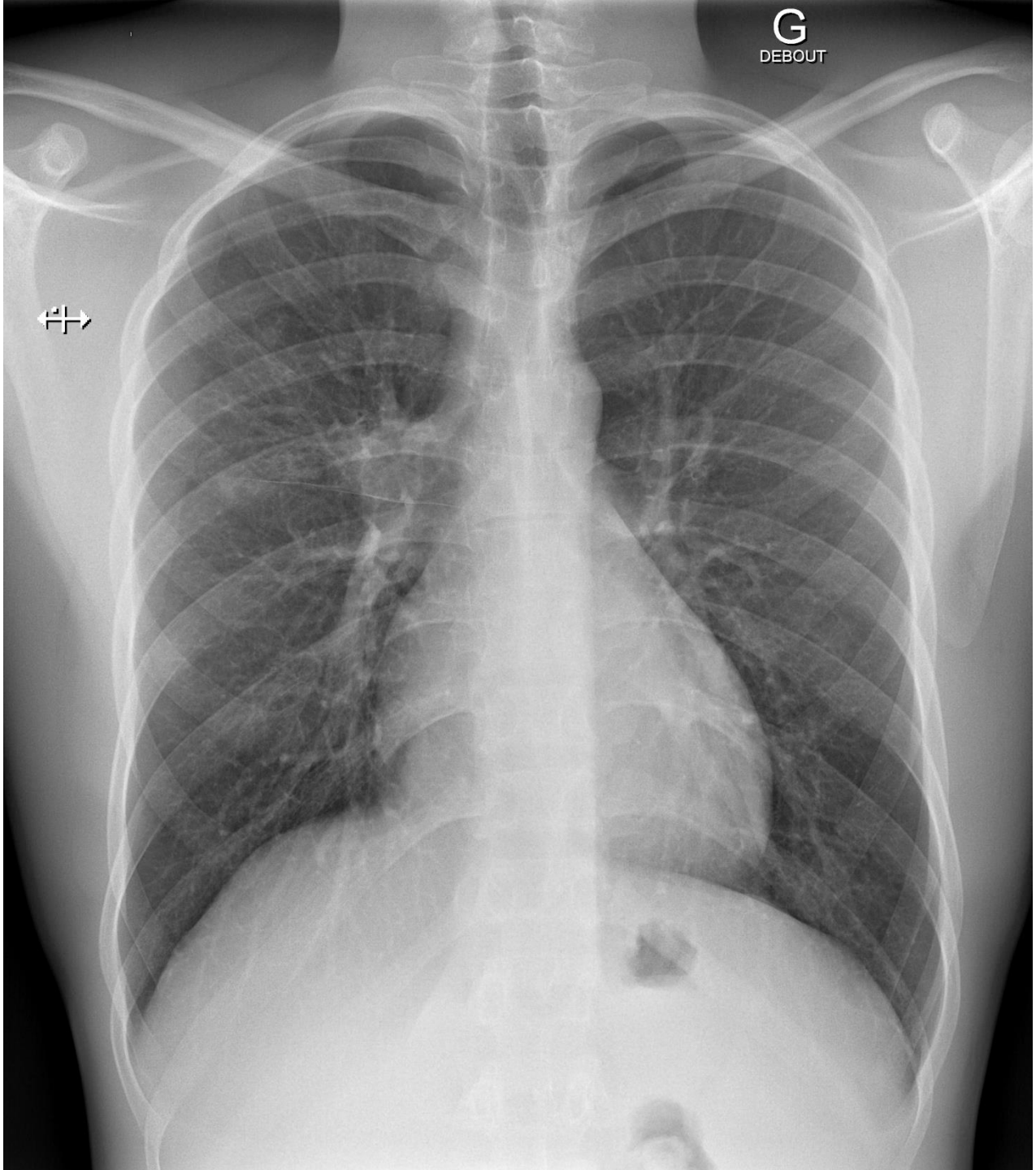
- 1984 (32 ans)
- Arrivée en CH: Avril 2015
- *Vit dans la même chambre que Cas N° 1*. VIH neg. Dépisté lors du contrôle d'entourage.
- 16.12. 2016: Toux, expectorations parfois hémoptoïques, perte de poids s/1 mois.
- **TB S-** PCR + rpoB non muté, C+



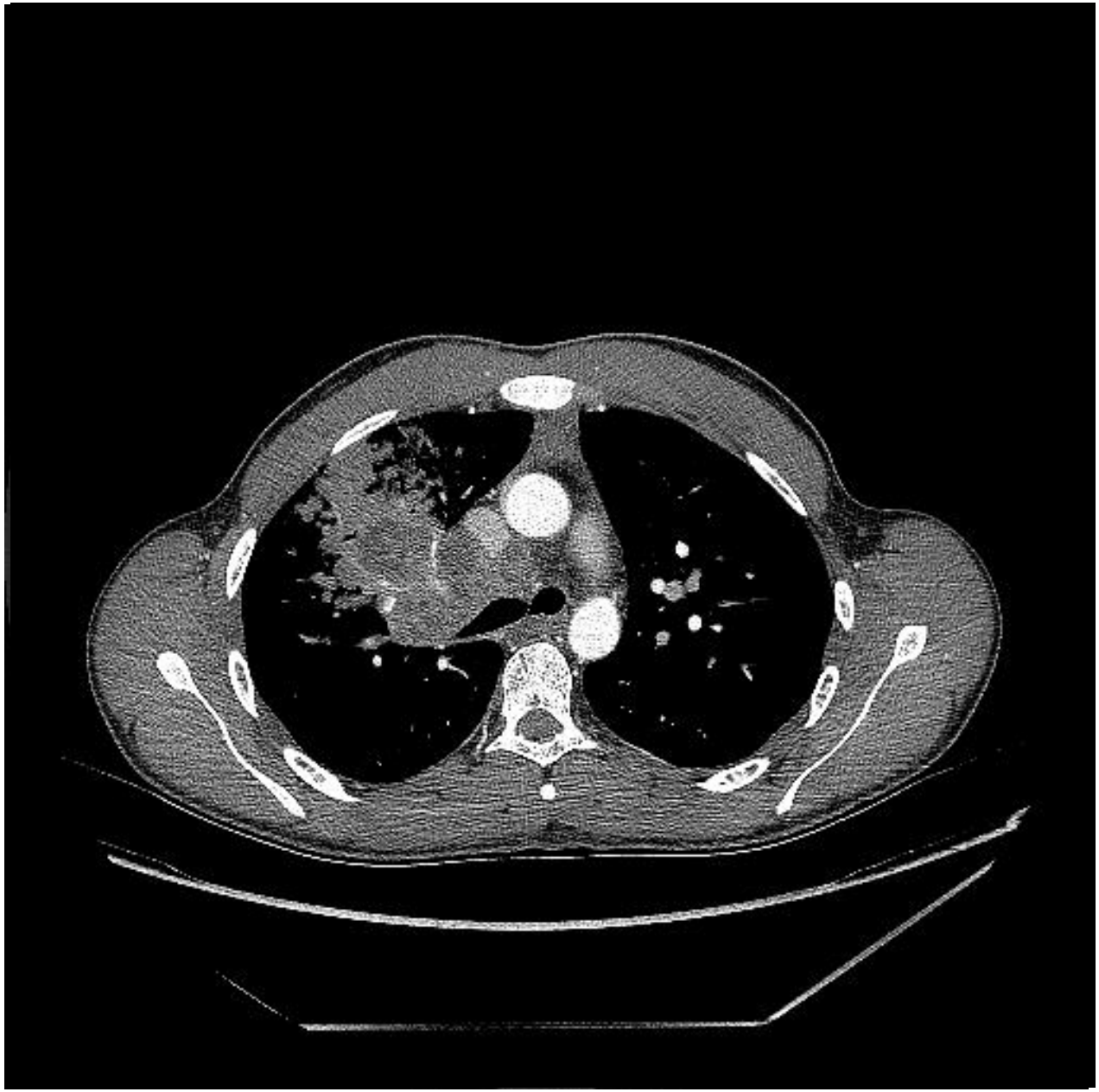
TE 1984

# Cas N°3 (+ 3.5 mois)(BY)

- 1997 (20 ans)
- *Vit sur le même étage que le cas N°1*
- Arrivée en CH: Eté 2015
- Vu dans le cadre du contrôle d'entourage  du Cas N°1. VIH neg
- Douleur hypochondre droit, perte de poids de 6 kg.
- CT: atteinte pleurale, mediastinale, splénique
- **TB S-** PCR + rpoB non muté, C+.
- Tt dès <u>21.01.2017</u>



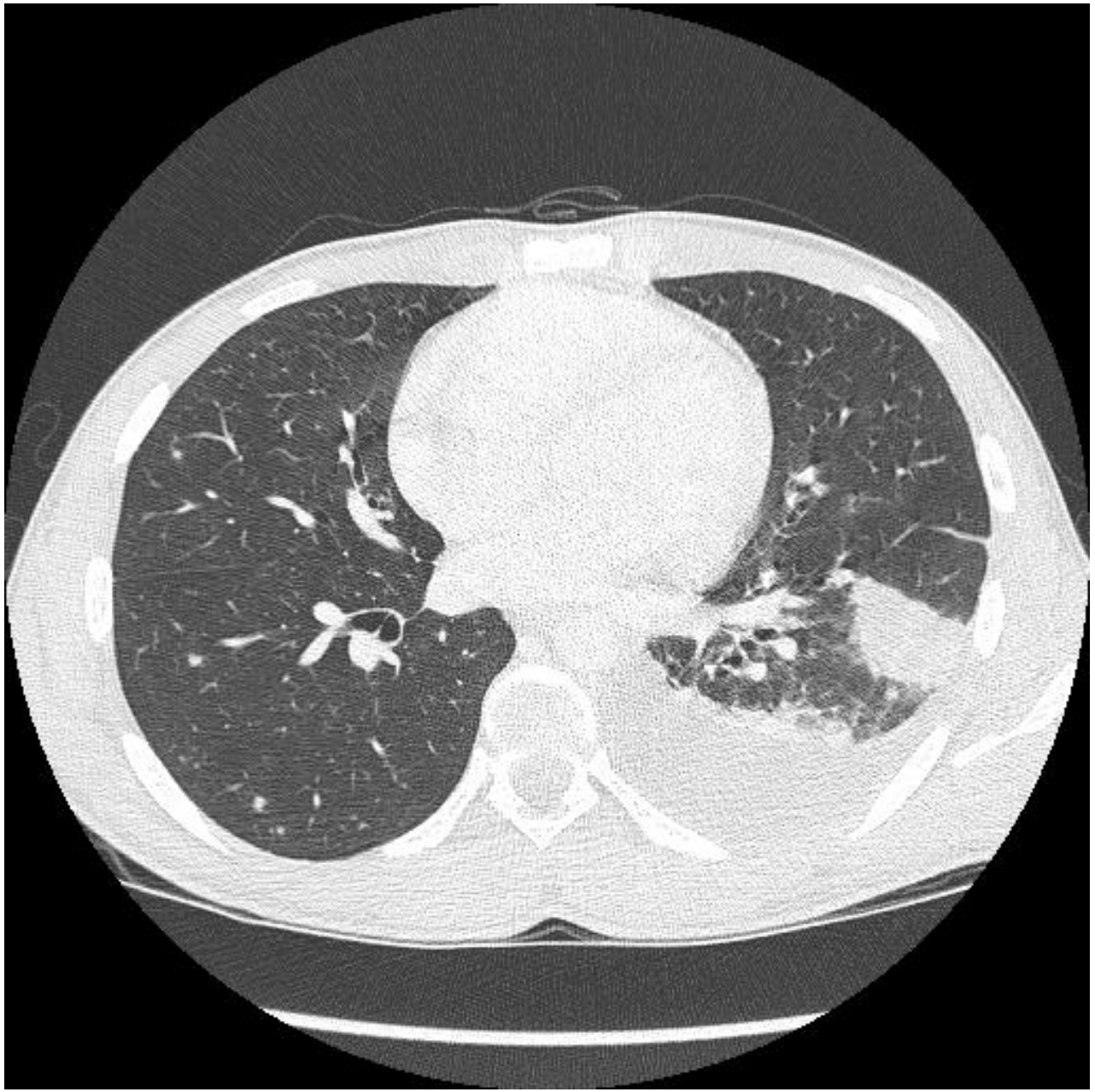

BY, 1997



BY, 1997

# Cas N°4 (+ 3.5 mois)(ST)

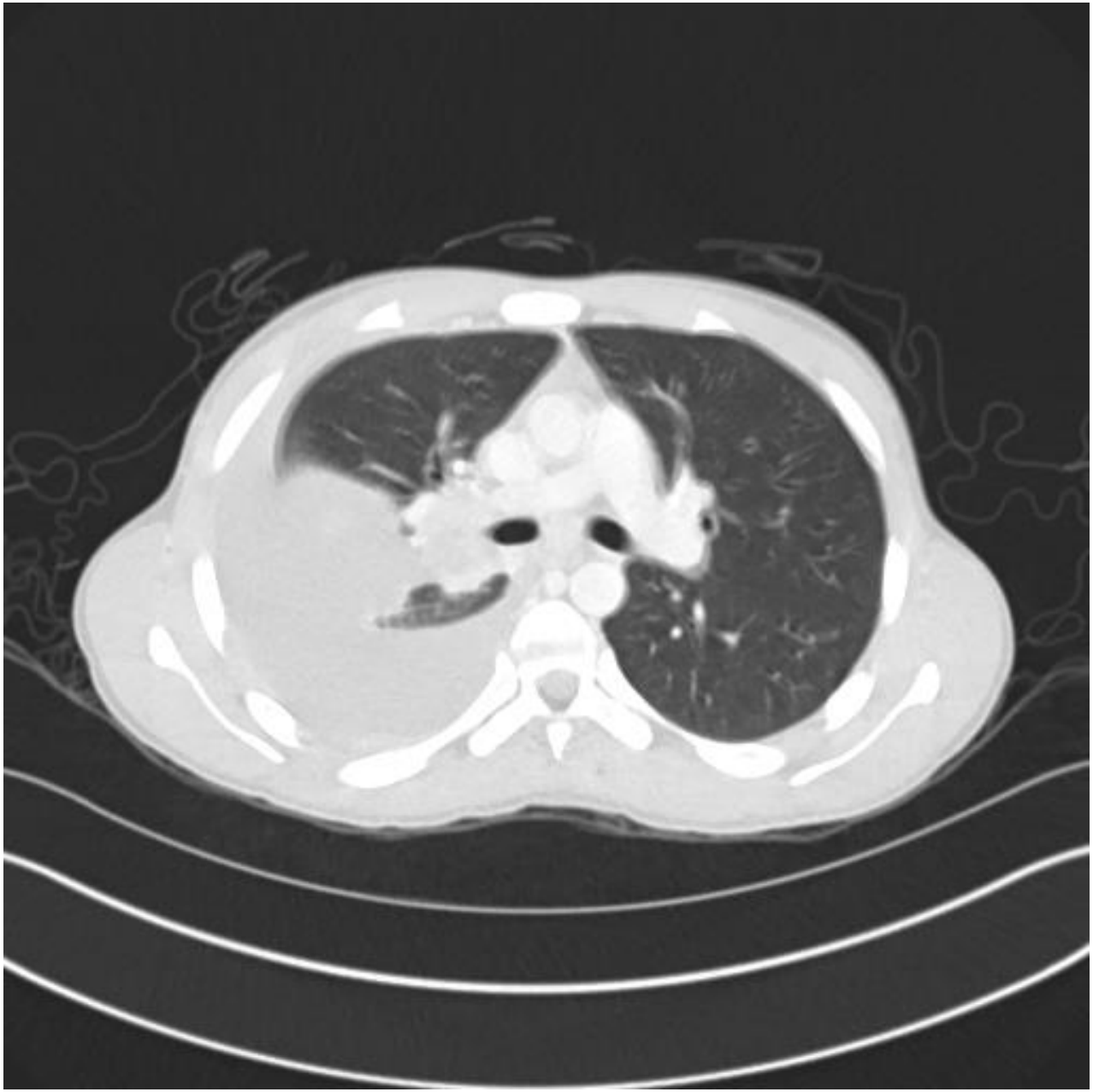
- 1990 (27 ans)
- *Vit sur le même étage que cas N°1.*
- Arrivée en CH: Avril 2015
- Vu dans le cadre du contrôle d'entourage  du Cas N°1. VIH neg
- Jan 2017: Douleur hypochondre droit, perte de poids de 6 kg. CT suspect.
- **TB S-** PCR + rpoB non muté, C+. Tt dès 22.01.2017



ST 1990

# Cas N°5 (NJ) + 3.5 mois

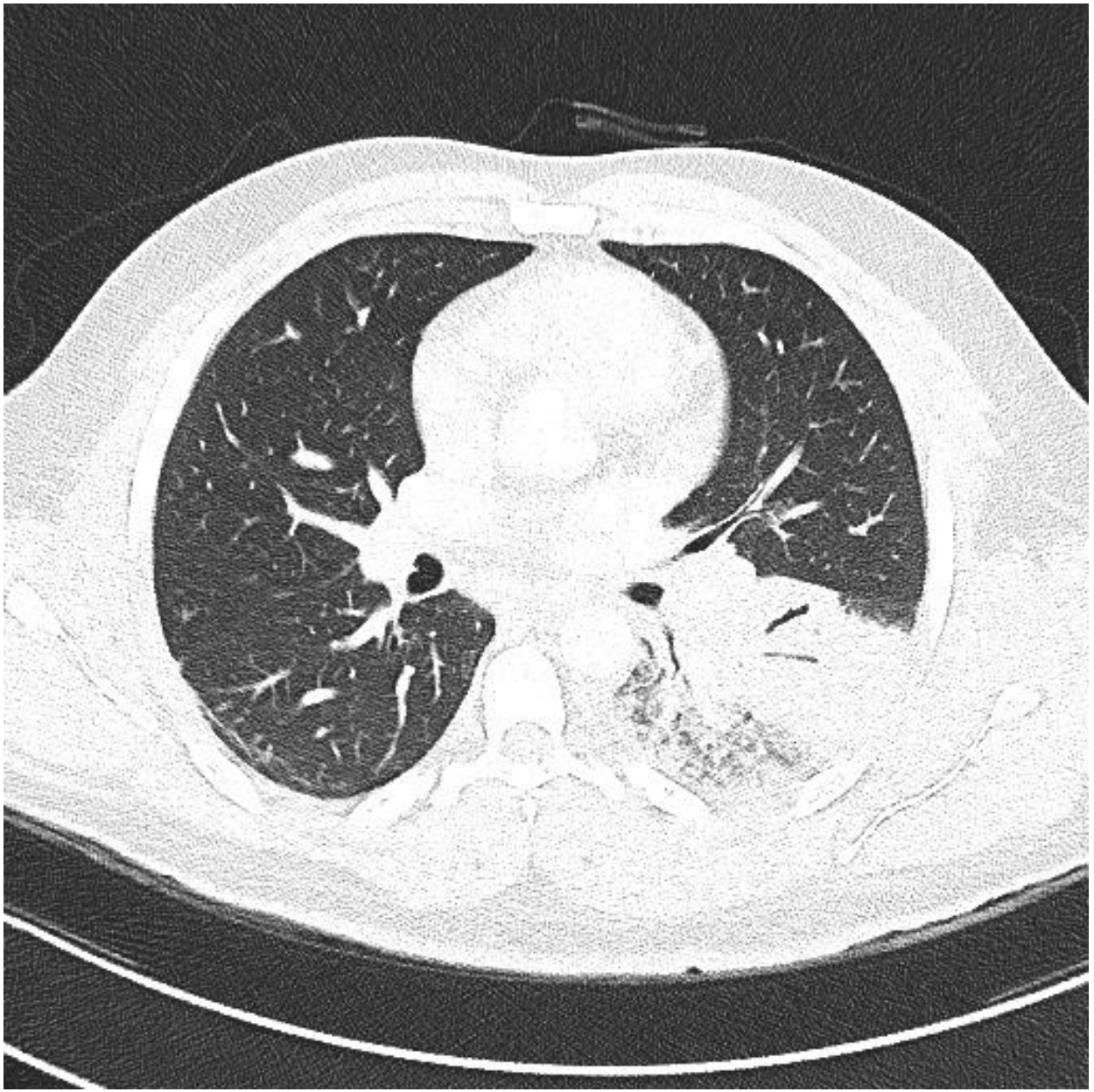
- 1997 (20 ans)
- *Vit au 2è étage du foyer A*
- Arrivée en CH: Août 2015
- Suivi pour un asthme. VIH neg
- Consulte spontanément aux urgences
- 21.01.2017: Toux, expectorations, perte de poids de 3 kg en 2 mois. CT suspect de TB
- **TB S-** PCR + rpoB non muté, C+



NJ 1997

# Cas N°6 (MA)(+ 5 mois)

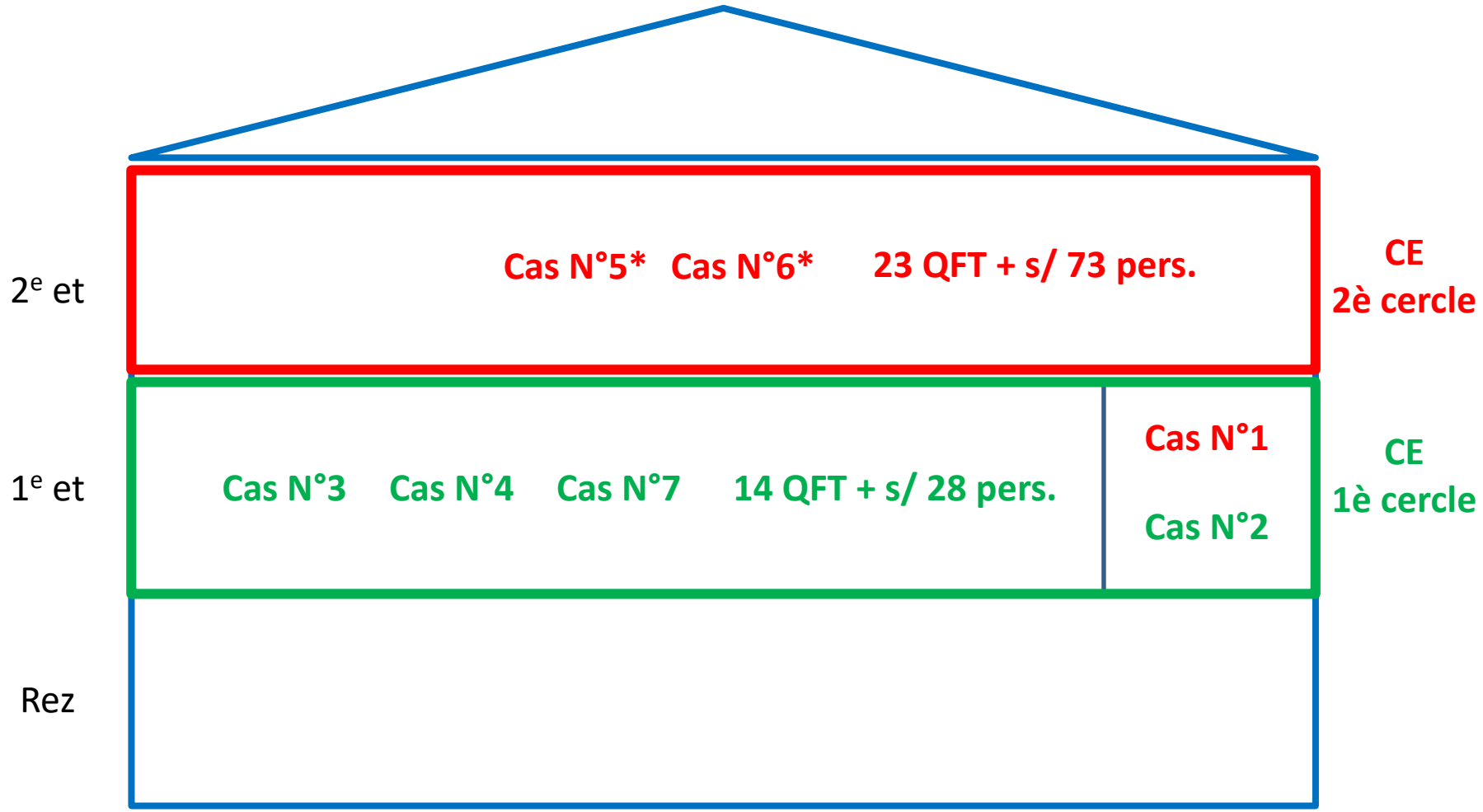
- 1997 (20 ans)
- Vit au 2è étage du foyer A.
- Arrivée en CH: 2014
- Consulte spontanément aux urgences en Mars. VIH neg (prévu pour 2è cercle).
- Hospitalisé pour suspicion de TB.
- 17.03.2017: **TB S+** PCR + rpoB non muté, C+



MA 1990

# Cas N°7 (NE)(+ 7 mois)

- Vit au Foyer A. Même étage que cas N°1.
- 17.5 ans.
- Arrivée en CH: Août 2015
- Vu dans le cadre du 1è cercle; QFT +; Rx suspecte. VIH neg
- 01.05.2017: **TB pulmonaire S-**, C+, pas de mutation rpoB




*: consultent spontanément aux urgences

# Commentaires

- 6 cas/ 7* sont clairement le résultat d'une transmission survenue en CH au foyer
- Un autre cas non génétiquement lié était survenu 11 mois avant le cas N°1.
- Chaque étape du contrôle d'entourage a fait l'objet d'une *information publique sur site avec interprètes.* Transports organisés pour les requérants. Rx systématique pour 1è cercle en même temps que le QFT.
- 101 personnes contrôlées; 36% de QFT +; 6 cas de TB active détectés ; 1/7 s'est présenté aux urgences
- Patients tous M, en CH depuis 20.9 ± 8.4 mois (range: 13.4 – 39 mois)
- Tous filtrés par le questionnaire de dépistage des SEM

*: Cas N° 7 non genotypé

# Commentaires

- 2 cas de tuberculose étaient  prévus dans le CE du 2è cercle consultent spontanément aux urgences
- Un cas vu lors du CE du 1è cercle a un QFT +, une Rx douteuse; plusieurs rdz-vs manqués  jusqu'au diagnostic et à la mise en route du traitement

*: Cas N° 7 non genotypé

# Commentaires

- Cette petite épidémie soulève la question de la *promiscuité* et des *conditions d'hébergement* de jeunes personnes provenant d'une population à haut risque, rappelle *l'importance d'un accès facilité aux soins*, et d'une sensibilisation du personnel et des patients.
- Cette situation souligne aussi l'importance de *contrôles d'entourage rigoureux* lors de tuberculose dans un foyer pour  requérants

# Remerciements


- Dr Bettina Schultess; Dr Peter Keller; Laboratoire de référence nationale , ZH
- Prof Jacques Schrenzel, et l'équipe du Laboratoire de Mycobactéries des HUG
- Dre Sophie Durieux, PSM, HUG
- Dr Peter Helbling, OFSP

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# Tuberculosis screening in Switzerland past – present – future

Magglingen
March 22, 2018

Peter Helbling
peter.helbling@bag.admin.ch

# History of TB screening in Switzerland (1948-1991)

- 1948: Start of TB screening by radioscopy of immigrant workers (1960s: miniature x-ray)
- **1974-1991: 14 Federal «Border Health Posts» for radiographic TB screening**

  - **Seasonal immigrant workers**

    App. 200,000/y in 1980s, «1 radiographically active case per 2300»

  - **Refugees and asylum seekers (age >=14 years)**

    «Border Health Posts» and cantonal radiography centers

    1984-87: ~75% coverage, prevalence 290/100,000
    (*Raeber PA, Ther Umschau 10, 1990*)

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# «Why screen for TB?» (1990)

«Would easy access to the health care system not be sufficient?»

Plans to abandon screening (FOPH) politically not acceptable:

→ Screening (radiography) of immigrant labor maintained

→ Screening of asylum seekers, centralized in 5 reception centers (radiography and tuberculin skin test)

# History of TB screening in Switzerland: Overview

- 1948: Start of TB screening by radioscopy of immigrant workers (1960s: miniature x-ray)
- 1974-1991: 14 Federal «Border Health Posts» for radiographic TB screening

  - Seasonal immigrant workers

  - Refugees and asylum seekers

- 1992-2005: - TB screening of immigrant labor (radiography)

  - TB screening of asylum seekers (radiography if >=14 yrs)

  - Screening of asylum seekers for latent TB infection (LTBI) (tuberculin skin test)

- 2006-2017: TB screening of asylum seekers with interview-based scoring

# Yield of radiographic screening of immigrant labor force (1992-2005)

Target group: All immigrants getting a work permit for the first time, except if from EU, EFTA, USA, Canada, Australia, New Zealand

1995-1999 (complete data of 13 «Border Health Posts»):
12,442 radiographs
136 abnormal findings
6 TB cases
**Number needed to screen (NNS) to detect one case: 2074**

Early 2000s: **NNS ~7000** (*Bulletin FOPH Jan 3, 2006*)

# Yield of radiographic screening of asylum seekers (1992-2005)

| | 2004-2005 (5 centers) | 2004 (4 centers) |
|---|---|---|
| Asylum seekers (n) | 21,727 | 8,995 |
| Cases* (n) | 31 | 27 |
| **Number needed to screen to detect one pulmonary culture-confirmed case** | **701** | **333** |
| | Schneeberger-Geisler S, IJTLD 2010 | Mathez C, Swiss Med Wkly 2007 |

*Both studies: culture-positive pulmonary TB cases

Referred to by: *Kunst H, IJTLD 2017*

# Main effect of immigrant screening for TB

- Reduces delay to treatment (e.g. 2-3 months)
- Thereby prevents some transmission, mostly within the respective immigrant group

  *Verver S, Int J Tuberc Lung Dis 2001; 5: 419*

- Screened cohort will have fewer cases over 10 years (~10%)

  *de Vlas SJ. Project ECDC.572, Part C. Rotterdam, Erasmus Medical Centre 2008*

# Screening for LTBI in asylum seekers (1994-2003 data)

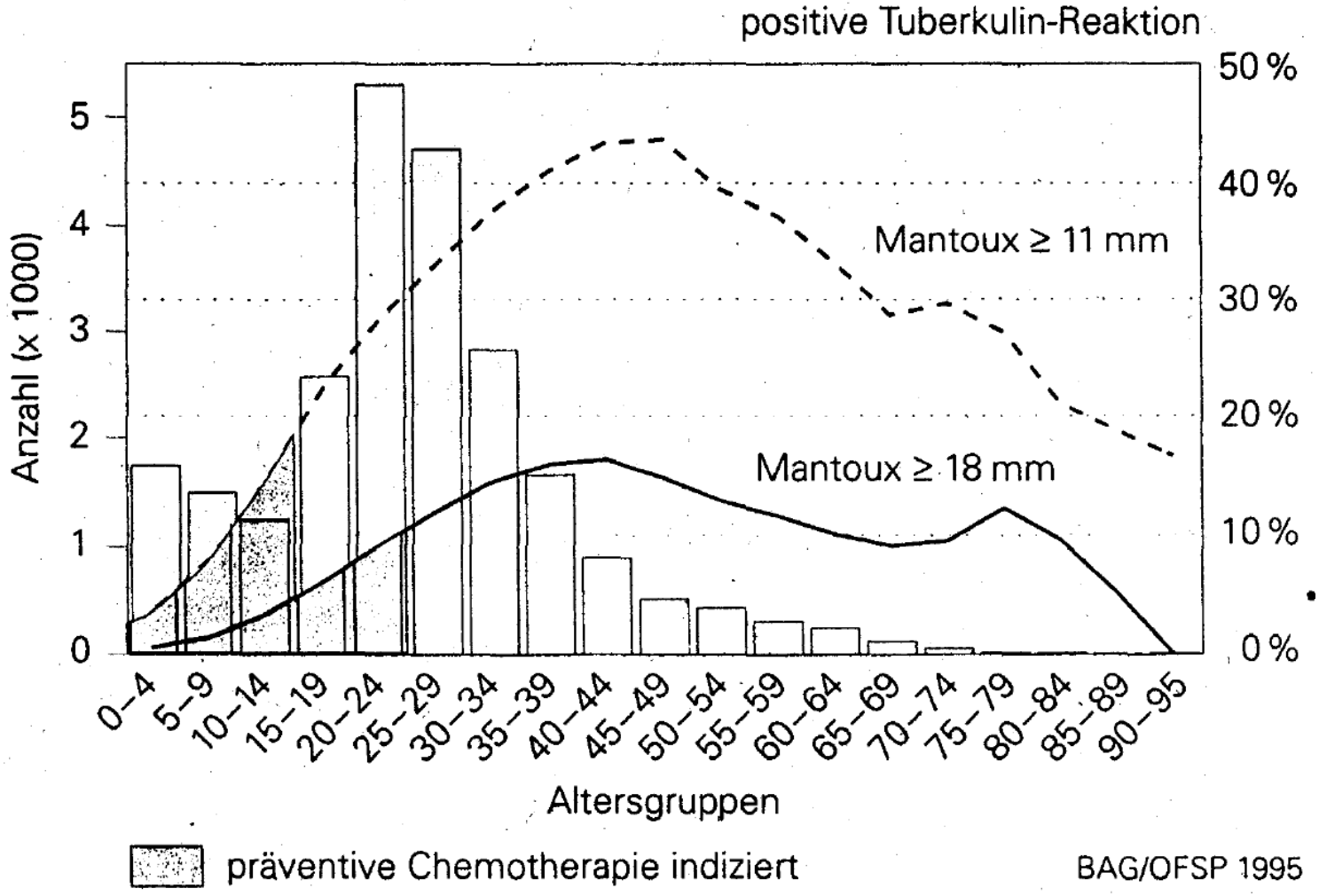
| Tuberculin skin tests (TST) | | |
|---|---|---|
| Total number of asylum seekers | 223,319 | |
| TST done and result available | 191,870 | 86% |
| TST positive* | 30,839 | 16% |

* 10 mm for age <15 years
15 mm for age >=15 years

No data on number of treatments started for LTBI

*P.S. Indication for treatment was more restrictive (5% in 1992-1993): <15 years >=11 mm; 15-25 years >=18mm (Bull FOPH 24.4.1995)*

# Screening for LTBI in asylum seekers (1992-1993 data, courtesy Hans Rieder)



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# LTBI screening – WHO guidelines 2015

"Systematic testing and treatment of LTBI should be considered for prisoners, healthcare workers, **immigrants from high TB burden countries,** homeless persons and illicit drug users."

**"Conditional recommendation, low to very low quality of evidence"**

*Guidelines on the management of latent tuberculosis infection*
*WHO/HTM/TB/2015.01*

# LTBI screening – WHO guidelines 2015

Conditional recommendation, low to very low quality of evidence

"[WHO] Panel concluded that "**the desirable effects of adherence to the recommendation probably outweigh the undesirable effects,** but the **Panel was not confident** about these trade-offs.

Reasons for not being confident included:

- **absence of high-quality evidence (data to support the recommendation are scant);**
- presence of **imprecise estimates of benefits or harms** (new evidence may result in changing the balance of risk to benefit);
- uncertainty or variation regarding how different individuals value the outcomes (only applicable to a specific group, population or setting);
- **small benefits and benefits that may not be worth the costs** (including the costs of implementing the recommendation)"

*Guidelines on the management of latent tuberculosis infection*
*WHO/HTM/TB/2015.01*

# Screen immigrants for LTBI?

- TB elimination drive: invented primarily for funding purposes

  USA in 1980s
  WHO in 2014 «End TB strategy»: *«If we don't come up with new bold ideas, funding will go down» (Personal communication Raviglione M, WHO, Münchenwiler Symposium 2014)*

- WHO: «The target [of elimination by 2050] will not be reached with the technology and procedures we have today»
  *Dye C, Annu. Rev. Public Health 2013*

- No elimination possible in low-prevalence countries with immigration from high-prevalence countries

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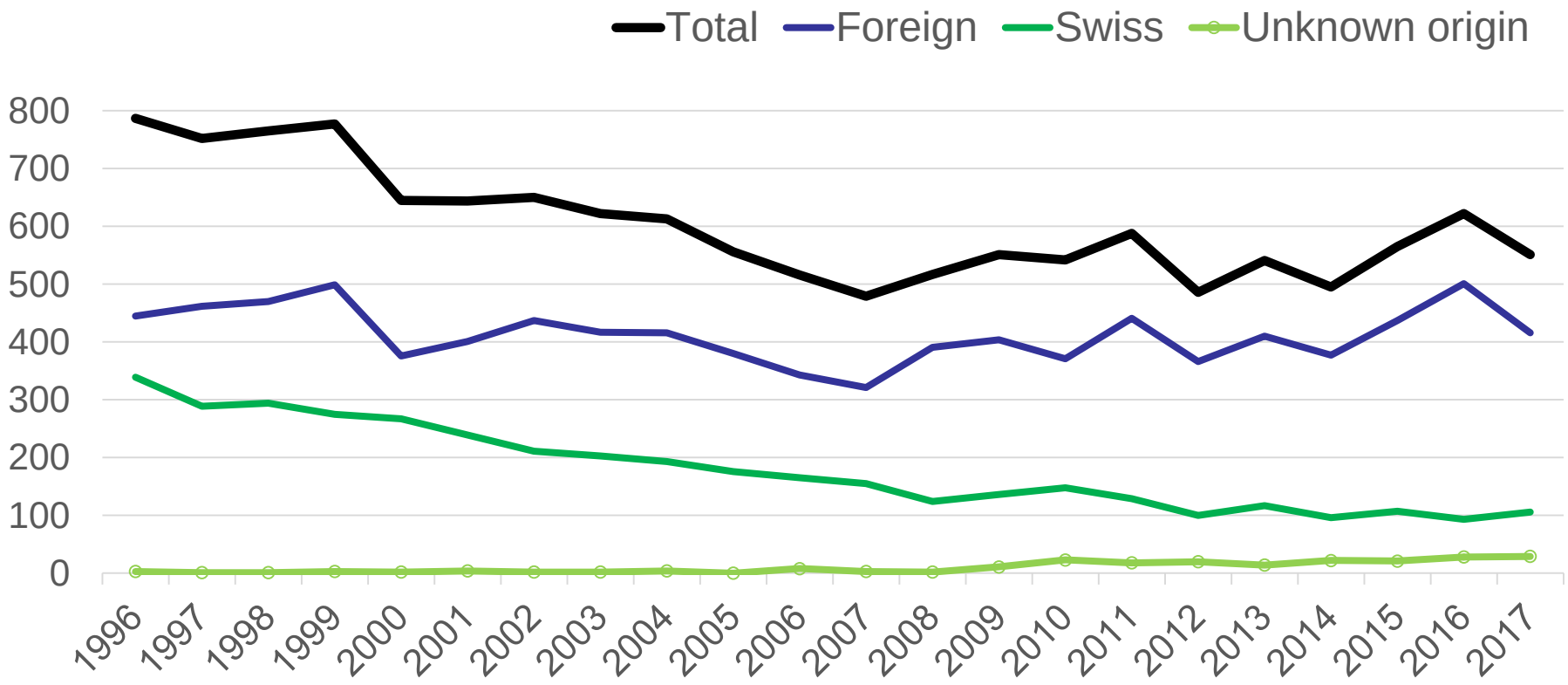
# Origin of notified cases of tuberculosis Switzerland 1996-2017




Magglingen, 22 March 2018
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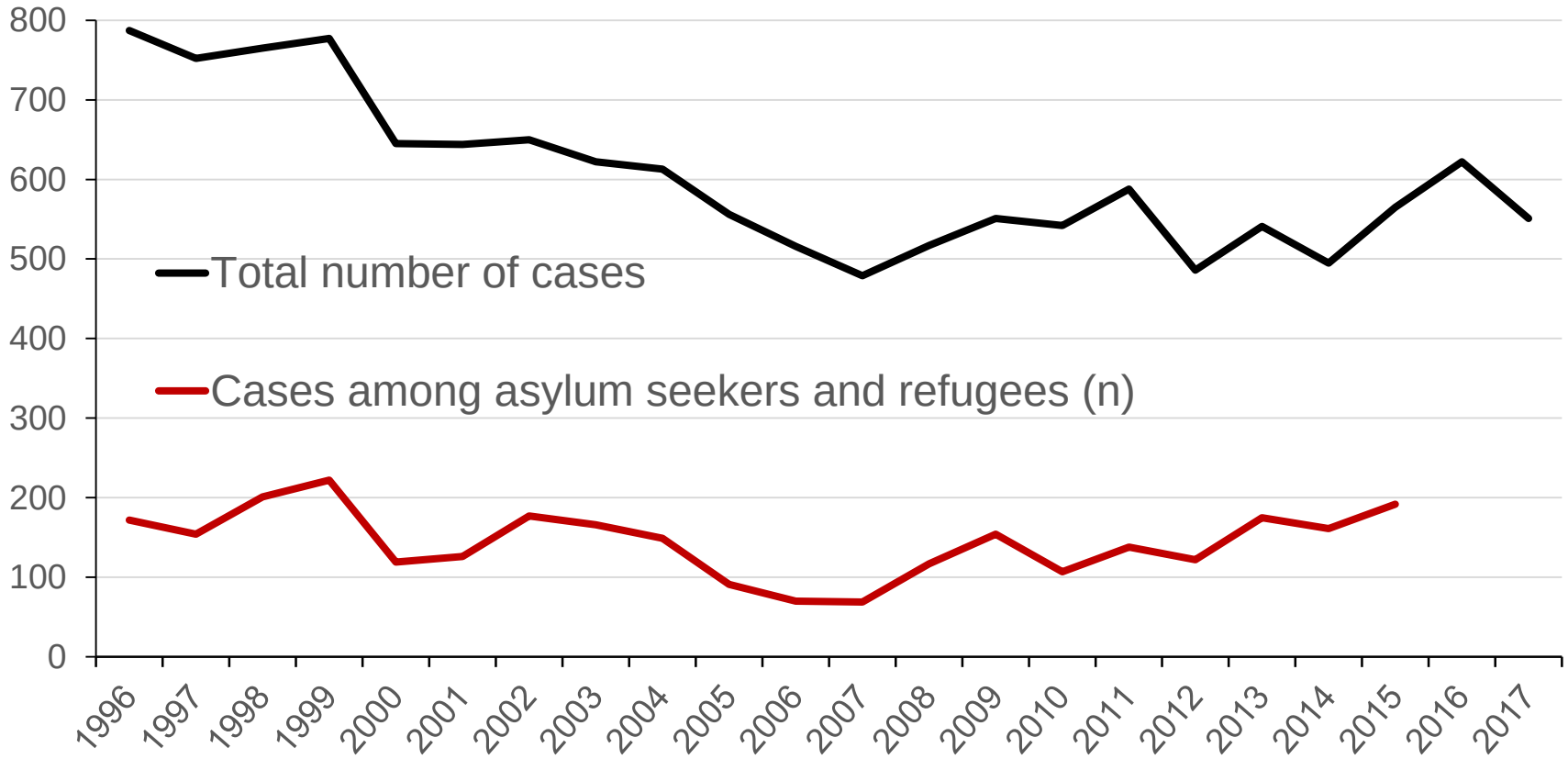
# TB cases among asylum seekers / refugees vs. total n Switzerland 1996-2017




Magglingen, 22 March 2018
Peter Helbling

# Screen immigrants for LTBI?

- Elimination drive, invented for funding purposes (?)

  USA in 1980s; WHO in 2014

- «The target [of elimination by 2050] will not be reached with the technology and procedures we have today» Dye C, Annu. Rev. Public Health 2013

- No elimination possible in low-prevalence countries with immigration

- Treatment of LTBI found in current contact tracings in Switzerland: Room for improvement («low-hanging fruit»)?

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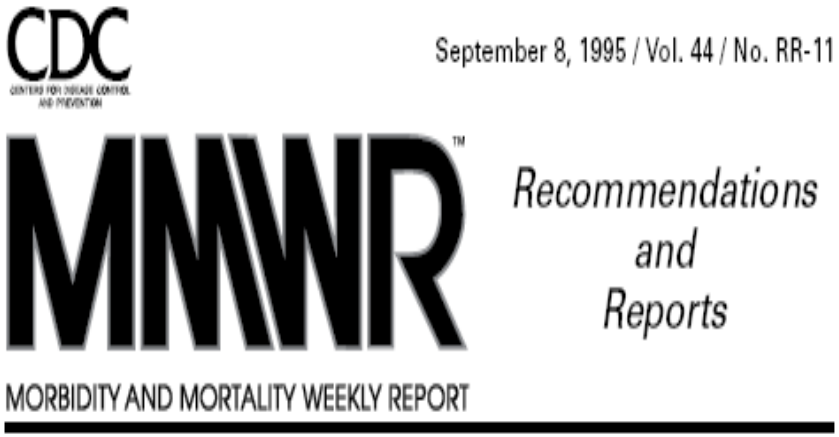
# More LTBI screening needed?

## LTBI treatments in Switzerland from contact tracings (data from Swiss Lung Association)

| Year | 2014 | | 2015 | |
|---|---|---|---|---|
| Contact tracings | 268 | | 247 | |
| Tests with available results | 2873 | | 2339 | |
| Infected persons | 340 | | 245 | |
| LTBI treatments started | 147 | 43% | 133 | 54% |
| LTBI treatments carried out to the end | 119 | 35% | 103 | 42% |

# Screening – a priority?




"In general, screening should not be given preference over higher priority activities (e.g., treatment of TB patients and contact investigation)."

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# History of TB screening in Switzerland: Overview

- 1948 Start of TB screening by radioscopy of immigrant workers (1960s: miniature x-ray)
- 1974-1991: 14 Federal «Border Health Posts» for radiographic TB screening

  - Seasonal immigrant workers

  - Refugees and asylum seekers
- 1992-2005: - TB screening of immigrant labor (radiography)

  - TB screening of asylum seekers (radiography)

  - LTBI screening of asylum seekers (tuberculin skin test).
- 2006-2017: TB screening of asylum seekers with interview-based scoring

# Decision not to screen for LTBI after 2005

- Intention: Treatment would reduce future TB cases
- Screening test positive: possible remote contact to tuberculosis, lower progression rates* compared to contact tracing
- Treatment of ~20% of asymptomatic asylum seekers is not feasible – trying it is costly.
- We have tried (1992-2005) and failed!

**Shea KM, Am J Epi 2014:* Reactivation rate <1 case/1000 person-years in TST positive

# Decision to abandon routine radiography in 2006

## Background

- Limited effectiveness

*Dasgupta K. Eur Respir J 2005; 25: 1107*

- High costs

  (Swiss data: 10% of persons screened had abnormal radiographs requiring microbiological investigations.)

## Reason

- Popular referendum on national debt brake (2001)

  -> Limit on deficit spending by federal government

  -> Linear budget cuts

# TB screening 2006-2017

- Federal Reception Centers for asylum seekers

- Nurse consultation with IT tool: Score based on TB prevalence in country of origin, person's history of TB, current symptoms, clinical impression (cf. generic version on www.tb-screen.ch)

→ Radiography in approximately 4%

# Evaluation of yield: Comparison to x-ray

Outcome: Culture-positive pulmonary TB cases starting treatment within 90 days after screening

| | **2004-2005 Radiography** | **2007-2008 Interview** |
|---|---|---|
| Asylum seekers (n) | 21,727 | 23,402 |
| Cases (n) | 31 | 29 |
| Period prevalence (n/10,000) | 14.3 | 12.4 |
| **Median time from screening to start of treatment (days)** | **6** | **25** |



*Schneeberger-Geisler S, IJTLD 2010*

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# Tuberculosis (TB) and latent TB (LTBI) in Federal Reception Centers (FRC) 2014-2017

| | 2014 | 2015 | 2016 | 2017 | Total 2014-2017 |
|---|---|---|---|---|---|
| TB diagnosed while in FRC | 24 | 33 | 49 | 31 | 137 |
| Arrival with diagnosis of TB | 8 | 3 | 9 | 12 | 32 |
| LTBI diagnosed in FRC | 3 | 4 | 5 | 10 | 22 |
| Arrival with diagnosis of LTBI | 0 | 2 | 3 | 4 | 9 |
| Total number of asylum seekers screened | 20658 | 37855 | 21782 | 14188 | 94483 |

Magglingen, 22 March 2018
Peter Helbling

# Period prevalence of TB in Federal Reception Centers for asylums seekers 2014-2017

| | Asylum seekers (n) | TB cases diagnosed (n) | Period prevalence / 100,000 | "Number needed to stay" for one diagnosis of TB |
|---|---|---|---|---|
| Somalia | 3991 | 53 | 1327 | 75 |
| Tibet | 776 | 5 | 644 | 155 |
| Sudan | 753 | 3 | 398 | 251 |
| Georgia | 1874 | 7 | 374 | 268 |
| Guinea | 2150 | 6 | 279 | 358 |
| Gambia | 2623 | 5 | 191 | 525 |
| Eritrea | 20140 | 30 | 149 | 671 |
| Morocco | 2179 | 3 | 138 | 726 |
| Nigeria | 3470 | 3 | 86 | 1157 |
| Afghanistan | 12343 | 4 | 32 | 3086 |

Magglingen, 22 March 2018
Peter Helbling

# Period prevalence of TB among Somali asylum seekers in Federal Reception Centers (2014-2017)

| | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|
| Cases/ «stays» | 8/637 | 7/1266 | 23/1407 | 15/681 |
| «Number of stays needed»/case | 80 | 181 | 61 | 45 |
| MDR (n) | ? | >=1 | >=3 | >=4 |

Magglingen, 22 March 2018
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# TB screening and cases diagnosed in Federal Reception Centers 2016

| | Altstä | BS | BE | **Chiasso** | Kreuzl | Vallorbe | ZH | Total |
|---|---|---|---|---|---|---|---|---|
| MD consultation before registration in screening system | 0 | 1 | 1 | **6** | 0 | 0 | 0 | 8 |
| From screening to MD to diagnosis without delay | 3 | 5 | 0 | **21** | 3 | 1 | 1 | 34 |
| From screening not to MD, diagnosis later (initially missed diagnosis) | 0 | 2 | 1 | 3 | 0 | 0 | 1 | 7 |
| Total | 3 | 8 | 2 | **30** | 3 | 1 | 2 | 49 |

Magglingen, 22 March 2018
Peter Helbling

# Screening for TB (first 30 weeks of 2017)
# Are the defined procedures respected?

| | |
|---|---|
| Asylum requests in federal reception centers: | N=10,788 |
| Score >9, radiograph needed | 499 (4.6%) |
| Radiograph taken | 447 (90%) *[2016: 97%]* |
| Radiograph not normal | 46 (10%) *[2016: 12%*] |
| Microbiological specimens taken | 37 (80% of abnormal x-rays) *[2016: 73%)* |

# Screening for TB disease by tuberculin skin test?

Recommendation by Pediatric Infectious Diseases Group of Switzerland (PIGS) *(Bernhard S, Paediatrica 2016)*

Target group: Asylum seekers <5 years of age born abroad

Stated objective: To diagnose existing TB disease before symptoms appear

Stated rationale: Majority of children <5 years of age progress to disease within 6 months after infection.

FOPH does not support the recommendation:

- The cohort to be tested is 1500 children per year.
- There is one (01) case per year in this cohort (one complicated case per 10 yrs).
- It is unlikely that the case will be screened exactly at the time stated above.
- WHO recommends against using any screening test for this purpose (*WHO/HTM/TB/2013.04).*
- If the objective were to find and treat LTBI: Test >>1500 children to prevent one case (Ethical? Cost-effective? CHF >1 million per case prevented)

# From 2018 onward:

# “Communicable diseases in collective centers for asylum seekers in Switzerland: the new national concept”

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https://www.bag.admin.ch/bag/de/home/themen/mensch-gesundheit/uebertragbare-krankheiten/infektionskontrolle/gesundheitsversorgung-asylsuchende.html

# 2012 revision of legal framework

- Epidemics Act (RS 818.101) and its ordinance (RS 818.101.1)
- Relevant articles:  Art. 19 in RS 818.101 and Art. 31 in RS 818.101.1
- Enacted 2016 (art. 31: 2018)

# Responsibilities

## Federal Office of Public Health (FOPH)

- Recommendations, directives and procedures
- Technical and administrative procedures
- Provision of information material
- Periodical control of the effectiveness and efficacy of the prevention measures

## State Secretariat for Migration (SEM)

- Implementation of the measures as mentioned in Art 31 OEp
  - Mandatory information
  - Access to primary health care
  - Access to vaccinations / prevention material
  - Coordination with the cantons
  - Evaluation

# Federal centers

- To be carried out by **nurses**
  - **Medical information upon arrival**
  - **First consultation**: not compulsory, but strongly recommended
    - **Individual medical file** for each asylum seeker
- Access to vaccinations
- Written cooperation **agreements** with physicians of the centres
  - Supervision of the nurse
- Costs covered for **interpreters** for the physicians of the centre
- Directives and procedures in the case of an outbreak of communicable diseases in the centres
- Teaching module on transcultural clinical competences «Séminaire **Compétences Cliniques Transculturelles** (CCT) »

# Questionnaire (IT tool) for the first consultation

Mandated by the FOPH

- **Interview on various subjects (including questions and scoring of www.tb-screen.ch)**
- 14 languages so far; pictogrammes, spoken, written
- **No saving of electronic data**
- Answers can be printed and form **part of the medical file**

# Acknowledgements

- All staff in the Federal Reception Centers and the respective MDs investigating and treating TB
- Otto Schoch and Bruno Naccini, Swiss Lung Association
- All MDs and laboratories notifying TB cases
- Jean-Marie Egger, Swiss Lung Association
- Simone Graf, Ekkehardt Altpeter, Daniela Beeli, Domenica Perissinotto, Nathalie Vicari (Federal Office of Public Health)
- Daniel Spirgi (Federal Office of Public Health)
- Hans Rieder

National Institute for Public Health
and the Environment
*Ministry of Health, Welfare and Sport*

# Screening of immigrants to the Netherlands: Is LTBI screening and preventive therapy an option?

Gerard de Vries, MD, MSc, PhD

National coordinator TB control, RIVM/CIb

Consultant KNCV Tuberculosis Foundation

27nd Symposium Tuberculosis, Macolin, Switzerland | 22 March 2018

# *Outline Presentation*

1. Strategies
2. TB Epidemiology
3. Current practice: TB screening migrants
4. Why to screen migrants for LTBI?
5. Feasibility of screening migrants for LTBI?
6. Research needs and way forward

# 1. Strategies


# Global End TB Strategy

Stop TB Partnership

REACH THE 3 MILLION.
FIND. TREAT. CURE TB.

## WHA approves Post-2015 Global Strategy and Targets for TB Prevention, Care and Control

The 67th World Health Assembly in session as Member States discuss post-2015 TB strategy

19 May 2014 – Geneva, Switzerland – The World Health Assembly (WHA), the WHO's highest decision-making authority, today approved the "Post-2015 Global Strategy and Targets For Tuberculosis Prevention, Care and Control". This means the world has now agreed on a strategy to end TB as a global pandemic (an average less than 10 tuberculosis cases per 100 000 population) and to cut the number of deaths from TB by 95% by 2035.

# Vision, goal and targets 2035

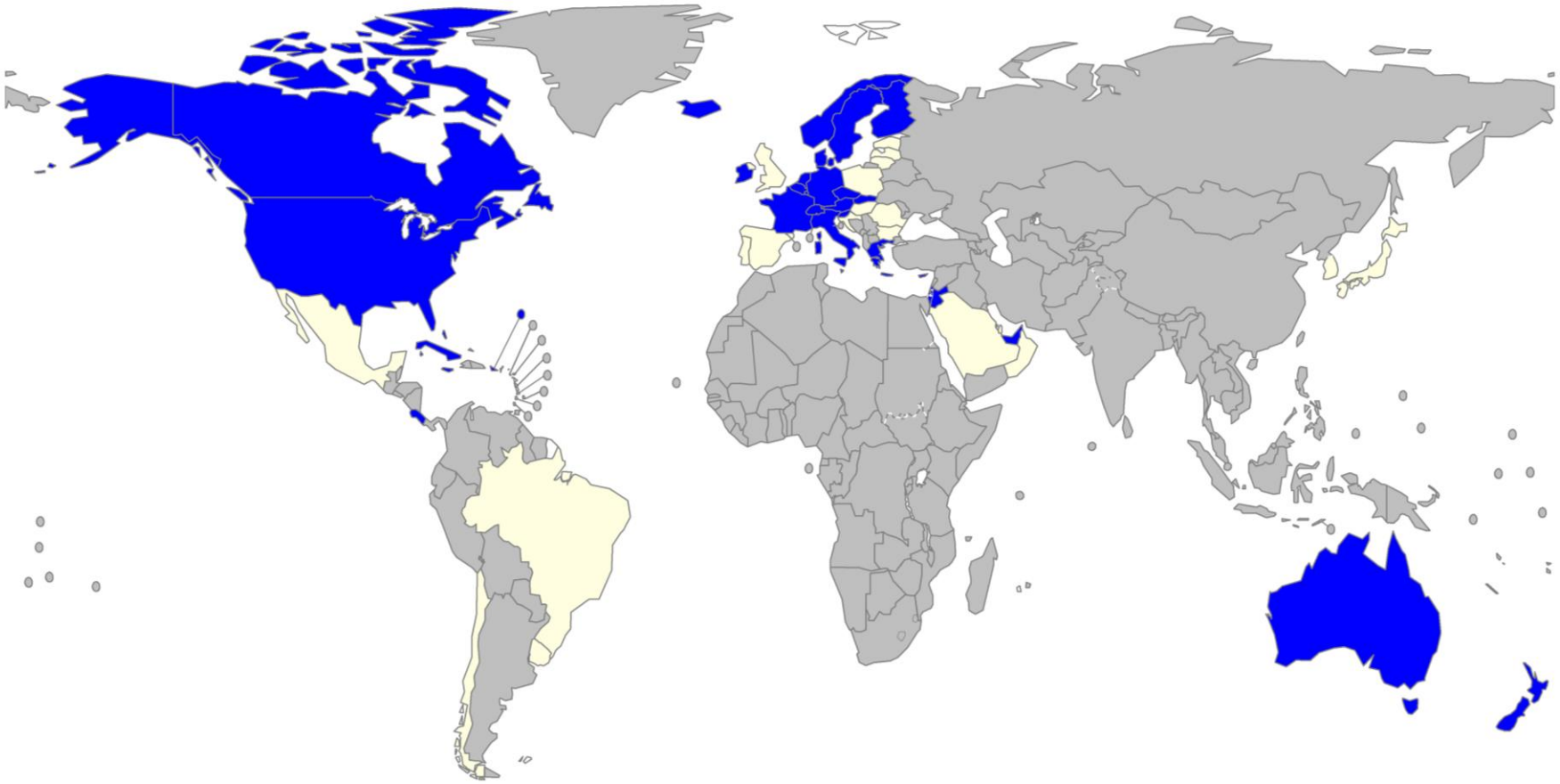
**Vision:** A world free of TB

*Zero TB deaths, Zero TB disease, and Zero TB suffering*

**Goal:** End the Global TB epidemic (<10 cases per 100,000)

| Target 1 | Target 2 | Target 3 |
| --- | --- | --- |
|  |  |  |
| 95% reduction in deaths due to TB (compared with 2015) | 90% reduction in TB incidence rate (compared with 2015) | No affected families face catastrophic costs due to TB |

# TB low-incidence countries



Countries with < 10/100,000 TB cases/year, notified all forms cases & > 300k population

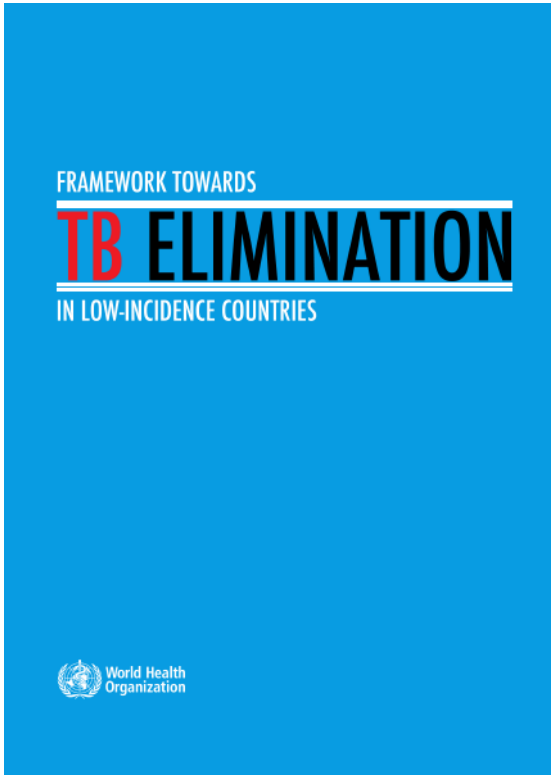
Other countries progressing rapidly or with potential to consider elimination in the future

*Ref: Global TB Control Report 2013*

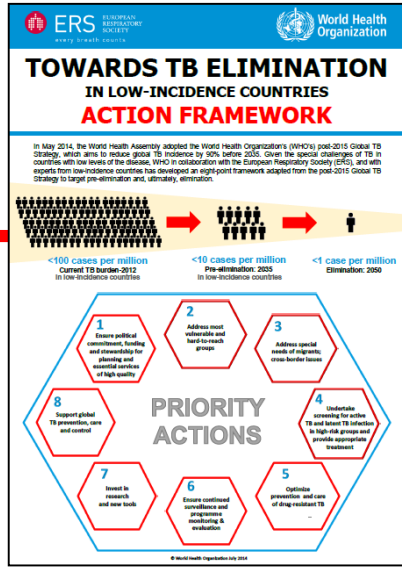
# Framework towards TB elimination in low-incidence countries (WHO/ERS)

**Eight priority actions in low-incidence countries**

1. Sustain funding and capacity for stewardship, planning and essential clinical functions
2. Ensure case-based surveillance; M&E
3. Address **most vulnerable and hard-to-reach groups**
4. Address **special needs of migrants**; cross-border issues
5. Undertake **selective screening for active TB and LTBI** in **high-risk groups**
6. Optimize **MDR-TB prevention and care**
7. Invest in research & new tools
8. Support global TB control



# Targets




**<10 case per 100.000**

**<100 cases per million**

**Current TB burden-2012**

in low-incidence countries

**<10 cases per million**

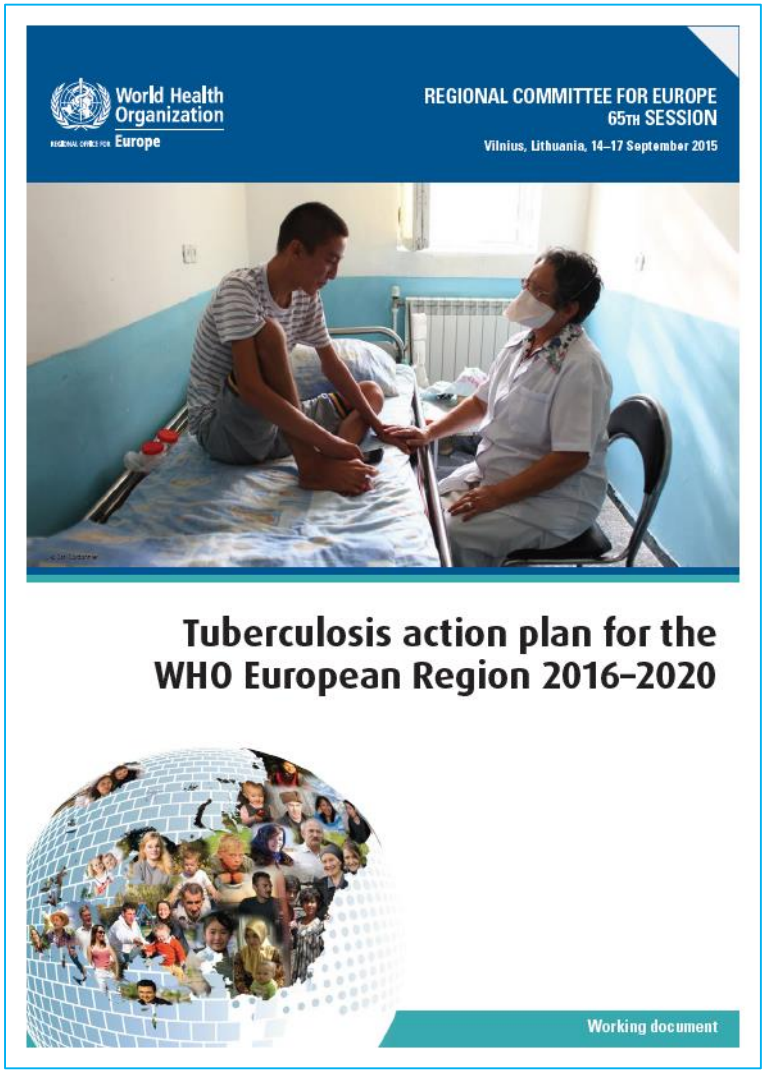
**Pre-elimination: 2035**

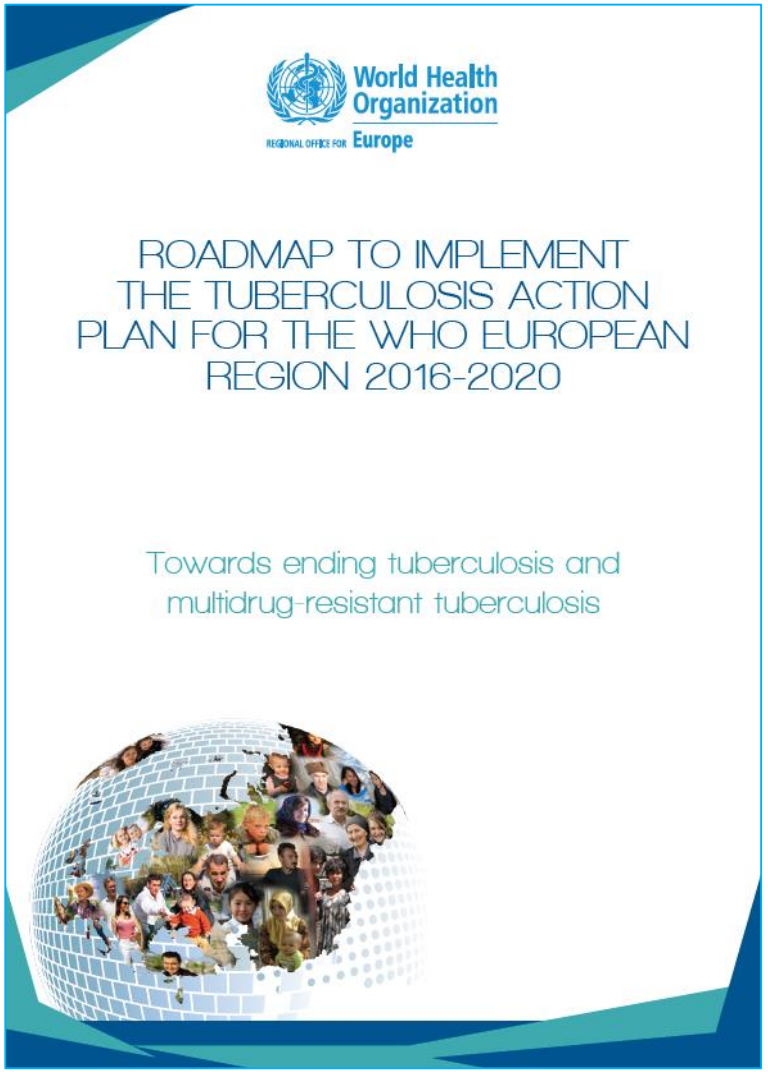
in low-incidence countries

**<1 case per million**

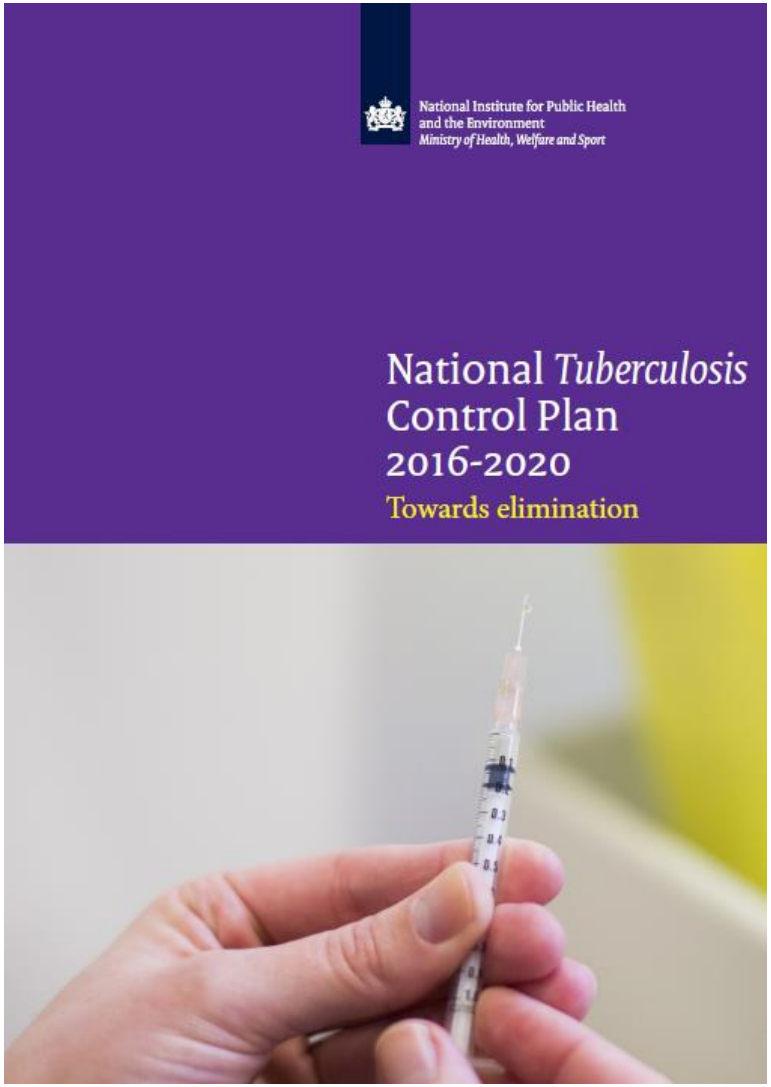
**Elimination: 2050**

# WHO European Region strategy



# Dutch National TB Control Plan 2016-2020

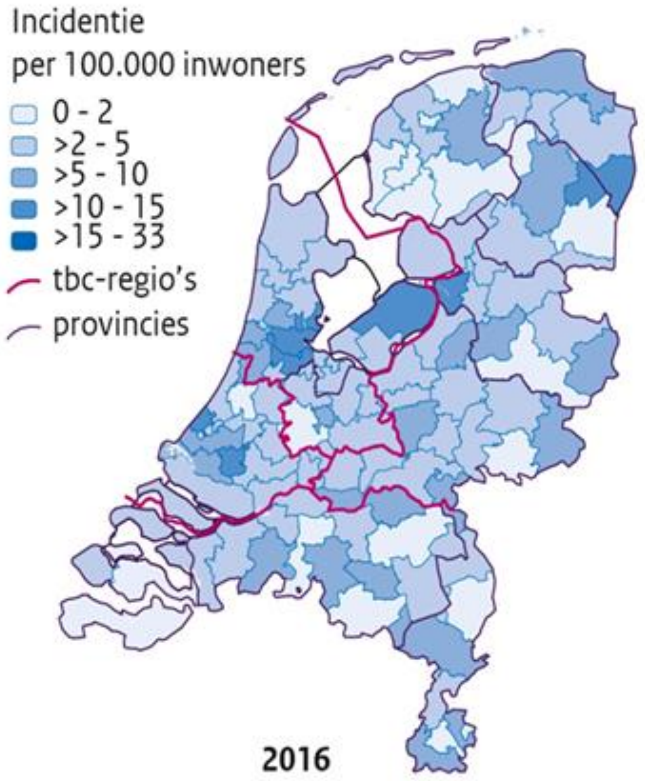



**Main new interventions** is to **screen immigrants and asylum seekers** from **high-incidence countries** for **latent TB infection** and **provide preventive treatment.**

http://www.rivm.nl/en/Documents_and_publications/Scientific/Reports/2016/maart/National_Tuberculosis_Control_Plan_2016_2020_Towards_elimination

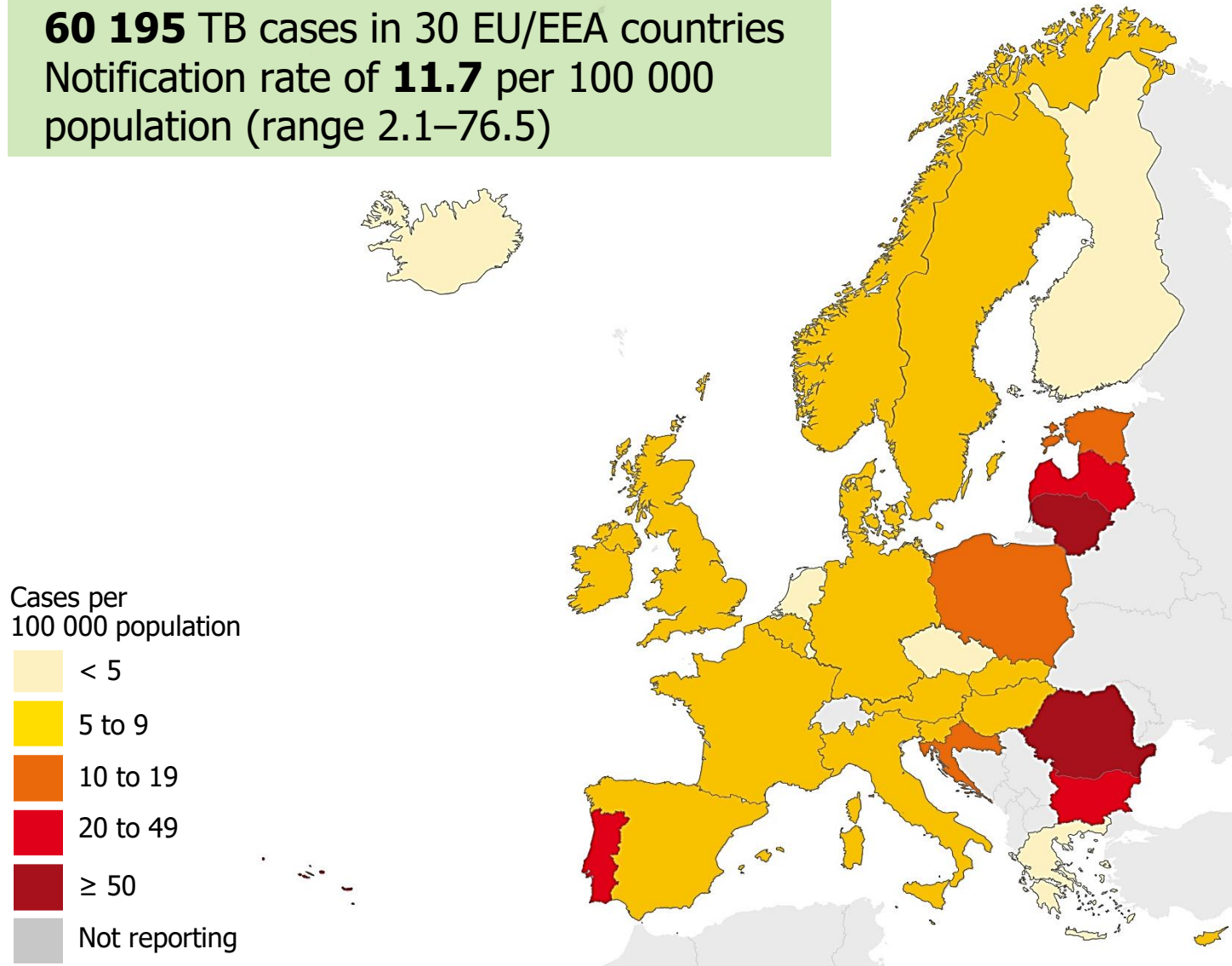
# 2. TB Epidemiology

- *European Union*
- *The Netherlands*



# TB notifications, EU/EEA, 2015

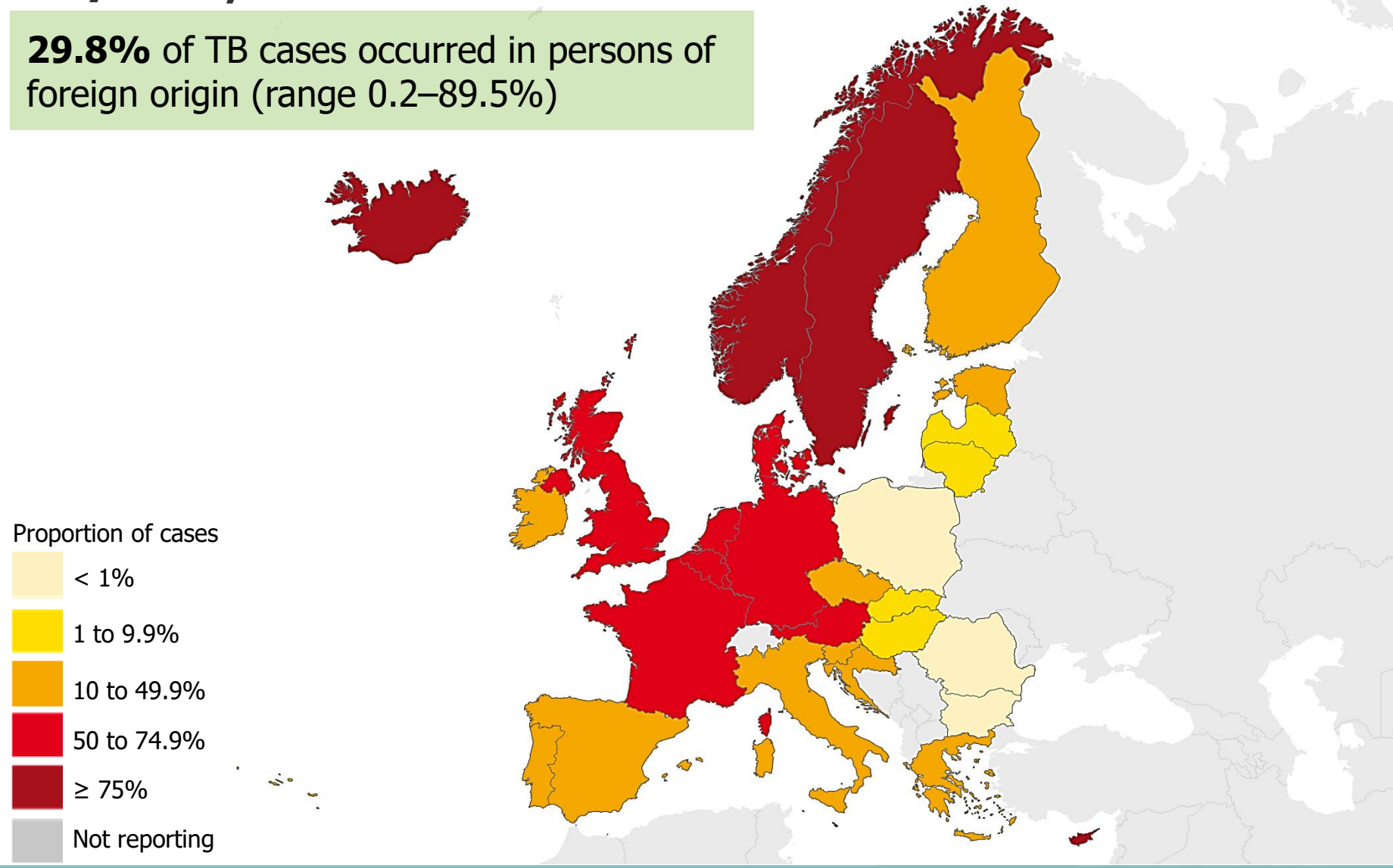
**60 195** TB cases in 30 EU/EEA countries
Notification rate of **11.7** per 100 000 population (range 2.1–76.5)




Source: European Centre for Disease Prevention and Control/WHO Regional Office for Europe. Tuberculosis surveillance and monitoring in Europe 2017

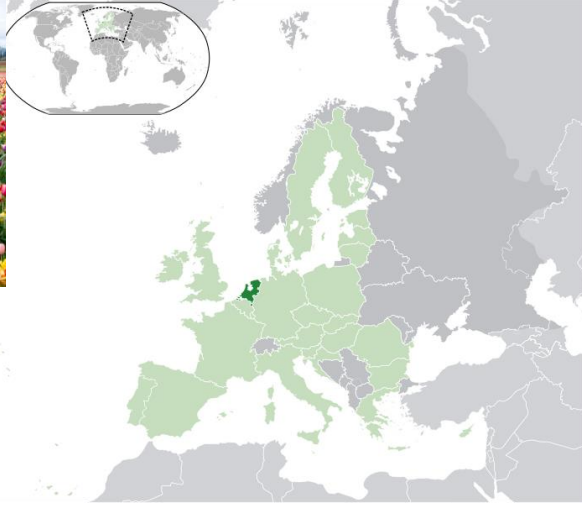
# TB cases in persons of foreign origin, EU/EEA, 2015

**29.8%** of TB cases occurred in persons of foreign origin (range 0.2–89.5%)

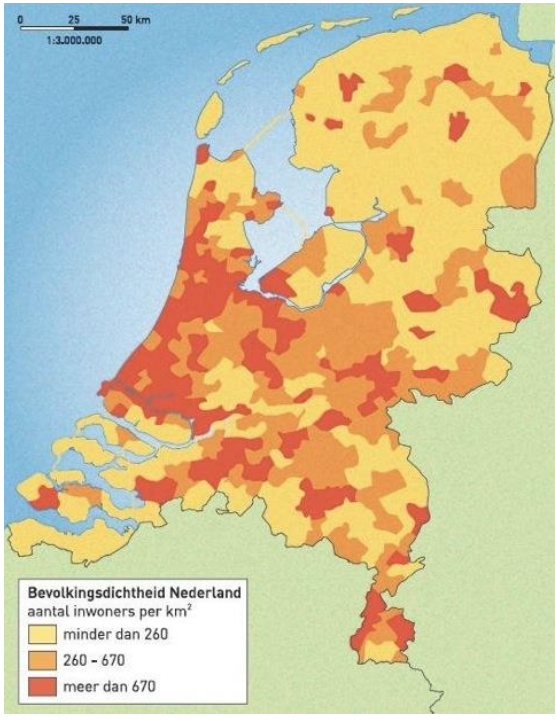



Source: European Centre for Disease Prevention and Control/WHO Regional Office for Europe. Tuberculosis surveillance and monitoring in Europe 2017

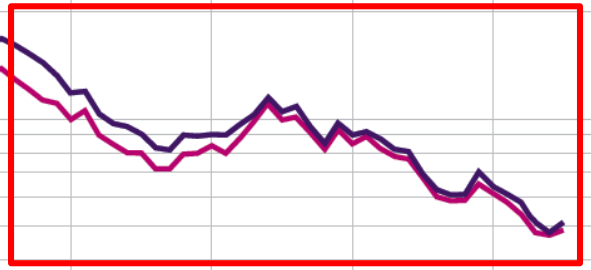
# The Netherlands



- 17.1 million people
- Kingdom (King Willem Alexander)
- 12 provinces and three small overseas islands (Caribbean)
- Member of the European Union (EU) (green countries).
- Most densely populated country in the European Union.
- The highest mountain is 322 meters; 20% of the country is below sea level.



**Blue line:**
Decrease TB notifcation rate from 120 to 10 and to 5 per 100,000



Tuberculosecijfers Nederland per 1.000.000 alle vormen (logaritmische curve).

- Sterftecijfers sinds 1901
- Sterftecijfers inclusief late gevolgen sinds 1971
- Nieuwe patiënten
- Eerder behandelde patiënten
- Totaal aantal patiënten

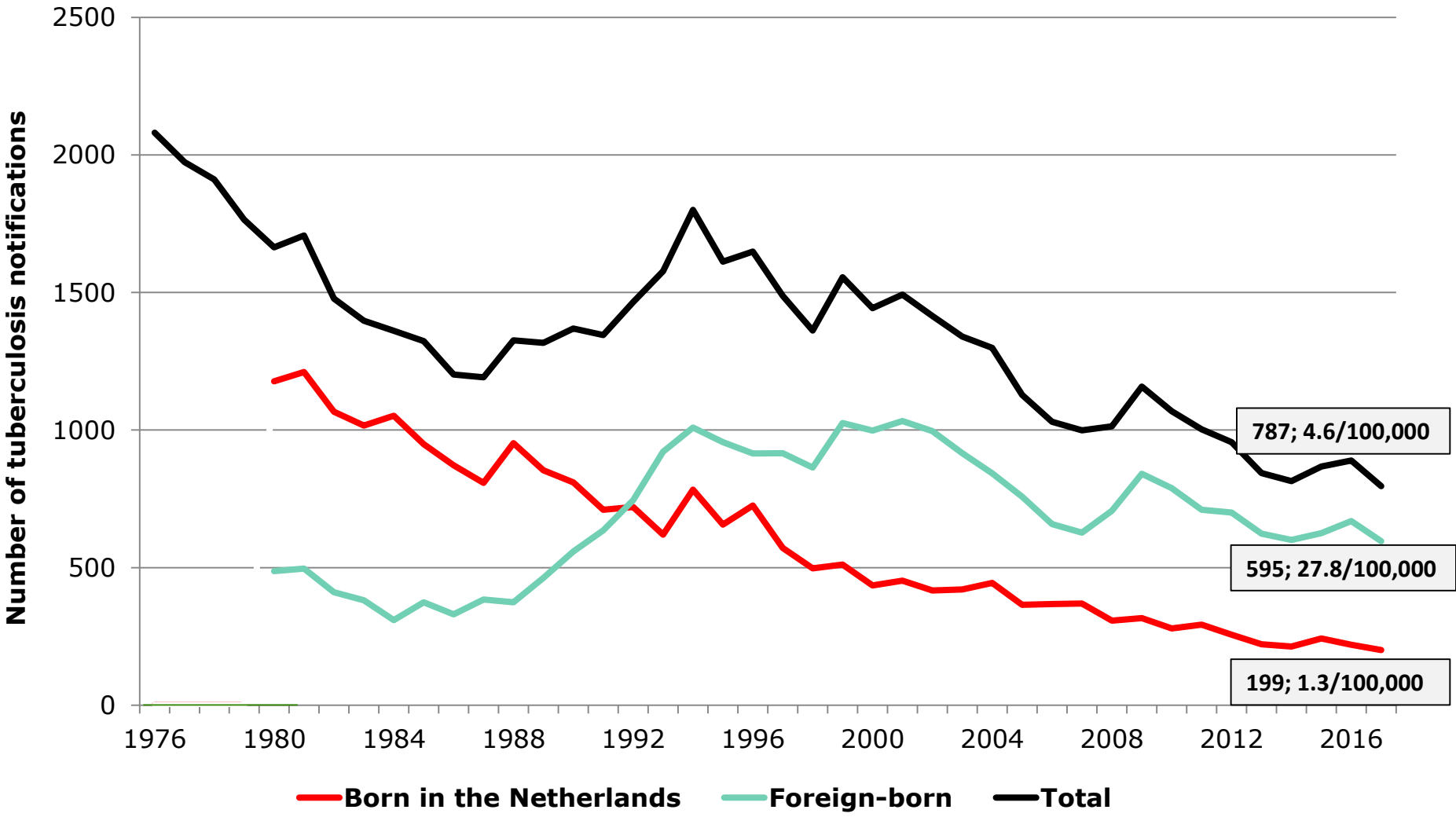
*Sinds 1951 toegevoegd*

- Berekende tuberculose-infectie-kans per 10.000 gem. bevolking sinds 1910

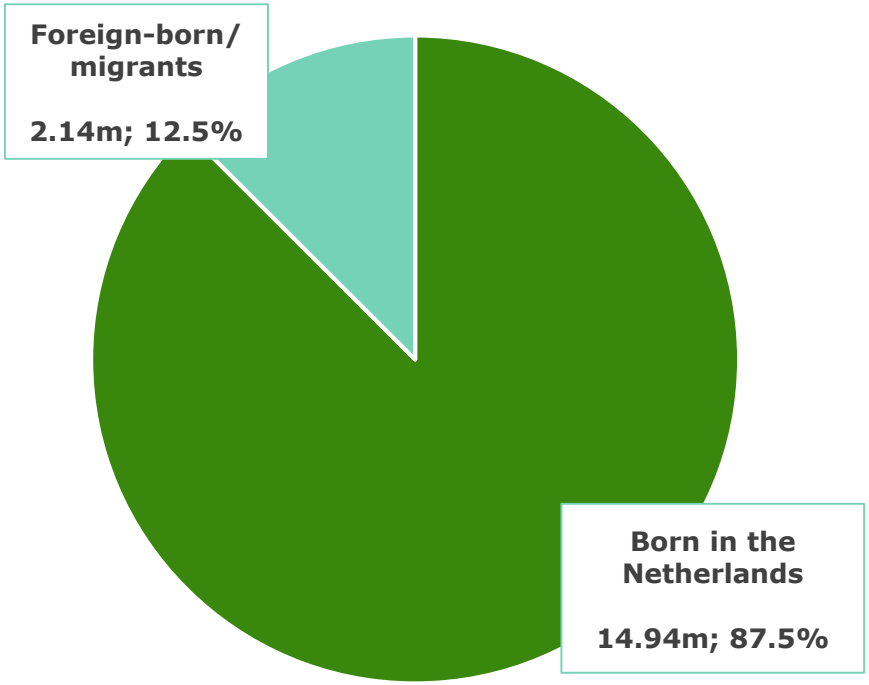
Bron: RIVM-CIb-NTR, KNCV Tuberculosefonds en CBS.

Prognose (8% daling per jaar)

# Tuberculosis trends in the Netherlands



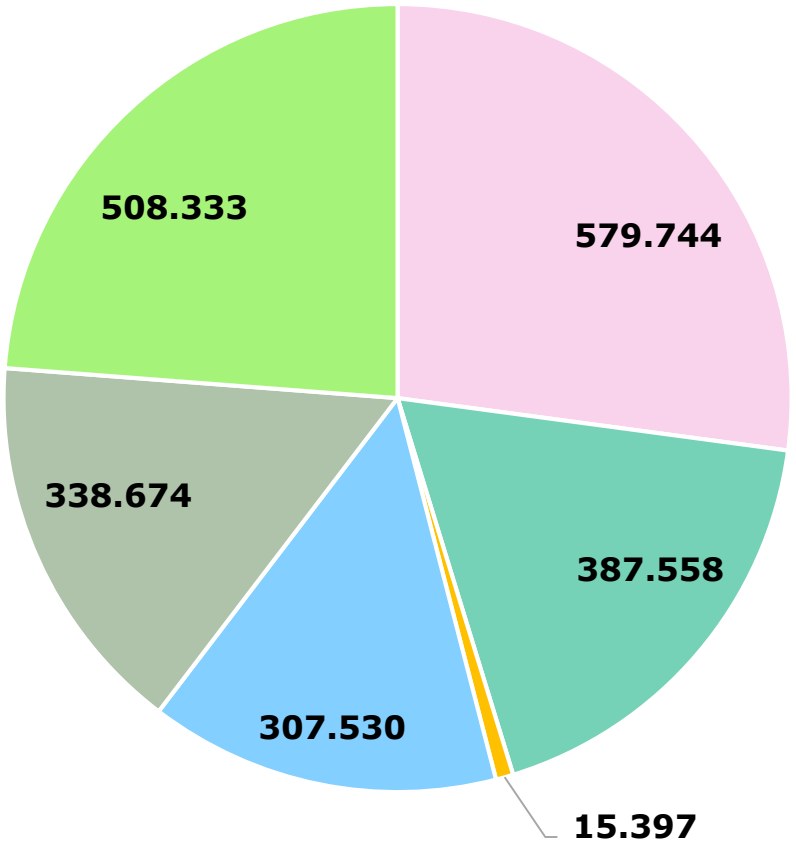
# Population NL 17.1m




**In the Netherlands, 1 out of 8 persons is a first generation migrant (=foreign-born)**

**In some big cities: 1 out of 3, 1 out of 4 is foreign-born**

# Migrant residents in the Netherlands (2.1m) by Country of birth




European Union (excluding the Netherlands)

Poland 126,000
Germany 118,000
Belgium 56,000

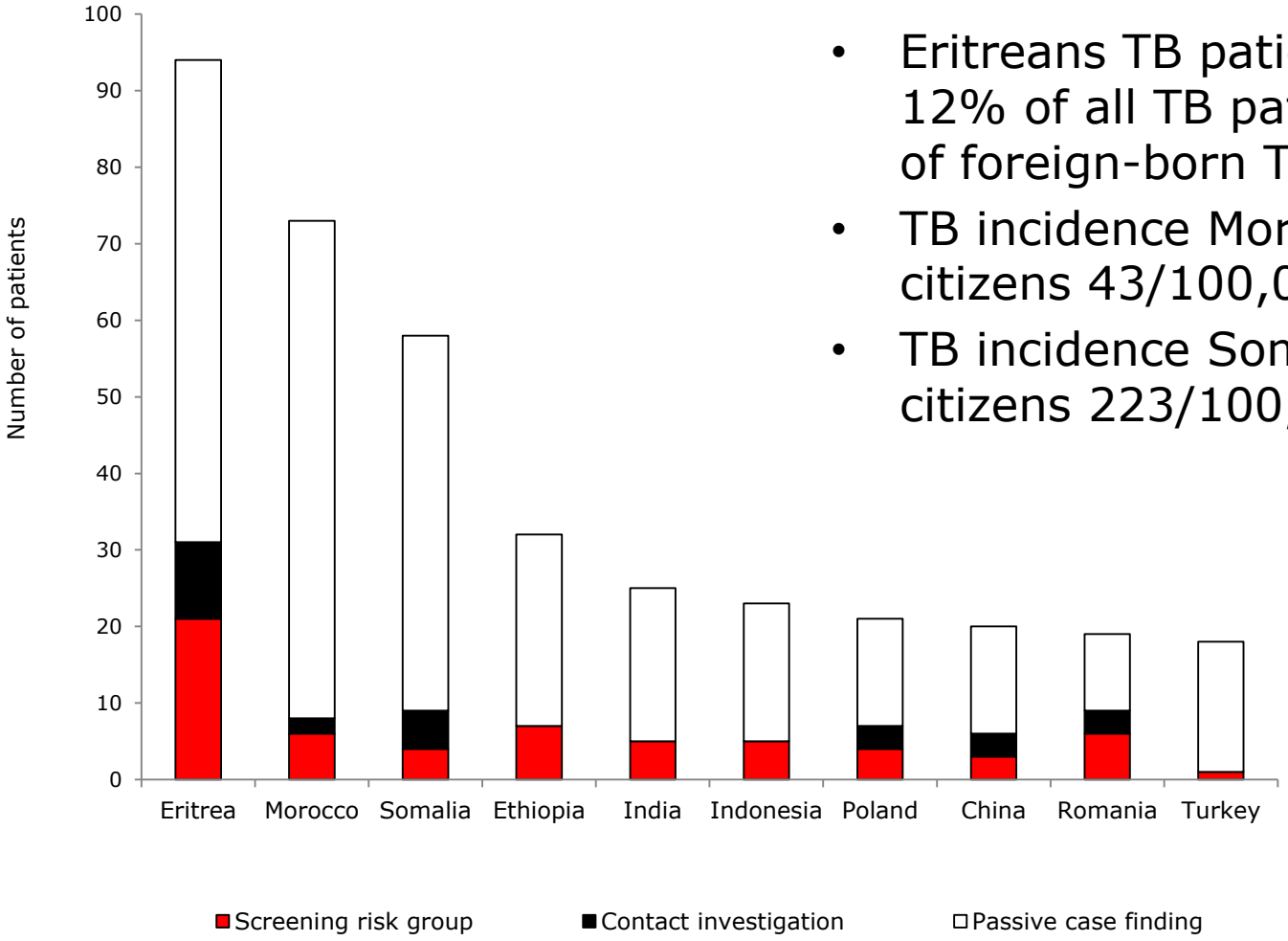
Suriname 178,000

Turkey 190,000
Ex-USSR 62,000
Ex-Yugoslavia 53k

Morocco 168,000
Somalia 26,000

Indonesia 120,000
China 56,000

# Top 10 TB in migrants 2017




- Eritreans TB patients represent 12% of all TB patients and 16% of foreign-born TB patients
- TB incidence Moroccan-born citizens 43/100,000
- TB incidence Somalian-born citizens 223/100,000

# 3. Current practice

INT J TUBERC LUNG DIS 21(8):840–851

http://dx.doi.org/10.5588/ijtld.17.0036

STATE OF THE ART

STATE OF THE ART SERIES
TB and migration
*Series editors:* Knut Lönnroth, Christoph Lange, Sarita Shah
NUMBER 5 IN THE SERIES

# Tuberculosis and latent tuberculous infection screening of migrants in Europe: comparative analysis of policies, surveillance systems and results

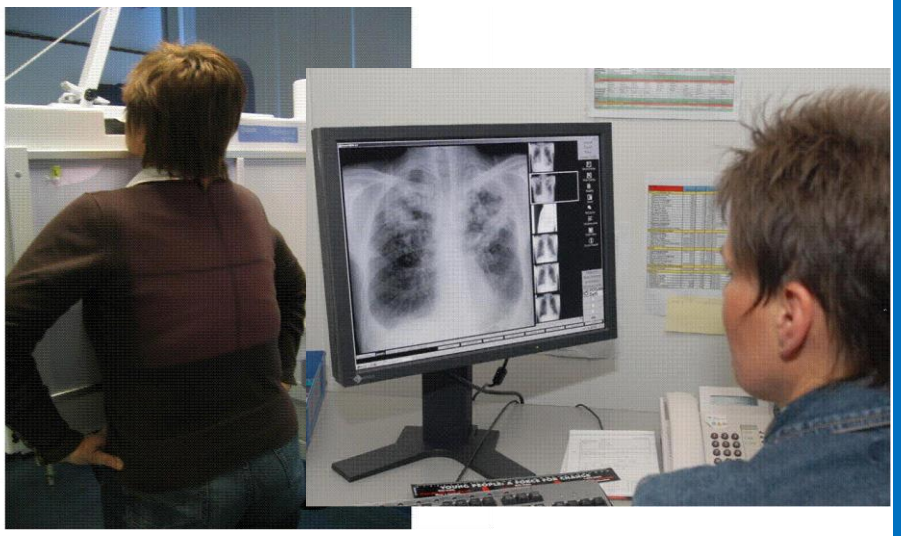
H. Kunst,*† M. Burman,*† T. M. Arnesen,‡ L. Fiebig,§ M-P. Hergens,¶# O. Kalkouni,**
E. Klinkenberg,††‡‡ À. Orcau,§§¶¶ H. Soini,## G. Sotgiu,*** D. Zenner,†††‡‡‡ G. de Vries§§§¶¶¶

# (Regular) migrants and asylum seekers

*Two different groups and different screening pathways*

**(Regular) migrant**

- Migration reason: work, study, family reunification
- Referred by the Immigration Office to Municipal Public Health Services for TB screening
- (Public Health Act)



**Asylum seeker**

- Migration reason: war, suppression, but also economical reasons
- Screened during first 2 days of asylum procedure
- (Contractual arrangements)

# Evaluation screening regular migrants, 2011-2015

| TB incidence country of origin | Number | TB found by screening | Yield per 100,000 (+ Conf. Interval) |
|---|---|---|---|
| ~~≤50~~ | ~~26,101~~ | ~~7~~ | ~~27 (11-55)~~ |
| 51-100 | 37,787 | 11 | 29 (15-52) |
| 101-200 | 36,548 | 41 | 112 (80-152) |
| >200 | 13,028 | 38 | 292 (206-400) |
| unknown | 2,837 | 0 | - |
| **Total** | **116,301** | **97** | **83 (67-100)** |

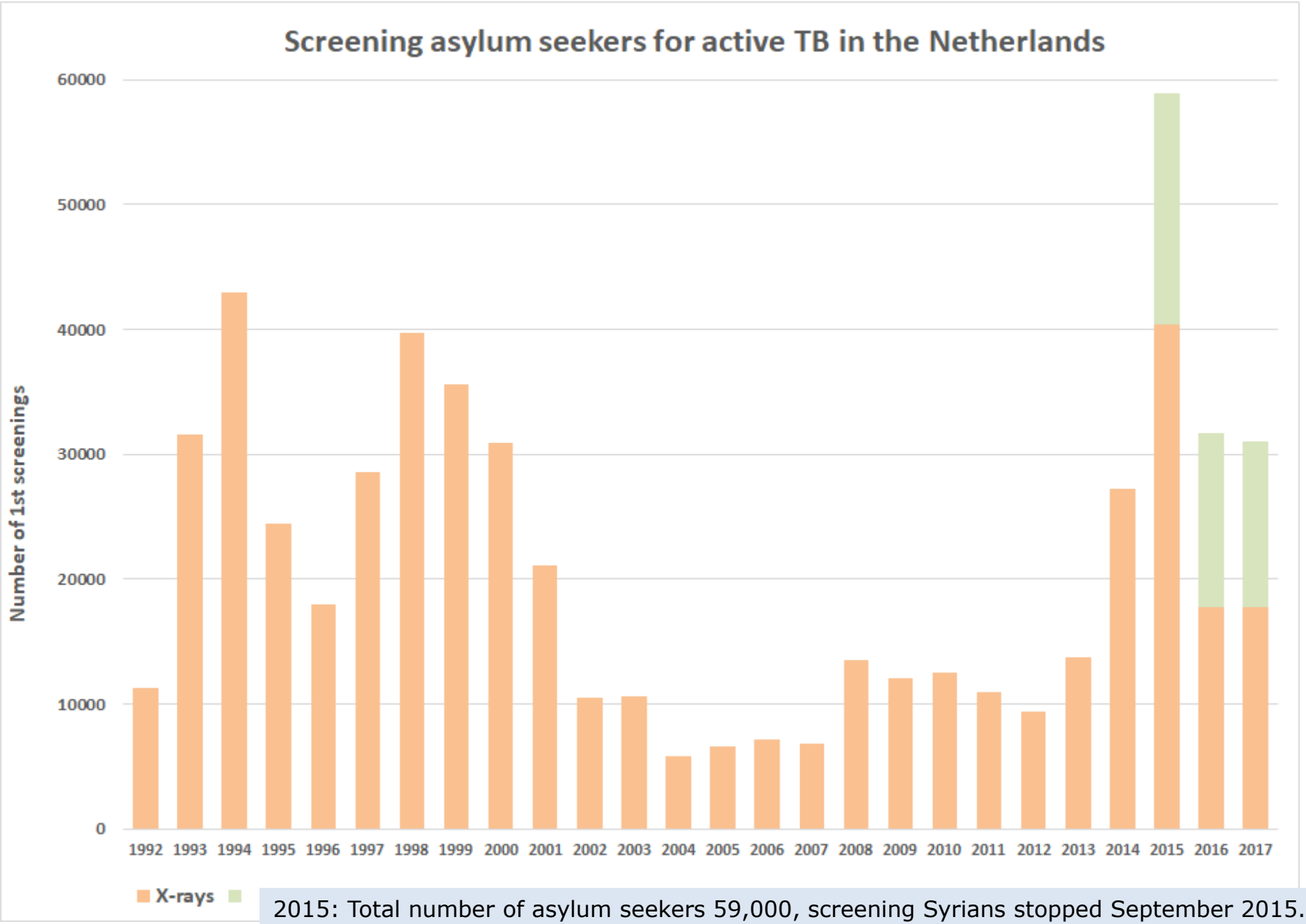
In the Netherlands, a **cut-off of 50/100,000 (NNS=2000)** was arbitrarily set to limit exposure of healthy individuals to radiation and increase the effectiveness of screening (De Vries. ERJ 2016;47:1870-2).

Screening migrants from countries with a TB incidence ≤50/100,000 was discontinued per 1/1/2015 (Van den Berg. ERJ 2017 Oct;50(4)

# Evaluation screening asylum seekers, 2011-2015

| TB incidence country of origin | Number | TB found by screening | Yield per 100,000 (+ Conf. Interval) |
|---|---|---|---|
| ≤50 | 49,142 | 16 | 33 (19-53) |
| 51-100 | 5,833 | 11 | 189 (94-337) |
| 101-200 | 10,385 | 34 | 327 (227-457) |
| >200 (+Eritrea) | 23,966 | 65 | 271 (205-337) |
| unknown | 10,180 | 0 | - |
| **Total** | **99,506** | **126** | **127 (105-148)** |

Screening asylum seekers from countries with a TB incidence ≤50/100,000 was stopped in September 2015 (De Vries. ERJ 2016;47:1870-2).




2015: Total number of asylum seekers 59,000, screening Syrians stopped September 2015.
2016 and 2017: Half of the asylum seekers are not screened anymore.

# *Current screening policy for migrants in the Netherlands*

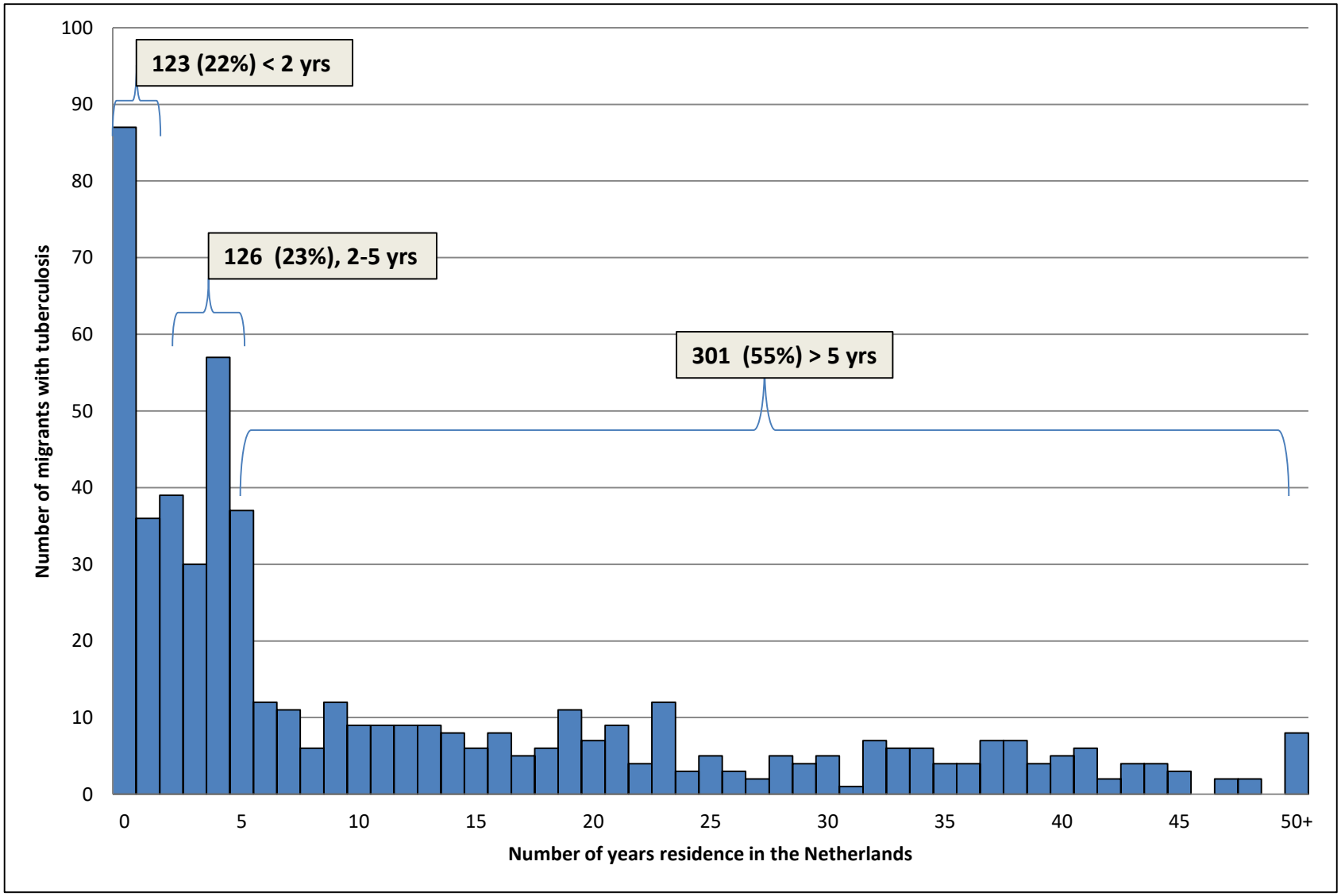
Eligible: migrants from countries with TB incidence **>50/100,000** who intend to stay longer than 3 months (including asylum seekers)

1. **<18 year**: LTBI screening
   - implemented for regular migrants <18 years
   - not yet implemented for asylum seekers <18 years. They are still screened with CXR
2. **>18 years:** CXR screening (for active disease)
3. **4x follow-up CXR screening** if migrant is from a country with TB incidence **>200/100,000.** (Currently at discussion to replace the follow-up screening by LTBI screening)

## *Why screening (and treating) for LTBI?*

1. Long time risk of developing disease
2. Screening for active disease is not enough!
3. LTBI screening is feasible
4. And probably cost-effective

# TB among migrants 2013, years residence in the Netherlands (550 with known duration of residence)



# Monitoring TB in Eritrean asylum seekers

| | Asylum request (n) | 1st screening/ prevalence | | 1st year / incidence | | 2nd year / incidence | |
|---|---|---|---|---|---|---|---|
| | | Patients (n) | Per 100,000 | Patients (n) | Per 100,000 | Patients (n) | Per 100,000 |
| 2013 | 978 | 4 | 409 | 7 | 716 | 5 | 511 |
| 2014 | 3927 | 11 | 280 | 68 | 1732 | 35 | 891 |
| 2015 | 8434 | 22 | 261 | 51 | 605 | (29) | |
| 2016 | 2870 | 8 | 279 | (11) | | | |
| **Total** | **16,209** | **45** | **295** | **126** | **945** | **40** | **815** |

**Prevalence 0.3%, but 1.7% developed TB <2 years!**

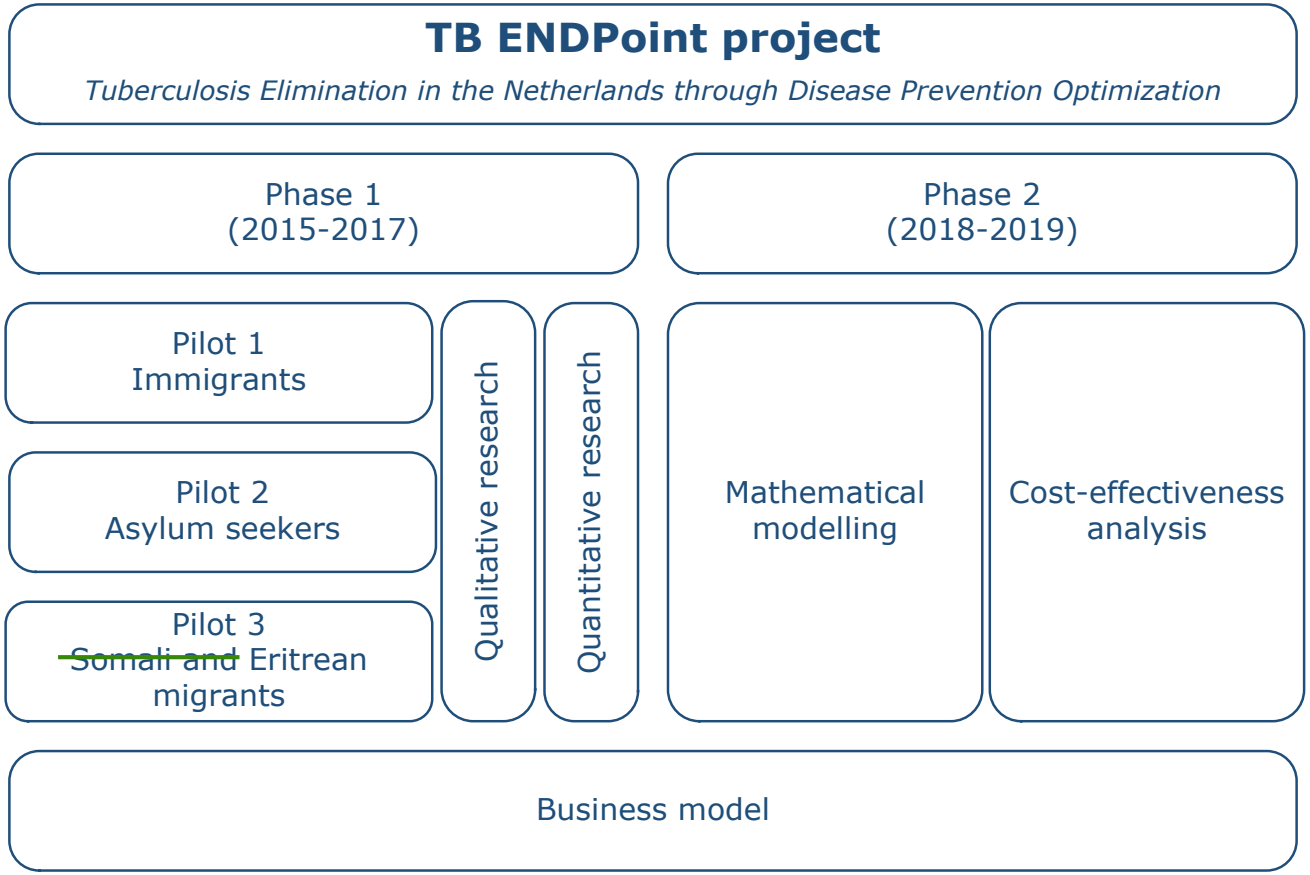
# 5. Feasibility LTBI screening

## *LTBI studies in migrants (PREDICT)*

1. **Prevalence of LTBI**: 20% of migrants >18 years (n=1468) were QFT positive (Mulder, *Eur Respir J*. 2012;40(6):1443-1449)

2. **Feasibility study of LTBI screening** (in De Vries, *Journal of Clinical Tuberculosis and other Mycobacterial Diseases*, 2017;7(4):40-48)
   - 726 immigrants younger than 35 years were tested in 2013 (either with TST followed by IGRA if TST ≥5 mm, or with IGRA only)
   - 88 (12%) persons were diagnosed with LTBI, and one person was diagnosed with active TB
   - 73 persons were offered preventive treatment
   - 34/73 (47%) initiated preventive therapy

# LTBI studies in migrants (TB ENDPoint)



# *LTBI studies in migrants (TB ENDPoint) – preliminary results pilot 1 and 2*

| | Pilot 1 | Pilot 2 |
|---|---|---|
| Target group | Migrants | Asylum seekers |
| # screened | 581 | 725 (2 parts) |
| # LTBI (%) | 98 (17%)<br>+ 4 TB | 88/363 (24%)<br>+ 1 TB |
| # starting preventive Rx | 50 (51%) | 59 (67%) |
| Remarks not starting: | -Staying short period in the country<br>-Contra-indications | |

# LTBI studies in migrants (TB ENDPoint)

*In this country, they are far ahead in controlling diseases. It is not like in our country. Generally, I think is for our own health and then for the surroundings that we live in. For example, when I am living in an asylum center and if I am sick without being noticed, I could infect others. And those people might go to other places and it goes that way. Thus primarily it is for them to control any kind of infections but also for our own sake as well. (Asylum seeker)*

*We, all Eritreans, came here through the Sahara and Mediterranean and the route is really difficult. You don't know with what diseases you could get infected on the way, but also when we were in Eritrea. People don't often do overall examinations thus you cannot tell what is inside you. (Asylum seeker)*

# 6. Research needs

***Well-conducted research is needed on the evaluation of TB/LTBI screening programs of migrants***

*(Kunst, IJTLD 2017; 21(8):840-51)*

The first step is to reach an agreement on the standard set of data required to adequately evaluate migrant screening programs.

**Important elements** are:

1. the target population for screening and how this is identified;
2. the coverage of the screening programme;
3. the screening method for TB or LTBI;
4. the screening yield, including case definition for TB/LTBI;
5. the results of active TB/LTBI treatment;
6. the costs of the screening activities

Ultimately assess the **impact** of screening on the health of the migrants and controlling TB in the host-country.

# 6. Research needs and way forward

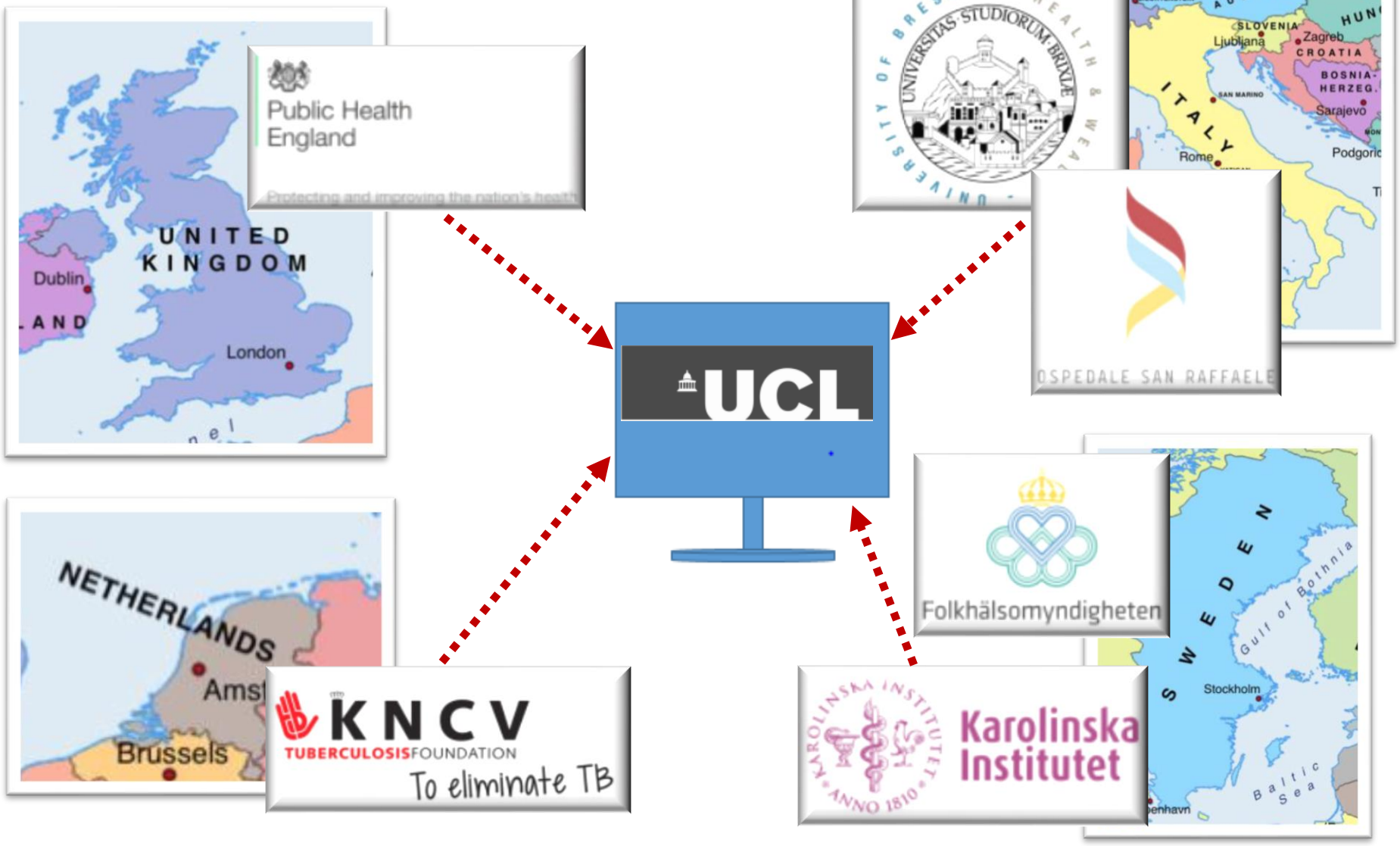
## *Other research initiatives*

*(Kunst, IJTLD, 2017; 21(8):840-51)*

- **E-DETECT TB project**, co-financed by the European Commission, aims to use country screening data and develop a standardised protocol to collect indicators, share data and build better systems at a national and international level, with a long-term goal to initiate future routine reporting into a **European database**.

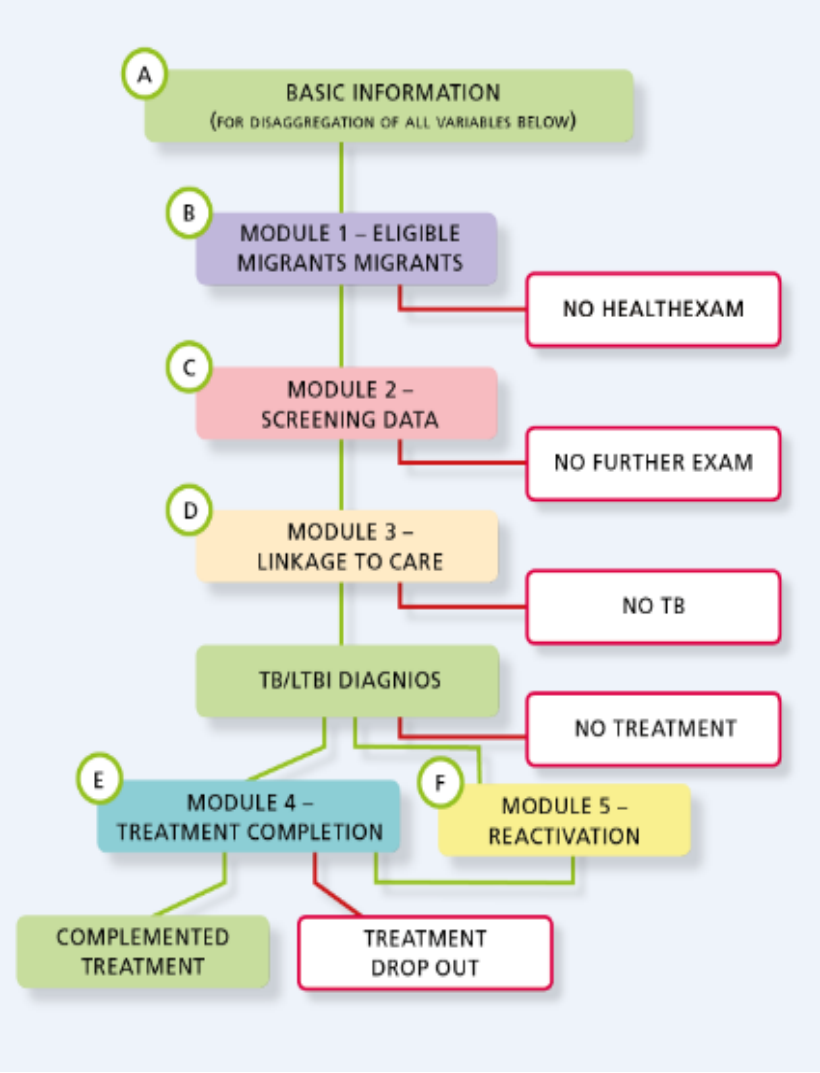
- A **European platform** to share countries' policies and practices and to discuss challenges in implementation can further contribute to achieving TB elimination targets.

# WP6: contributing countries




This presentation is part of the project E-DETECT TB (709624) which has received funding from the European Union's Health Programme (2014-2020)

# Data modules – cascade of screening and care

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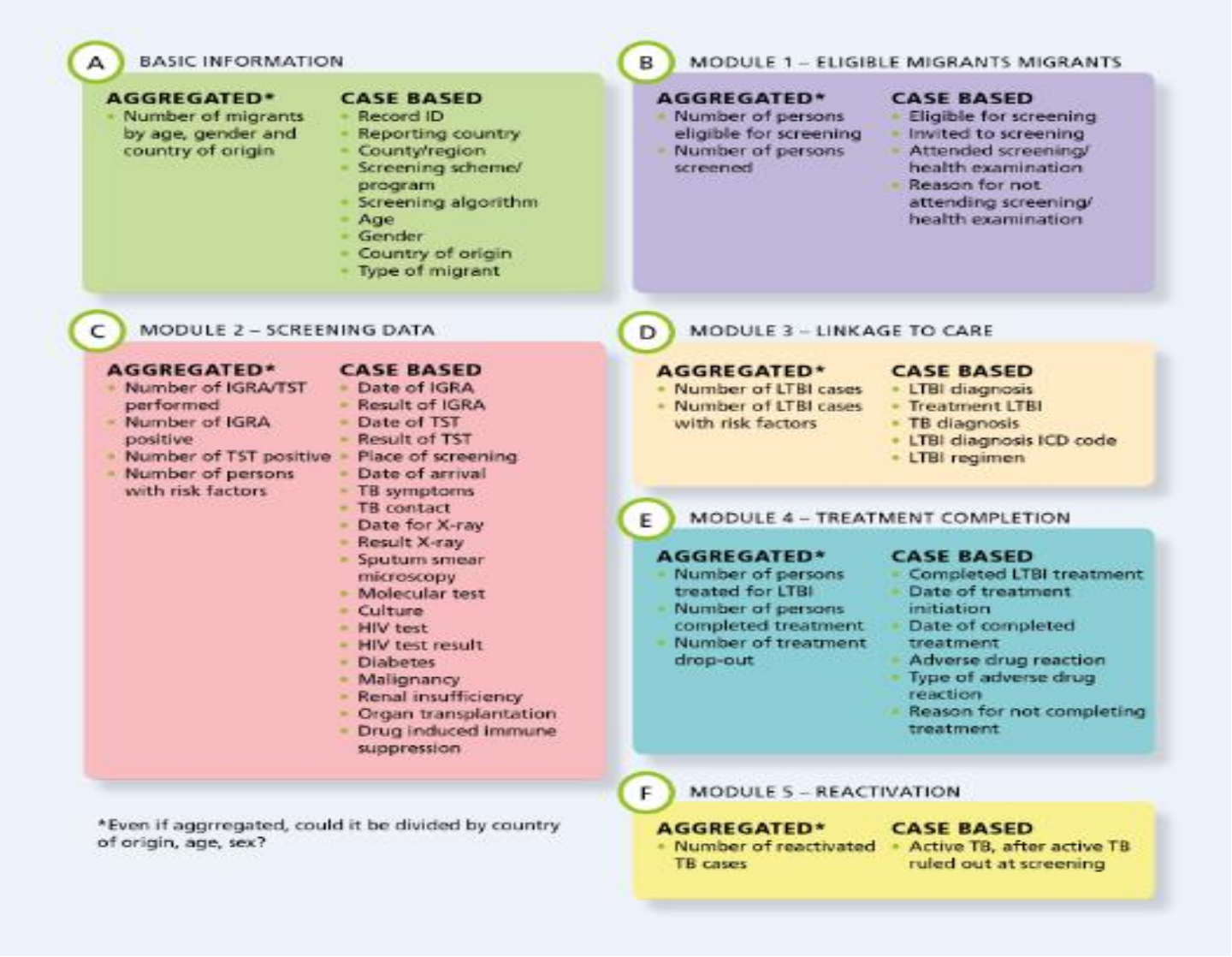
# Data modules - variables

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*You are all welcome!*

***THANK YOU FOR YOUR ATTENTION***