Options for integrated TB, HIV and hepatitis service delivery in Romania

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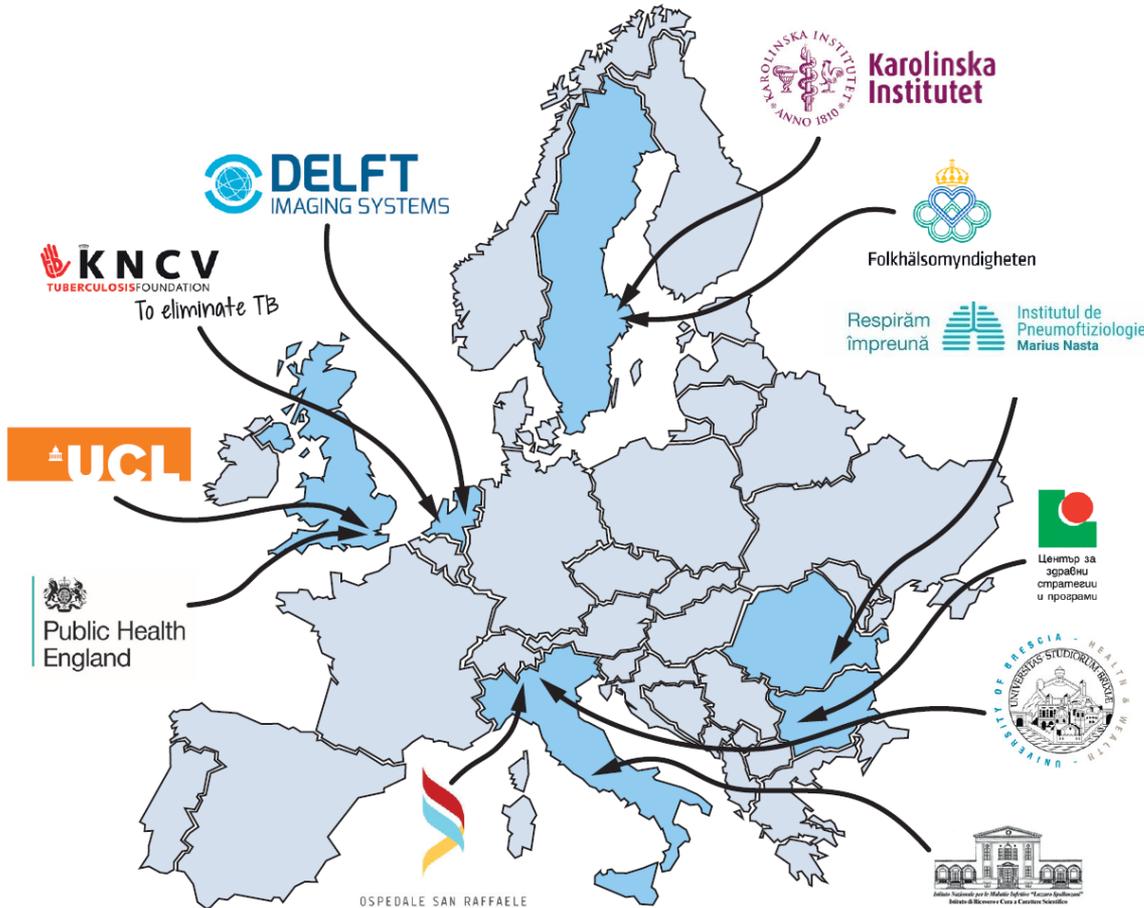
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**HepHIV2019, Bucharest**| 29 January 2019

The E-DETECT TB consortium

University College London (London, United Kingdom)
Public Health England (London, United Kingdom)
Delft Imaging Systems (Veenendaal, The Netherlands)
Public Health Agency of Sweden (Stockholm, Sweden)
KNCV Tuberculosis Foundation (The Hague, The Netherlands)
Marius Nasta Institute of Pneumology (Bucharest, Romania)
Tsentar Za Zdravni Strategyi i Programi (Sofia, Bulgaria)
National Institute for Infectious Diseases (Rome, Italy)
Karolinska Institute (Stockholm, Sweden)
Ospedale San Raffaele (Milan, Italy)
University of Brescia (Brescia, Italy)
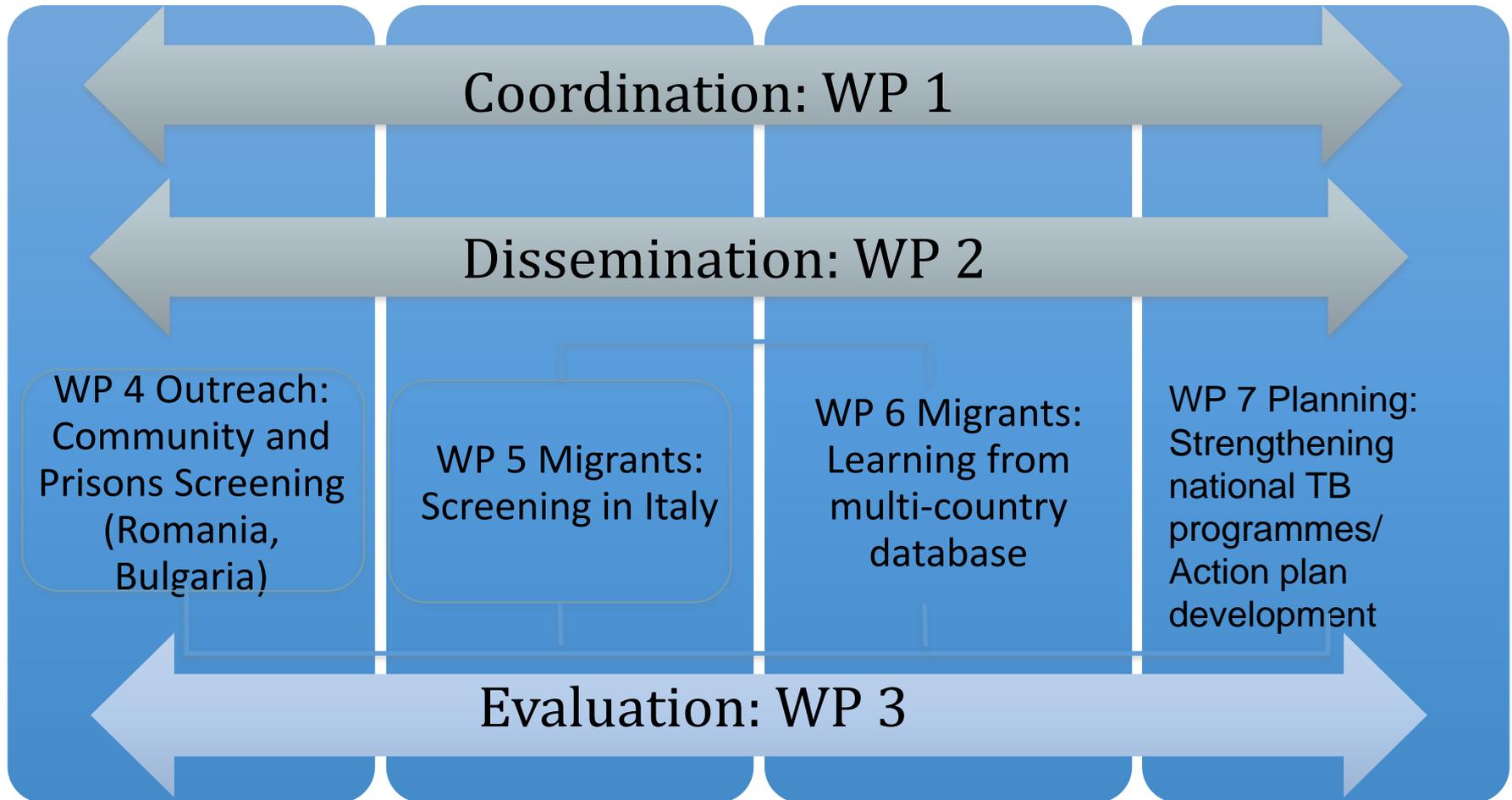
In collaboration with the 'Find & Treat' programme

FIND & TREAT

What is E-DETECT TB about?
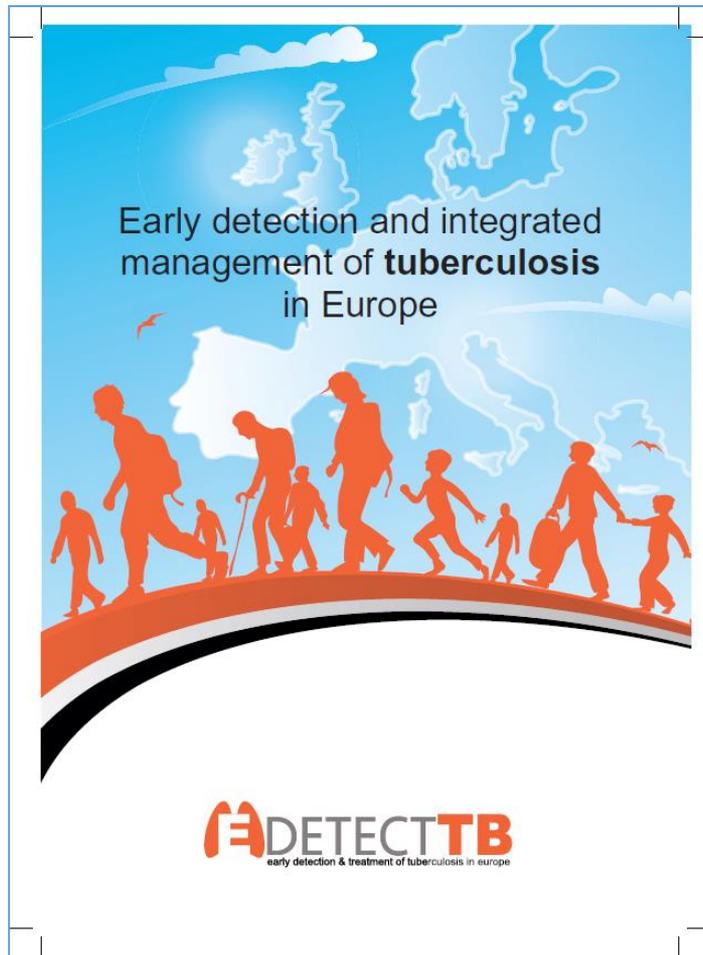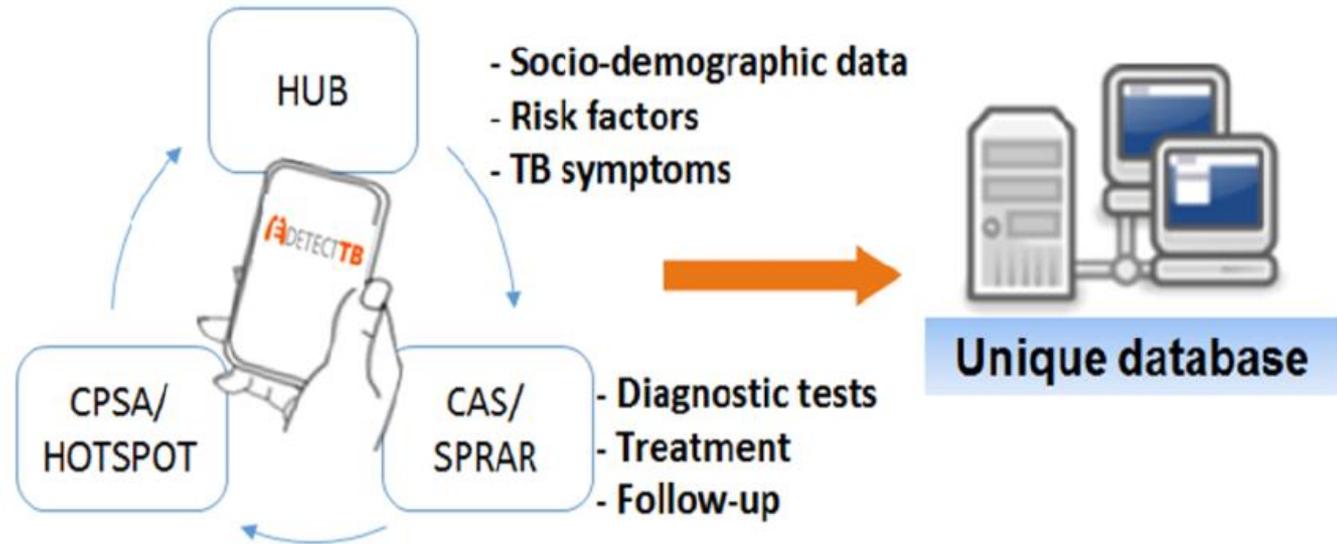
"A practical programme of translational research"

It brings partners together, share their experiences and exploit new technologies and advances in knowledge to TB control.

Methods: Work packages

Coordination: WP 1

Dissemination: WP 2

| WP 4 Outreach: Community and Prisons Screening (Romania, Bulgaria) | WP 5 Migrants: Screening in Italy | WP 6 Migrants: Learning from multi-country database | WP 7 Planning: Strengthening national TB programmes/ Action plan development |

Evaluation: WP 3

# WP 5: Migrant TB detection, prevention and treatment

In Italy, we are actively screening new and settled migrants for active and latent TB respectively, ensuring that those testing positive are appropriately managed and generating the evidence to support future European policy.

HUB
- Socio-demographic data
- Risk factors
- TB symptoms

CPSA/ HOTSPOT

CAS/ SPRAR
- Diagnostic tests
- Treatment
- Follow-up

Unique database

WP 6: Establishing a database on migrant TB screening in Europe

Many low-incidence EU countries have a high TB burden in migrants from endemic countries. Migrant TB screening policies vary widely across EU countries. This work package is establishing a multi-country database on migrant TB screening that will be used to inform the identification and harmonisation of cost-effective screening strategies in the EU.
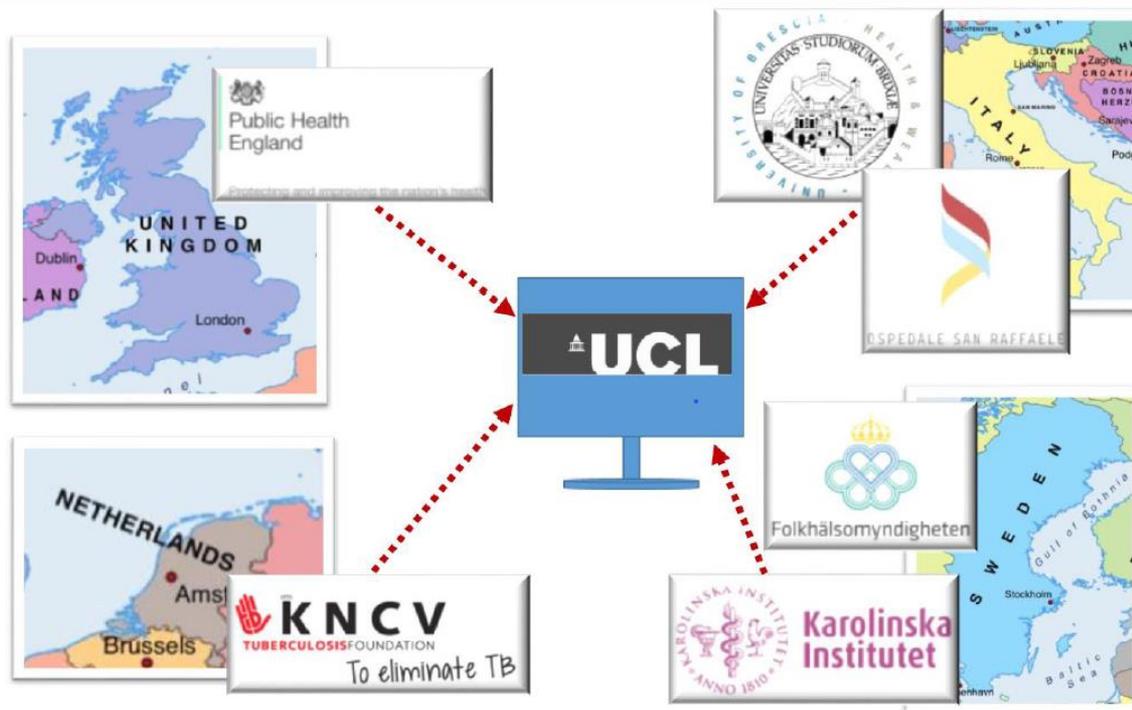
Data sharing for the multi-country database on migrant TB screening

WP 7: Supporting national TB control programmes

The aim of E-DETECT TB Work Package 7 is to support the development of action plans in EU/EEA member states by surveying TB control plans and strategies, and reviewing evidence for actions to control and prevent TB. Information from the survey and reviews will inform an expert meeting to develop a TB Strategy toolkit.
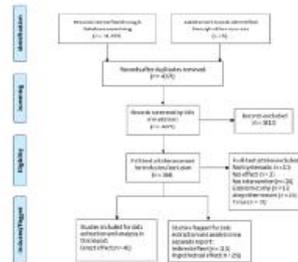
Survey of plans and strategies → **Evidence review** → **Expert meeting** → **TB strategy toolkit**

Online survey of 31 EU/EEA member states

Collaborative Tuberculosis Strategy for England 2015 to 2020

Effectiveness of interventions and barriers to implementation

National TB programme leads and other TB experts

Toolkit to develop a National Strategic Plan for TB prevention, care and control
Methodology on how to develop a national strategic plan

Developing the NSP

Based on evidence, expert views and experience in EU/EEA countries

WP 4: Outreach for early diagnosis

WHO recommends systematic screening for active TB in high risk subpopulations that have poor access to health care. Romania and Bulgaria are countries in transition from high to intermediate incidence and are experiencing high TB rates among certain subpopulations. This work package will utilize a mobile diagnostic unit equipped with digital radiography, computer aided detection and molecular point of care tests to improve early diagnosis in these populations.

TB screening in Rotterdam

Main objectives

- To ensure early diagnosis in vulnerable populations (prisoners, drug users, homeless persons and Roma population) in Romania and to pilot the screening for 1 week in Bulgaria. The aim is to screen 12,800 persons per year.
- To strengthen care integration using an outreach strategy by providing a one-stop "shop" (clinic).

Tuberculosis (TB) in Romania

Romania

- Almost 20m inhabitants

- Highest TB incidence in the European Union (**66.3**/100,000)

- Steady/rapid decline (6.5% per year)

- TB incidence 10x higher among vulnerable populations, and not declining!

TB notification in Romania
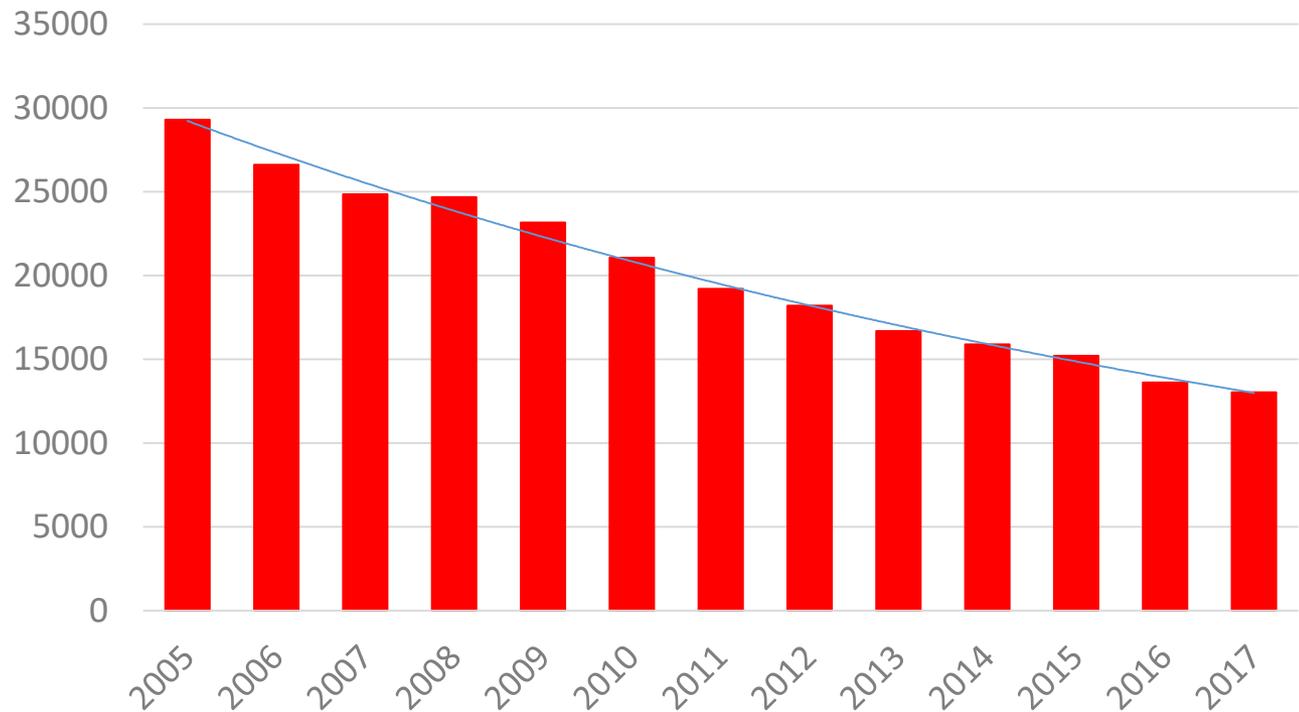
Estimated TB incidence in risk groups

2015-2017	TB cases (annual average)	Estimated population	TB incidence (per 100,000)
Prisoners	147	26,000	565
Drug users	63	10,000	630
Homeless population	135	15,000	900

Mobile x-ray unit ('caravan') & training

Official launch by the Minister of Health
20th November 2018

http://stiri.tvr.ro/prima-caravana-de-detectare-activa-a-tuberculozei-din-romania-va-porni-spre-zonele-cele-mai-afectate-din---ara_838497.html#view

Who to screen?

- **Vulnerable populations**
  - **Prisoners**
  - **People who use drugs**
  - **Homeless individuals**
  - **Roma population**

Characteristics of TB patients in Romania, 2017

	Total	Prisoners	Drug users	Homeless
Estimated population	19.6m	22,532	10,000	15,000
Number of TB cases	13,031	110	57	183
Estimated TB incidence (per 100,000)	66.3	488	570	1220
Urban residence	44%	48%	**88%**	**75%**
Previous history of TB	20%	24%	23%	**45%**
HIV infection	1.9%	**19%**	**81%**	8.2%
Drug resistance against rifampicine	3.5%	3.6%	7.0%	**11.5%**
Treatment outcome (2016)				
- Successful	81%	92%	**48%**	64%
- Died	8.6%	3.7%	**27%**	12%

Patients diagnosed (1)
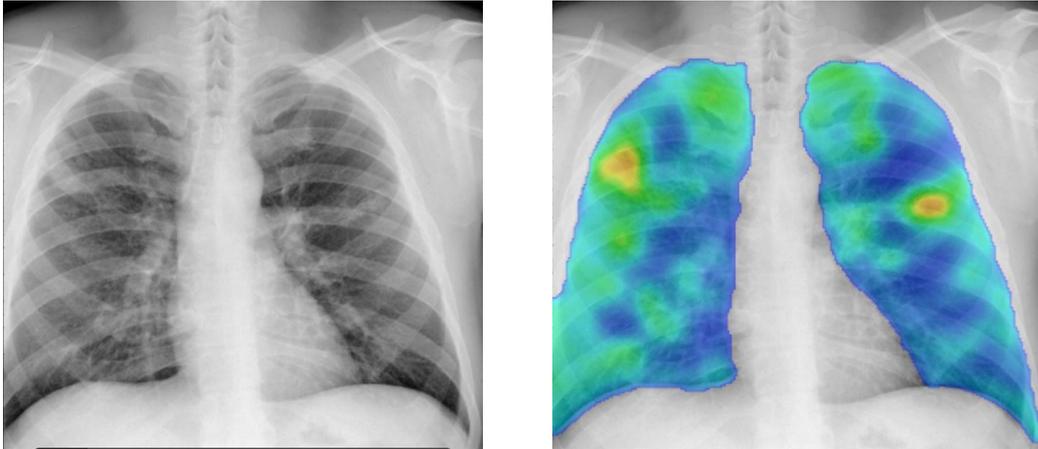
- Chest x-ray (CXR) of a person screened in the prison in August 2018.

- CAD4TB® (Computer aided detection for TB) score was 55.

- Chest physician rated the CXR as highly suggestive for active TB.

- GeneXpert (GX) and microscopy were negative, but the culture showed several weeks later growth of *Mycobacterium tuberculosis*.

- Patient was referred to the prison medical ward and started TB treatment.

Patients diagnosed (2)
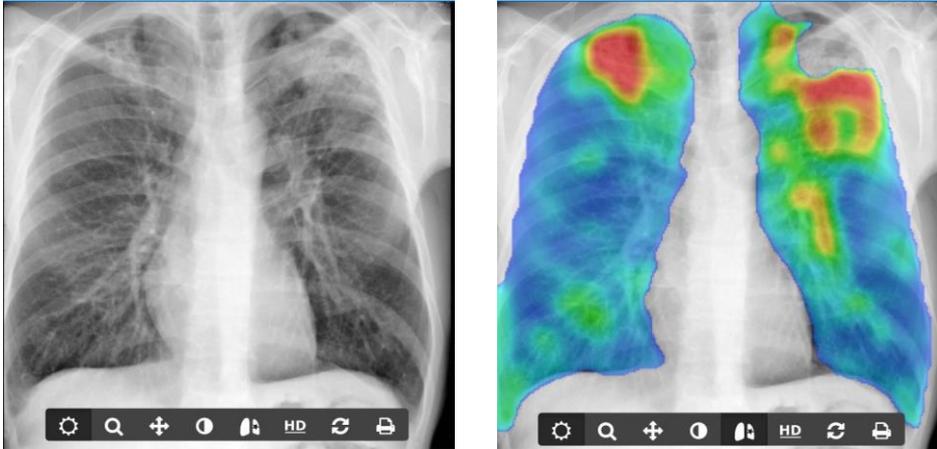
- Chest x-ray of a person screened in the prison end of November 2018.

- CAD4TB score was 89.

- Chest physician read CXR on the same day and classified it as highly suggestive for active TB.

- Person was separated from other prisoners on that same day.

- Next working day, sputum was collected and GX was positive.

- Patient was referred to the prison medical ward and started TB treatment.

Why integrate?

- TB, HBV, HCV and HIV are chronic infectious diseases.
- These diseases all have a long latent stage and therefore there are options to screen and treat early.
- These diseases affect often the same vulnerable groups.
- Best addressed by outreach services → combined is more efficient.
- Working with the same NGOs → so combine.
- Treatment complexities if patients have more than one disease:
  - Drug-drug interactions in TB/HIV patients
  - Hepatotoxicity of TB drugs
- Holistic approach. Al Story: "*People not pathogens".*
- Etc.

DETECT TB
early detection & treatment of tuberculosis in europe

We come to you

Al Story, UCLH/UCL - (UK)

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Sharing the experience

Al Story, UCLH/UCL - (UK)

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FIND & TREAT **Integrated One-stop-shop screening**

Digital X-ray

Reporting station

Reception

Waiting area

Laboratory

Clinical examination
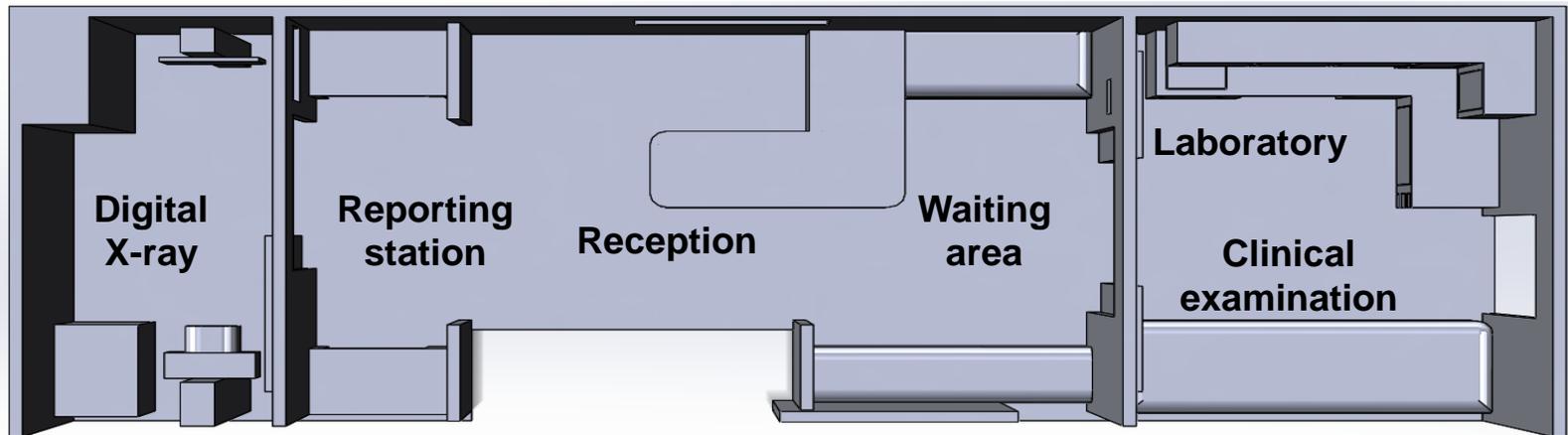
High prevalence of latent tuberculosis and bloodborne virus infection in a homeless population

Robert W Aldridge,[1,2] Andrew C Hayward,[1,2,3] Sara Hemming,[1,2,4] Susan K Yates,[1,2,4] Gloria Ferenando,[1,2,4] Lucia Possas,[1,2,4] Elizabeth Garber,[1,2,4] John M Watson,[1] Anna Maria Geretti,[5] Timothy Daniel McHugh,[6] Marc Lipman,[4,7] Alistair Story[8]

- 16.5% Latent TB infection (LTBI)
- 11.9% HBV infection; 64% no immunity to HBV
- 13.0% HCV infection
- 1.0% HIV
- 37.0% of those diagnosed with LTBI had also HBV or HCV infection

NICE National Institute for Health and Care Excellence

- In major urban centres and areas of identified need:

  - Offer BBV testing alongside active case-finding using mobile digital radiography

https://www.nice.org.uk/guidance/NG33

Two opportunities for integrated service delivery in the E-DETECT TB project Romania?

1. Integrated rapid point-of-care **testing** for HBV, HCV and HIV alongside digital x-ray screening for TB
   - Plan is a 2-week pilot
   - Evaluate its feasibility
   - Use results for defining next projects
2. Integrated **treatment pathways and social care** for coinfected patients
   - HIV testing of TB patients (indicator condition-guided testing)
   - Testing all TB patients (in the project) for HBV and HCV
   - Manage coinfections
   - Improve health outcomes.

Mobile health unit

Thank you for listening!

- Ana-Maria Duca, Beatrice Mahler-Boca, Ioana Munteanu, Gilda Popescu, Misu Stefan, Dan Gainaru, Gabriel Nicorescu, Domnica Chiotan, Nicoleta Cioran, and many others

- Harro Nip, Frank Vijn, and others

- Nathalie Vigot, Rob van Hest, Hanneke Kuipers, Dianne van Oosterhout

- Al Story, Dee Menezes, Brendan Scott, Ibrahim Abubakar

- Tonka Varleva

https://e-detecttb.eu

http://stiri.tvr.ro/prima-caravana-de-detectare-activa-a-tuberculozei-din-romania-va-porni-spre-zonele-cele-mai-afectate-din---ara_838497.html#view