

FIND & TREAT

People not Pathogens

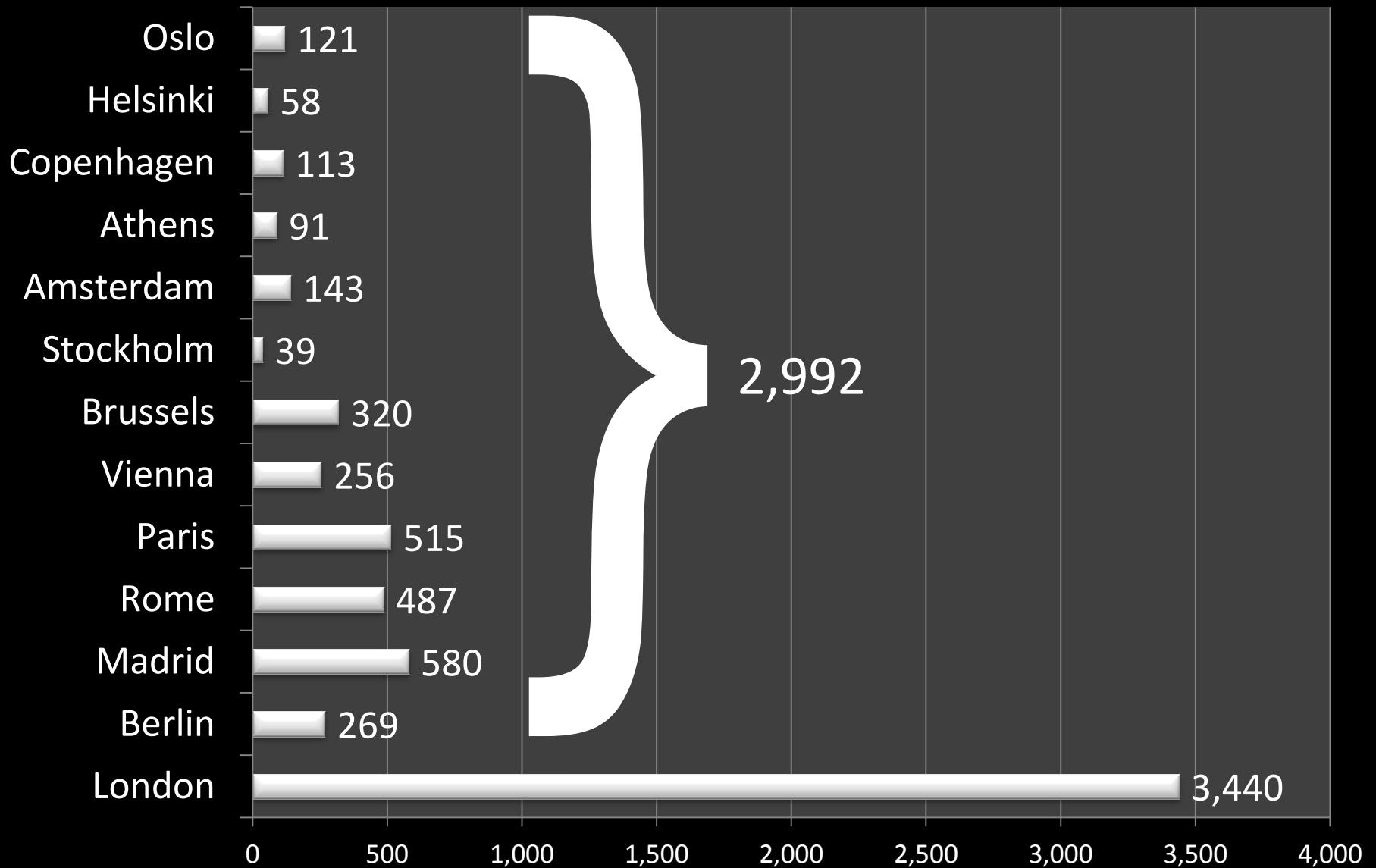
Dr Al Story



Plan

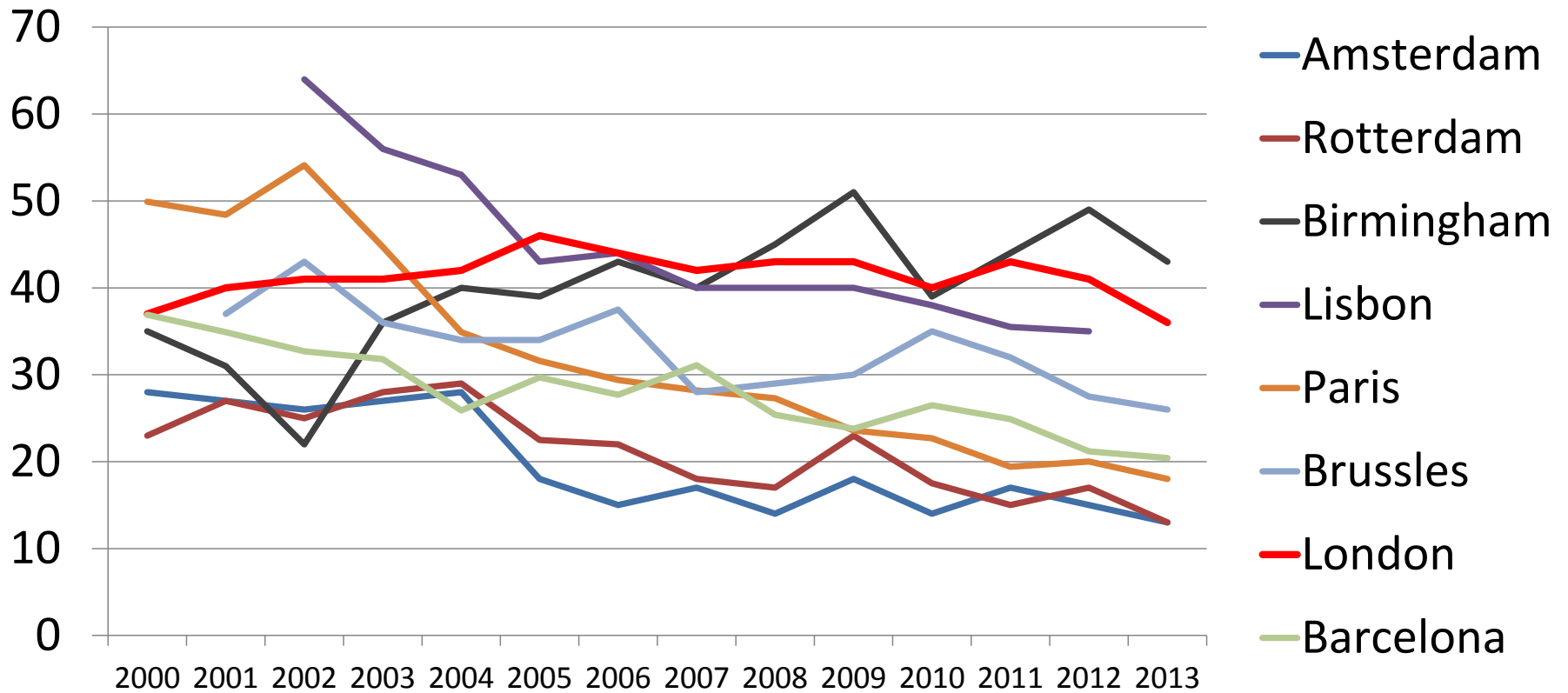
- People not Pathogens
- Find&Treat
 - Active Case Finding
 - Treatment Support
- Going forward
 - Integration and inequalities
 - A national strategy - A national service

Western European Capital Cities (2009 pop. > 0.5M)



Source: ECDC TB in Big Cities working group

TB incidence in European cities



TB - Epi transition

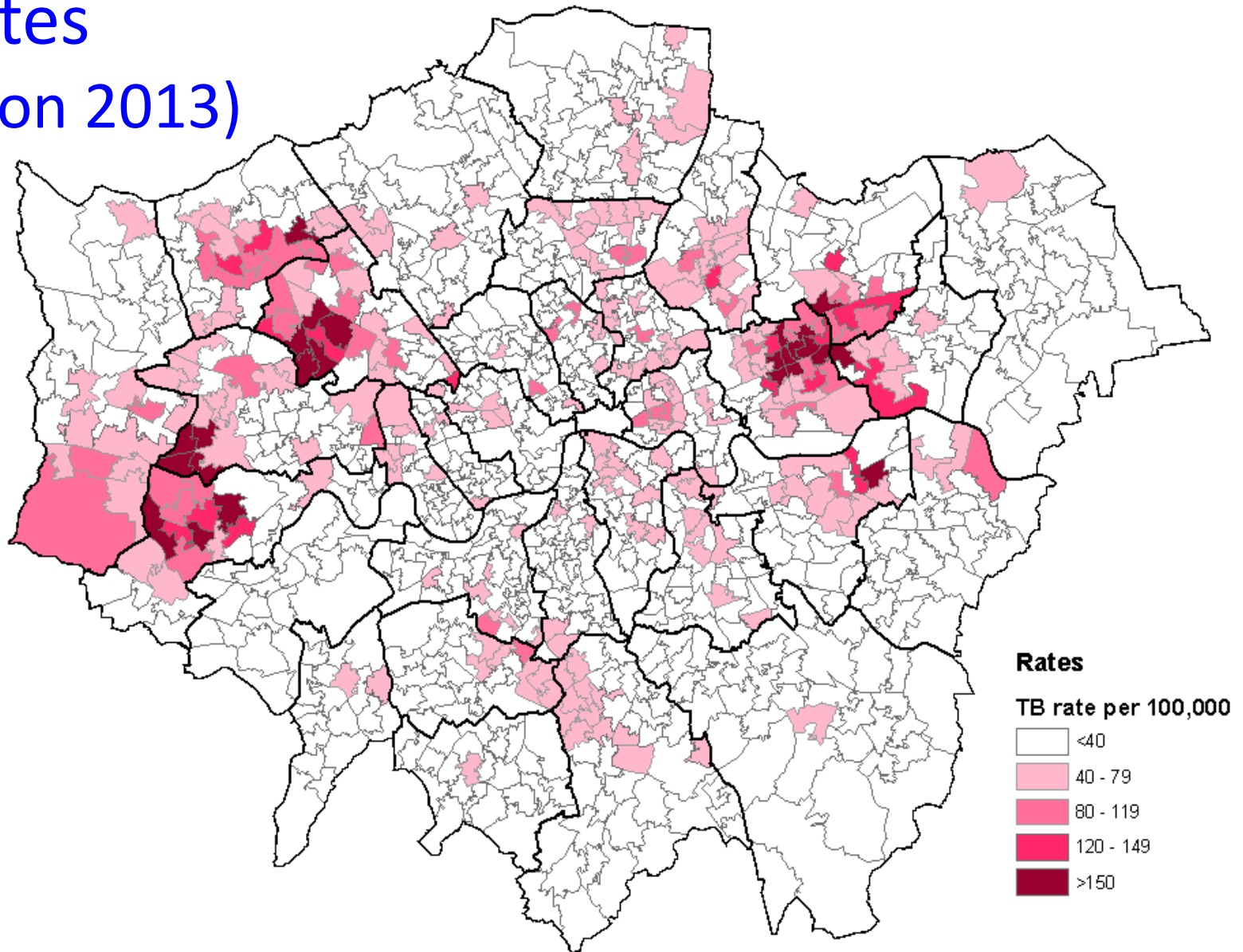
Exposure
and
infection

- Overcrowding
- Homelessness
- Incarceration
- Health care access

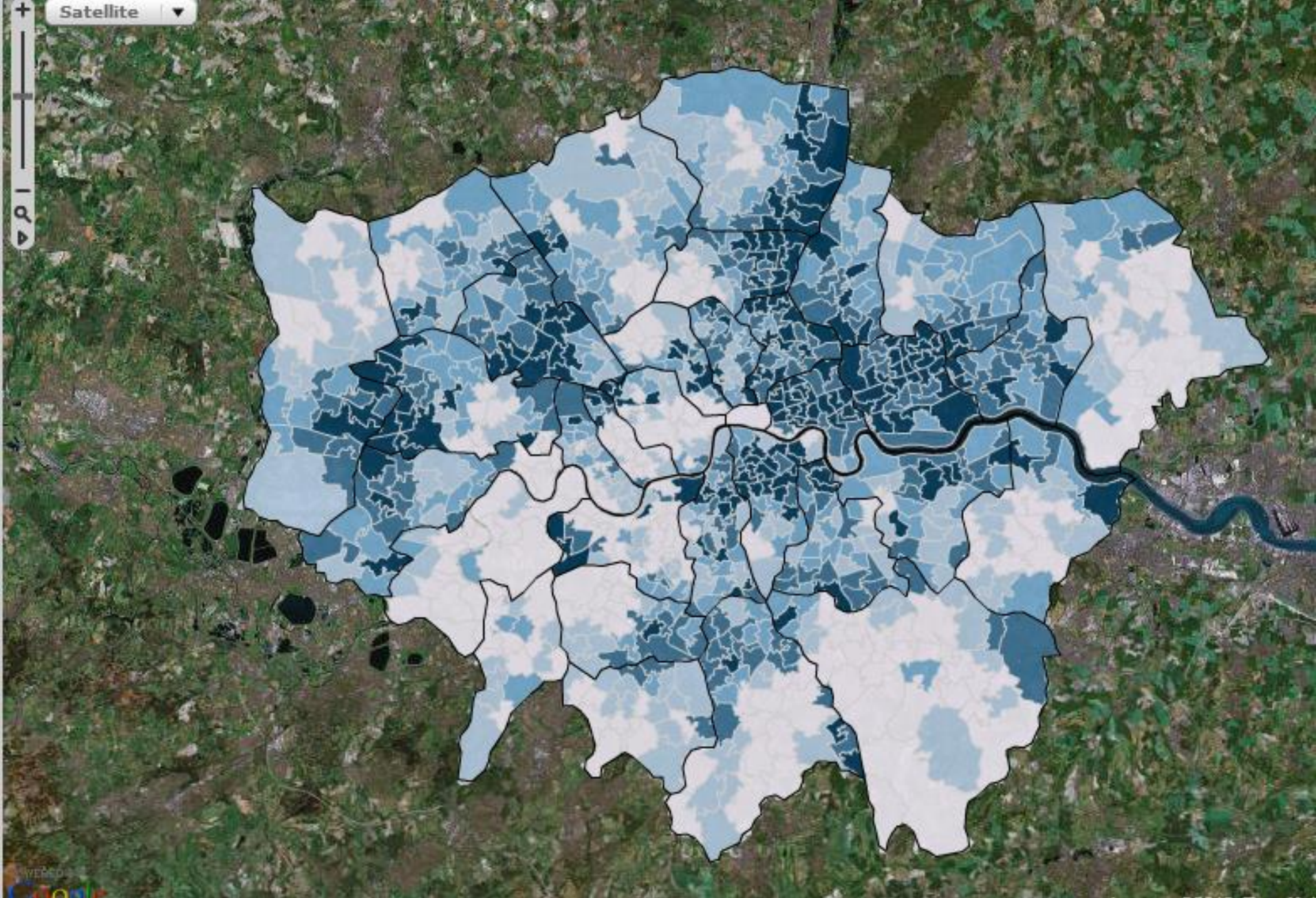
Progression
to active
disease

- Drug and alcohol use
- Smoking
- Poor nutrition
- Co-morbidities

TB rates (London 2013)

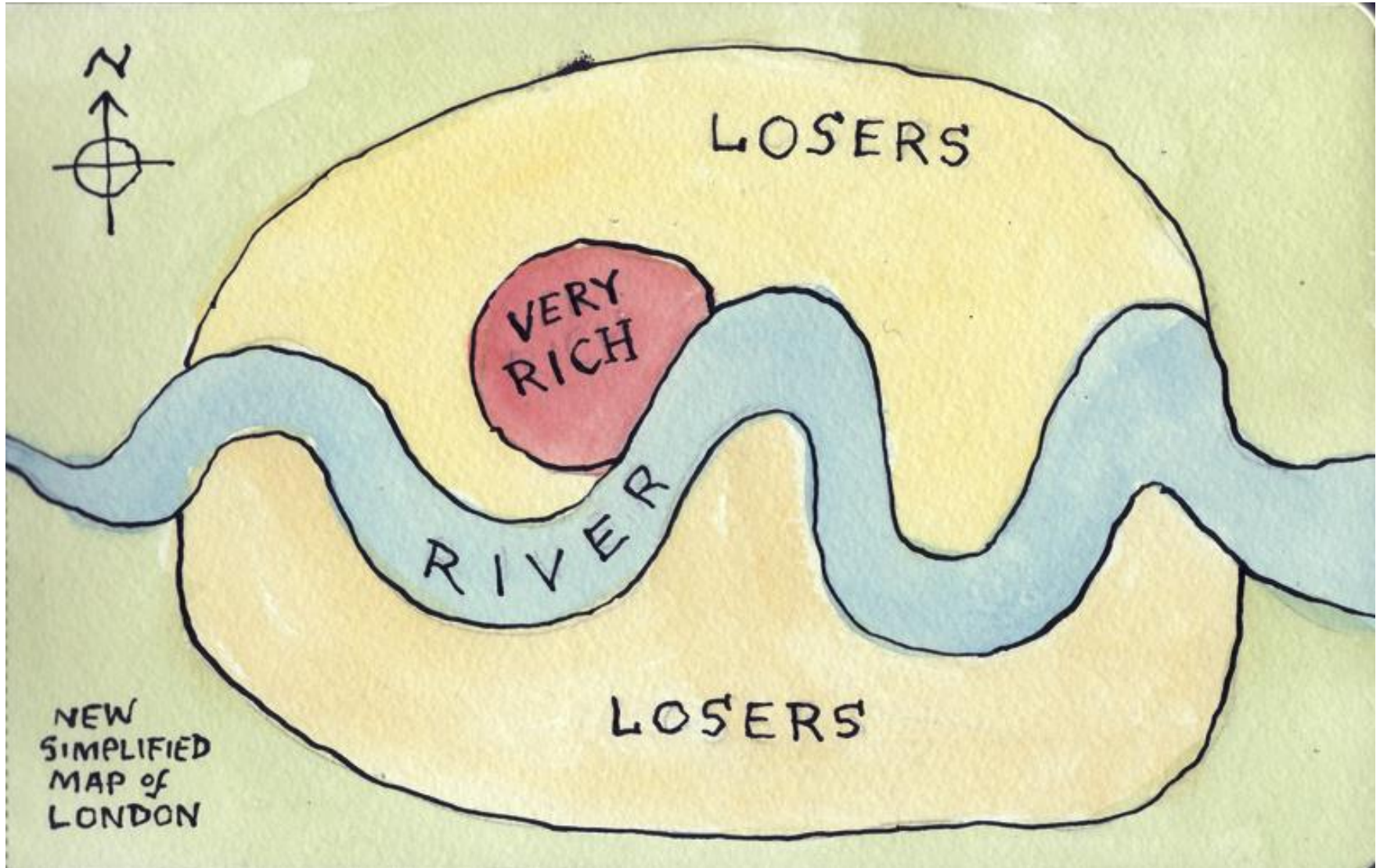


Source: Enhanced Tuberculosis Surveillance (ETS) and Office for National Statistics (ONS) Prepared by: Field Epidemiology Services Victoria. © Crown copyright and database rights 2013 Ordnance Survey 100016969

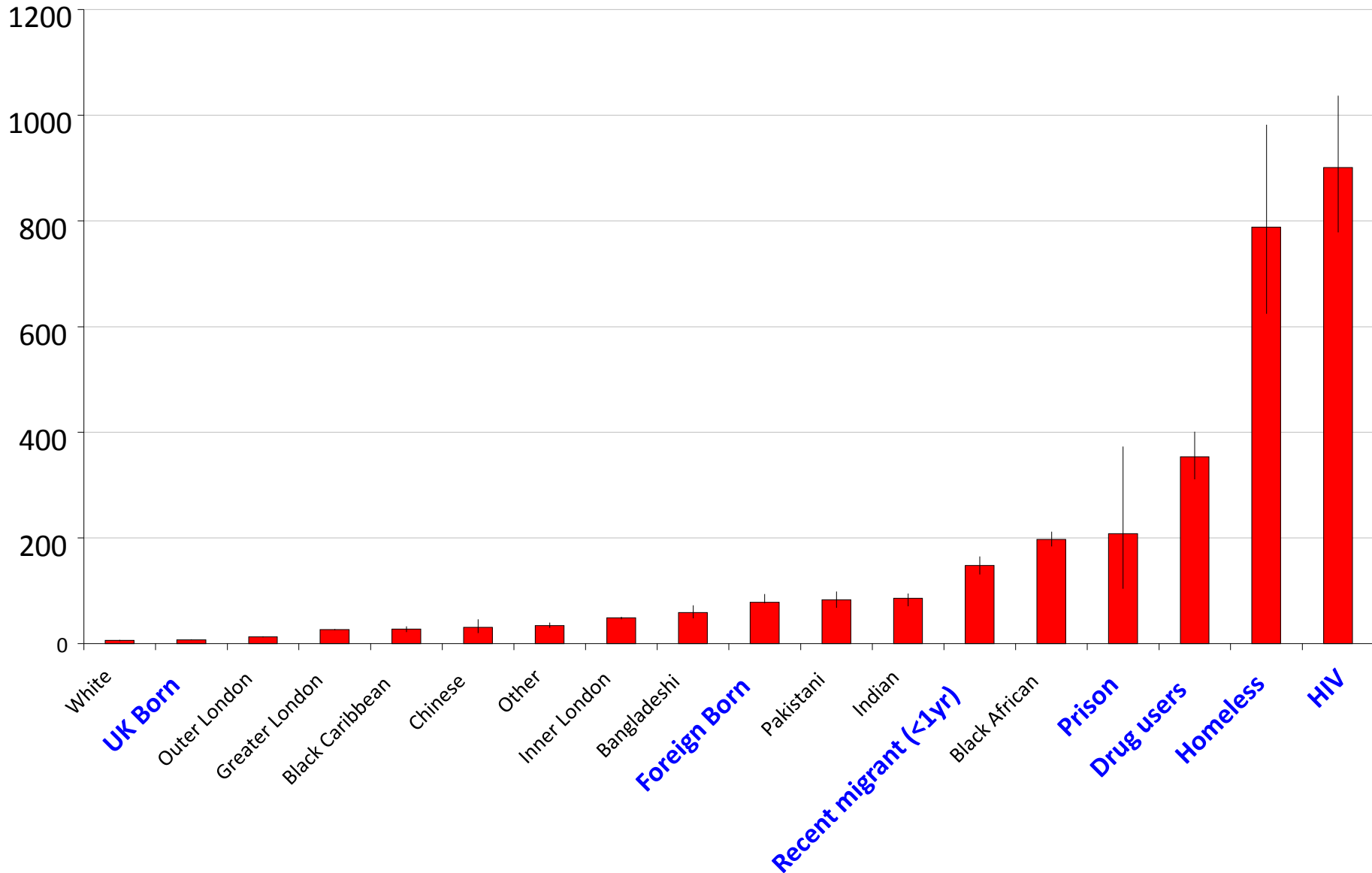


Percentage of Households below 60% of median income <http://data.london.gov.uk>

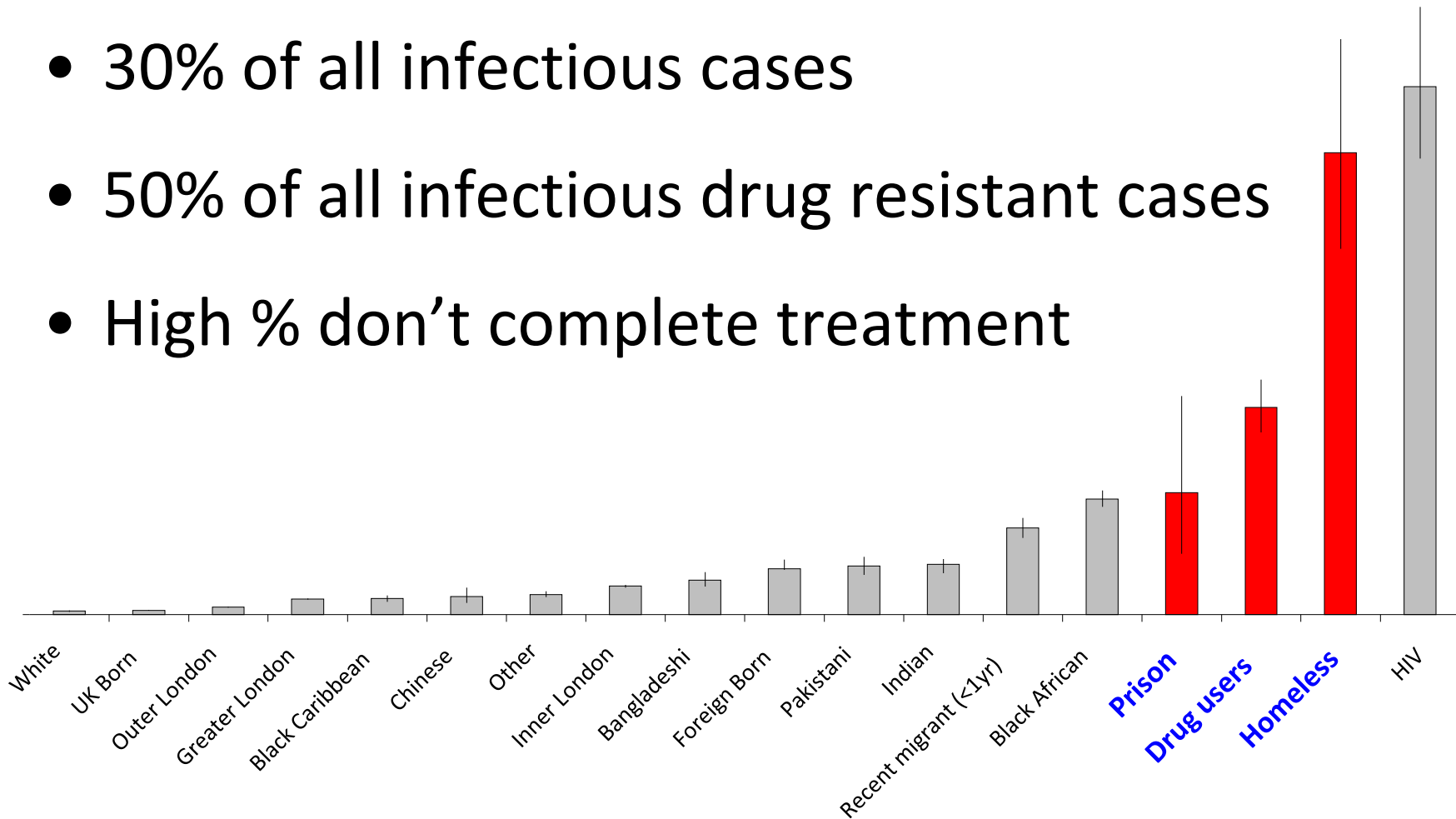
Wealth map of London



London TB Profile study - TB Prevalence



- 1:6 of all cases
- 30% of all infectious cases
- 50% of all infectious drug resistant cases
- High % don't complete treatment



Convergence of risk factors

Homelessness TB patients in London

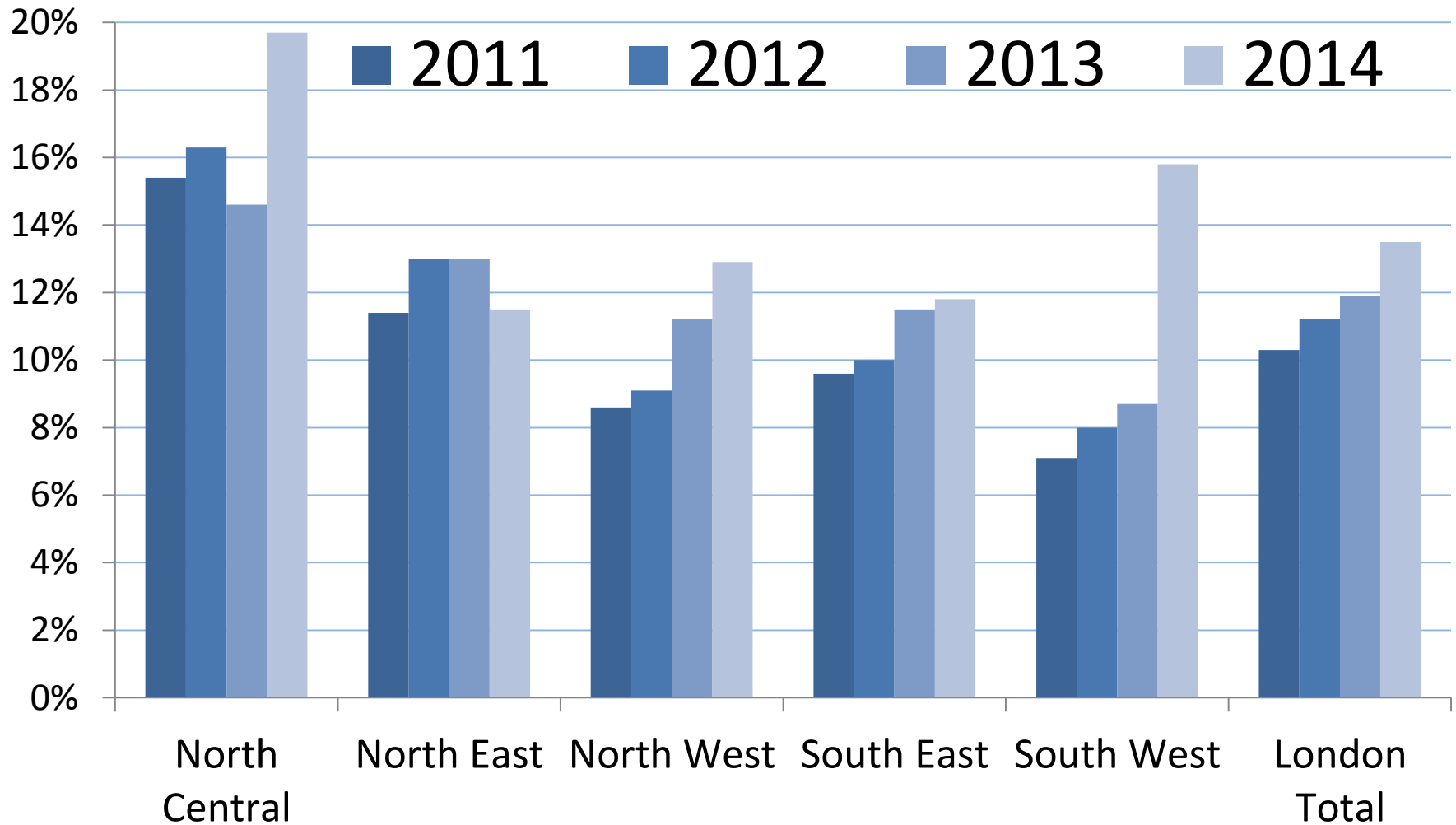
- **2 x** risk of being highly infectious
 - aOR 1.8, 95% CI 1.4-2.4
- **3 x** risk of having MDR TB
 - aOR 2.9, 95% CI 1.6-5.2
- **10 x** risk of non-adherence
 - aOR 10.2, 95% CI 7.9-13.2

A black and white photograph of a subway station. A person is lying on a bench in the foreground, their head resting on their hand. In the background, another person is walking away from the camera. The scene is dimly lit, with light coming from the side, creating strong shadows.

TB rates highest among

- hardest to reach
- hardest to treat

% TB cases with one or more social risk factors



Source: London TB Register; Includes Homeless, Drugs, Alcohol, Mental Health

Key exemplars

- **Homeless people**
 - Hostels – Day centres - Street
- **Substance users**
 - In treatment or Not engaged
- **Prisoners**
 - Current and ex
- **Vulnerable migrants**
 - Destitute, undocumented, NRPF

Drug use

Homeless

Prison

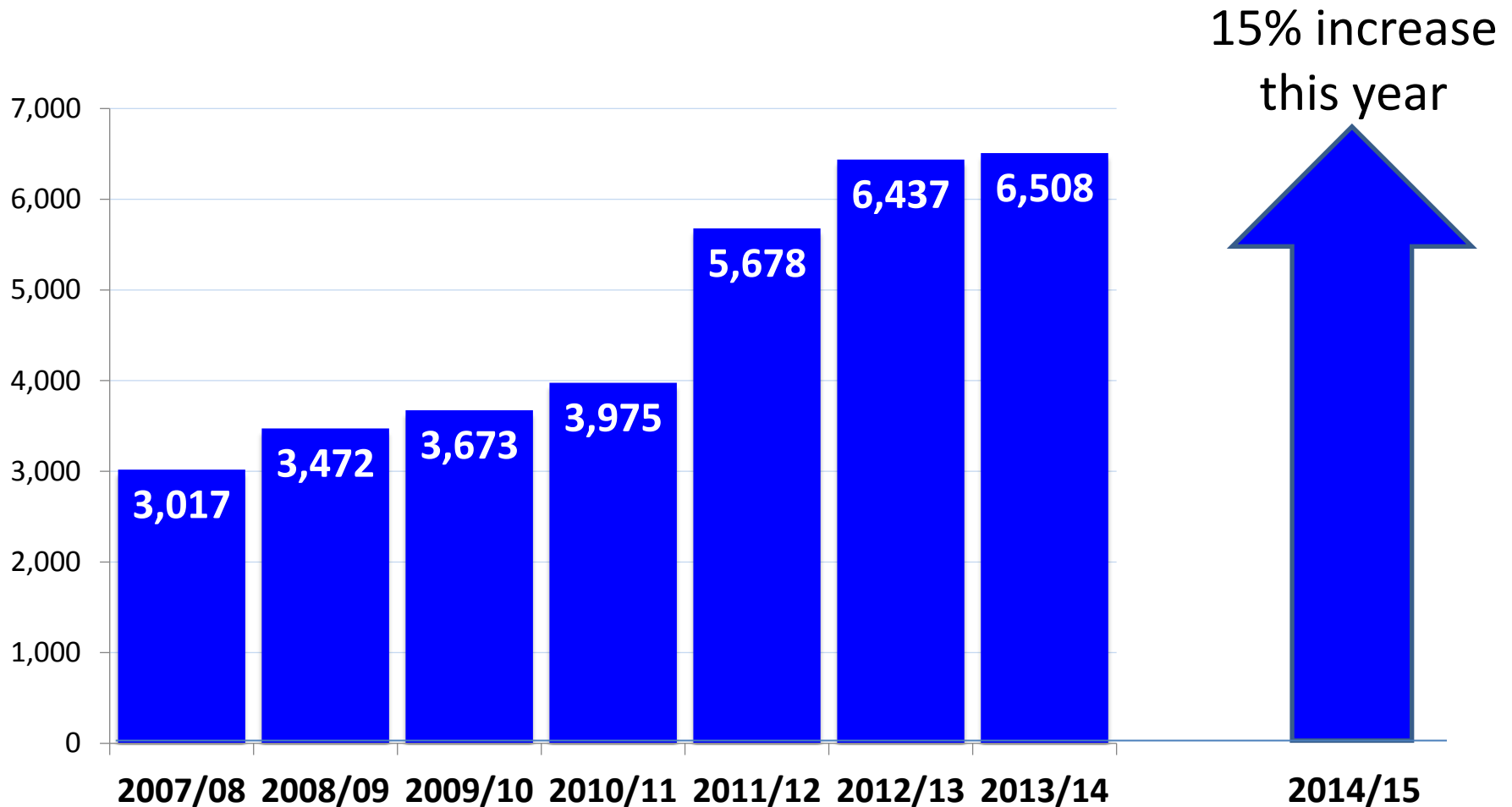
Austerity

- 25% less hostel bed spaces (2011-2013)
- Increase in Day Centre use
- Reduced 'specialist' service provision
- 50% services restricted to 'local' residents

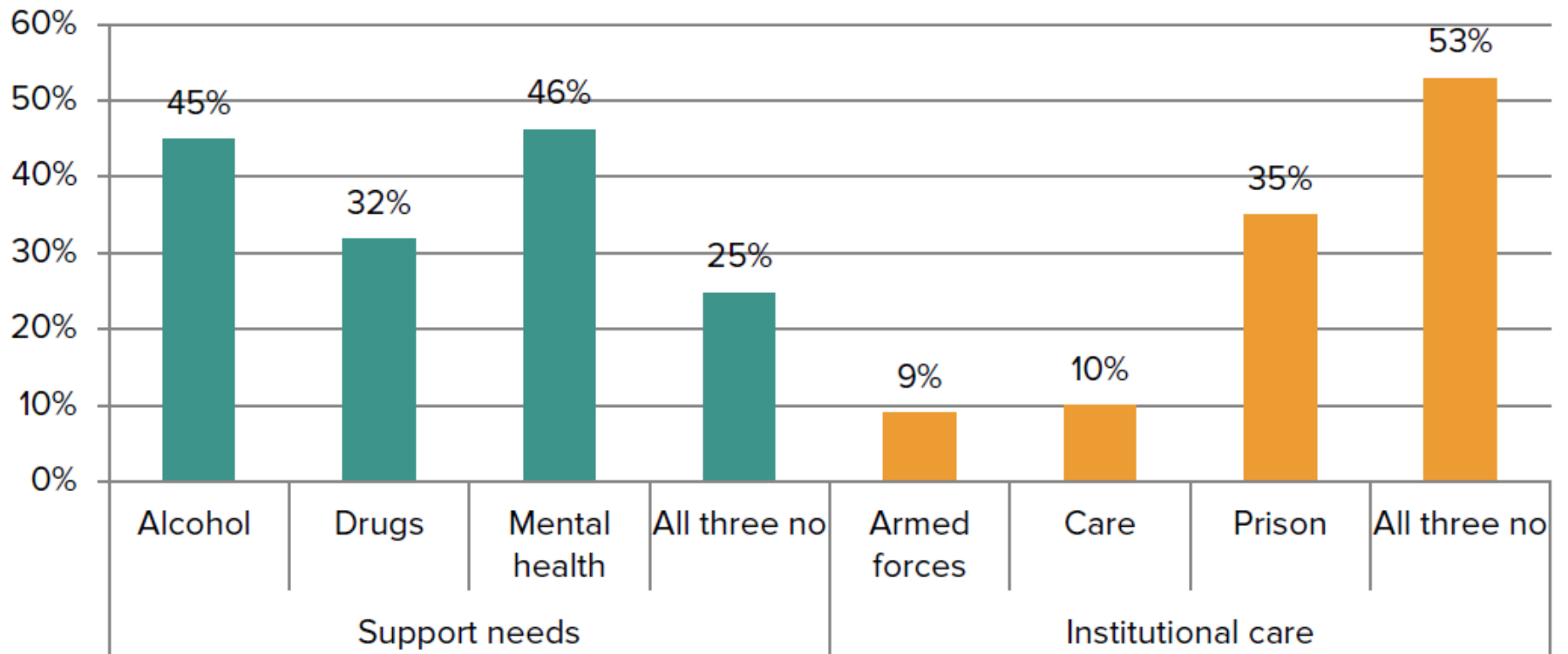
The unhealthy state of homelessness: Health audit results 2014

<http://www.homeless.org.uk/sites/default/files/site-attachments/The%20unhealthy%20state%20of%20homelessness%20FINAL.pdf>

Tip of the iceberg – Rough sleepers



People seen sleeping rough by outreach teams - CHAIN - Combined Homelessness and Information Network (Oct – Dec 2014)
London rough sleeping increases despite economic recovery
<http://www.crisis.org.uk/pressreleases.php/605/london-rough-sleeping-increase-despite-economic-recovery>



Destitute migrants

- NRPF
- Under the wire

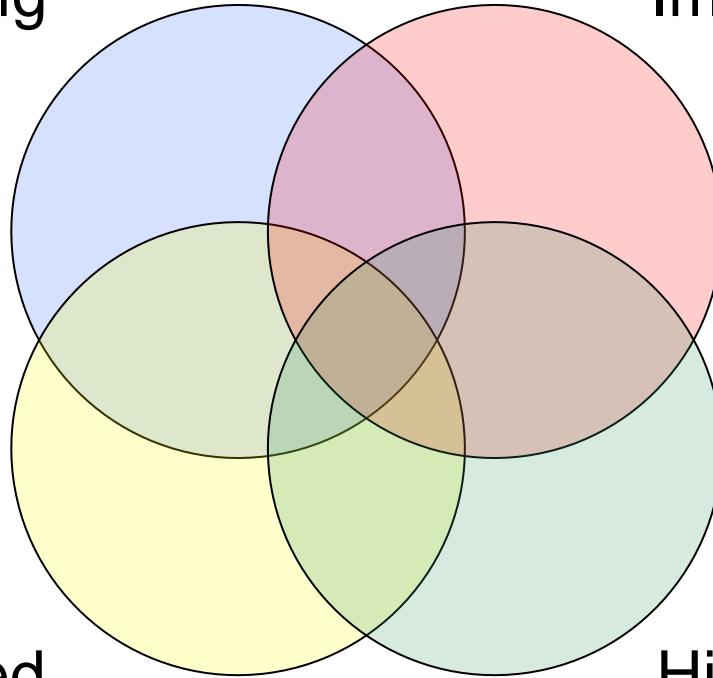


63,000 opiate and/or crack cocaine users aged between 15 and 64.



Overcrowding

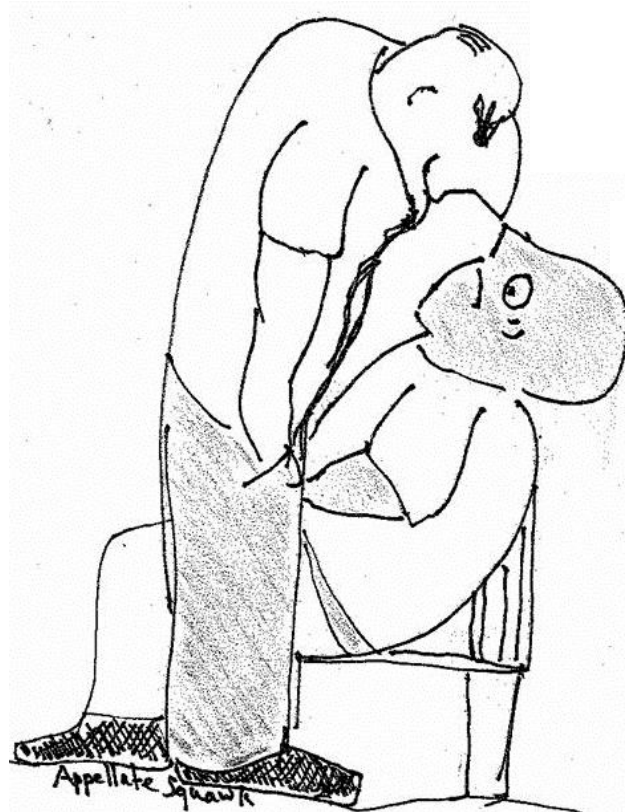
Immunosuppression



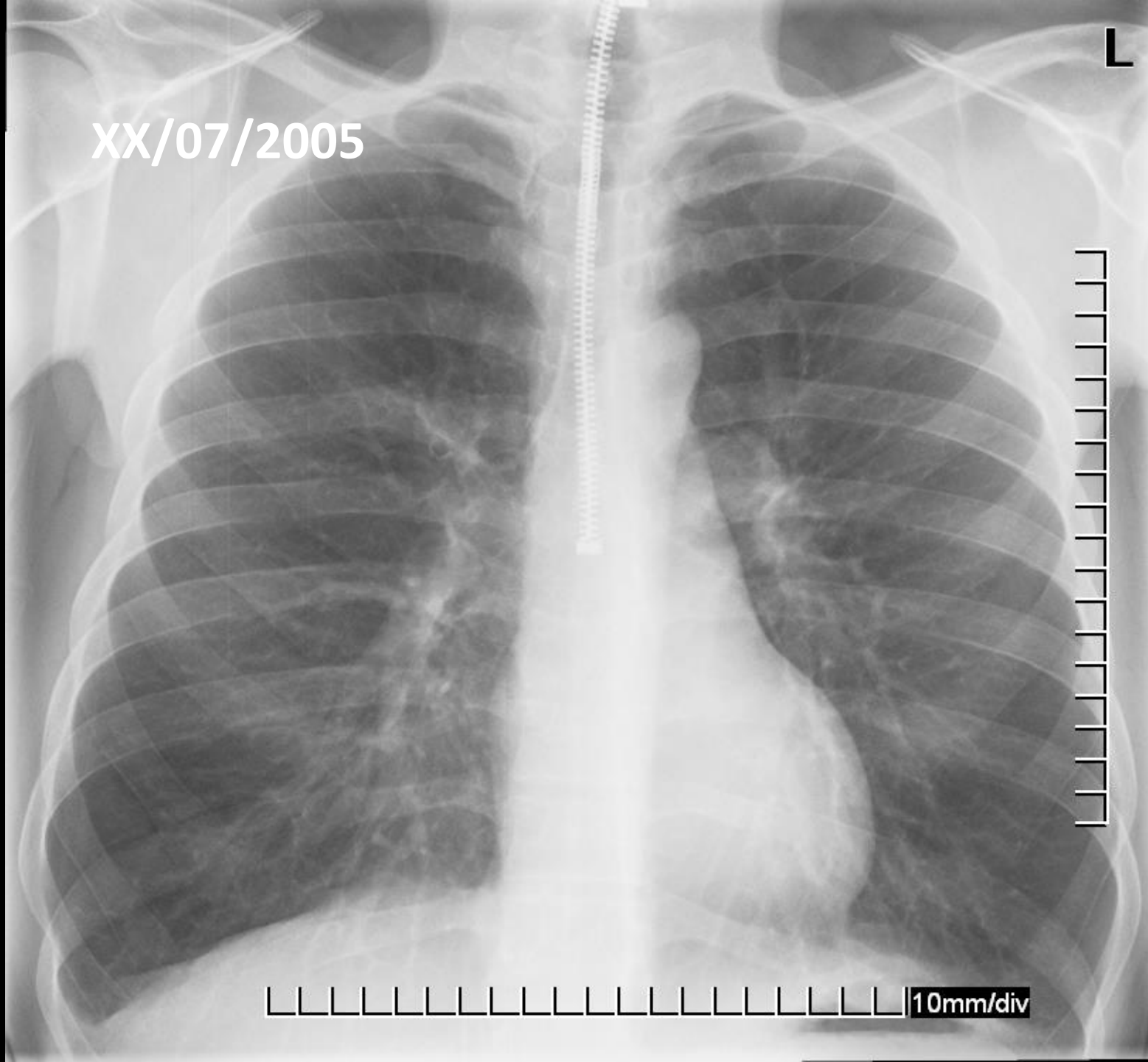
Delayed
diagnosis

High contact
rate

Who have you
infected?



XX/07/2005



XX/12/2006

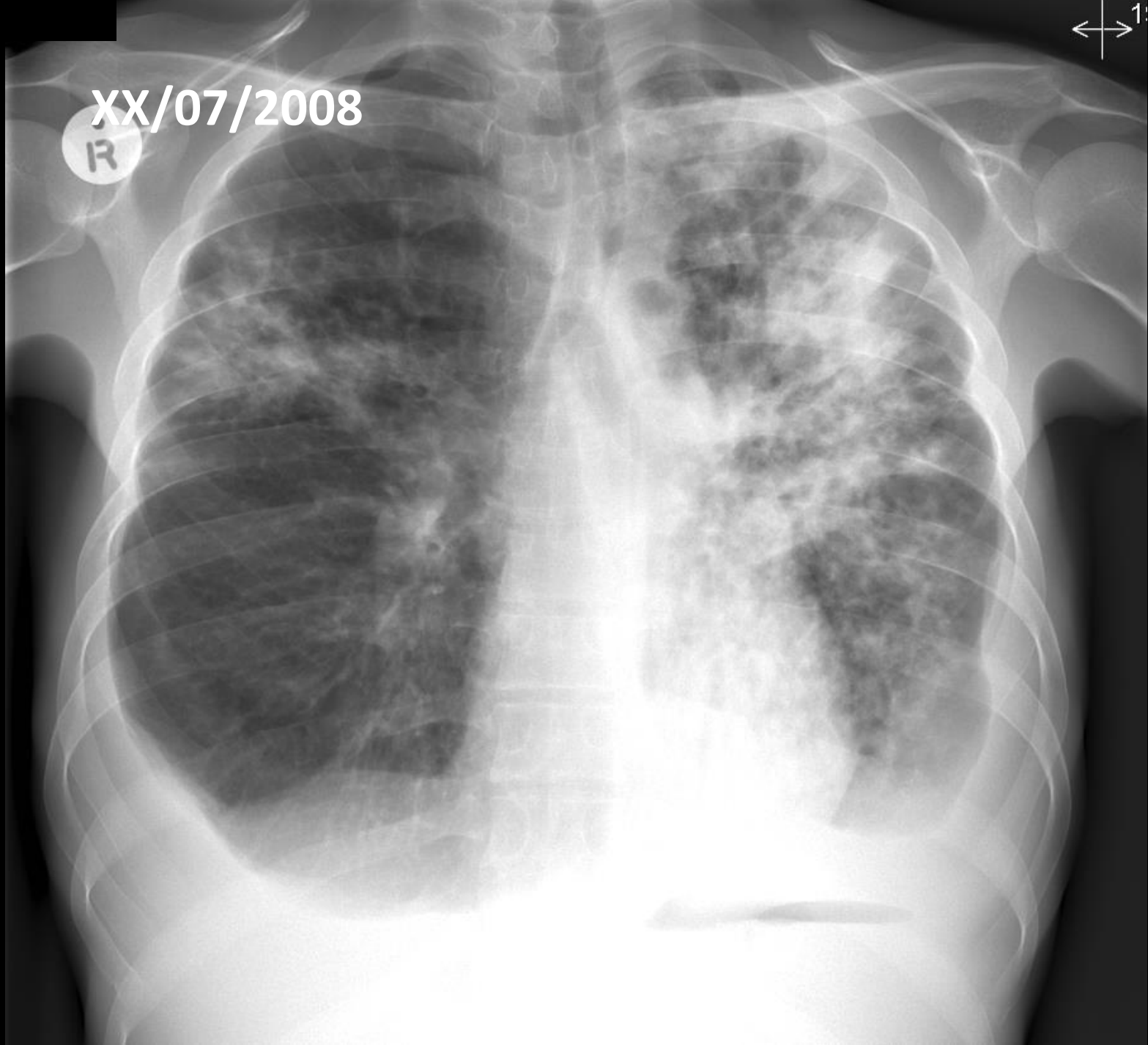


10mm/div



XX/07/2008

R



Detection (1960's)



Detection (21st C) Dutch fleet



Identifying and managing tuberculosis among hard-to-reach groups

- In major urban centres and areas of identified need commissioners should:
 - ensure there is a programme of active case-finding using mobile digital radiography in places where homeless people and substance misusers congregate

Core business

- **Active case finding**

- Circa 10K screens per year - 290 sessions

- **Support the most complex cases**

- >2,000 referrals so far (34% DR - 89 MDR, 8 XDR)

- **Locate & return to service**

- >400 active TB cases returned so far

- **Training / awareness – Peer educators**

- 3rd Sector non-clinical professionals

NHS

Cepheid.
A better way



TB **groundswell** inclusive solutions to homelessness **FIND & TREAT**
PEER TO PEER



- 10,000 screens per year
- Detection rate 250 per 100,000
- 1 in 4 referred start TB treatment
- Two-thirds less likely to be AFB +

Story A, Aldridge RW, Abubakar I, Stagg HR, Lipman M, Watson JM, Hayward AC. Active case finding for pulmonary tuberculosis using mobile digital chest radiography: an observational study. *Int J Tuberc Lung Dis*. 2012 Nov;16(11):1461-7



WHATEVER

IT TAKES

Social Determinants Model of Care

- Treatment engagement (DOT - VOT)
- Psychosocial support
 - Housing
 - Addiction
 - Mental health
 - Destitution
 - Criminal justice
- Incentives
- Coercion



**Olallo House
TB Hostel**



**Video Observed
Treatment RCT**



Impact

- <6% lost pre-Dx
- 75% of LFU's located and returned to service
- 84% of cases detected complete treatment
 - vs 83% of all cases nationally!

Highly cost effective

BMJ

BMJ 2011;343:d5376 doi: 10.1136/bmj.d5376

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RESEARCH

Dedicated outreach service for hard to reach patients with tuberculosis in London: observational study and economic evaluation

Height

Distance

Escape velocity $v_e = \sqrt{\frac{2GM}{r}}$

- The speed needed to "break free" from the gravitational attraction of a massive body, without further propulsion, i.e., without spending more fuel



Framework towards tuberculosis elimination in low-incidence countries 2014



TB prevention and control in hard to reach and vulnerable populations 2015

NICE

Update of CG117 Tuberculosis
October 2015



Collaborative tuberculosis strategy for England
2015 to 2020



21st Century Infectious Disease Screening
April 2015



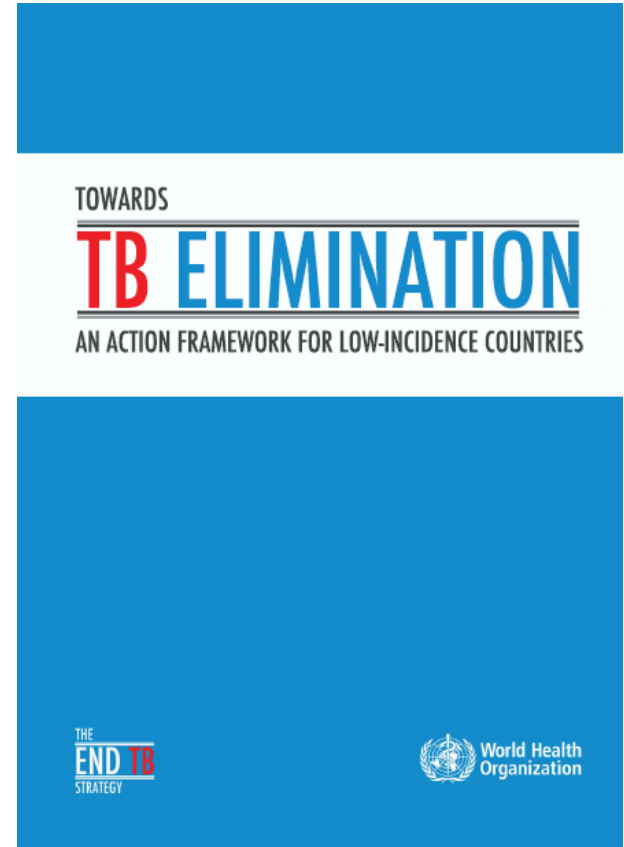
Hard to reach groups: Making a call on the mobile
June 2014

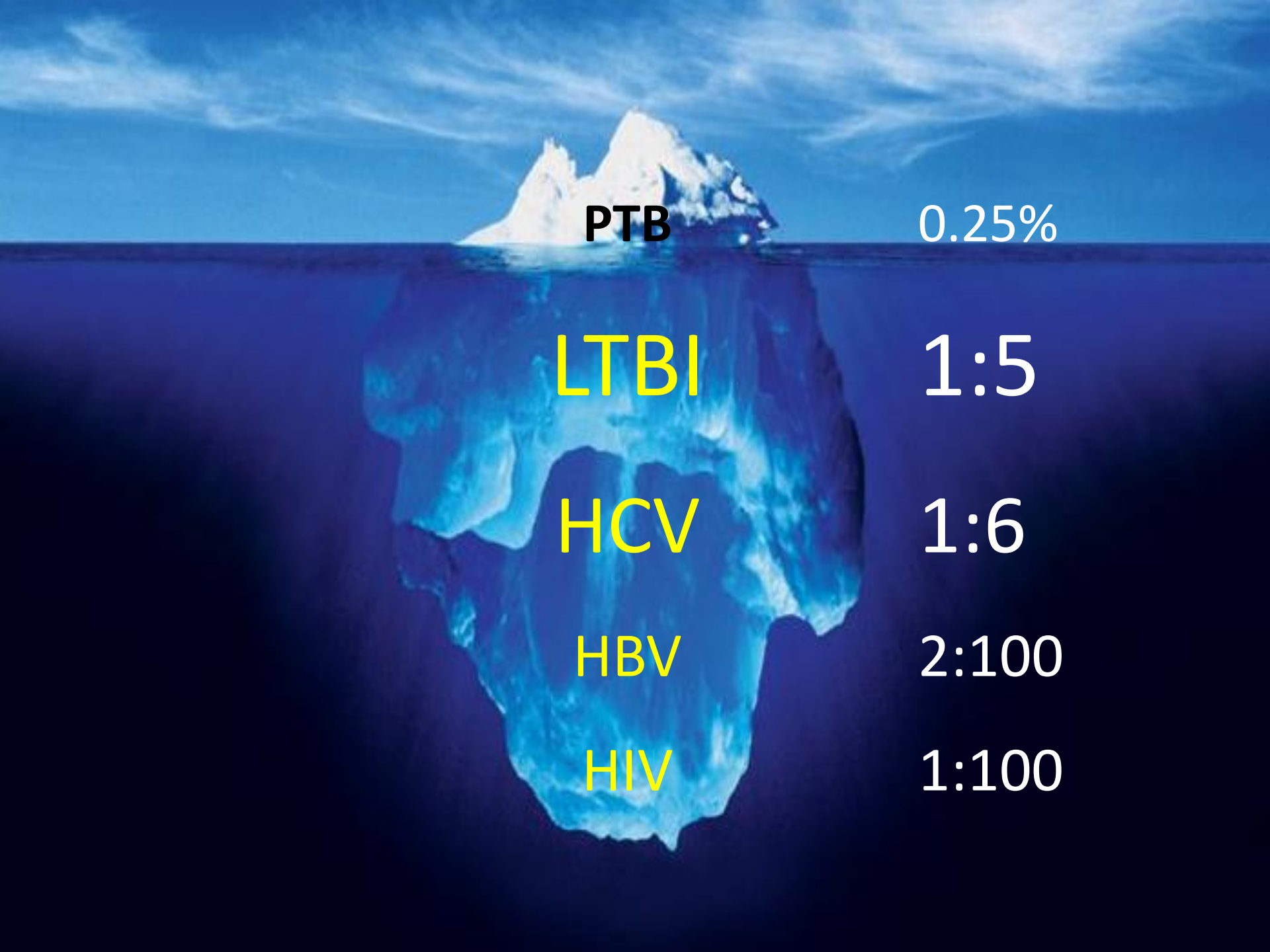


Inspiring Healthcare: Find&Treat
February 2014

Pillar 1: Integrated, patient-centred care and prevention

- A. **Early diagnosis** of TB including universal drug susceptibility testing; and **systematic screening of contacts and high-risk groups**
- B. **Treatment** of all people with TB including drug-resistant TB; and **patient support**
- C. Collaborative TB/HIV activities and **management of comorbidities**
- D. **Preventive treatment** of persons at high-risk; and vaccination against TB





PTB

0.25%

LTBI

1:5

HCV

1:6

HBV

2:100

HIV

1:100

Identifying and managing tuberculosis among hard-to-reach groups

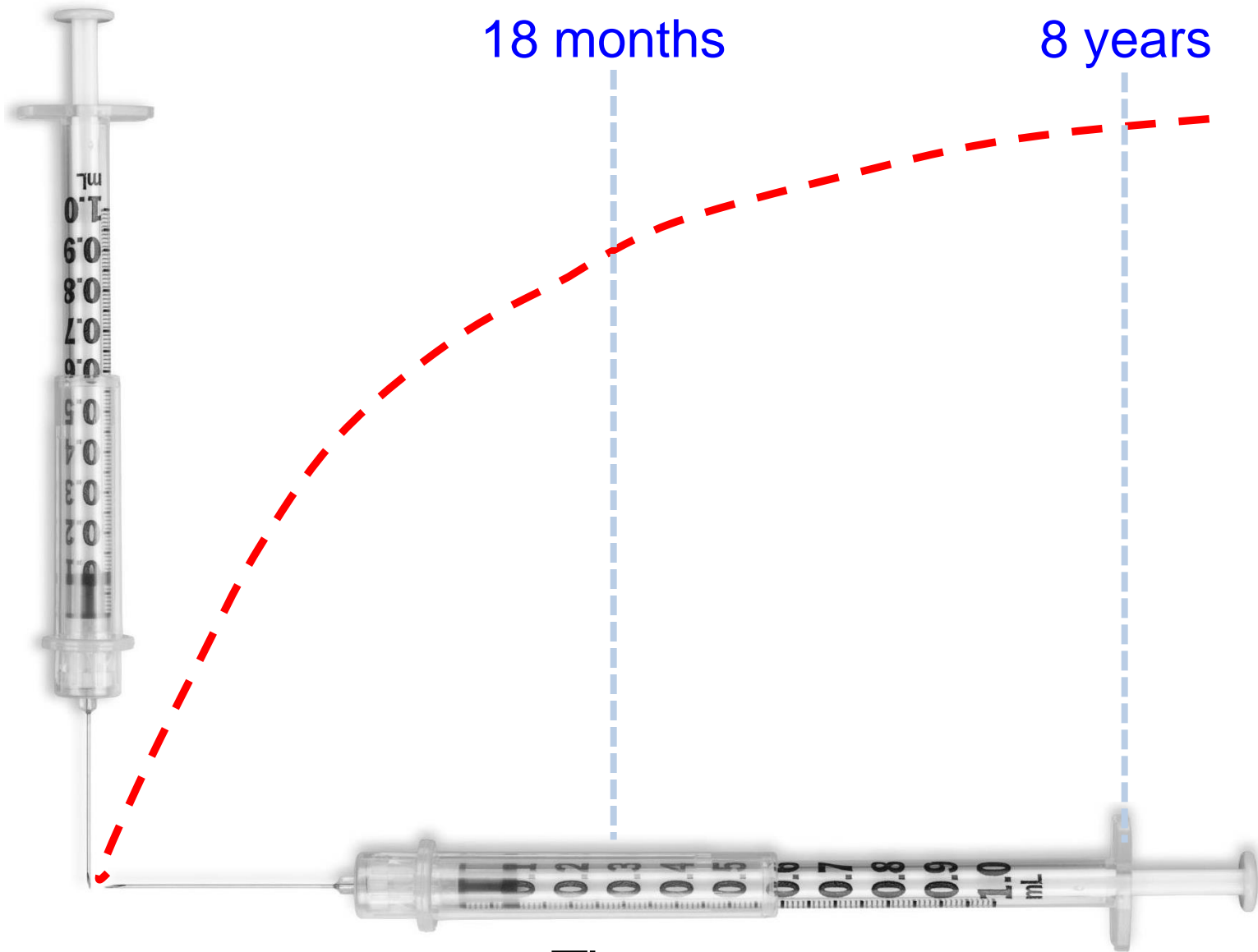
- In major urban centres and areas of identified need commissioners should:
 - Offer BBV testing alongside radiology

% HCV infected

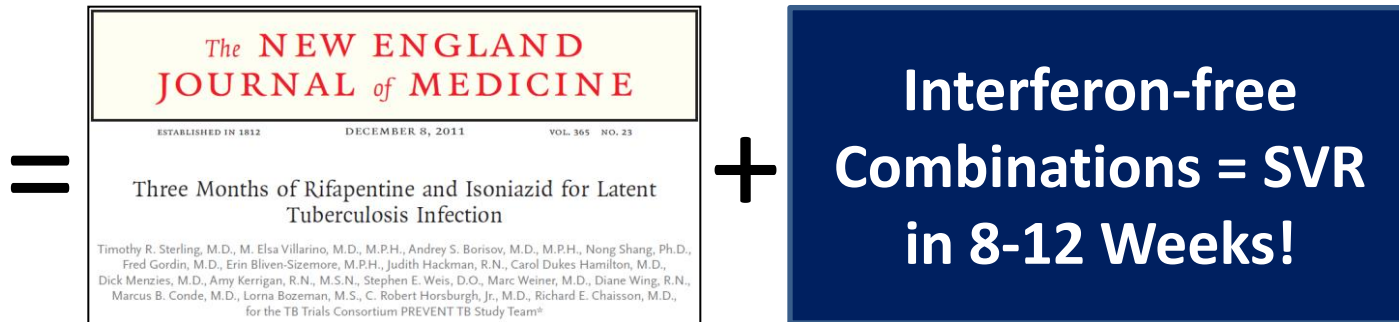
18 months

8 years

Time

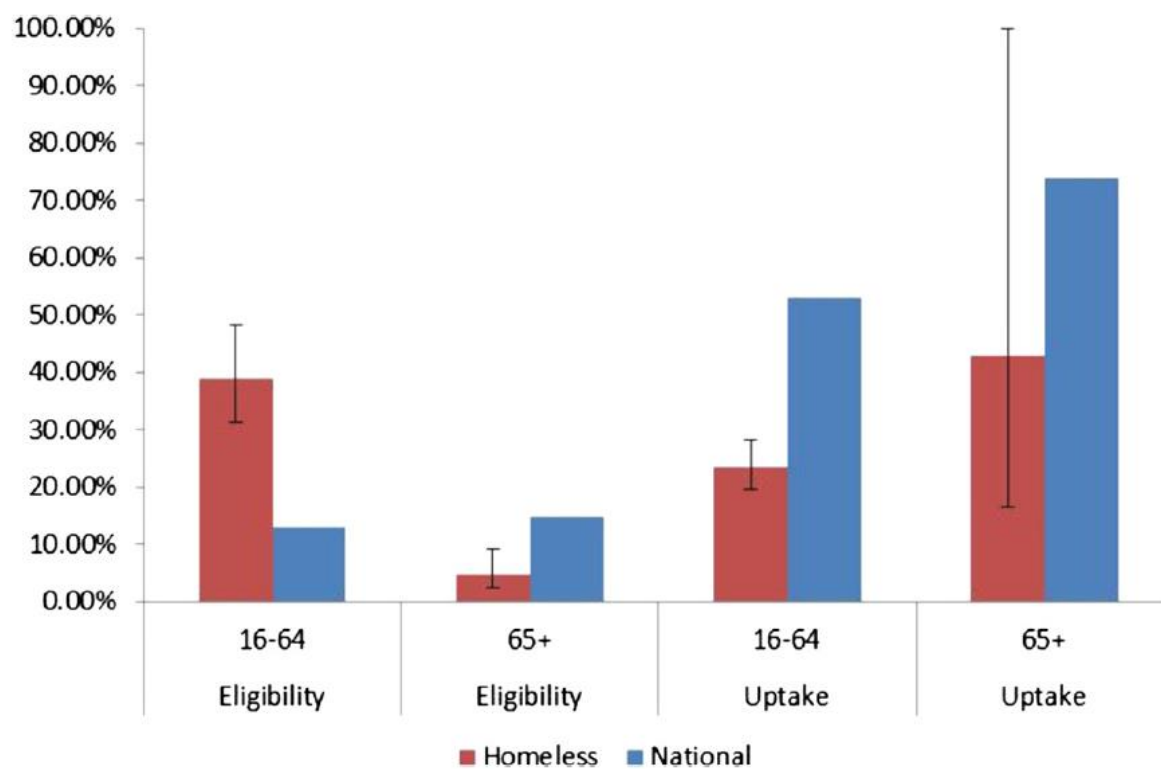


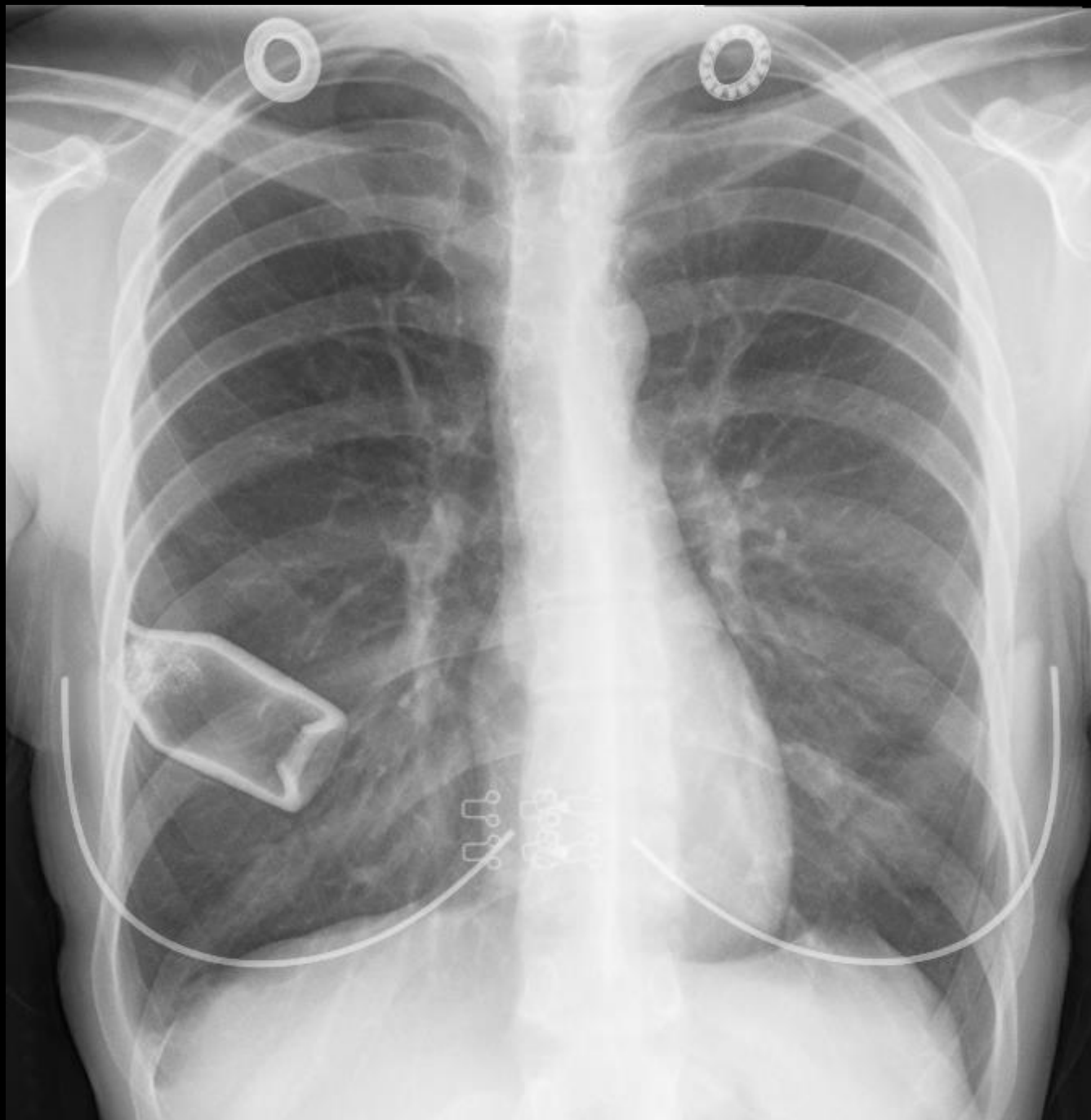
Integrated LTBI and Hep C treatment



Influenza vaccination, inverse care and homelessness: cross-sectional survey of eligibility and uptake during the 2011/12 season in London

Alistair Story^{1*}, Robert W Aldridge², Tat Gray¹, Stan Burridge¹ and Andrew C Hayward²









30-year-old male 'crack-cocaine' user presented to A&E with hemoptysis.

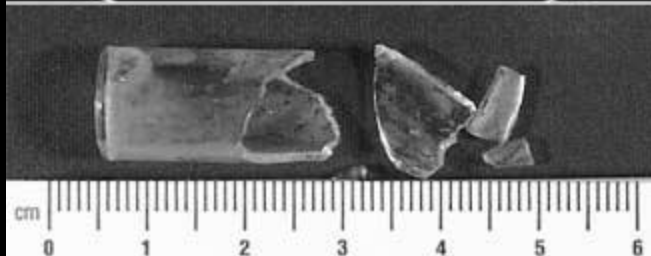
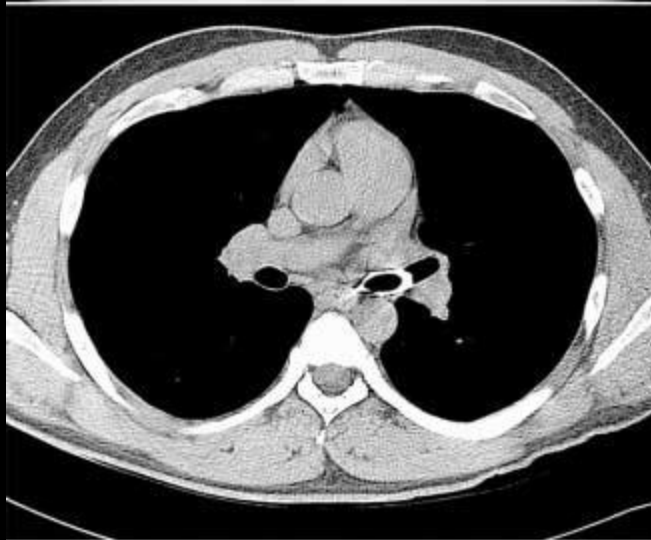
Given oral antibiotics for presumed bronchitis and discharged home.

2 weeks later presented with hemoptysis.

CXR and CT revealed a cylindrical density in the lumen of the left mainstem bronchus.

1-cm diameter glass tube with jagged edges removed by bronchoscopy.

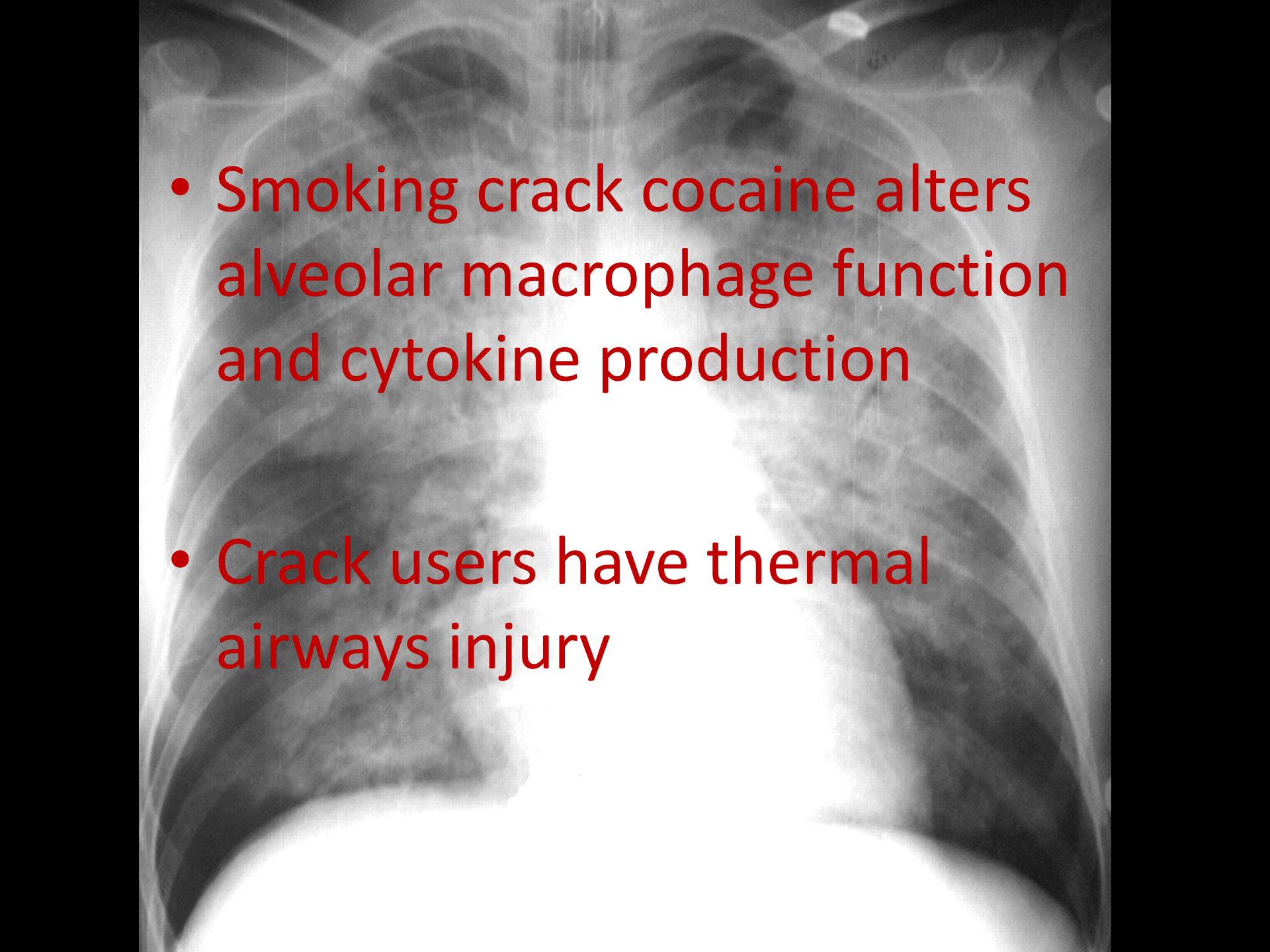
No recollection of aspiration!



Kovitz KL, Mayse ML, Araujo CE, David O. Self-stenting with a crack pipe: the ultimate in 'managed care'. *Respiration*. 2004 Jan-Feb;71(1):91.

TB and Crack

- **2.4 times more likely to be infectious at diagnosed**
- Increased risk not due to diagnostic delays
 - Crack users had the shortest diagnostic delays, potentially attributable to rapidly progressive, debilitating disease
 - Crack users were also more likely to seek treatment at an emergency department rather than primary care services

- 
- Smoking crack cocaine alters alveolar macrophage function and cytokine production
 - Crack users have thermal airways injury

FIND TREAT

CRACK FACTS

Smoking crack totally wrecks your lungs

It's very hot! Crack vaporizes at 90°C but rapidly loses potency - hence the need for short stem pipes

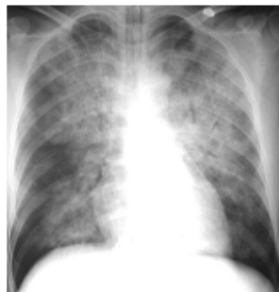
Smoking crack will numb the lungs so you can't feel the burning

Crack wipes out the lung immune system

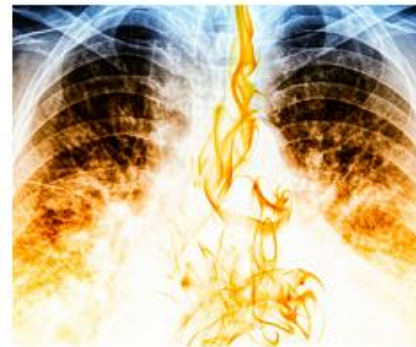
Crack smoke is full of other highly toxic stuff you didn't know you paid for!

These are the lungs of a crack smoker in their early 30's. In a few years they will probably need oxygen just to walk.

Many people who smoke tobacco get breathing problems in their 50's or 60's. Smoking crack can do the same damage in just a few years.



Lung damage is a one way ticket!



Smoking crack causes asthma symptoms, cough – often with blood, wheeze, chest pain, strokes and heart attacks. It increases your risk of chest infections and TB.

If you want some help and advice to kick the crack call any of these national helplines.

ADDICTION HELPLINE

0800 140 4823

Narcotics Anonymous

0300 999 1212

FRANK HELPLINE

0800 77 66 00

Contact Find&Treat on 0203 447 9842

University College London Hospitals 

NHS Foundation Trust



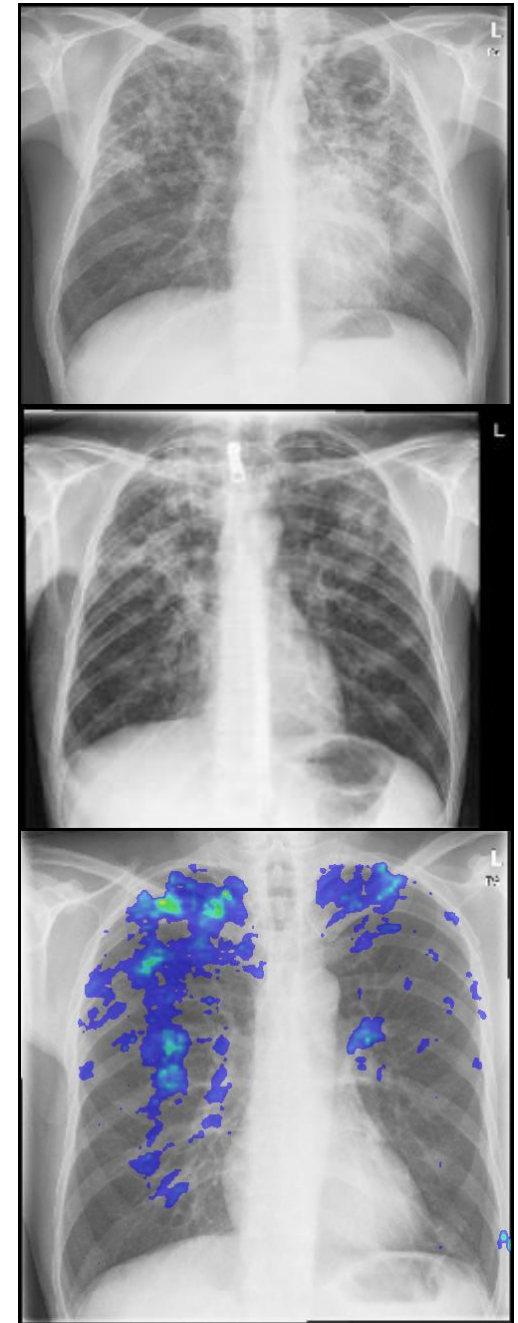
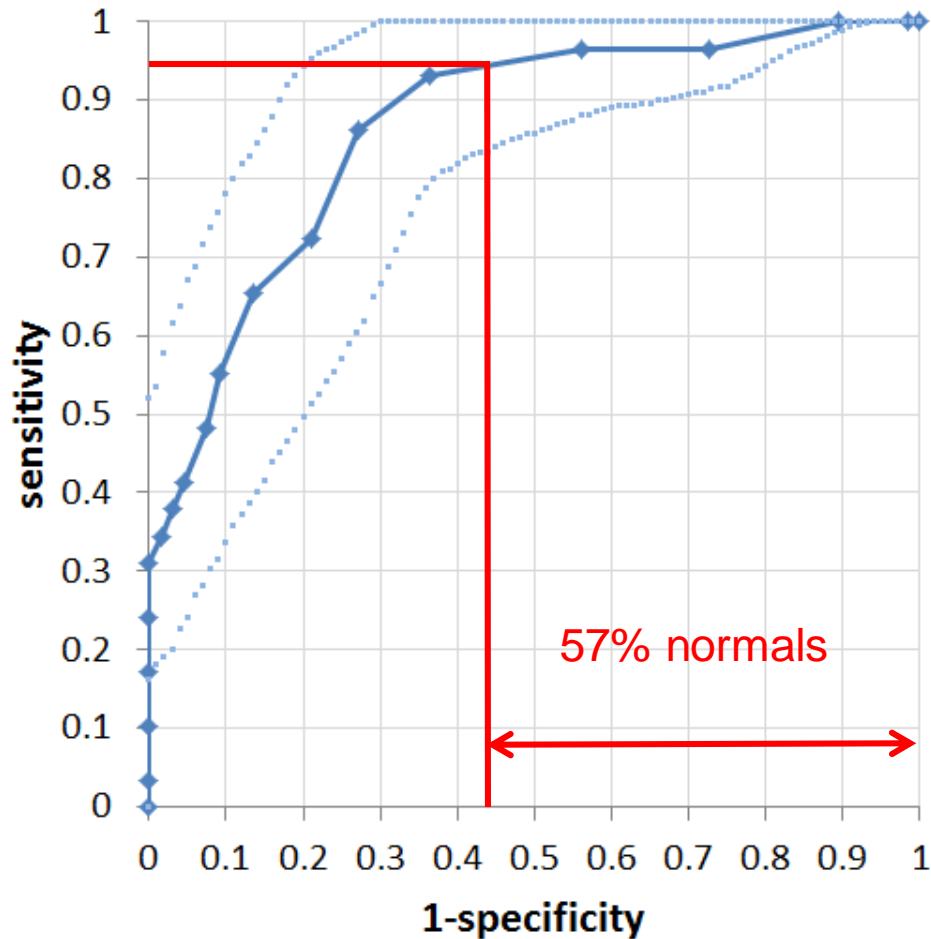
The window of opportunity







57% of images can be discarded by CAD at high sensitivity (95%)

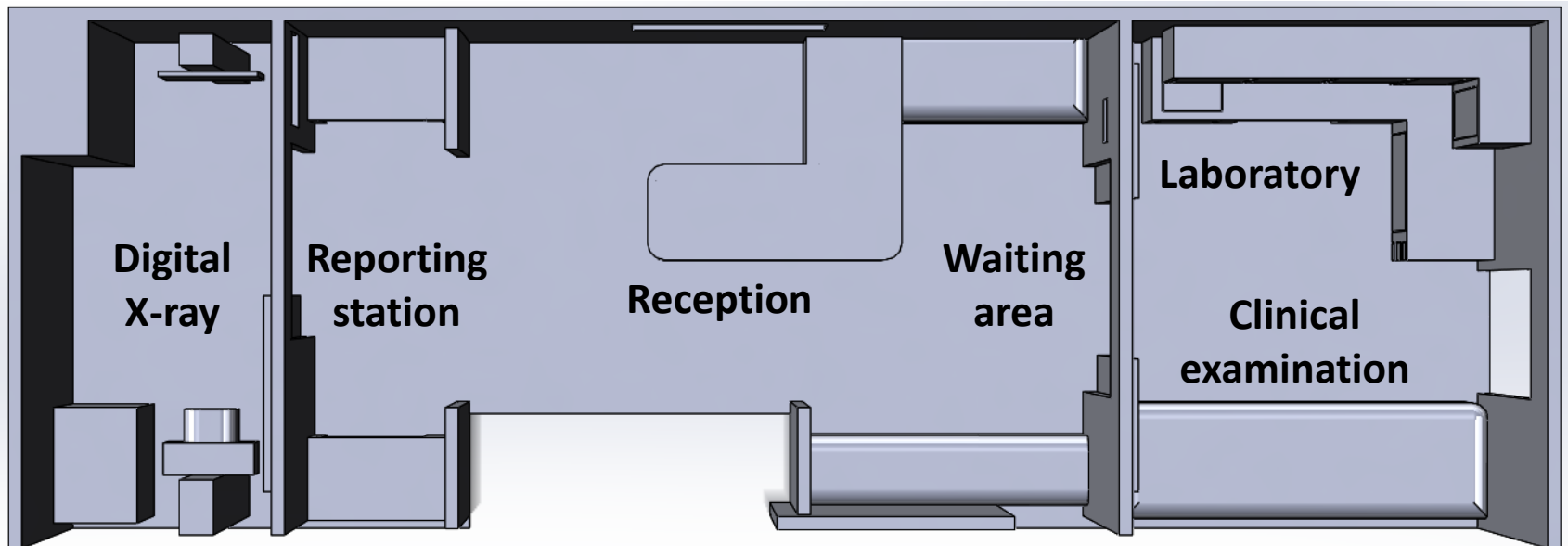
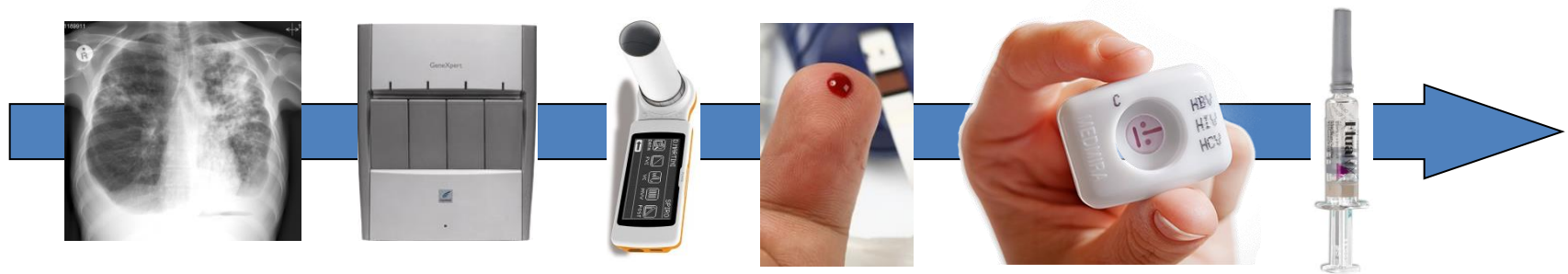


Chest X-ray
(tele-radiology)
and rapid TB
confirmation

Lung Health
Harm min.
Smoking
cessation

LTBI, HIV,
HCV, HBV
venous /
POCT

On-the-spot
vaccination
for Flu, PPV
& Hep B





Last year I saw the first of these fantastic units at work and am delighted that the team launched their second mobile health unit earlier today

Jane Ellison, Public Health minister (19 January 2015)

Three areas for new investment

1. TB control boards - £1.5 million
2. Testing for, and treatment of, latent TB in new entrants - £2m for testing, £8 million for treatment
3. Expand outreach services, similar to the 'Find&Treat' service in London, to the rest of England - £900,000

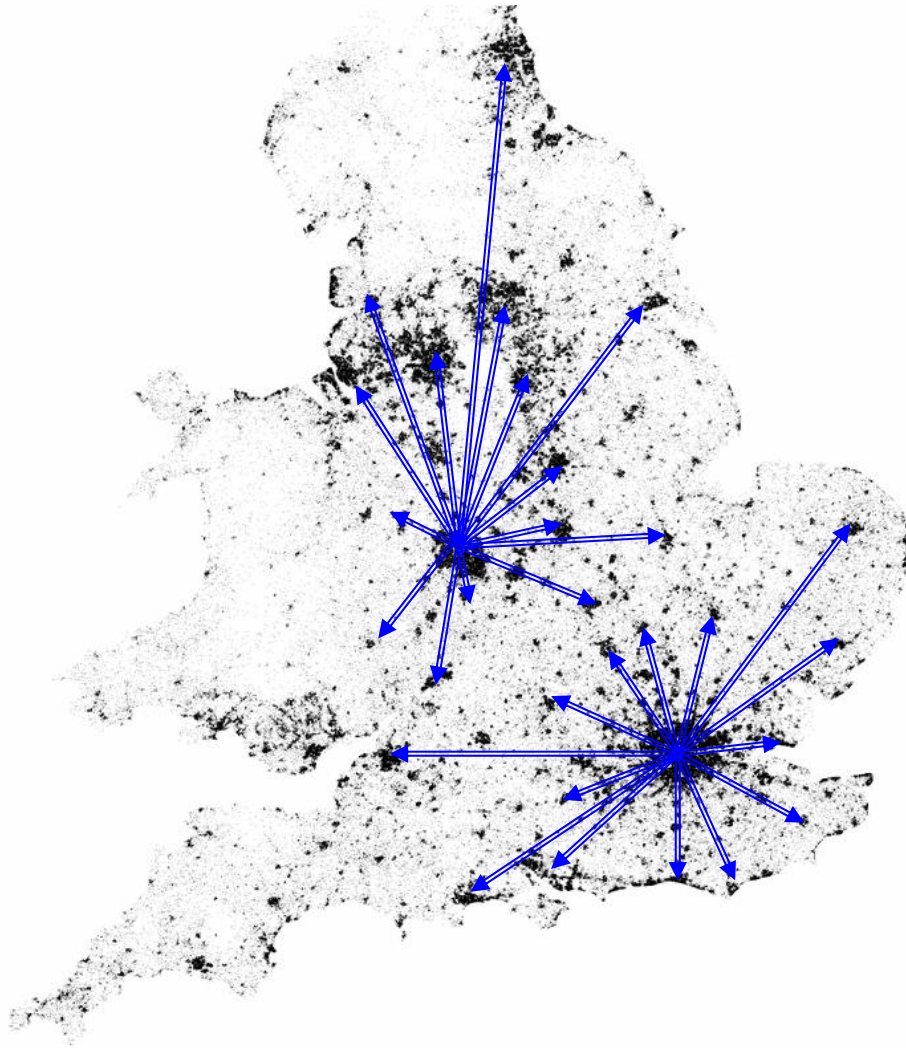


Protecting and improving
the nation's health

Collaborative Tuberculosis
Strategy for England

2015 to 2020





- **People not Pathogens**
- **Point of Care**
- **Prevention**
- **Peers**
- **Partnership**

FIND & TREAT Thank you

