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

ECDC TB in Big Cities working group (2015)
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)
Percentage of Households below 60% of median income [http://data.london.gov.uk](http://data.london.gov.uk)
Wealth map of London
• 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

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
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

Destitute migrants

- NRPF
- Under the wire
63,000 opiate and/or crack cocaine users aged between 15 and 64.
Immunosuppression
Overcrowding
Delayed diagnosis
High contact rate
Who have you infected?
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

http://guidance.nice.org.uk/PH37 2012
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
• 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 +

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

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

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
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

http://guidance.nice.org.uk/PH37
Integrated LTBI and Hep C treatment

Three Months of Rifapentine and Isoniazid for Latent Tuberculosis Infection


Interferon-free Combinations = SVR in 8-12 Weeks!

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

Alistair Story¹*, Robert W Aldridge², Tat Gray¹, Stan Burridge¹ and Andrew C Hayward²
30-year-old male ‘crack-cocaine’ user presented to A&E with haemoptysis.

Given oral antibiotics for presumed bronchitis and discharged home.

2 weeks later presented with haemoptysis.

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!

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
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

Digital X-ray

Reporting station

Reception

Waiting area

Laboratory

Clinical examination
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
- People not Pathogens
- Point of Care
- Prevention
- Peers
- Partnership
Thank you