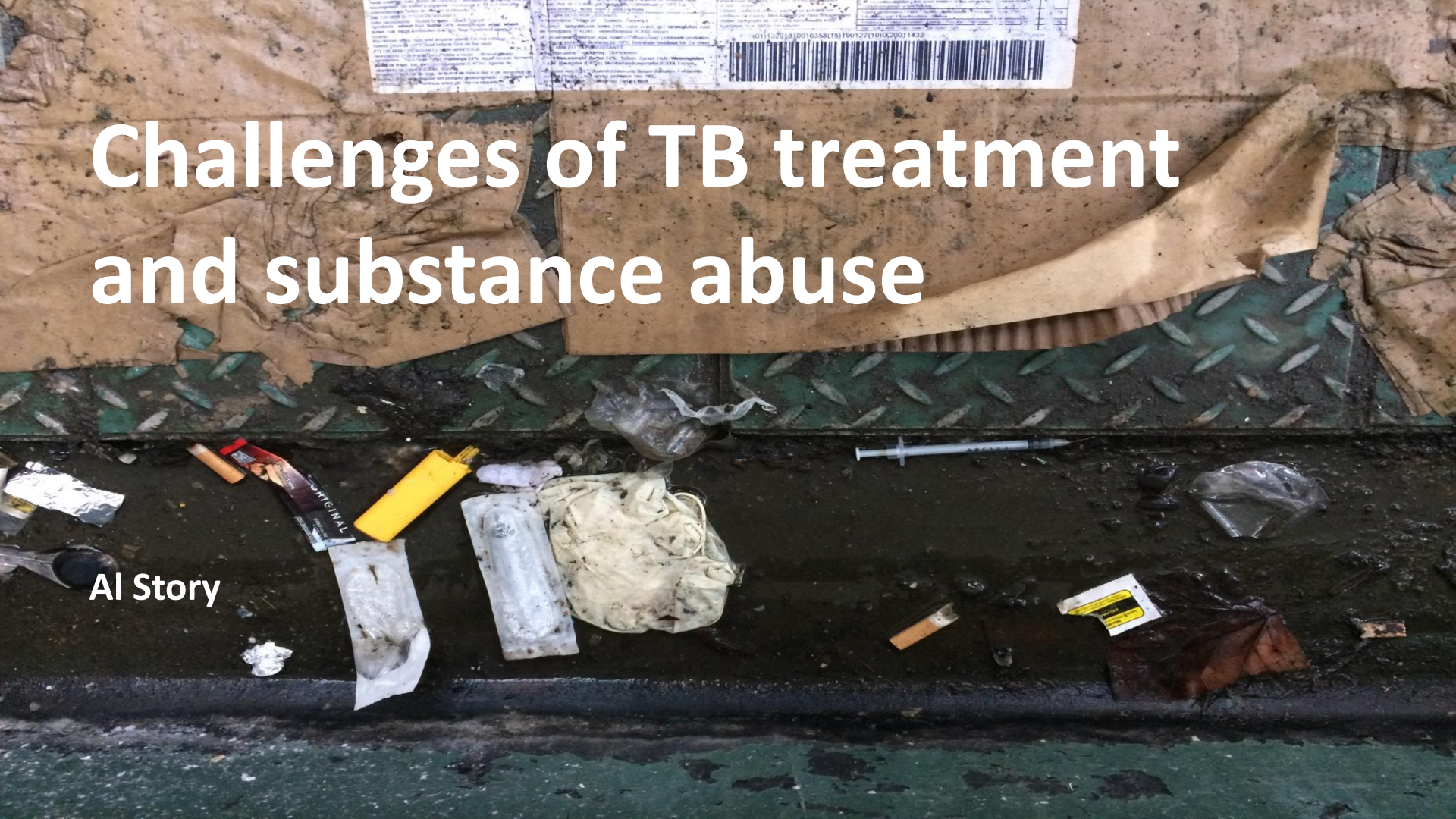


Challenges of TB treatment and substance abuse

AI Story



Plan

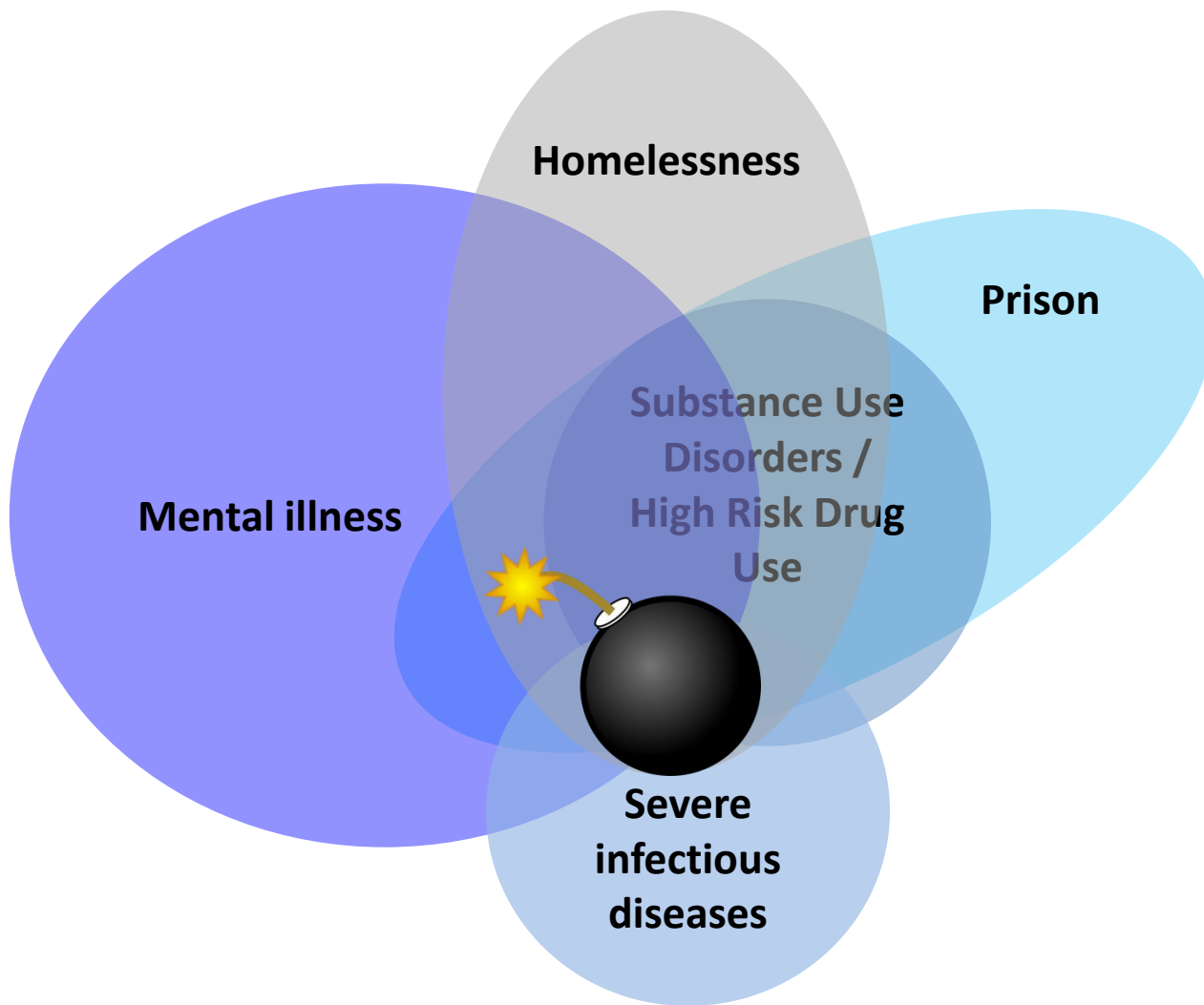
- Epidemiology
- Complex Comorbidities
- Barriers to Dx and Rx
- Conclusion



Challenge 1: Incidence

- Physiological effects, environment and risk behaviors
- TB and substance use share common risk factors
 - Immune suppression
 - Malnutrition
 - Smoking
 - Alcohol
 - Prison
 - Homelessness
 - HIV

Deiss RG, Rodwell TC, Garfein RS. Tuberculosis and illicit drug use: review and update. Clin Infect Dis. 2009 Jan 1;48(1):72-82.



Challenge 2: Prevalence

- Symptoms masked / suppressed
- Prolonged infectivity
- Delayed Dx / Health service access / stigma
- Social mixing

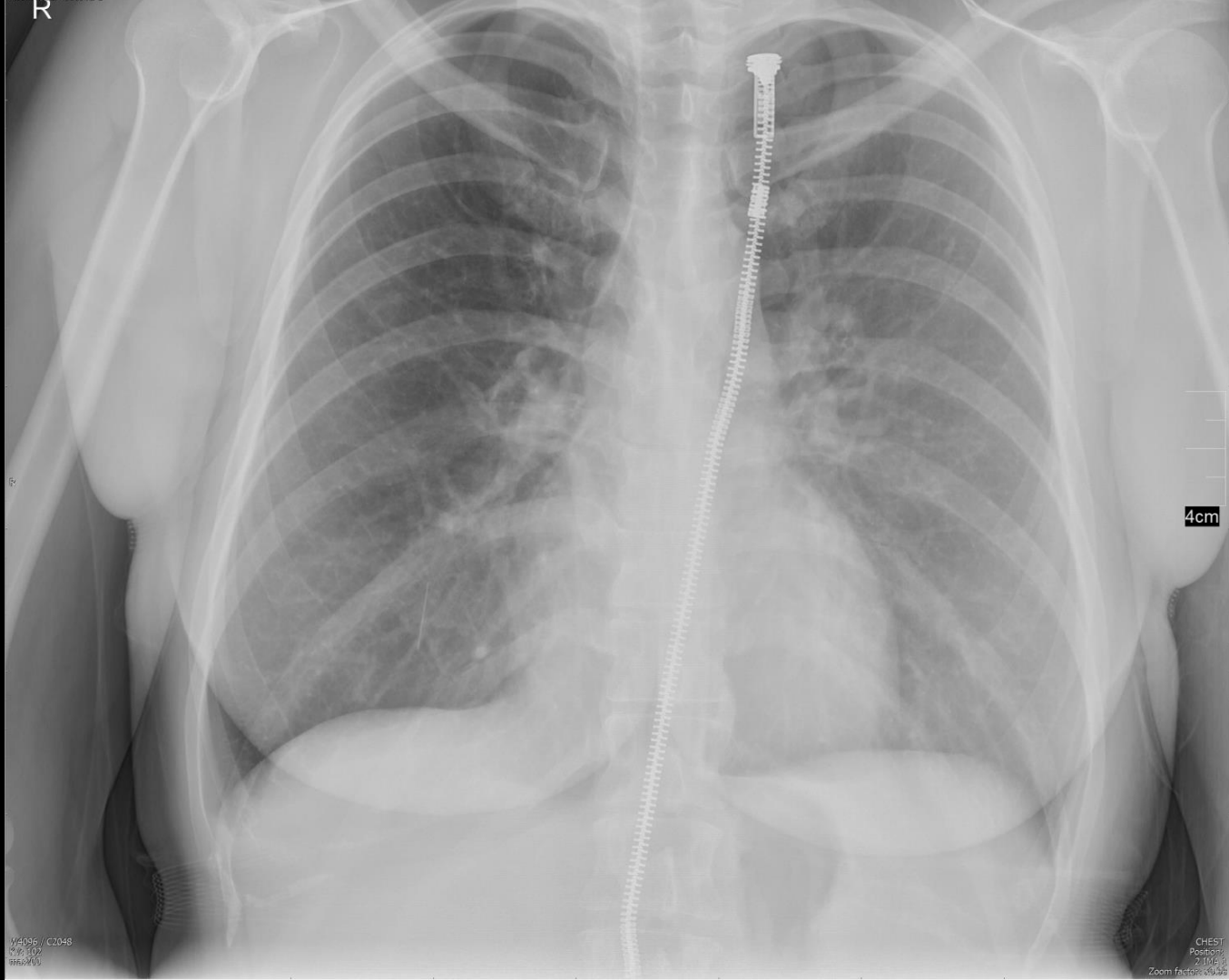
- $R_0 = \text{outbreaks}$

Rodrigo T, Caylà JA, García de Olalla P, Galdós-Tangüis H, Jansà JM, Miranda P, Brugal T. Characteristics of tuberculosis patients who generate secondary cases. *Int J Tuberc Lung Dis.* 1997 Aug; 1(4):352-7.



OCTOBER 2013

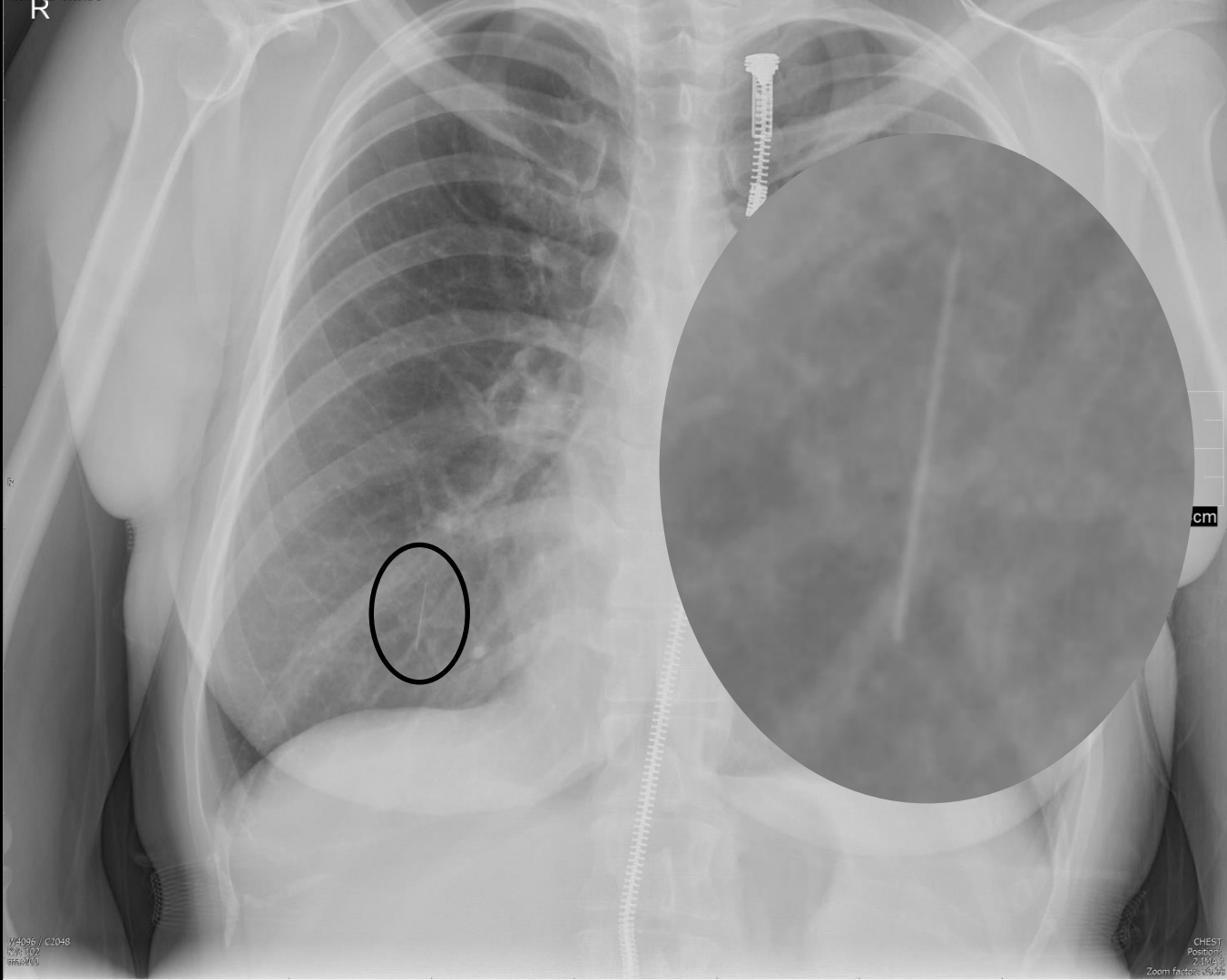
	1	2	3	4	5
6	7	8	9	10	11
12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29
30	31				



W1996 / C2048
2008.10.2
1985210

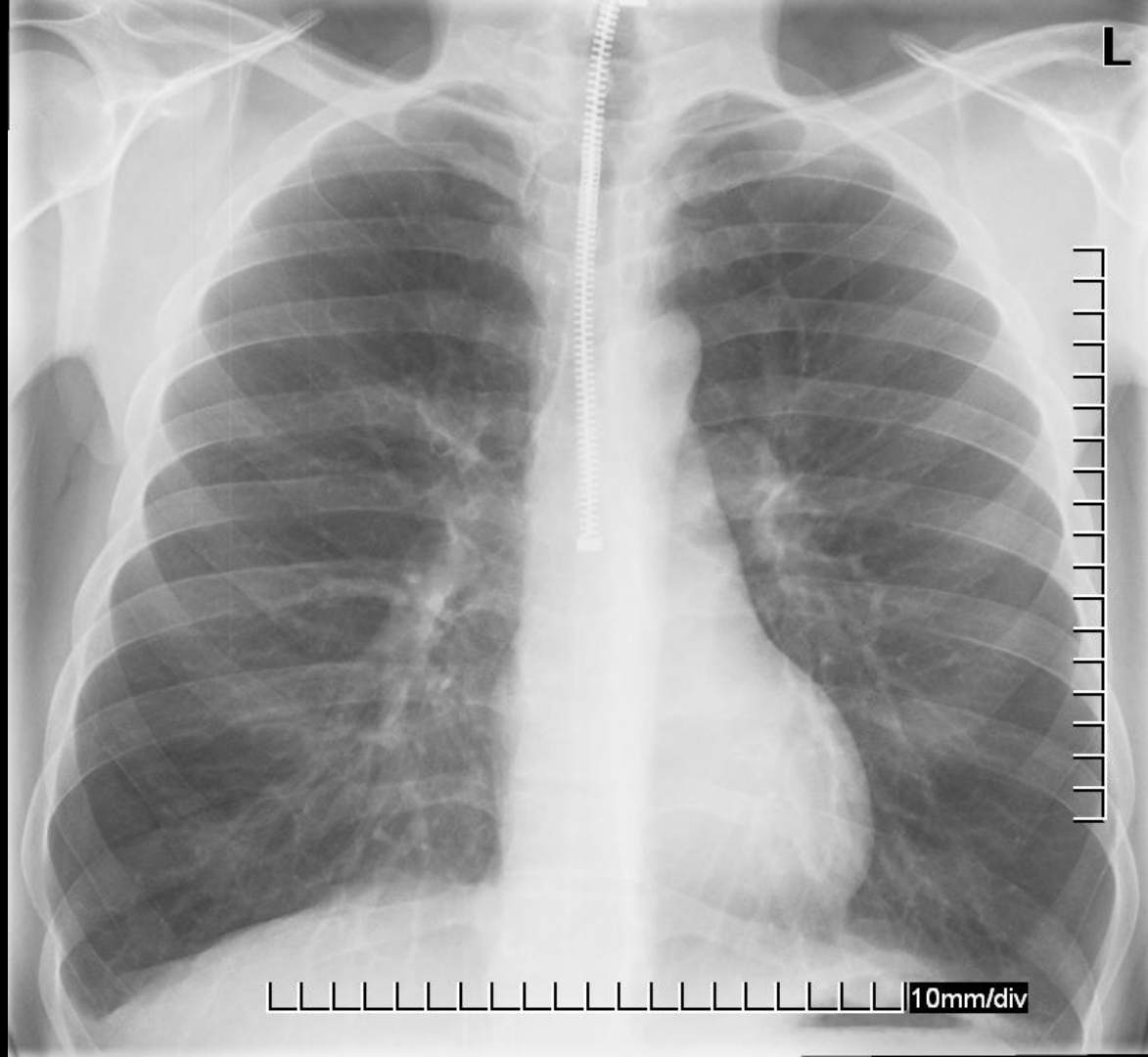
4cm

CHEST
Position:
2.10.08
Zoom factor: 0.95

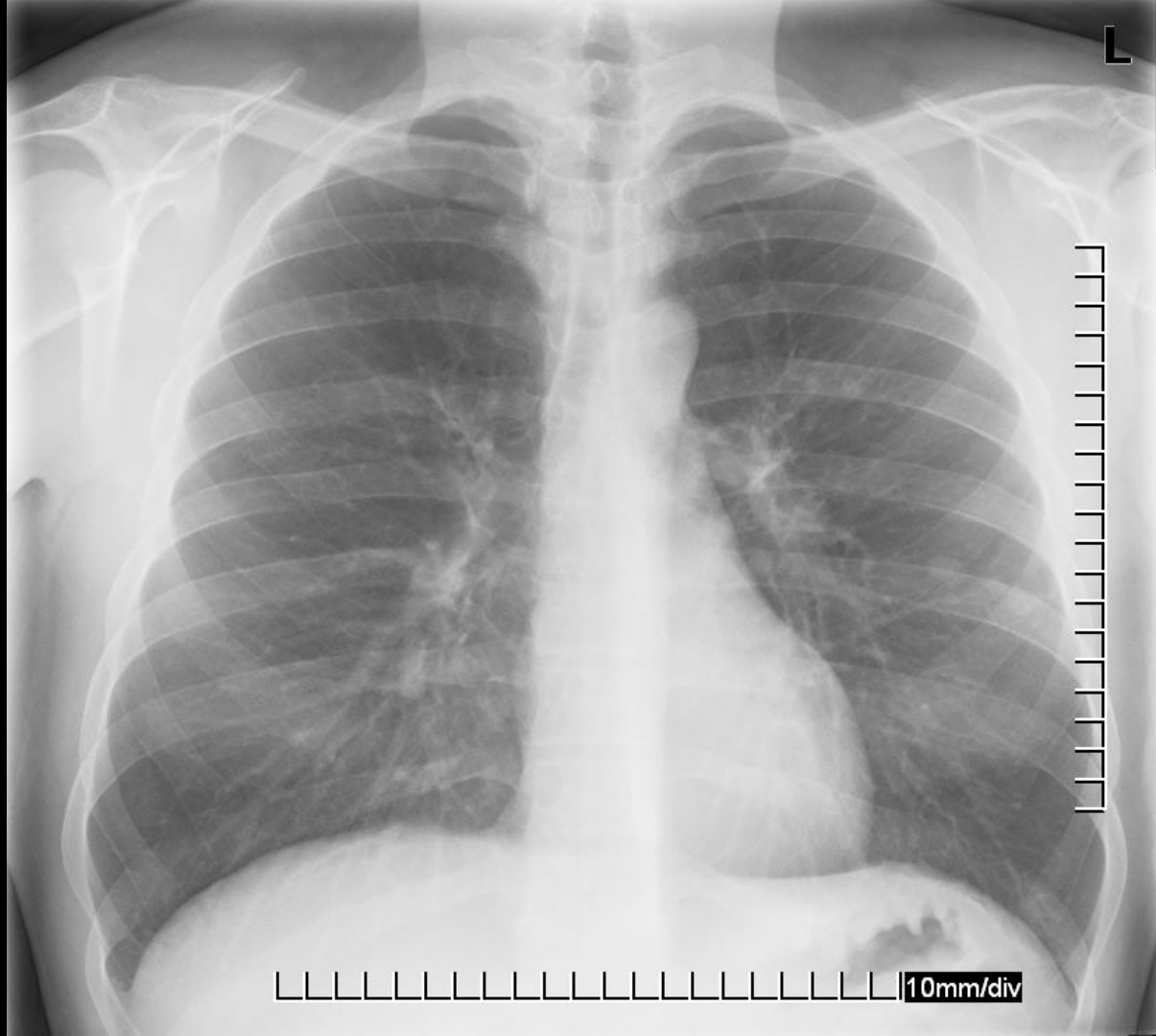


W4996 / C2048
2/10/08
11:52:00

CHEST
Position:
2/10/08
Zoom factor: 3.95



10mm/div

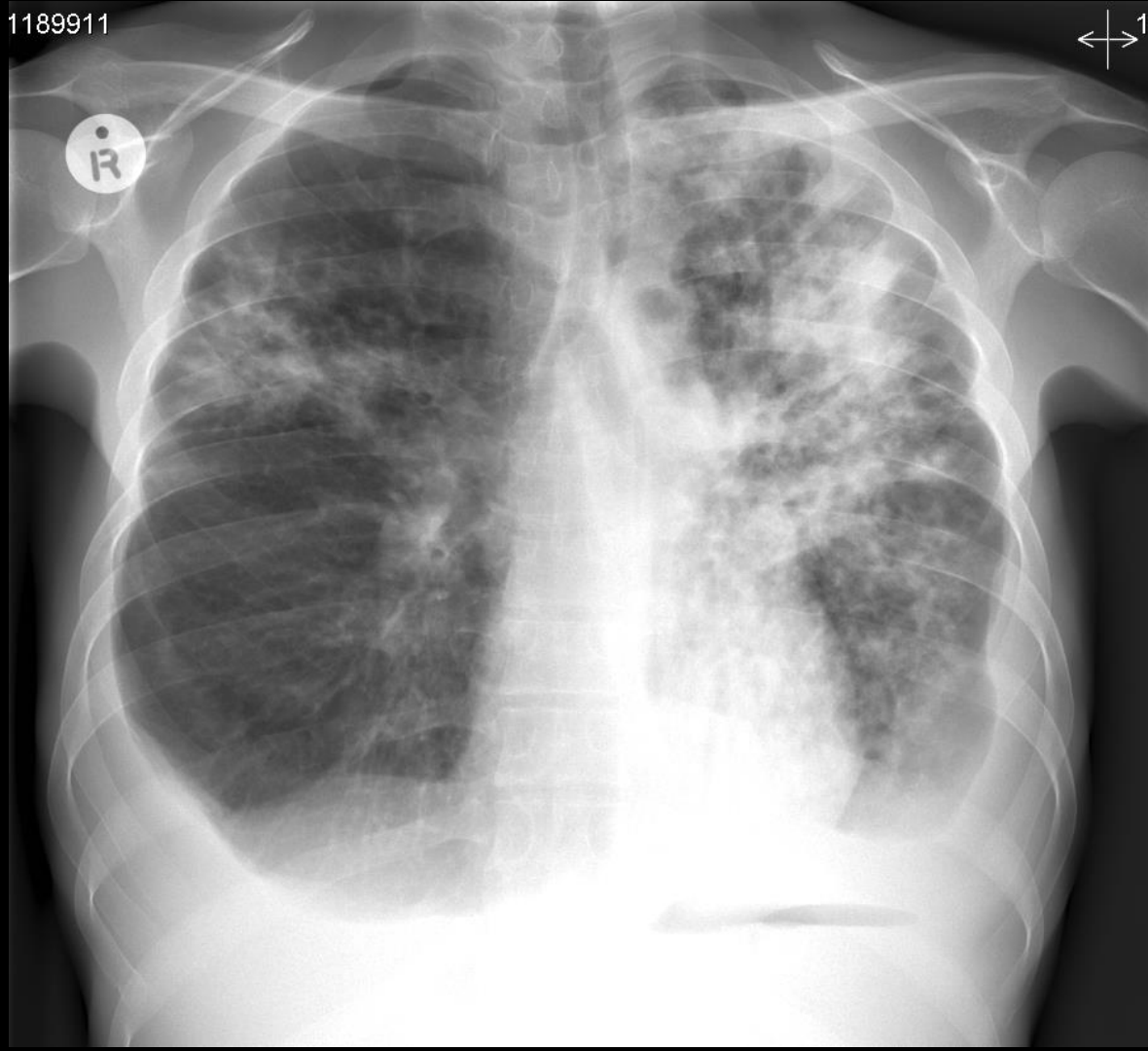


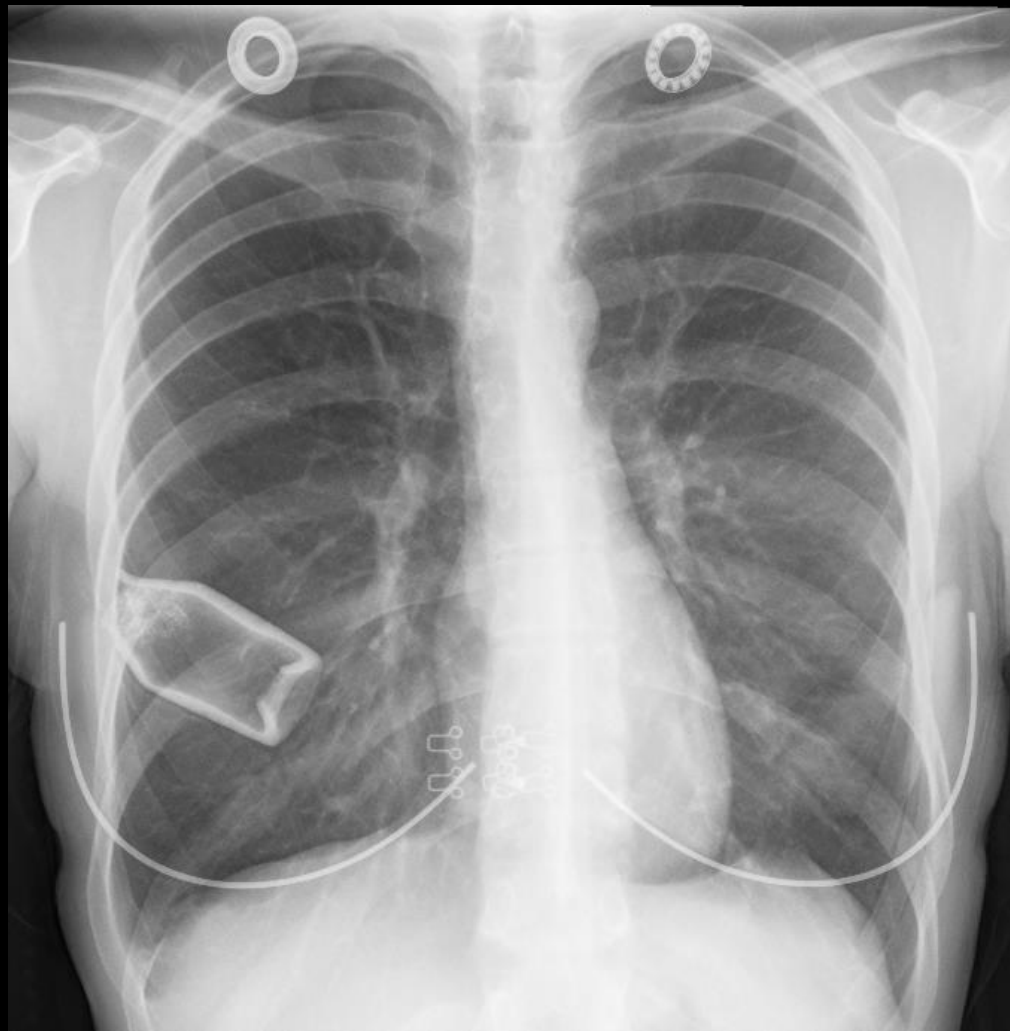
10mm/div

1189911



R





CXDI

Ex: 1563

Se: 1

Im: 1

DFOV mm

MHU 1

20151014

2192 rows, 2176 cols

kV 102.0

mA: 200

mm

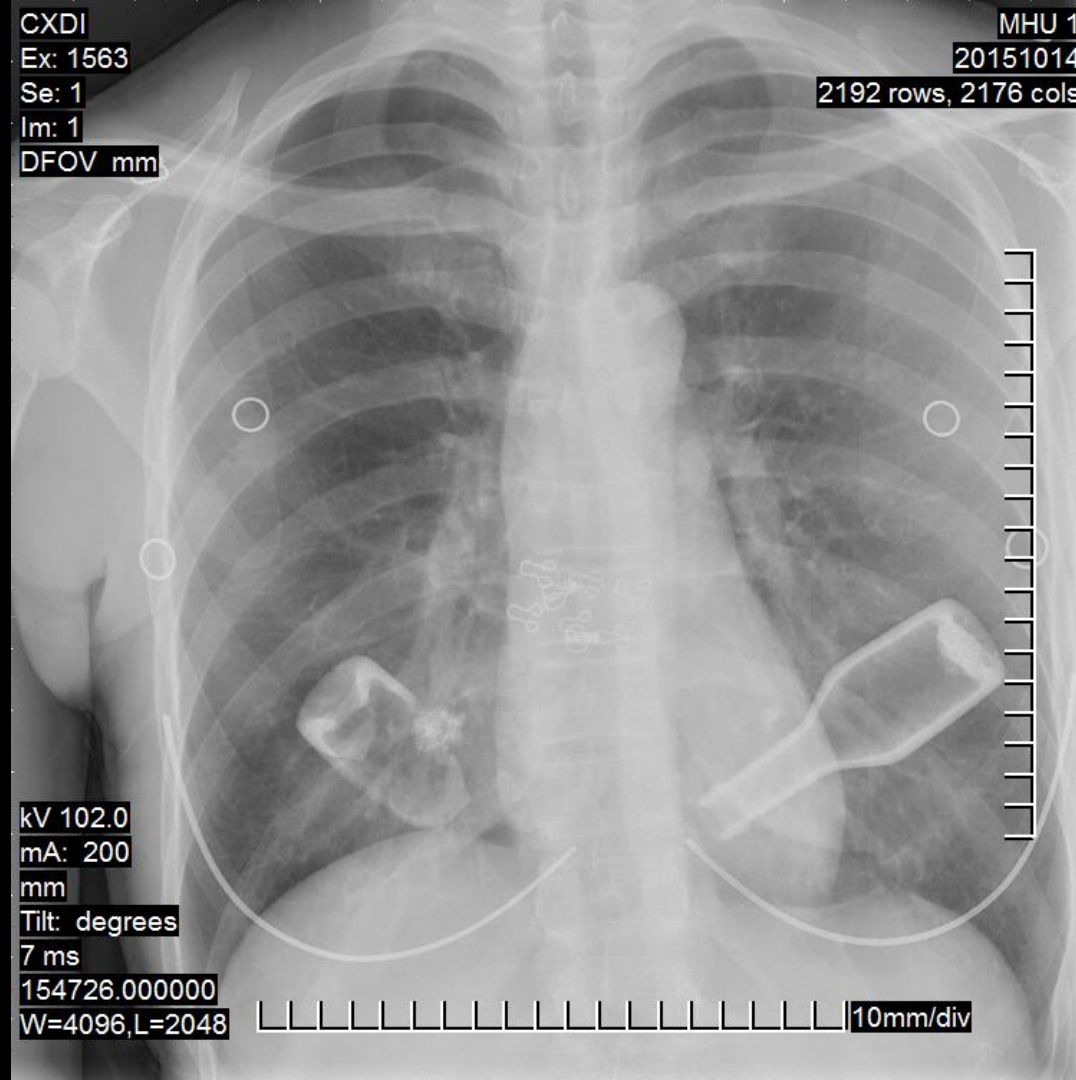
Tilt: degrees

7 ms

154726.000000

W=4096,L=2048

10mm/div





Thanks to the custody staff at the Metropolitan Police Saville Row Police station in London for providing access to crack smoking paraphernalia

http://news.tictac.org.uk/news/9_4/pipes.htm



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

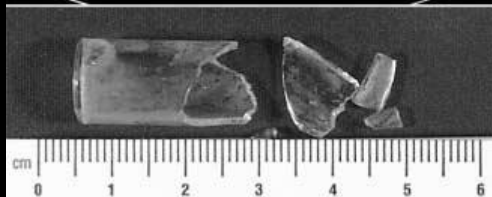
Given oral antibiotics for presumed bronchitis and discharged home.

2 weeks later presented with hemoptysis.

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



4cm X 1cm glass tube with jagged edges removed by bronchoscopy.



No recollection of aspiration!

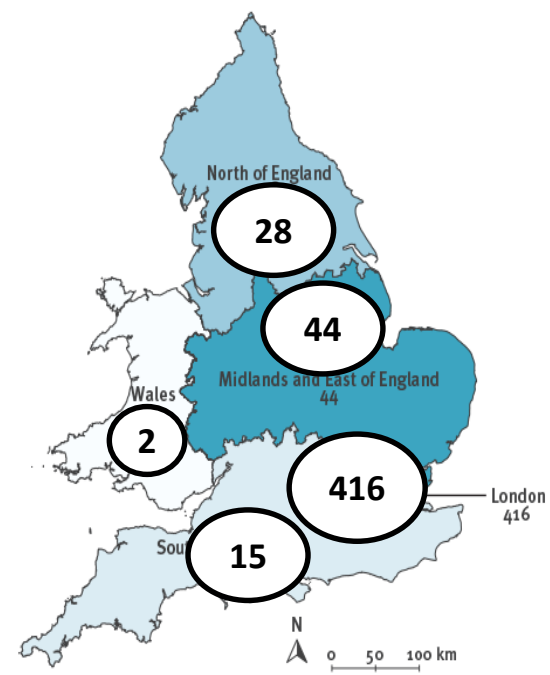
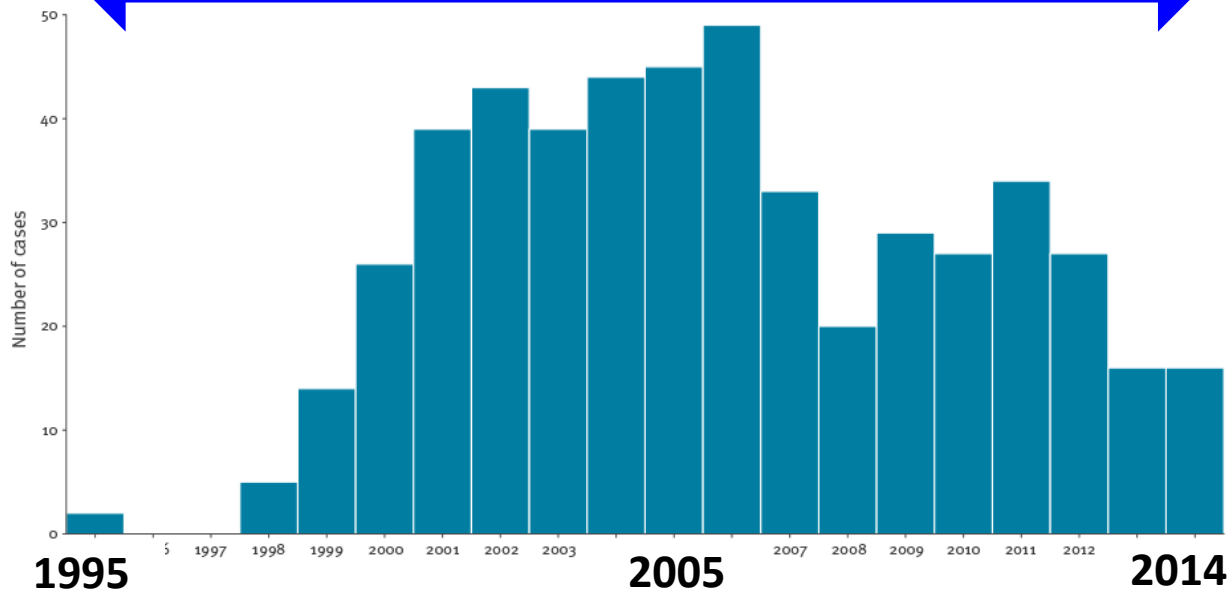
Kovitz KL, Mayse ML, Araujo CE, David O. Self-stenting with a crack pipe: the ultimate in 'managed care'. *Respiration*. 2004 Jan-Feb;71(1):91.

TB and Crack

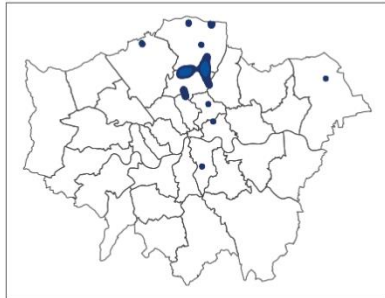
- **2.4 times more likely to be infectious at diagnosed**
- Increased risk not due to diagnostic delays
 - Crack users had the shortest diagnostic delays, potentially attributable to rapidly progressive, debilitating disease
 - Crack users were also more likely to seek treatment at an emergency department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

Story A, Bothamley G, Hayward A. Crack cocaine and infectious tuberculosis. Emerg Infect Dis. 2008 Sep;14(9):1466-9.

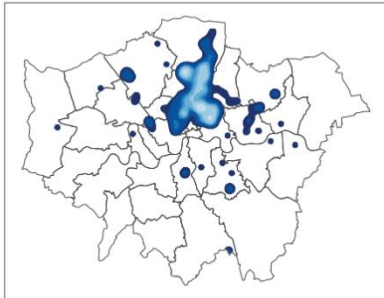
508 INH res cases



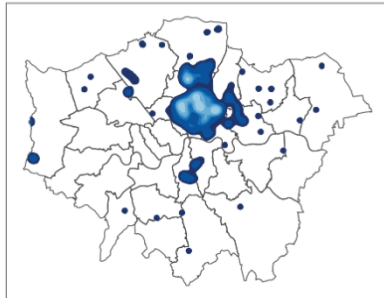
A. 1995–1999



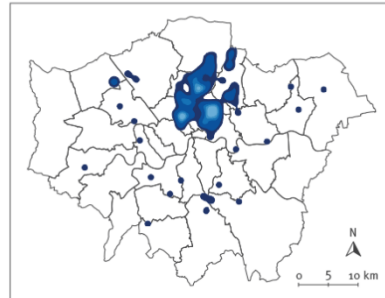
B. 2000–2004

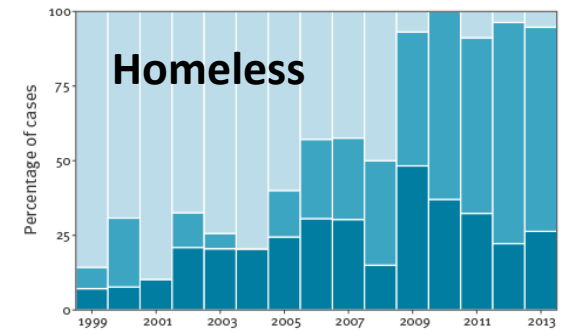
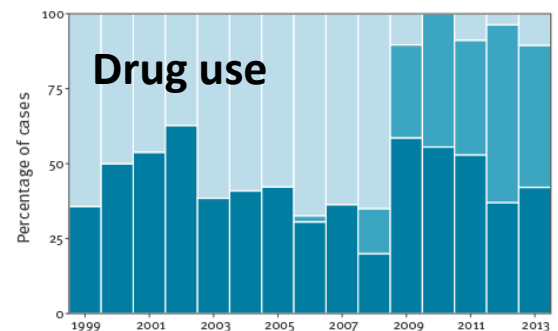
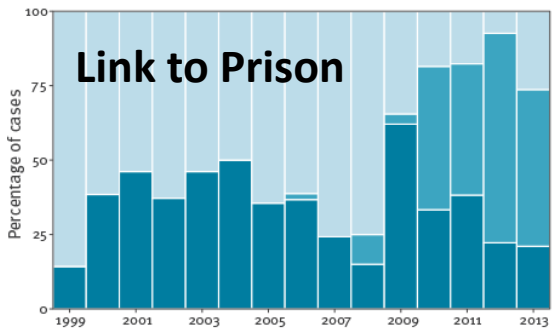
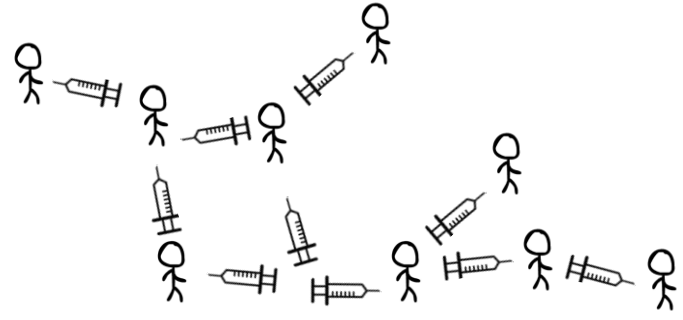
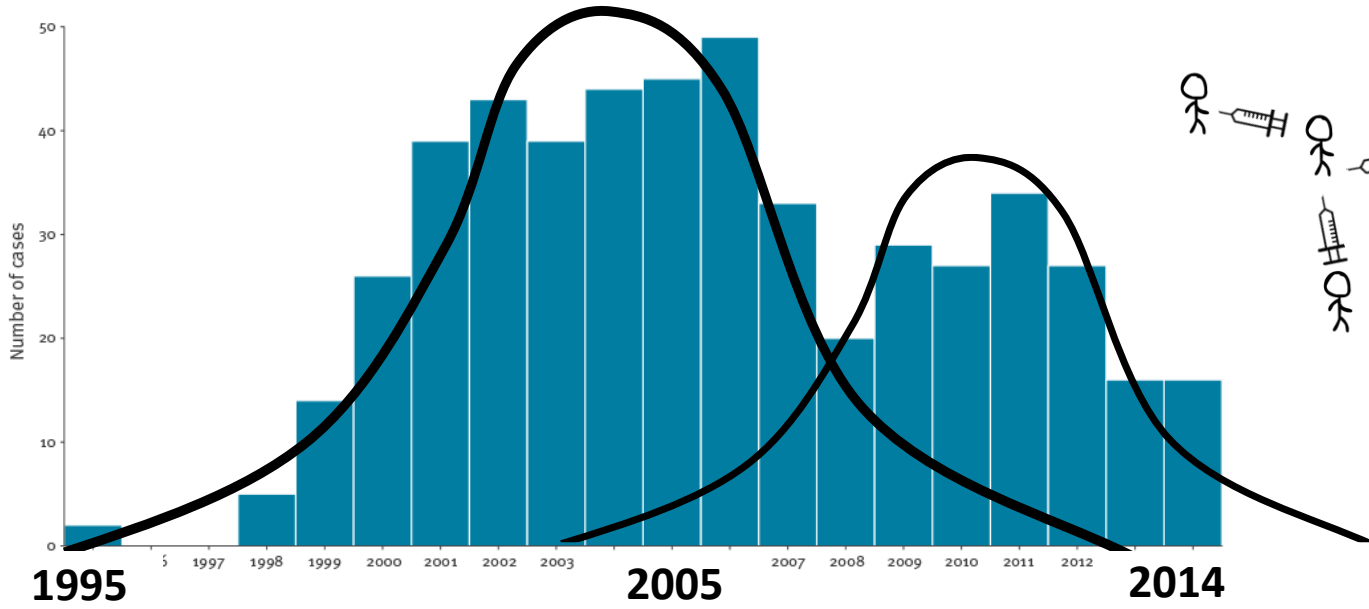


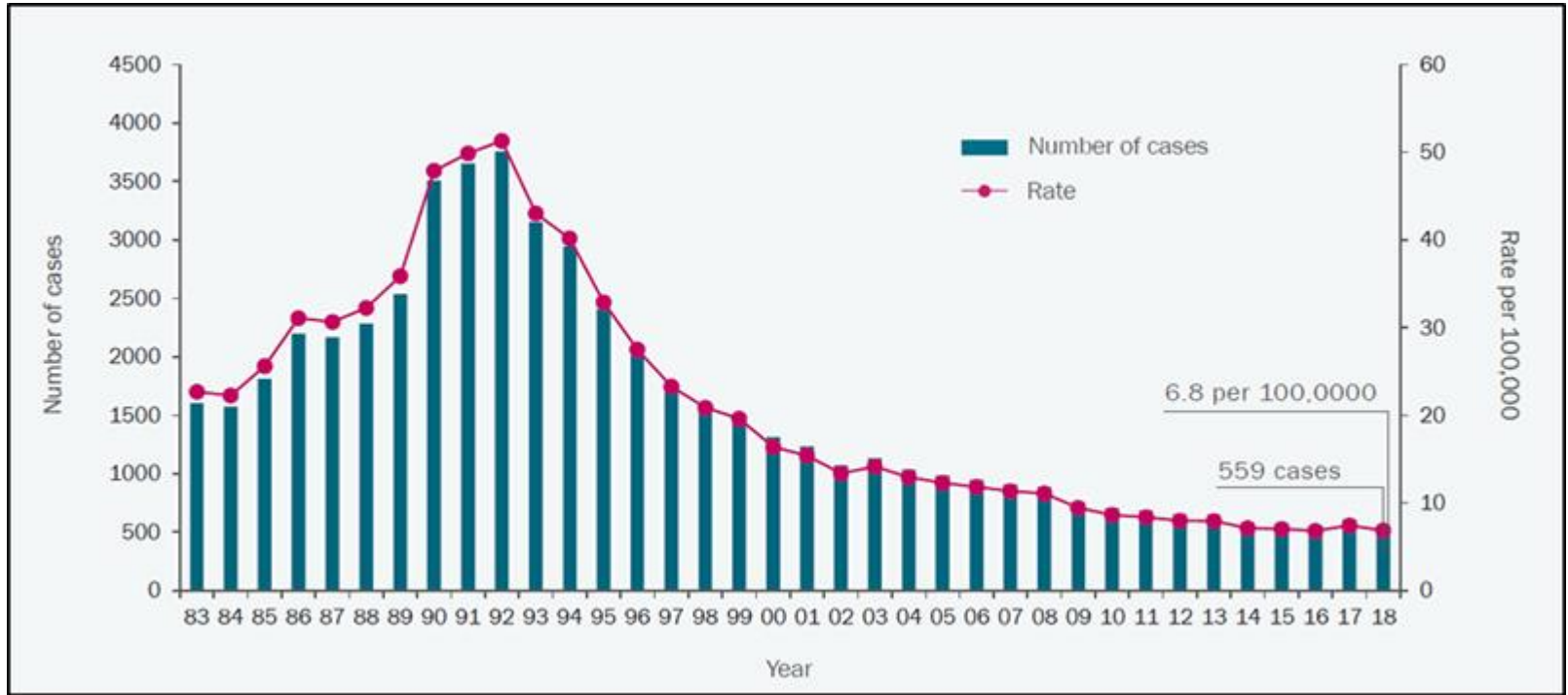
C. 2005–2009



D. 2010–2014







Crack more than tripled the number of cocaine users in the city between 1986-1988. According to New York State statistics, there were 182,000 regular cocaine users in New York City in 1986. That number grew to an estimated total of 600,000 predominantly crack users by 1988
 NYT Feb 20th 1989

Challenge 3: Taking drugs

- Adherence
- Resistance
- Opiates and opioid dependency

methadone is **metabolised** by **CYP 2B6**

rifampicin is a potent **CYP 2B6 inducer**



ELSEVIER

Drug and Alcohol Dependence

Available online 20 May 2019

In Press, Corrected Proof 



The optimization of methadone dosing whilst treating with rifampicin: A pharmacokinetic modeling study

Raj K.S. Badhan ^a  , Rosalind Gittins ^b, Dina Al Zabit ^a

OST

- Escalation to 150-160mg required – BD?!
- De-escalation
- Interactions common with other CYP 2B6 inducers
 - Efavirenz
 - Nevirapine
 - Ritonavir
- Buprenorphine levels affected by inducers e.g. rifampicin via CYP 3A4

Challenge 4: Cure?

- Chronic lung disease
- Relapse
- Recovery

Solutions

- Awareness
- LTBI – 1HP
- ACF
- Integrated care – OST / DOT
- Residential model – Olallo House

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 Story⁸

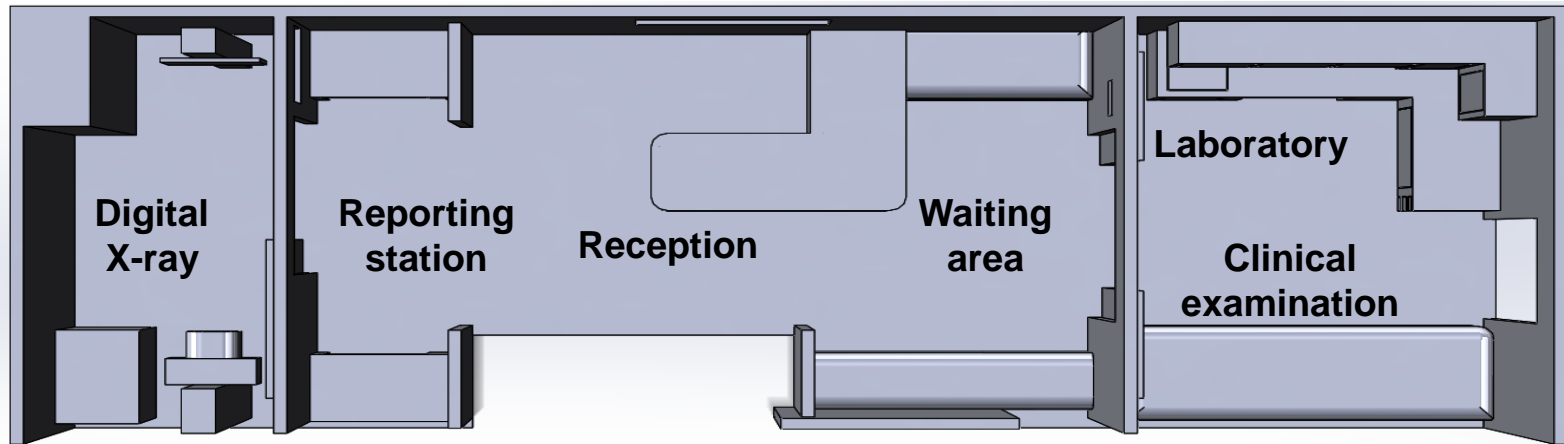
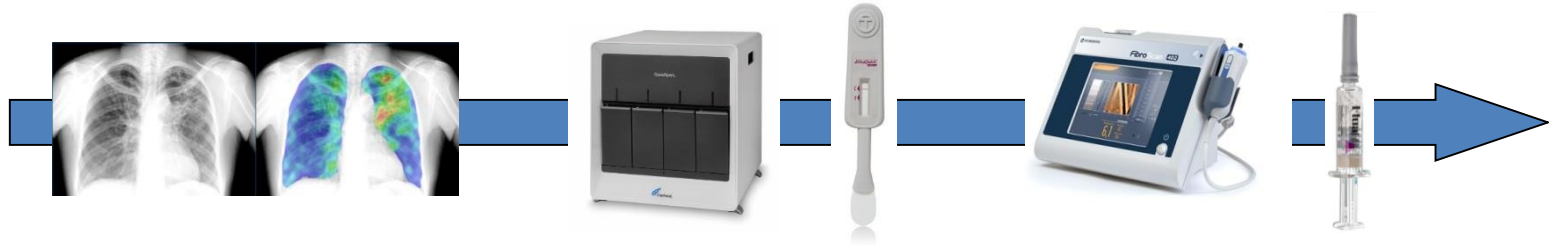
June 2018 *Thorax*

Hepatitis C among vulnerable populations: A seroprevalence study of homeless, people who inject drugs and prisoners in London

D. N. Aisyah^{1,2}  | L. Shallcross¹ | A. Hayward^{1,3} | R. W. Aldridge^{1,4} | S. Hemming^{1,4,5} | S. Yates^{1,4,5} | G. Ferenando^{1,4,5} | L. Possas^{1,4,5} | E. Garber^{1,4,5} | J. M. Watson⁴ | A. M. Geretti⁶ | T. D. McHugh⁷ | M. Lipman^{5,8} | A. Story⁹

May 2018 *J Viral Hepat*

Integrated One-stop-shop screening



Smartphone-enabled video-observed versus directly observed treatment for tuberculosis: a multicentre, analyst-blinded, randomised, controlled superiority trial

Alistair Story, Robert W Aldridge, Catherine M Smith, Elizabeth Garber, Joe Hall, Gloria Ferenando, Lucia Possas, Sara Hemming, Fatima Wurie, Serena Luchenski, Ibrahim Abubakar, Timothy D McHugh, Peter J White, John M Watson, Marc Lipman, Richard Garfein, Andrew C Hayward

Euston flood: Homeless hostel and mosque swamped in water





Thank you

