Bristol Drugs Project

MRSA in People Who Inject Drugs: is Bristol 'Special & Different'?

Maggie Telfer CEO
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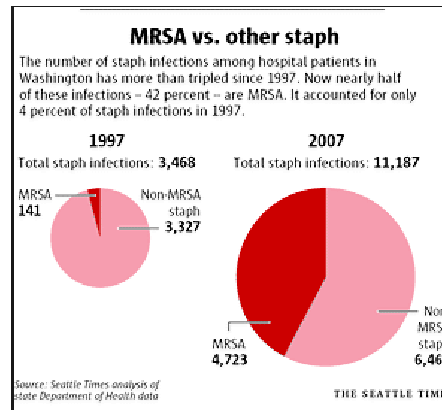
Independence from drugs and alcohol

MRSA: the original "superbug"(HA –MRSA)



We all know what MRSA is…

- Methicillin Resistant Staphylococcus Aureus
- Community-acquired MRSA (C-MRSA) identified over 20 years ago
- C-MRSA colonisation and infection in People Who Inject Drugs (PWID) previously reported in a number of cities within North America and Europe including Cambridge, Liverpool, Brighton.
- Costly:

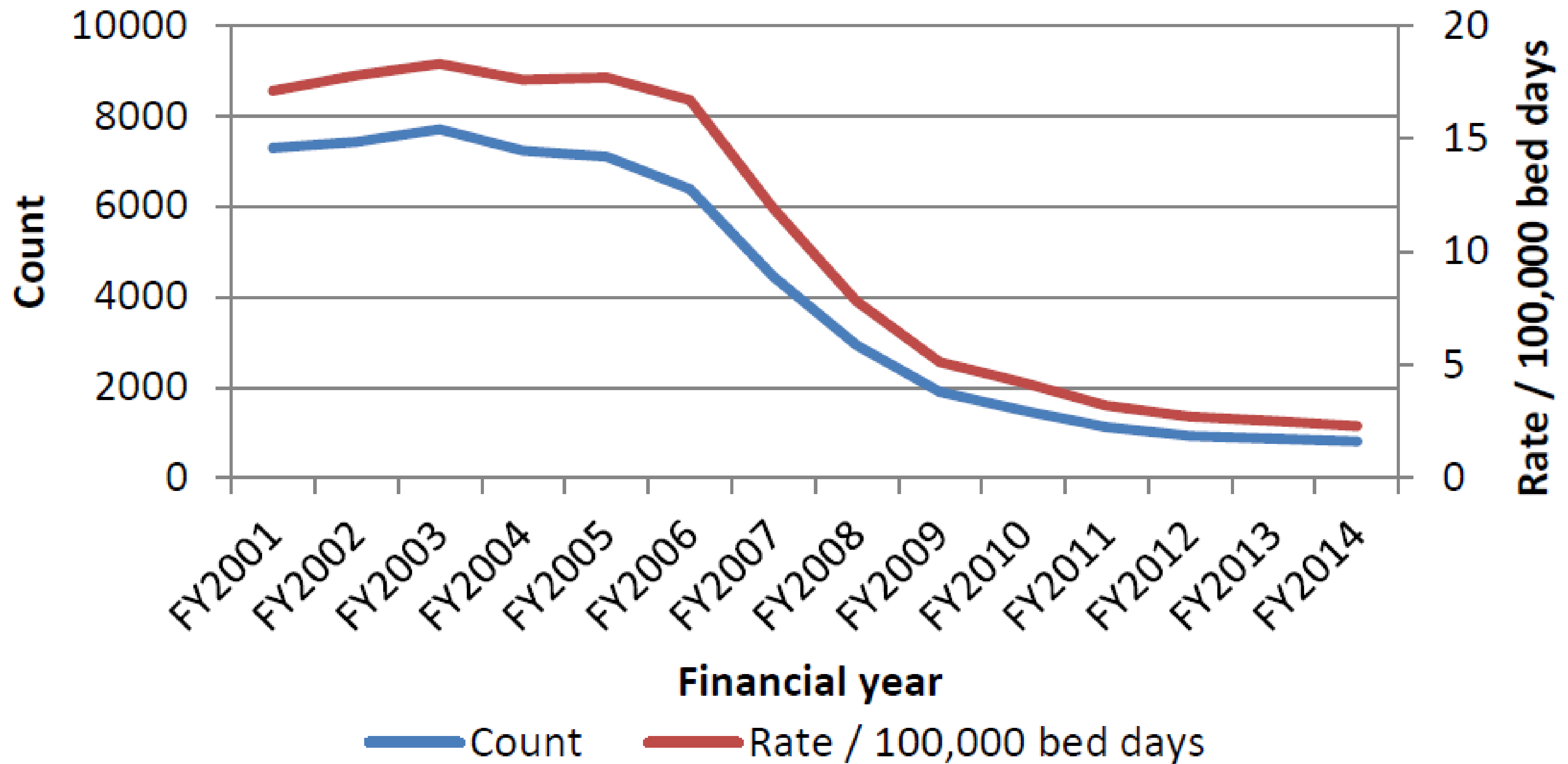
➢ Hospital admission (£4949)

➢ Lower limb amputation (£18K)

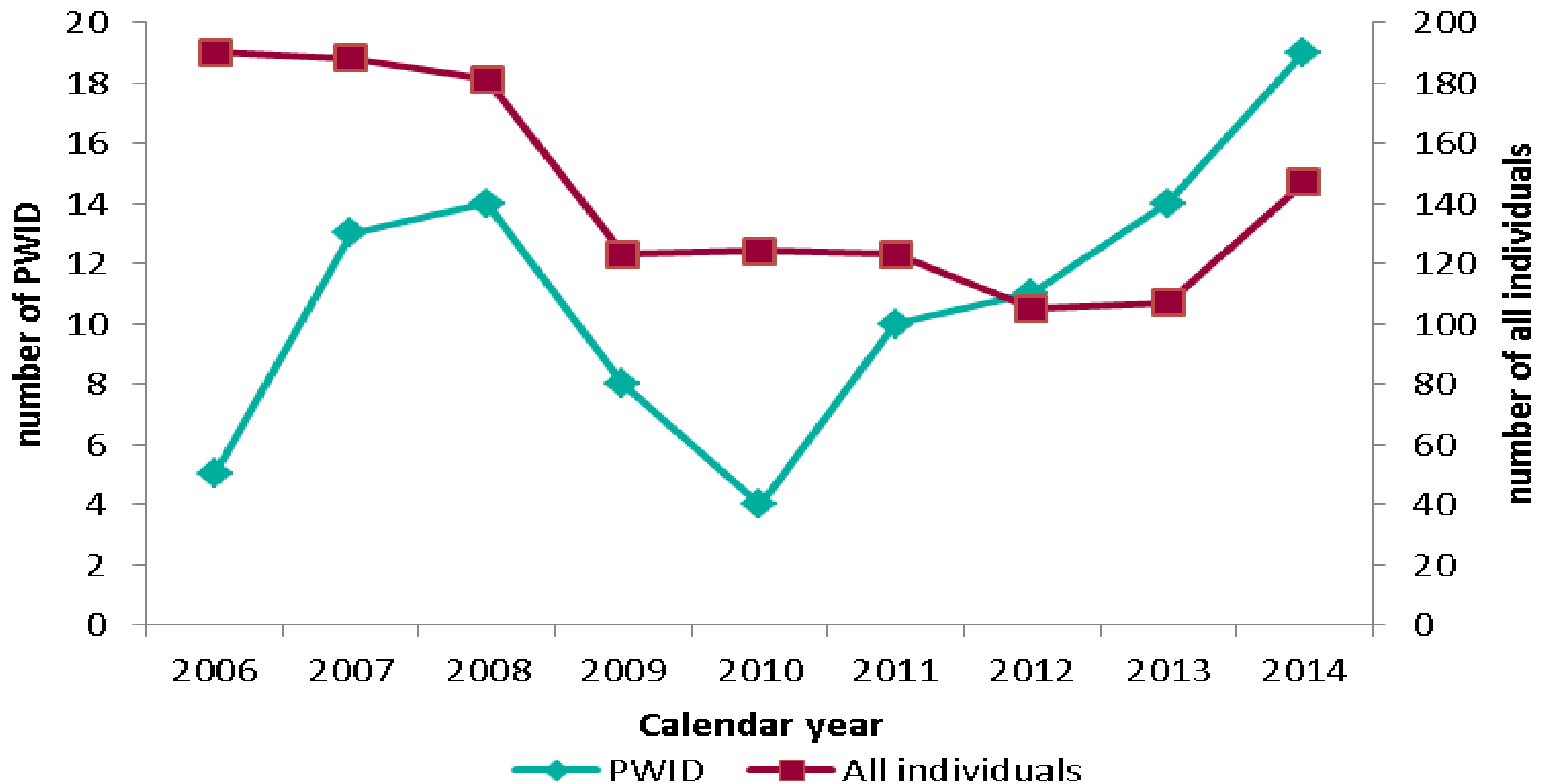
➢ Hospital fines (£44K for each infection exceeding agreed limit)

➢ Potential for C-MRSA to develop more virulent strain – impact for general population

MRSA activity in England



Bristol: Annual number MRSA isolates overall and amongst PWID 2006 to 2014



About PWIDs in Bristol:

- 5,349 Opiate & Crack Cocaine users (2011/12)
- 4th highest prevalence of Opiate Use in England
- 2nd highest prevalence Crack use
- Highest prevalence of people using both Heroin & Crack
- 1,499 -2,700 estimated injectors
- ‘Snowballing’ - Heroin and Crack injected together & frequently
- Most frequently used injection site – femoral vein (groin)

BBV's & PWIDs in Bristol (UAMS 2014):

Of people who inject drugs:

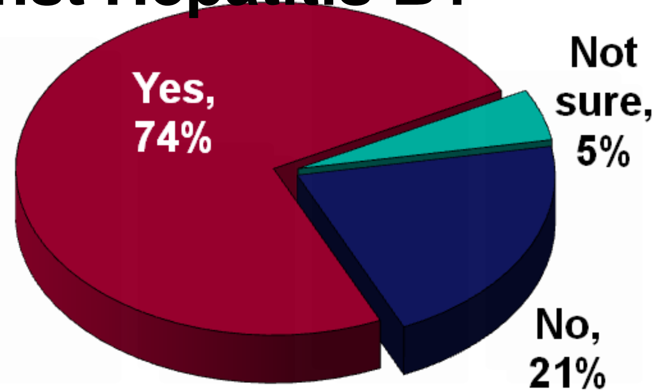
17% have had hepatitis B

66% have hepatitis C

Have you ever had a test for:

HIV: 76% Yes
HCV: **90%** Yes

Have you been vaccinated against Hepatitis B?



PWIDs in Bristol have access to:

Needle & Syringe Programme

- City centre: M-F 9am – 8pm; Sat 10am – 5pm
- Pharmacies: 24
- Mobile Harm Reduction Truck
- Outreach: hostels & street

Access to Opioid Substitution Treatment

- Shared Care in Primary Care (capacity circa 1900)

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About C-MRSA in Bristol

- Post Infection Review (PIR) introduced nationally in 2013 - Bristol an ‘outlier’ for C-MRSA bacteraemia
- PWID 4 in 2013 ⟶ 8 in 2014 (40% of C-MRSA)
- Other outlier CCGs – Leeds & Liverpool: not PWID
- Chlorhexidine wipes as panacea?
- March 2015 Staphylococcus Reference Service report ‘a different clone’
- PIR re-designed
- Case review MRSA infections – 1st April 2006 to 31st January 2014

Case review…

- PWID = 10.0% (129/1289) of all MRSA isolates, increasing from 1.1% of total reported in 2006 to 26.5% in 2014.
- 2014, a third of PWID with MRSA isolated had the organism detected in blood.
- At least fourteen PWID had MRSA detected on two separate episodes between 2006 and 2014.
- Predominantly groin injectors; 50% homeless (50% not); 84 concurrent heroin and crack use.
- Cases across city – two ‘clusters’ Central & South

Demographic characteristics

Age and sex distribution of cases

Map of cases by post code of residence

So why does MRSA appear ‘special and different’ in Bristol from early 2014?

Hypotheses

- Reporting issue? (less likely since NHS England scrutiny?)
- Femoral vein most common site = least hygienic?
  (but common in many areas)
- Rapid growth of street homeless population ? (but from 2015)
- Injecting practise poor? (not unique)
- ‘Snowballing’
- Pregabalin and synthetic cannabinoids = increased public disinhibited groin injecting
- Colonisation is so prevalent that risk of MRSA bacteraemia is very high?
- ‘Special & different’ MRSA clone – particularly resilient?

Testing our hypotheses: Bristol's response

- £ from Elizabeth Blackwell Fund to investigate:

Prevalence and risk factors for MRSA infection amongst PWID

- Questionnaire –short version of UAM plus additional Qs -focus group with PWID
- June 2016: Bdp NSP staff trained to collect MRSA samples
- July – August 2016: incentivised screening - 100 PWID using Bdp NSP (city centre based and harm reduction truck in S Bristol)

Testing our hypotheses: Bristol’s response

Molecular epidemiology

PHE Staphylococcus Reference Service analyse MRSA isolates (from 2006 & current screening)

Whole Genome Sequencing (WGS) to:

(i) Identify when MRSA acquired

(ii) Describe transmission pathways

(iii) Insights into genetic markers associated with antimicrobial resistance, virulence, fitness and transmissibility

So why does MRSA appear 'special and different' in Bristol?

Look out for the outcome of

Bristol's

research

in early 2016

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