

National Centre for Clinical  
Research on Emerging Drugs



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## Optimising Care for People Who Inject Drugs: A retrospective medical record review of *Staphylococcus Aureus* bacteraemia treatment

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ST VINCENT'S  
HOSPITAL  
SYDNEY



Kirby Institute



## Background

### Discharge against medical advice

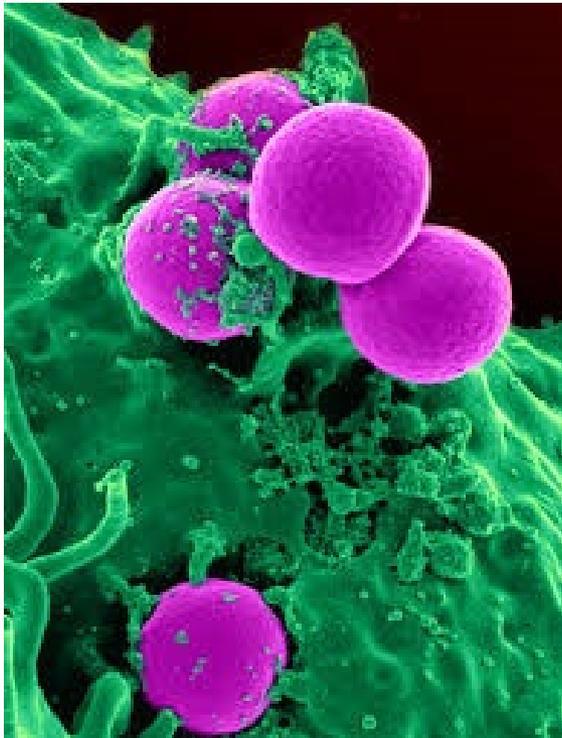
- People who inject drugs (PWID) are at increased risk of suboptimal medical treatment due to discharge against medical advice (DAMA)<sup>1</sup>
- Risk factors include poorly managed alcohol or other drug withdrawal, stigma, inadequate pain relief, discrimination, social stressors and inadequate hospital policies<sup>2</sup>
- DAMA is associated with readmission and 40% higher risk of mortality<sup>3</sup>
- Poor outcomes may be exacerbated by clinician focus on infectious nature of illness rather than complexity of addiction and socioeconomic factors

<sup>1</sup>Onukwugha, Qual Saf Health Care, 2010

<sup>2</sup>Ti, Am J Pub Health, 2015

<sup>3</sup> Yong, Int Med J, 2014

## Background cont.



## Staphylococcus Aureus bacteraemia (SAB)

- Most common pathogen associated with community and hospital acquired infection<sup>1</sup>
- Injecting drug use increases risk
- PWID higher prevalence<sup>2</sup>
- Associated with high mortality
- MSSA/MRSA
- International treatment guidelines recommend > 14 days IV antibiotics<sup>3</sup>

<sup>1</sup> Rosenthal, Am J Med, 2016

<sup>2</sup> Al-Rawahi, J Clin Micro, 2014

<sup>3</sup> Holland, JAMA, 2014



## DAMA vs. unplanned discharge

### Discharge against medical advice (DAMA)

Refers to a patient who leaves suddenly, or directly against the advice of medical professionals or without prior consultation

*May also include:*

- Patients who abscond directly from the ward
- Patients who initiate a code black

### Early, unplanned discharge

Refers to a patient who wishes to discharge early, however forms a treatment plan with their physician prior to leaving

*May include:*

- Provision of take-home oral antibiotics
- Referral to wrap around services



## **Study design and methods**

### Retrospective medical records review

#### **Inclusion Criteria**

- All patients with positive *S. Aureus* blood cultures admitted to SVHS between June 2015 and September 2018

#### **Exclusion Criteria**

- Patients admitted to private hospital, treated entirely as an outpatient or discharged from E.D.

#### **Data collection**

- Data collected: demographics, admission details, substance use history, infection characteristics, antibiotic therapies, comorbidities and service details

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## **Outcome measures**

### **Primary outcome:**

To determine the proportion of patients with recent injecting drug use with SAB infection who completed at least 14 days of I.V. antibiotic therapy, compared with patients with SAB and no history of injecting drug use

### **Secondary outcomes:**

Proportion of cases who DAMA, group differences in separations data, readmission rates, comorbidities, infection characteristics, antibiotic therapy and substance use history and therapies



## Results: Demographics

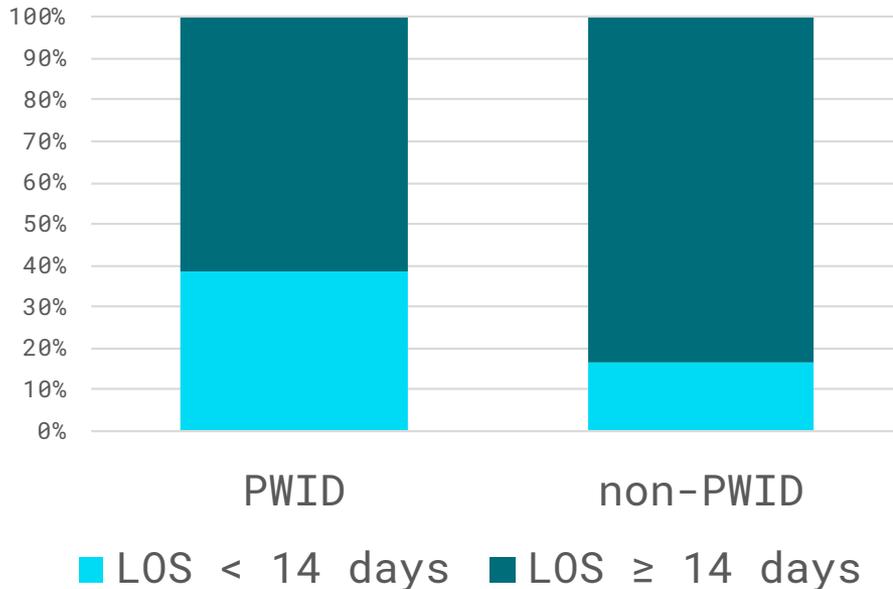
Demographics				
	PWID	non-PWID	OR <sup>a</sup> (95% CI <sup>b</sup> )	p-value
Total count, No. (%)	39 (23)	133 (77)	-	-
Male, No. (%)	23 (59)	98 (74)	0.5 (0.2-1.1)	0.077
Age, mean (SD)	43 (8.2)	65 (18.9)	-	<0.001
Documented homeless, No. (%)	7 (18)	0 (0)	*	<0.001
Hostel / boarding house, No. (%)	7 (18)	3 (2)	9.5 (2.3-38.7)	<0.001
Unstable housing, No. (%)	14 (36)	3 (2)	24.3 (6.5-90.7)	<0.001
Private health insurance, No. (%)	2 (5)	68 (51)	0.1 (0.0-0.2)	<0.001
Documented unemployed, No. (%)	28 (72)	22 (17)	12.9 (5.6-29.6)	<0.001
Australian born, No. (%)	35 (90)	89 (67)	4.3 (1.5-12.9)	0.005

<sup>a</sup> OR, Odds Ratio; <sup>b</sup> CI, Confidence Interval; \* OR not calculated as at least one 2x2 cell equalled 0



# Patients who completed at least 14 days of I.V. antibiotics

Patients at risk of incomplete treatment

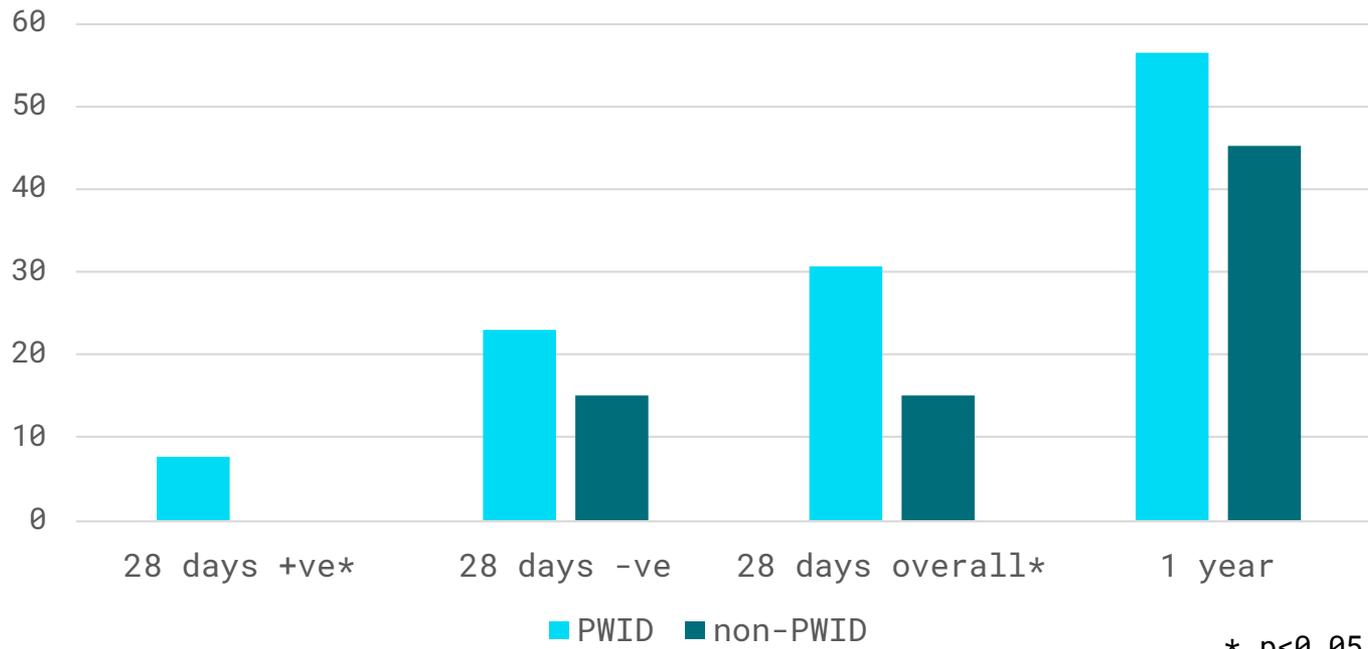


Patients who were discharged from hospital				
	PWID (n=31)	non-PWID (n=42)	OR (95% CI)	p-value
	n (%)			
<b>LOS &lt; 14 days</b>	12 (39)	7 (17)	3.2 (1.1-9.4)	0.034



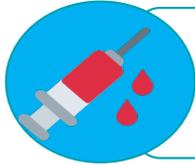
## Readmission rates

Proportion of patients who readmit within:

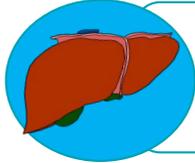




## Secondary outcomes



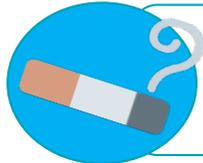
41% (n=16) of current PWID Discharged Against Medical Advice ( $p < 0.001$ ). Current PWID accounted for **all** DAMA.



Increased psychiatric diagnoses (51%, n=20) and Hepatitis C (49%, n=19) amongst PWID ( $p < 0.004$ )



PWID were more likely to be documented living in unstable housing (36% vs. 2%,  $p < 0.001$ )



For PWID, those who DAMA were significantly more likely to be tobacco smokers (81% vs 49%,  $p = 0.035$ )



81% (n=13) of PWID who DAMA were readmitted within 1yr, twice the rate of their non-DAMA counterparts ( $p = 0.009$ )



## Limitations and conclusions

- Data cannot be generalized to other populations including non-injecting drug use
- Retrospective reviews cannot determine causality, further prospective research is needed
- Inconsistent record keeping can reduce reliability of results
- PWID are significantly more likely to discharge prior to the recommended 14 days of IV antibiotics and DAMA, potentially leading to unfinished treatment and negative sequelae
- Addressing multiple intersecting social and health risk factors likely to be of benefit in supporting optimal treatment for SAB in this population

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## Next steps

- Collaboration with SVHM to increase sample size, generalisability and define predictor variables
- Phase 2 of the study: a qualitative assessment of reasons and rationale for people to leave hospital against medical advice (OCOP-2)
- Data from phase 1 and 2 to be used to inform an “intervention” to address discharge from hospital for PWID
- APSAD poster highlight

# Thank You

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