The burden of infection in homeless adults in Dublin

C. Anderson[a], K. Kavanagh[a], NR. Power[a], C. Ní Cheallaigh[a]

1. Department of Inclusion Health, St. James' Hospital, James' St, Dublin 8

Background

Inclusion Health is a discipline that provides integrated, trauma-informed care for people who are socially excluded. We know from previous research from our centre that homeless people have higher rates of Emergency Department attendance and longer inpatient stays than the housed population.[1]

There is no data in our setting (a tertiary hospital with a high rate of homelessness) on infections in this patient population.

This study aims to characterise acute infections in homeless adults admitted to hospital, with particular emphasis on sites of infection, identified pathogens, and rates of multi-drug resistant organisms (MDROs).

Methods

All patients referred to the inclusion health team were identified from the electronic healthcare record between 01/07/2021 and 31/12/2021.

Patients with proven or suspected bacterial infections were identified by chart review. Data relating to demographics, length of stay, and infection were collected for all patients.

Data was analysed using SPSS version 26.

Results

52 of the 398 (13%) patients referred to Inclusion Health had acute infections. 47 (90.4%) were male and median age was 47 (range 22- 76).

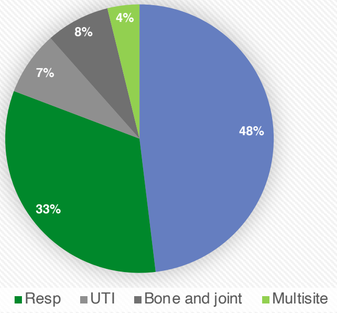
As for sites of infection 25 (48.1%) were treated for skin and soft tissue infection (SSTI). 17 (32.7%) were treated for respiratory tract infection, 4 (7.7%) for urinary tract infection, and 4 for bone and joint infection. Multisite infections account for the remaining 2 (3.8%) patients.

13 (25%) patients were colonised with one or more drug resistant organisms. 6 (11.5%) VRE, 5 (9.6%) MRSA, and 3 (5.8%) ESBL. 18 (34.6%) were positive for hepatitis C antibody, and 8 (44.4%) of those had active infection. 6 (11.5%) were seropositive for HIV. 27 (51.9%) were active drug users, and 25 (48.1%) were established on methadone.

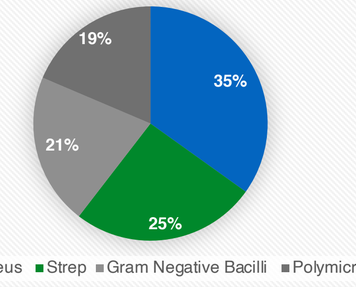
Pathogens were identified in 43 patients. Of these 43, *Staphylococcus aureus* was identified in 15 (34.8%) of infections, *Streptococcal species* in 11 (25.5%), gram negative bacilli in 9 (20.9%) and polymicrobial infections were identified in 8 (18.6%)

Baseline characteristics	N = 52
Average age (years – range)	47 (range:22-76)
%Male patient	90.4%
MDRO	13 (25%)
VRE	6 (11.5%)
ESBL	3 (5.8%)
MRSA	5 (9.6%)
HCV Ab	18 (34.6%)
HCV PCR+ve	8 (15.3%)
HIV	6 (11.5%)
Active drug use	27 (51.9%)
Methadone use	25 (48.1%)

Sites of infection



Pathogens isolated



Conclusions

Infections are a significant cause of hospital admission among people experiencing homelessness with high average lengths of stay. IDU is common among homeless patients admitted with infections despite high uptake of methadone.

Rates of MDRO colonisation were high in this cohort despite the overall low rates of MDROs in Ireland.[2] This may be a result of high antimicrobial exposure in this cohort and/or because of environmental spread of MDROs in either congregate homeless accommodation or during previous hospital admissions

Homeless patients presenting to acute hospitals should be assessed for the presence of infection and empirical antimicrobial treatment should cover *S. aureus*, *Streptococci* and MDR GNB as appropriate.

References

1. Ní Cheallaigh C, Cullivan S, Sears J, et al. Usage of unscheduled hospital care by homeless individuals in Dublin, Ireland: a cross-sectional study. BMJ Open. 2017 Dec 1;7(11):e016420. doi: 10.1136/bmjopen-2017-016420. PMID: 29196477
2. European Centre of Disease Prevention and Control. Surveillance Atlas of Infectious Diseases. 2022 [cited 15 May 2022]. Available from: https://atlas.ecdc.europa.eu/public/index.aspx