Utilizing EIP data, we evaluated the incidence of PWID with invasive infections. Population-based, active, laboratory surveillance for invasive infections has been conducted as part of The Centers for Disease Control and Prevention Emerging Infections Program (EIP).

In 2011, persons who inject drugs (PWID) were estimated to make up 2.6% of the US population ≥ 13 years of age. Among PWID, those with MRSA were more likely to have septic shock (OR=3.2, 95% CI=1.2-8.4), pneumonia (OR=8.9, 95% CI=1.0-75.4) and septic emboli.1,4 Hospitalizations and deaths due to prescription opioid and heroin use;1-3 viral hepatitis and infectious endocarditis (IE).1-4

A total of 1,474 cases in 1,307 unique persons occurred. Time periods for analysis are as follows: Year 1: 9/1/15 – 8/31/16; and Year 2: 9/1/16 – 8/31/17.

Positive ISA cultures are reported to EIP by 3 local laboratories. Case data are abstracted from medical records. Chi-square and student t-tests were used to compare differences between groups.

Results

<table>
<thead>
<tr>
<th>PWID n (%)</th>
<th>Non-PWID n (%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of cases (N=1,474) 153 (10)</td>
<td>1321 (90)</td>
<td>n/a</td>
</tr>
<tr>
<td>Proportion MSSA 88 (57)</td>
<td>875 (66)</td>
<td>0.04</td>
</tr>
<tr>
<td>Mean age, years (SD) 38 (13)</td>
<td>61 (20)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Sex, female 56 (45)</td>
<td>472 (40)</td>
<td>0.34</td>
</tr>
<tr>
<td>Race, White 103 (82)</td>
<td>877 (74)</td>
<td>0.05</td>
</tr>
<tr>
<td>Ethnicity, Hispanic/Latino 20 (16)</td>
<td>82 (7)</td>
<td>0.002</td>
</tr>
</tbody>
</table>

Table 1. Case counts & demographics by PWID status

Discussion

- The incidence of PWID with ISA increased in Monroe County with one in four MRSA cases occurring in PWID by 2017.
- PWID with ISA tend to be younger, White and Hispanic/Latino; have fewer chronic diseases; and present with infections related to their drug use such as IE.
- PWID with ISA are significantly more likely to be smokers, have Hepatitis B and C, and to have longer hospital stays possibly due to the need for supervised intravenous antibiotic therapy.
- Further research is needed to assess post-hospitalization mortality to account for PWID who may leave the hospital against medical advice.
- In summary, invasive MRSA/MSSA among PWID is often accompanied by liver disease, nicotine use, polysubstance abuse and the need for extended hospital stays, posing an increasing challenge to the public health community.

References


Table 2. Common Infection Types, Underlying Conditions and Outcomes by PWID Status

Table 3. Common Infection Types, Underlying Conditions and Outcomes by PWID Status

Figure 1. Incidence of ISA cases in PWID, 2004-2017

Figure 2. Proportion of ISA cases in PWID, 2004-2017