Disparities in Community Viral Load among HIV Infected Persons in NYC

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BACKGROUND

• Viral load is a measure of the amount of virus in the plasma/blood that can indicate transmissibility.
• Community viral load (CVL) is the measure of total or average viral load in a given population. CVL is a novel public health approach and calculates yearly.
• The National HIV/AIDS Strategy highlights the importance of community-level approaches to alter conditions in which HIV is transmitted and to address factors that influence disparities among persons with HIV.
• Key interventions to reduce CVL in NYC:
  - Care Coordination and Support Services: reduce community-level indicators of HIV risk.
  - Early and widespread HIV treatment and linkage to care.
  - Health services and data infrastructure.
• Knowing where HIV is concentrated creates an opportunity to:
  - Reduce disparities,
  - Lower community collective risk,
  - Reduce morbidity and mortality.

METHODS

• To be included in the analysis HIV-infected persons reported to the NYC HIV Registry (eHARS) had to ≥13 years old by December 31, 2007, and alive at the end of 2008.
• The analyses was based on a comprehensive population-based surveillance system.
• Results were not limited to individuals’ address at diagnosis.
• The analyses included private or non-residential addresses.
• CVL may be a valuable biomarker to add to routine surveillance data.
• CVL may be useful to evaluate community-level interventions, especially those addressing disparities, or changing treatment paradigms like Test and Treat.
• However, the proportion of persons with undetectable VL in a particular community may be a more focused measure to assess the impact of community interventions and treatment effectiveness.

STRENGTHS:

• The analyses examined changes in viral status of HIV-infected residents of NYC.
• The analyses excluded individuals unaware of their HIV status.
• This analysis excludes individuals not receiving medical care.
• The statistical analyses did not include treatment history as a treatment variable or by neighborhood.
• The statistical analyses did not adjust for the frequency of individual viral load testing.
• Viral load is not an absolute proxy for care engagement.

LIMITATIONS:

• This analysis excludes individuals unaware of their HIV status or not receiving medical care.
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CONCLUSION

1. Describe patterns of CVL in NYC, using laboratory data routinely reported through HIV surveillance.
2. Determine correlates of CVL by patient and community-level characteristics.

RESULTS

Table 1: Mean VL among persons with detectable viral load (copies/ml) by year 1, 2, 3, 4

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
<th>Residence</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>42.94</td>
<td>4.00</td>
<td>Bronx</td>
</tr>
<tr>
<td>2008</td>
<td>55.88</td>
<td>5.00</td>
<td>Brooklyn</td>
</tr>
<tr>
<td>2009</td>
<td>63.00</td>
<td>6.00</td>
<td>Manhattan</td>
</tr>
</tbody>
</table>

Table 2: Mean CVL by viral load categories 1, 2, 3, 4

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Male</th>
<th>Female</th>
<th>Residence</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>29.50</td>
<td>24.00</td>
<td>Bronx</td>
</tr>
<tr>
<td>Black</td>
<td>31.50</td>
<td>25.00</td>
<td>Brooklyn</td>
</tr>
<tr>
<td>Hispanic</td>
<td>29.00</td>
<td>24.00</td>
<td>Manhattan</td>
</tr>
<tr>
<td>Other</td>
<td>29.00</td>
<td>24.00</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

REFERENCES:

PHISH/PHIVADS, Results of the NYC HIV Registry at the end of 2008.

OSTRACIZED

LIMITATIONS

• There are disparities in CVL that mirror known disparities of NYC’s HIV epidemics.
• There are clear geographic community disparities in CVL, and the proportion undetectable parallels differences in AIDS prevalence and death rates by neighborhood.
• CVL may be a valuable biomarker to add to routine analysis of HIV surveillance data.
• CVL may be useful to evaluate community-level interventions, especially those addressing disparities, or changing treatment paradigms like Test and Treat.
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<tr>
<th>Year</th>
<th>Mean</th>
<th>N</th>
<th>SD</th>
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<tr>
<td>2007</td>
<td>42.9</td>
<td>76,000</td>
<td>2.79</td>
</tr>
<tr>
<td>2008</td>
<td>55.8</td>
<td>76,000</td>
<td>2.79</td>
</tr>
<tr>
<td>2009</td>
<td>63.0</td>
<td>76,000</td>
<td>2.79</td>
</tr>
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Figure 1: Proportion of persons with HIV/AIDS with suppressed VL each year, 2007 – 2009

<table>
<thead>
<tr>
<th>Year</th>
<th>No Suppressed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>25,720</td>
<td>76,000</td>
</tr>
<tr>
<td>2008</td>
<td>35,500</td>
<td>76,000</td>
</tr>
<tr>
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