Understanding the HIV Disease Burden in Miami-Dade County, Florida

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Study Team and Partners

- University of Miami
  - Me…
  - Anna Calderon MS, Wayne Defreitas MS,
  - SCAN (Lauren Nahodyl MS)
  - CHARM (Dan Feaster PhD, Renae Schmidt MPH)
- Florida Department of Health
  - Emma Spencer PhD, Kira Villamizar BS MPH
What information does the Florida DOH provide about HIV?

### Acquired Immunodeficiency Syndrome (AIDS) Diagnoses, Single Year

- **County**: Miami-Dade
- **Year**: 2020
- **Count/Rate**: Counts and Rates
- **Gender/Race/Ethnicity**: All

### Acquired Immunodeficiency Syndrome (AIDS) Diagnoses, Rate Per 100,000 Population, 2020

- **Year**: 2020
- **Gender/Race/Ethnicity**: All

*Mouseover map to see county name and value.  * Click a legend category to hide or show that category.
Incidence Rate (Age Adjusted)  
No Neighborhoods Available

Everyone, Male and Female, All Ages:
413 per 100,000  95% CL(410.03 - 416.53)*

*Confidence Limits

NOTE: In order to protect privacy of individuals, cancer data in areas with less than 10 reported cases have been suppressed from the map.

Foreign-Born  
Miami-Dade

Everyone, Male and Female, All Ages:
52%

NOTE: In order to protect privacy of individuals, cancer data in areas with less than 10 reported cases have been suppressed from the map.
Design Decisions

- Who are constituents?
  - Policy Makers
    - Cancer control Sylvester
    - Municipalities (cities, towns, villages)
    - The Florida Department of Health
  - Community Leaders
  - Researchers

- What level of geography should we use?
  - Tract (4K people) is too small
  - Zip Codes are used for mail (not policy)
  - I want “places” (towns, villages, cities)
What should we show for cancer?

- Disease Burden
  - incidence
  - percent late stage
  - mortality
  - years of potential life lost

- Risk/Protective Factors
  - race, ethnicity, sex, age
  - environmental risk factors
  - economic factors
    - rent burden
    - access to a car
  - screening sites
  - treatment locations
What should we show for *HIV*?

- Disease Burden for PLWH
  - incidence
  - prevalence
  - rate in care
  - rate with suppressed HIV
  - rate not suppressed HIV
  - rate in care & not suppressed

- Risk/Protective Factors
  - race, ethnicity, sex, age
  - economic factors
    - rent burden
    - access to a car
  - screening sites
  - PrEP/PEP services
What are the places in Miami-Dade?

- In 2010, there were 519 census tracts and in 2020, there are 707.
- There are 36 municipality-defined areas (towns, villages, cities) and 36 census-defined places.
- There are “other places”.
We have information on census tracts in Miami-Dade!

- We requested census tract data summaries instead of person-level data to allow the State IRB to approve an exempt IRB.
- The state IRB took most of a year to determine that this was an exempt protocol.
What Makes This Tricky

- We need to map census tracts (4,000ish people) to places.
- Big and Tiny Places
  - The City of Miami has 440,000+ people.
  - Fisher Island has 360 people.
- Census tracts don’t align with “places”.
  - There are overlaps between tracts and places.
The City of Miami:

- More than 400,000 people live in the City of Miami.
  - In 2016 Miami defined 11 neighborhoods. We geo-coded them.
Small Places

Fisher Island is a municipality-defined place. It has approximately 300 people living there but its census tract has 4100 people (93% of the tract is the City of Miami Beach).

A Fisher Island estimate is really an estimate of Miami Beach.
There are other little places:

<table>
<thead>
<tr>
<th>Place</th>
<th>2010 Census Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian Creek</td>
<td>86</td>
</tr>
<tr>
<td>Medley</td>
<td>838</td>
</tr>
<tr>
<td>Golden Beach</td>
<td>919</td>
</tr>
<tr>
<td>Homestead Base</td>
<td>964</td>
</tr>
<tr>
<td>El Portal</td>
<td>2325</td>
</tr>
<tr>
<td>Bal Harbour</td>
<td>2513</td>
</tr>
</tbody>
</table>

We are merging the little places with adjacent places.
Placing Some Little Places is Tricky
Aligning Tracts to Places

Why is this tricky?
There are different ways to allocate tracts:

1. **Winner take all:** The .07 tract would *not* count toward Pinecrest’s HIV statistics.
   - Currently

2. **Use percent:** The .07 tract would *count* toward Pinecrest’s HIV statistics.
   - Eventually
Prototype Neighborhood Profile

Profile: Pinecrest
September 07, 2022

Figure 1: Simulated HIV Data in Miami-Dade County and Pinecrest in 2020
Values are NOT REAL. Do not quote.

Table 1: Simulated HIV Data in Pinecrest 2015-2020

<table>
<thead>
<tr>
<th>Location</th>
<th>Year</th>
<th>Prevalence</th>
<th>Incidence</th>
<th>In Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pinecrest</td>
<td>2015</td>
<td>35.56</td>
<td>412.45</td>
<td>164.73</td>
</tr>
<tr>
<td>Pinecrest</td>
<td>2016</td>
<td>234.9</td>
<td>385.83</td>
<td>153.89</td>
</tr>
<tr>
<td>Pinecrest</td>
<td>2017</td>
<td>189.43</td>
<td>264.53</td>
<td>194.53</td>
</tr>
<tr>
<td>Pinecrest</td>
<td>2018</td>
<td>451.08</td>
<td>326.89</td>
<td>245.24</td>
</tr>
<tr>
<td>Pinecrest</td>
<td>2019</td>
<td>380.67</td>
<td>502.93</td>
<td>96.18</td>
</tr>
<tr>
<td>Pinecrest</td>
<td>2020</td>
<td>259.3</td>
<td>385.97</td>
<td>564.14</td>
</tr>
</tbody>
</table>
Exciting Stuff

- Supporting Researchers
  - Show and analyze tract-level data
  - We are building custom geographies to assess the impact of an intervention.

- Statistics
  - Moran’s I Tests
  - LISA (Local Indicator of Spatial Association)
    - Statistics for geospatial cluster analysis
Thank you!!

Questions? Thoughts?

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