Catchment Area Data Opportunities using ArcGIS Business Analyst

Use cases from an NCI-Designated Comprehensive Cancer Center

Nathanael Stanley, PhD
Applied Research Scientist
Office of Community Outreach, Engagement, and Equity (COEE)
Outline

- Use Cases for Cancer Centers
  - Use Case 1: Catchment Area Expansion
  - Use Case 2: Community Partner Landscape Analysis
- Summary: Uses of Business Analyst
- Benefits and Limitations
Use Case 1: Catchment Area Expansion
Catchment Area Expansion

Scenario: 2021 Moffitt expanding its catchment area to cover more area in central and southern Florida

Had to consider...

Population and Area

Cancer burden

Priority populations

Other cancer centers

Patient population

Had to consider...
Catchment Area Expansion

Moffitt’s 2021 Catchment Area

Miami-Sylvester Cancer Center
UF Cancer Center Catchment
East Central Region
Southwest Region
Southeast Region
Northeast Region
North Central Region
Northwest Region

Scenario 1: Southwest + East Central Cancer Control Collaboratives (CCC) Only

Includes
✓ Southwest and East Central Cancer Control Collaboratives
✓ 8 new counties
✓ 4 UF Catchment counties (Sumter, Marion, Lake, Citrus)

Scenario 2: Southwest CCC+ East Central CCC + Indian River & Okeechobee

Includes
✓ Southwest, East Central and part of Southeast Cancer Control Collaboratives
✓ 10 new counties
✓ 4 UF Catchment counties (Sumter, Marion, Lake, Citrus)

Scenario 3: Southwest CCC+ East Central CCC + Flagler & Volusia

Includes
✓ Southwest, East Central and part of Northeast Cancer Control Collaboratives
✓ 10 new counties
✓ Advent Health catchment area
✓ 4 UF Catchment counties (Sumter, Marion, Lake, Citrus)
Catchment Area Expansion

[DEMO]
Define Areas
Comparison Report
**Catchment Area Expansion**

### Change in Vulnerable Population by Scenario

- **Miami-Sylvester Cancer Center Catchment Area**
- **UF Cancer Center Catchment Area**
- **East Central Region**
- **Southwest Region**
- **Southeast Region**
- **Northeast Region**
- **Central Region**
- **Northwest Region**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>2021 Catchment Area</th>
<th>Scenario 1: SWCCC + ECCCC</th>
<th>Scenario 2: SWCCC + ECCCC + IR + OKC</th>
<th>Scenario 3: SWCCC + ECCCC + FLG + VOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pop 18-64 Speak Spanish</td>
<td>9.79%</td>
<td>↑ 11.81%</td>
<td>↑ 11.74%</td>
<td>↑ 11.48%</td>
</tr>
<tr>
<td>Hispanic Population</td>
<td>20.35%</td>
<td>↑ 23.61%</td>
<td>↑ 23.46%</td>
<td>↑ 23.09%</td>
</tr>
<tr>
<td>White Non-Hispanic Population</td>
<td>80.63%</td>
<td>↓ 77.54%</td>
<td>↓ 77.71%</td>
<td>↓ 77.89%</td>
</tr>
<tr>
<td>Black/African American Population</td>
<td>11.15%</td>
<td>↑ 12.61%</td>
<td>↑ 12.55%</td>
<td>↑ 12.51%</td>
</tr>
<tr>
<td>American Indian/Alaska Native Population</td>
<td>0.39%</td>
<td>↑ 0.41%</td>
<td>↑ 0.41%</td>
<td>↑ 0.41%</td>
</tr>
<tr>
<td>Senior Population (Age 65+)</td>
<td>26.14%</td>
<td>↑ 23.84%</td>
<td>↑ 23.96%</td>
<td>↑ 24.03%</td>
</tr>
<tr>
<td>Pop 65+ in HHs: have No Computer</td>
<td>2.83%</td>
<td>↓ 2.57%</td>
<td>↓ 2.60%</td>
<td>↓ 2.60%</td>
</tr>
<tr>
<td>HHs with No Internet Access</td>
<td>12.56%</td>
<td>↓ 12.08%</td>
<td>↓ 12.20%</td>
<td>↓ 12.32%</td>
</tr>
<tr>
<td>Persons living with HIV</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

*Analytical First Contact Date Between 1/1/2020 - 12/31/2020, Unique Patient Count.

Data Sources: ESRI 2021, American Community Survey 2015-2019, 2021, Data Axel 2021; FLHealth Charts
Catchment Area Expansion

2021 Catchment Area

- 679,676 Households With Disability
- 1,732,135 Population 65+
- 140,726 Households Without Vehicle

**Scenario 1**
- 1,001,777 Households With Disability
- 2,471,132 Population 65+
- 205,824 Households Without Vehicle

**Scenario 2**
- 1,022,207 Households With Disability
- 2,533,267 Population 65+
- 209,285 Households Without Vehicle

**Scenario 3**
- 1,081,341 Households With Disability
- 2,656,195 Population 65+
- 220,288 Households Without Vehicle

Data Sources: ESRI 2021, American Community Survey 2015-2019, 2021, Data Axel 2021
### Catchment Area Expansion

<table>
<thead>
<tr>
<th>Group</th>
<th>Catchment Area</th>
<th>Florida</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Population(^1)</td>
<td>10,209,232</td>
<td>21,538,187</td>
<td>331,449,281</td>
</tr>
<tr>
<td>Black Population(^1)</td>
<td>12.1%</td>
<td>16.1%</td>
<td>12.7%</td>
</tr>
<tr>
<td>Hispanic Population(^1)</td>
<td>21.4%</td>
<td>25.6%</td>
<td>18.0%</td>
</tr>
<tr>
<td>Seniors (&gt;age 65)(^1)</td>
<td>22.1%</td>
<td>20.2%</td>
<td>15.8%</td>
</tr>
<tr>
<td>Uninsured(^1)</td>
<td>16.0%</td>
<td>12.7%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Rural Residents(^1)</td>
<td>8.3%</td>
<td>8.8%</td>
<td>19.3%</td>
</tr>
<tr>
<td>Same Sex Couple Households(^2)</td>
<td>0.4%</td>
<td>0.5%</td>
<td>0.4%</td>
</tr>
<tr>
<td>HIV Counties(^3)</td>
<td>13.04%</td>
<td>25.84%</td>
<td>26.20%</td>
</tr>
</tbody>
</table>

**Persistent Poverty**

| % of census tracts with persistent poverty | 24.54% | 25.84% | 26.20% |

*Priority counties for the *Ending the HIV Epidemic (EHE) in the US* Initiative

CDC Analysis: 50% of new HIV diagnoses between 2016-2017 occurred in these counties, plus Washington D.C, and San Juan, Puerto Rico

1. U.S Census Bureau, ACS Demographic and Housing Estimates, 2020 5-Year Survey
2. U.S. Census Bureau, ACS Demographic and Housing Estimates, 2021, 5-year survey

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Covers 100% of 2 Cancer Control Collaborative regions in Florida

**Most Populous Counties:**
1. Hillsborough
2. Orange
3. Pinellas

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East Central Cancer Control Collaborative Region
Southwest Cancer Control Collaborative Region
Moffitt Catchment Area 2016 -2021
Moffitt Catchment Area 2022-present
Rural Counties
High HIV Incidence
Use Case 2:
Community Partner Landscape Analysis
Community Partner Landscape Analysis

An initiative of COEE - Support for Community Organization Research Engagement (SCORE)

Scenario: Moffitt wanting to expand community partnerships throughout the catchment area, identify partners in counties we do not have much reach in, identify potential new partners

Libraries
Educational Support
Physician Offices
Dentist Offices
HMO Medical Centers
Outpatient Care Centers (FQHCs)
General Medical and Surgical Hospitals
Individual and Family Counseling
Community Food Services
Temporary Shelters
Fitness and Recreational Sports Centers
Religious Organizations
Civil and Social Organizations

CATCHMENT AREA
Brevard County, FL
Collier County, FL
DeSoto County, FL
Marion County, FL
Osceola County, FL
Seminole County, FL
Charlotte County, FL
Glades County, FL
Hardee County, FL
Hendry County, FL
Lake County, FL
Sarasota County, FL
Citrus County, FL
Hernando County, FL
Highlands County, FL
Lee County, FL
Orange County, FL
Sumter County, FL
Hillsborough County, FL
Manatee County, FL
Pasco County, FL
Pinellas County, FL
Polk County, FL

PRIORITIZATION KEY
Priority 1 (High): No COEE-SHORE Partners
Priority 2 (Mod-High): 5 or Fewer COEE-SHORE Partners
Priority 3 (Moderate): 6-19 COEE-SHORE Partners
Priority 4 (Low): 20+ COEE-SHORE Partners
Community Partner Landscape Analysis

[DEMO]
Points of Interest Search
Number of Community Organizations Identified: **5,377**

- Priority 1 Counties: **1,166**
- Priority 2 Counties: **659**
- Priority 3 Counties: **1,410**
- Priority 4 Counties: **2,142**

**Prioritization Key**

<table>
<thead>
<tr>
<th>Priority 1 (High)</th>
<th>No Partners</th>
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<tr>
<td>Priority 2 (Mod-High)</td>
<td>5 or Fewer Partners</td>
</tr>
<tr>
<td>Priority 3 (Moderate)</td>
<td>6-19 Partners</td>
</tr>
<tr>
<td>Priority 4 (Low)</td>
<td>20+ Partners</td>
</tr>
</tbody>
</table>

**Number of Organizations per Category (all catchment area counties)**

- FQHCs (excludes Pediatrics, includes Dental): **292**
  - FQHCs with Dental: **93**
- Hospital Systems: **147**
  - Rural Health Association Hospitals: **30**
- Primary Care Clinics (non-FQHC): **755**
  - Rural Health Association Health Clinics: **45**
- Imaging/Radiology: **313**
- Dental Clinics (non-FQHC): **3,023**
- Public Libraries: **244**
- Religious Organizations: **331**
- Recreation Centers/Community Centers: **113**
- Food Banks: **73**
- Homeless Services: **59**
Summary
Uses of ArcGIS Business Analyst
Summary

Expanding the catchment area

Started with a need: Expand the cancer center’s catchment area

ArcPro
Create regional geographies, provide preliminary maps

Business Analyst
DATA DATA DATA Catchment scenarios

Feed data into infographics

Create custom tables to compare geographies

Data not in Business Analyst

Community Partner Landscape Analysis

Started with a need: Increase community partners throughout catchment area

Preliminary review and county prioritization of current community partner presence across 23 county catchment area

Business Analyst and NAICS website
Identify codes of requested organizations, creating POI database/map

Feed data into infographics

Create excel database for cancer center catchment area impact

The cancer center’s outreach and screening initiatives, other types of community engagement to observe over time and space

ArcPro
Data layering Map design

Data layering Map design
Benefits and Limitations

**Benefits**

- Time saver
- Low code / No code option
- Integrates with other ArcGIS platforms, exports to excel file
- Point and click access to thousands of geographically referenced data

**Limitations**

- Cost consideration: cost of the extension + cost of geoprocessing credits ($120 for 1,000 credits)
- Learning curve to use the program
Thank you.