Secondary Data Analysis of the Uniform Data System (UDS)

Alaina Boyer, PhD
Director of Research
National Health Care for the Homeless Council

Eric Turer, MBA
Senior Health Services Consultant, John Snow, Inc.
HRSA Uniform Data System (UDS)

- **330e** – entire communities
- **330g** – migrant population
- **330h** – persons and families experiencing homelessness
- **330i** – person in public housing

Core Set of Information:
- Aggregated data
- Reported across 9 different tables
- Clinic Descriptions

Patient Demographics

Services Provided

Clinical Indicators

Utilization rates, costs and revenues

All 330 funded health centers – more than 900 variables
Secondary Analysis

CHC Universal Reporting (1,375 health centers, 24,295,946 Patients served)

HCH only Reporting (295 health centers, 890,283 patients served)

**Purpose/Benefits**

- Establish benchmarks specific to our population
- Identify trends across time, region, clinic size
- Prioritize needs for new programs in your region
- Demonstrate value of clinics and programs
- Drive Targeted Training and Technical Assistance

**Considerations**

- Some tables are reported as lump data from the CHC
  - Hard to interpret HCH specific data for some variables
- Definition of homeless varies and how it is captured is varied across clinics
What we did: Secondary Analysis Subsets

Universal Data (All 330)

HCH funded (330h)

% homeless patients

Clinic Size

Region
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &amp; Gender (SOGI will be in 2016 data)</td>
<td></td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
</tr>
<tr>
<td>Income as % level of Poverty Level</td>
<td>100% and below, 101-150%, 151-200%, Over 200%, and unknown. Comparisons: HCHs, Universal health center totals, and US population (census data)</td>
</tr>
<tr>
<td>Insurance status (Policy Team)</td>
<td>None/Uninsured, Medicaid (L 8a+8b), Medicare, Public Insurance (L 10a+10b), and Private</td>
</tr>
<tr>
<td>Housing/Homeless Status</td>
<td>Homeless shelter, transitional, doubling up, street, other, and unknown</td>
</tr>
<tr>
<td>Integrated Services</td>
<td>Dental, vision, Mental Health, Substance Abuse, Enabling services</td>
</tr>
<tr>
<td>Selected Diagnoses</td>
<td>Infectious Diseases (HIV, TB, STDs, Hep B/C), Respiratory Diseases (asthma, chronic bronchitis, emphysema), abnormal breast/cervical findings, diabetes, heart disease, HTN, skin conditions, environmental health conditions/exposure, AUD/SUD, tobacco use, depression/anxiety, PTSD</td>
</tr>
<tr>
<td>Health Outcomes/Disparities</td>
<td>Live births, Diabetes control (A1Cs), controlled HTN</td>
</tr>
<tr>
<td>Costs</td>
<td>TA requests and NACHC have presented average cost per patient, average cost per patient visit</td>
</tr>
</tbody>
</table>
# Types of Comparisons

| HRSA Regions | Region 1: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut  
Region 2: New York and New Jersey  
Region 3: Pennsylvania, Maryland, Delaware, Virginia, and West Virginia  
Region 4: Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, and Mississippi  
Region 5: Minnesota, Wisconsin, Illinois, Indiana, Michigan, and Ohio  
Region 6: New Mexico, Texas, Oklahoma, Arkansas, and Louisiana  
Region 7: Nebraska, Kansas, Iowa, and Missouri  
Region 8: Montana, North Dakota, South Dakota, Wyoming, Colorado, and Utah  
Region 9: Nevada, California, Arizona, and Hawaii  
Region 10: Washington, Oregon, Idaho, and Alaska  

Sort by states “HealthCenterState” |
| Rural vs Urban | Sort by regions “UrbanRuralFlag” |
| Medicaid | Medicaid expansion states (32) vs non-expansion states (19) |
| Type of facility | Stand-alone HCH only vs multiple federal funding (i.e. HCH w/ combo of CHC, PH and MHC) |
Questions to Consider

• How familiar are you with the Uniform Data System?
  – Not at all familiar
  – Somewhat familiar
  – Moderately familiar
  – Extremely familiar

Chat Box Question: Secondary data analysis of UDS would help me...
What we did: Secondary Analysis Subsets

Universal Data (All 330)

- HCH funded (330h)
- Clinic Size
- Region
- % homeless patients
Health Outcomes

The image shows a bar chart and a line graph comparing the prevalence of health outcomes among different percentiles of homeless patients. The graph includes data on asthma, diabetes, and hypertension visits per patient.

- **Percent of Patients with Diagnosis**
- **Visits per Patient**

The chart segments are color-coded as follows:
- **Asthma**
- **Diabetes**
- **Hypertension**
- **Asthma Visits**
- **Diabetes Visits**
- **Hypertension Visits**

The categories on the x-axis represent different percentiles of homeless patients, ranging from less than 1% to 35% homeless.

The y-axis represents the percent of patients with the respective diagnoses and the number of visits per patient.
Questions to Consider

• What is your role at the Health Center?
  – Administrative
  – Clinical
  – Health IT staff
  – Case Manager/Coordinated Care Professional
What we did: Secondary Analysis Subsets

Universal Data (All 330)

- HCH funded (330h)
- % homeless patients
- Clinic Size
- Region
HCH Grantee Profiles

2015 UDS overview
- 1,375 reporting Health Centers
  - 24,295,946 total # of patients
- 295 HCH Grantees reporting
  - 890,283 total # of patients
- Funding Stream
  - CHC – 330e
  - HO (HCH) – 330h
  - MHC – 330g
  - PH – 330i

Funding Diversity within 330h funded grantees
- HO+CHC: 53%
- HO: 20%
- HO+CHC+PH: 12%
- HO+CHC+MHC: 8%
- HO+CHC+PH+MHC: 4%
- HO+PH: 3%
- HO+MHC: 3%

<table>
<thead>
<tr>
<th>Funding</th>
<th>Number of Grantees</th>
</tr>
</thead>
<tbody>
<tr>
<td>HO+CHC</td>
<td>155</td>
</tr>
<tr>
<td>HO</td>
<td>60</td>
</tr>
<tr>
<td>HO+CHC+PH</td>
<td>35</td>
</tr>
<tr>
<td>HO+CHC+MHC</td>
<td>25</td>
</tr>
<tr>
<td>HO+CHC+PH+MHC</td>
<td>11</td>
</tr>
<tr>
<td>HO+PH</td>
<td>8</td>
</tr>
<tr>
<td>HO+MHC</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>295</td>
</tr>
</tbody>
</table>

Groupings:
- HCH in CHC – 226
- Stand alone - 69
HCH Grantee Profile

<table>
<thead>
<tr>
<th></th>
<th>Total HCH Reporting</th>
<th>HCH in CHC</th>
<th>Stand Alone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rural</strong></td>
<td>101</td>
<td>90</td>
<td>11</td>
</tr>
<tr>
<td><strong>Urban</strong></td>
<td>194</td>
<td>136</td>
<td>58</td>
</tr>
</tbody>
</table>
HCH Grantee Profile: Housing Status

- HCH Numbers served = 890,283
- Total Homeless = 840,130

Type of Housing across 330h funded grantees only

- Homeless Shelter 31%
- Doubling Up 29%
- Transitional 12%
- Other 12%
- Street 8%
- Unknown 8%
- 71% of patients that access HCH clinics are 100% below FPL, this makes up the majority of our patients and are known to have more complex health conditions.
- HCH Grantees patients make up 3.6% of the total number of patients reported for this variable.
Hypertension, Diabetes, and Asthma are most reported Diagnoses in HCH
What we did: Secondary Analysis Subsets

Universal Data (All 330)

- HCH funded (330h)
- % homeless patients
- Clinic Size
- Region
<table>
<thead>
<tr>
<th>Region</th>
<th>Number of HCHs</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>23</td>
</tr>
<tr>
<td>II</td>
<td>33</td>
</tr>
<tr>
<td>III</td>
<td>16</td>
</tr>
<tr>
<td>IV</td>
<td>53</td>
</tr>
<tr>
<td>V</td>
<td>41</td>
</tr>
<tr>
<td>VI</td>
<td>27</td>
</tr>
<tr>
<td>VII</td>
<td>11</td>
</tr>
<tr>
<td>VIII</td>
<td>17</td>
</tr>
<tr>
<td>IX</td>
<td>52</td>
</tr>
<tr>
<td>X</td>
<td>22</td>
</tr>
</tbody>
</table>

**HRSA Region 1:** Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut

**HRSA Region 2:** New York and New Jersey

**HRSA Region 3:** Pennsylvania, Maryland, Delaware, Virginia, and West Virginia

**HRSA Region 4:** Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, and Mississippi

**HRSA Region 5:** Minnesota, Wisconsin, Illinois, Indiana, Michigan, and Ohio

**HRSA Region 6:** New Mexico, Texas, Oklahoma, Arkansas, and Louisiana

**HRSA Region 7:** Nebraska, Kansas, Iowa, and Missouri

**HRSA Region 8:** Montana, North Dakota, South Dakota, Wyoming, Colorado, and Utah

**HRSA Region 9:** Nevada, California, Arizona, and Hawaii

**HRSA Region 10:** Washington, Oregon, Idaho, and Alaska
Housing Status Across HRSA Region

Percent of clinic population (number of patients/Total of Patients)

HRSA Region (# HCH Grantees)

I (23)  II (33)  III (16)  IV (53)  V (41)  VI (27)  VII (11)  VIII (17)  IX (52)  X (22)

- Other/Unknown
- Street
- Doubling Up
- Transitional
- Homeless Shelter
% Uninsured Across HRSA Region

% Uninsured

17 and under
18+

no med expansion
yes med expansion
Substance related disorders (excluding tobacco use disorders)

- Total # of visits 330h = 362,121
- Total # of patients 330h = 75,925

ICD-10 codes included: opioid abuse/dependence, cannabis, sedative/hypnotic, cocaine, other stimulant, hallucinogen, inhalant, psychoactive, drug use complicated pregnancy/childbirth
What we did: Secondary Analysis Subsets

Universal Data (All 330)

- HCH funded (330h)
- % homeless patients
- Clinic Size
- Region
Data broken out by clinic patient population size

• Using SPSS, data was distributed across 7 “bins,” evenly distributing number of clinics by patient population
• Patient populations are binned as follows:
  – Bin 1: <471
  – Bin 2: 472-964
  – Bin 3: 965-1478
  – Bin 4: 1479-2493
  – Bin 5: 2494-4042
  – Bin 6: 4043-8994
  – Bin 7: 8995+
• Distribution of clinics reporting within each bin: 42 in bins 1,2,3,5 and 6; 41 in bin 4; 27 in bin 7.
Selection of Data

- Services with most frequently suggested challenges accumulated through various T/TA activities and FAQs: **Substance Abuse, Mental Health, and Enabling Services**
- Highest reported diagnoses in the UDS: **Hypertension, Diabetes and Asthma**
- Clinic distribution across bins is graphed with the black markers. The clinics that reported having seen patients for service provided or with the diagnosed condition is shown to the right.
- The top graph demonstrates the high variability in consistent reporting, while the reports on diagnoses below remained consistent.
Regardless of patient size of clinic, or average patient population with diagnosis, visits per patient per condition appear to stay about the same.

Notably, although hypertension diagnoses are significantly most prominent across all bins, patients with diabetes had the most visits per patient for their condition, between 3-4 visits per patient on average.
Regardless of patient size of clinic, or patients seen, encounter ratios per services appear to stay about the same, between about 2-5, with exception of substance abuse.

Although there is much variability in reporting of substance abuse programs across bins, it is the highest reported visits per patient, despite consistently being reported with the least patients seen on average.
National Health Care for the Homeless Council

Clinical Quality Reporting and Electronic Health Record Systems
UDS Data Analysis

• 5 Years of clinical data history (2011-2015)
• 14 Measures as of 2015
• Sample size used to determine data source per measure per year
  • < 70 Charts → Indeterminant
  • 70 Charts → Sample
  • Equals to Universe → EHR

Note: Prenatal data source cannot be determined

• Results averaged with all Health Centers equally weighted
National Data and Trends

• Significantly lower clinical compliance measured in EHR derived data compared to sampled data
National Data and Trends

• Notable upward trend in quality for process measures (EHR & Sample)
  • EHR-Sample difference persists across years

• Rapid increase in adoption of EHR for UDS reporting
Organizational Level Analysis

- Difference in performance between sample (red) & universe (blue)
- UDS measure performance over time
- Compare overall performance with peers
Health Center Trend Analysis

Available by health center and measure

May indicate data integrity issues when EHR was first implemented

May highlight trends in health center performance over time
Homeless Program Analysis

- Three Comparison Groups
  - HCH Only
  - Mixed HCH *
  - Non HCH *
  * Non Homeless patients drive overall results

- Some measures show too much “Indeterminate” Health Centers in HCH population:
  - Asthma, CAD, Dental, Child Immunization, IVD

- Results not adjusted for patient ‘risk’
Hypertension
Colorectal
Pap Test


Overall Avg. Performance by Year

Reporting Method and Year

<table>
<thead>
<tr>
<th>HCH Only</th>
<th>Mixed HCH</th>
<th>Non HCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>40%</td>
<td>55%</td>
</tr>
<tr>
<td>2012</td>
<td>43%</td>
<td>53%</td>
</tr>
<tr>
<td>2013</td>
<td>43%</td>
<td>54%</td>
</tr>
<tr>
<td>2014</td>
<td>38%</td>
<td>52%</td>
</tr>
<tr>
<td>2015</td>
<td>37%</td>
<td>51%</td>
</tr>
</tbody>
</table>

% of Total Number of Records

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>55%</td>
<td>44%</td>
<td>38%</td>
<td>34%</td>
<td>31%</td>
<td>29%</td>
<td>28%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Overall Avg. %

<table>
<thead>
<tr>
<th>HCH Only</th>
<th>Mixed HCH</th>
<th>Non HCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>45.9%</td>
<td>50.7%</td>
</tr>
<tr>
<td>2012</td>
<td>53.1%</td>
<td>53.5%</td>
</tr>
<tr>
<td>2013</td>
<td>49.0%</td>
<td>48.4%</td>
</tr>
<tr>
<td>2014</td>
<td>46.4%</td>
<td>46.8%</td>
</tr>
<tr>
<td>2015</td>
<td>45.7%</td>
<td>46.0%</td>
</tr>
</tbody>
</table>
Adult Weight


Overall Avg. Performance by Year

Method and Year

% of Total by Reporting Method

% of Total Number of Records

Avg. % M
Depression


Overall Avg. Performance by Year

Reporting Method

Method and Year

Sample

EHR

Sample
Tobacco
Other Indicators


Data Validation Tool Process

1. Examine evidence of a problem
2. Extract EHR report universe & assessment of compliance
3. Determine sample size and strategy
4. Gather blinded chart data by audit
   – Parameters and qualitative parameters
5. Reveal audit results
   – Aggregate compliance
   – Record level Universe and Compliance discrepancies in results
   – Patterns indicative of underlying causes
Three Outcomes of Validation

**Numerator issues**
Report not finding evidence of compliance in chart

**Denominator issues**
Report including patients that should not be in the Universe: wrong timeframe, missing exclusions

**Clinical issues**
Indicated service not being provided or outcome not being achieved
Thank You

Eric Turer
Senior Health Services Consultant
501 South St., Bow NH 03304
eturer@jsi.com | Phone: (603)573-3307

Contact HITEQ
1-844-305-7440
hiteqcenter.org
hiteqinfo@jsi.com