Required Data Analytics – Leveraging Data to Drive Decisions
About the Presenter

Brandon Hill

Brandon is a Senior Manager in our Enterprise Intelligence team at Dixon Hughes Goodman where he:

• Assists organizations in driving strategic initiatives through data management including Health System Strategic Planning, Medicare Shared Savings Program development, Hospital Quality and Efficiency Dashboard creation and tailored market assessments
• Performs hospital/service line analyses to inform clients on market trends, provider utilization patterns and strategic opportunities within their given service areas
• Informs the decision making process for clients on strategic initiatives through the utilizations of internal and external data
Agenda

• DHG Healthcare - Who We Are and What We Do

• Required Analytics – What Does it Mean

• How Are Organizations Using Information to Inform Decision Making in Real-time
DHG Healthcare is aligned to support transformational themes related to the achievement of Risk Capability.

WHAT WE BELIEVE

The healthcare ecosystem (including providers, payers and employers) is undergoing a radical shift from a traditional fee-for-service economy towards one that is value based with vastly increased expectations for quality and cost. While the speed at which individual markets tip from one economy towards the other has varied, we believe that the healthcare industry, as a whole, has passed the tipping point. At this point and beyond, healthcare organizations will be facing greater risk for payment of services despite the impact to the organization, both financially and operationally. We believe that Risk Capability is the new measurement by which healthcare providers will thrive or struggle.
Enterprise Intelligence at DHG Healthcare

**NETWORK ANALYTICS**
- Affordable Care Organization (ACO)
- Clinically Integrated Network Quality Analytics (i.e. HQEP, HEP, QIP)
- Commercial Claims
- QNET Analytics
- Value Based Purchasing (VBP)
- Out of Network Utilization

**EPISODIC ANALYTICS**
- Bundled Payment Care Initiative Advanced (BPCI-A)
- Comprehensive Joint Replacement (CJR)
- Oncology Care Model (CCM)
- Custom Bundles

**SERVICE LINE ANALYTICS**
- State Data Service Line Dashboard
- Comprehensive Service Line Dashboard
- CMS State Data Service Line Dashboard

**MARKET DRIVEN ANALYTICS**
- Access Assessments (i.e. FSED, Urgent Care, Imaging Centers, ASCs)
- Provider Assessments
- Physician Need and Inventory
- Market Assessment
- Demographics

**POST ACUTE SOLUTIONS**
- SNF Scorecards
- Home Health Scorecards
- PAC Market Assessment
- SNF Operational Improvement
- SNF Back Office Hosting Product

**UNIQUE SKILLS:** Tableau, SAS Programming, SQL Knowledge, VBA Database Programming, Clinical Expertise, Dedicated Strategic Analytic Advisory Team, In Depth Knowledge of CMS Data

**150+ MARKETS**
Provider, Overall Market and Outpatient Assessments

**300+ PROVIDERS**
Monthly dashboard and analysis tool for acute care providers at risk for CMS Episodic Care

**200+ LOCATIONS**
Skilled Nursing Facilities with daily business functions and operational platforms

**100+ LOCATIONS**
Market assessments/Strategic planning analysis for a large post-acute care provider
Organizational Risk Capability
Data Analytics...Then

• Ted Williams – The Science of Hitting (1971)

• Looking for pitches in his “happy-zone”, with a sweet spot belt high right over the plate

• Had to swing at pitches he knew that he couldn’t hit well (low and outside), because they were strikes

• He knew that (with less than two strikes) if he could select only those pitches in the red/orange he’d bat ~.400

Source: http://www.tedwilliams.com
Data Analytics...Now

Jose Altuve
Houston Astros

Age: 28  |  Bats/Throws: R/R  |  5’6”/165  |  2B

Birthdate: 5/6/1990 (28 y, 4 m, 15 d)
Contract: $151M / 5 Years (2020 - 2024)

RotoWire News: Altuve went 2-for-3 with a double, a walk, three runs scored, two RBI and a stolen base in Saturday’s 10-4 win over the Diamondbacks. (9/14/2018)

9/10/2018  |  The Sleeper and the Bust Episode: 598 - 2018 Disappointments In... by Paul Sporer
8/20/2018  |  The AL West Now Has a Race by Jay Feiffer
5/7/2018   |  The Sleeper and the Bust Episode: 547 - The Struggle Bus Team by Paul Sporer
3/17/2018  |  Jose Altuve Signs Updated Joey Votto Deal by Craig Edwards

Source: https://www.fangraphs.com/
Objectives of Healthcare Analytics

- The fundamental objective to healthcare analytics is to help people to make and execute rational decisions, defined as being:

  - Data-Driven
  - Transparent
  - Verifiable
  - Robust

Evolution of Data Analytics in Healthcare

Data Analytics in the Past
• Expensive
• Small
• Slow
• Costly

Data Analytics Today
• Data Acquisition is Cheap
• Large and Varying Types of Data
• Extremely Fast
Finding the Balance Between Data and Information

Information is Lacking
- We have an opportunity to grow in market X
- We need to hire an additional Neurologist

Data is Everywhere
- Weekly Clinic Visits
- Did you receive discharge instructions?
- OR Turnaround Time
- Cost Per Case
### Changing Landscape in Healthcare

<table>
<thead>
<tr>
<th>Category</th>
<th>Key Points</th>
</tr>
</thead>
</table>
| **Payment Models**    | • Optimize cost structure  
  • Revenue transformation shifting risk  
  • Transition from volume to value |
| **Consumerism**       | • Employer as consumers  
  • Patient consumers demand high quality/low cost care |
| **Accessibility**     | • Expansion of Telehealth initiatives  
  • Enhanced outpatient access  
  • Strategic Partnerships for retail care |
| **Clinical Advancements** | • Quality and Process Improvement  
  • Enterprise intelligence  
  • Innovations in research |
| **Evolving Contracting Strategies** | • Medicare Advantage is growing in 2018  
  • Consolidation is leading to Joint-Contracting |
| **Population Health** | • Management of the care continuum  
  • Understanding of the health needs of the population  
  • Learning and impacting social determinants of health |
Hospital / Health System Data Management

DATA POINTS

INFORMATION

Strategic Analytics
Population Health Analytics
Operational Analytics
DATA USED TO INFORM STRATEGIC INITIATIVES AND THE NON-ORGANIC GROWTH EFFORTS OF AN ORGANIZATION

- Trends and Changes in Market Demographics
- Competitor Market Share and Development Activity
- Provider Landscape (Employed Physicians v. Independent Physicians)
- Network Development and Value Quantification
Hospital / Health System Data Management

DATA USED TO ASSESS THE QUALITY OF CARE BEING PROVIDED AND PROACTIVELY ADDRESS PATIENT NEEDS

- EHR Based Analysis / Quality Metrics
- Care Path / Protocol Compliance
- Care Coordination Patient Management
- Population Specific Metric Performance (i.e. AVWs, Flu Vaccinations, Diabetic Eye Exams, etc.)
- Clinical Documentation and Improvement
Hospital / Health System Data Management

DATA USED TO MEASURE THE DAY-TO-DAY PERFORMANCE OF AN ORGANIZATION

- Financial Performance Relative to Budget
  - Income Statement, Balance Sheet, Key Performance Indicators
- Patient Volumes
- Length of Stay
- Surgical Statistics (i.e. Room Turnaround Time, WIWO, etc.)
- Patient Experience
- Employee Turnover Rate
- Patient Access / Slot Utilization
- Productivity
- Patient / Case Mix
The Overlap

THOSE ACTIVITIES THAT PRODUCE DATA REQUIRING ELEMENTS FROM MULTIPLE BUCKETS

- Strategic Priorities / Special Projects
- Bundled Payments for Care Improvement – Advanced (BPCI-A)
- Medicare Shared Savings Program (MSSP)
- Next Generation Accountable Care Organizations (NG-ACO)
- Clinically Integrated Network (CINs) Contracts
What Are the Challenges to Major Challenges to Providing High Quality Healthcare Analytics

- Variability
- Gaining Trust in the Data and Processes to be Accurate
- Obtaining Data in a Timely Fashion
- Developing a Consolidated, Usable Platform/Interface
- Organizing the Data in a Way that Compels the Organization to Act
If it’s not measured, then it can’t be managed

If it’s not **accurately measured** and supported with timely and consistent delivery of information, then it can’t be managed
Service Line Dashboarding

State Data Service Line Dashboard

**Inpatient**
- Hospital Market Share Trend
- Market Share Gap
- Opportunity Assessment by DRG
- Market Map
- Contribution Margin Map
- Service Line Detail
- Service Line Age & Payer

**Emergency Department**
- ED Market Map
- ED Contribution Margin Map
- ED Market Share & Volume
- ED Detail

Where referenced (with the exception of In/Out Migration Dashboard), Client name includes ALL Client hospitals; not limited to just Client hospitals in the selected Service Area.
Service Line Dashboarding

Inpatient Gap between Market Share & Commercial Share (Most Recent 4 Quarters)

<table>
<thead>
<tr>
<th>Service Line Group</th>
<th>Service Line</th>
<th>Sub Service Line</th>
<th>Discharge QtrYr</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>All</td>
<td>All</td>
<td>Multiple values</td>
</tr>
</tbody>
</table>

- **Cincinnati**: Market Share 28.2% vs. Commercial Share 23.6%
- **Lima**: Market Share 55.1% vs. Commercial Share 15.7%
- **Lorain**: Market Share 27.0% vs. Commercial Share 50.0%
- **Springfield**: Market Share 32.0% vs. Commercial Share 24.7%
- **Toledo**: Market Share 55.7% vs. Commercial Share 52.5%
- **Youngstown**: Market Share 25.7% vs. Commercial Share 16.0%
- **Marcum**: Market Share 34.2% vs. Commercial Share 28.7%

Legend:
- Commercial Share %
- Market Share %
Service Line Dashboarding

## Inpatient Market Opportunity by DRG Trend

<table>
<thead>
<tr>
<th>Primary Service Area</th>
<th>Service Line Group</th>
<th>2017-02</th>
<th>2017-03</th>
<th>2017-04</th>
<th>2018-01</th>
<th>Payor Group</th>
<th>Multiple values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toledo</td>
<td>Orthopedics</td>
<td>1,416</td>
<td>1,409</td>
<td>1,509</td>
<td>1,156</td>
<td>5,490</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avg. Contribution Margin Demo</td>
<td>$5,881</td>
<td>$5,708</td>
<td>$5,503</td>
<td>$5,887</td>
<td>$6,002</td>
<td>$35,614,443</td>
</tr>
<tr>
<td></td>
<td>Contribution Margin Demo</td>
<td>$8,980,915</td>
<td>$8,730,696</td>
<td>$10,723,660</td>
<td>$7,352,964</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Avg. Contribution Margin Demo</td>
<td>$7,947</td>
<td>$7,161</td>
<td>$8,381</td>
<td>$8,147</td>
<td>$7,900</td>
<td>$22,997,033</td>
</tr>
<tr>
<td></td>
<td>Contribution Margin Demo</td>
<td>$5,854,352</td>
<td>$5,327,439</td>
<td>$7,381,471</td>
<td>$4,423,571</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Avg. Contribution Margin Demo</td>
<td>$5,063</td>
<td>$6,767</td>
<td>$6,063</td>
<td>$5,729</td>
<td>$6,023</td>
<td>$2,120,011</td>
</tr>
<tr>
<td></td>
<td>Contribution Margin Demo</td>
<td>$403,546</td>
<td>$446,458</td>
<td>$516,323</td>
<td>$572,084</td>
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<td></td>
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<tr>
<td></td>
<td>Contribution Margin Demo</td>
<td>$235,371</td>
<td>$214,710</td>
<td>$218,839</td>
<td>$210,720</td>
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<tr>
<td></td>
<td>Avg. Contribution Margin Demo</td>
<td>$6,593</td>
<td>$7,130</td>
<td>$7,409</td>
<td>$5,493</td>
<td>$3,102</td>
<td>$421,080</td>
</tr>
<tr>
<td></td>
<td>Contribution Margin Demo</td>
<td>$190,915</td>
<td>$249,854</td>
<td>$858,847</td>
<td>$1,387,771</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avg. Contribution Margin Demo</td>
<td>$3,322</td>
<td>$3,941</td>
<td>$2,419</td>
<td>$4,096</td>
<td>$2,908</td>
<td>$415,866</td>
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<tr>
<td></td>
<td>Contribution Margin Demo</td>
<td>$40,604</td>
<td>$110,357</td>
<td>$139,139</td>
<td>$139,139</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avg. Contribution Margin Demo</td>
<td>$2,165</td>
<td>$3,045</td>
<td>$2,681</td>
<td>$3,471</td>
<td>$3,102</td>
<td>$421,080</td>
</tr>
<tr>
<td></td>
<td>Contribution Margin Demo</td>
<td>$94,976</td>
<td>$103,629</td>
<td>$109,669</td>
<td>$93,717</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avg. Contribution Margin Demo</td>
<td>$5,935</td>
<td>$4,150</td>
<td>$5,488</td>
<td>$4,004</td>
<td>$4,641</td>
<td>$603,331</td>
</tr>
<tr>
<td></td>
<td>Contribution Margin Demo</td>
<td>$189,931</td>
<td>$145,260</td>
<td>$158,019</td>
<td>$112,122</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avg. Contribution Margin Demo</td>
<td>$3,609</td>
<td>$4,855</td>
<td>$4,857</td>
<td>$5,184</td>
<td>$4,847</td>
<td>$483,606</td>
</tr>
<tr>
<td></td>
<td>Contribution Margin Demo</td>
<td>$119,090</td>
<td>$121,174</td>
<td>$128,850</td>
<td>$125,405</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avg. Contribution Margin Demo</td>
<td>$5,889</td>
<td>$4,899</td>
<td>$4,492</td>
<td>$4,076</td>
<td>$4,769</td>
<td>$500,720</td>
</tr>
<tr>
<td></td>
<td>Contribution Margin Demo</td>
<td>$170,069</td>
<td>$141,327</td>
<td>$170,795</td>
<td>$111,528</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avg. Contribution Margin Demo</td>
<td>$570</td>
<td>$2,196</td>
<td>$1,187</td>
<td>$1,067</td>
<td>$1,008</td>
<td>$104,008</td>
</tr>
<tr>
<td></td>
<td>Contribution Margin Demo</td>
<td>$39,754</td>
<td>$22,302</td>
<td>$23,483</td>
<td>$25,269</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*DRG* stands for Diagnosis Related Group. Inpatient market opportunity is based on DRG and Payor Group. Contribution Margin shown is based on DRG. **Value in the Multiple values column is for one DRG and one Payor Group.**

For more information, please contact Dr. Smith at drsmith@dhg.com.
Service Line Dashboarding

Inpatient Contribution Margin Map - Client and Opportunity Contribution Margin

<table>
<thead>
<tr>
<th>Primary Service Area</th>
<th>Client vs Opportunity</th>
<th>Service Line Group</th>
<th>Service Line</th>
<th>Sub Service Line</th>
<th>Payer Group</th>
<th>Discharge Yr-Qtr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toledo</td>
<td>(All)</td>
<td>Orthopedics</td>
<td>(All)</td>
<td>(All)</td>
<td>(All)</td>
<td>(Multiple values)</td>
</tr>
</tbody>
</table>

Contribution Margin $ by Zip Code

- Pt Zip: 44883
- Count: 264.6
- Contribution Margin: $1,822,707
- Commercial Volume: 81.0
- Commercial Contribution Margin: $1,822,707

Average Contribution Margin Demo

- 2017-Q4: $12,204,195
- 2017-Q3: $11,694,775
- 2017-Q4: $14,387,508
- 2018-Q1: $10,408,541
- Avg Total: $12,223,754

Contribution Margin assigned by PSA by Payer and by DRG
### Inpatient - Primary Service Area Scorecard

**Service Line Dashboarding**

#### Market Share by Payer YE 2018 Q1

<table>
<thead>
<tr>
<th>Payer Group</th>
<th>Count</th>
<th>Market Share %</th>
<th>Total</th>
<th>Market Share %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>4,491</td>
<td>23.8</td>
<td>1,075</td>
<td>23.8</td>
</tr>
<tr>
<td>Medicare</td>
<td>1,460</td>
<td>23.8</td>
<td>1,075</td>
<td>23.8</td>
</tr>
<tr>
<td>Medicaid</td>
<td>9,249</td>
<td>21.7</td>
<td>2,020</td>
<td>22.2</td>
</tr>
<tr>
<td>Government</td>
<td>5,10</td>
<td>15.1</td>
<td>1,075</td>
<td>23.8</td>
</tr>
<tr>
<td>Swf Pay &amp; Othr</td>
<td>181</td>
<td>17.9</td>
<td>15.2%</td>
<td>42.8%</td>
</tr>
<tr>
<td>PSA Total</td>
<td>10,686</td>
<td>22.6%</td>
<td>3,140</td>
<td>21.2%</td>
</tr>
</tbody>
</table>

#### % Increase / Decrease in Volume YE 2018 Q1 vs YE 2017 Q1

<table>
<thead>
<tr>
<th>Group</th>
<th>% Increase / Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>2.4%</td>
</tr>
<tr>
<td>Orthopedics</td>
<td>9.3%</td>
</tr>
<tr>
<td>All</td>
<td>4.9%</td>
</tr>
<tr>
<td>All</td>
<td>1.8%</td>
</tr>
<tr>
<td>All</td>
<td>-6.3%</td>
</tr>
</tbody>
</table>

#### System Payer Mix Breakdown YE 2018 Q1

<table>
<thead>
<tr>
<th>Payer Group</th>
<th>Total</th>
<th>Market Share %</th>
<th>Total</th>
<th>Market Share %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>28.0%</td>
<td>23.5%</td>
<td>60.0%</td>
<td>32.0%</td>
</tr>
<tr>
<td>Medicare</td>
<td>61.4%</td>
<td>60.1%</td>
<td>60.1%</td>
<td>60.1%</td>
</tr>
<tr>
<td>Medicaid</td>
<td>35.4%</td>
<td>28.3%</td>
<td>29.8%</td>
<td>28.3%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

#### % Increase / Decrease by Payer YE 2018 Q1 vs YE 2017 Q1

<table>
<thead>
<tr>
<th>Payer Group</th>
<th>Total</th>
<th>Market Share %</th>
<th>Total</th>
<th>Market Share %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>-2.9%</td>
<td>23.5%</td>
<td>3.7%</td>
<td>26.2%</td>
</tr>
<tr>
<td>Medicare</td>
<td>34.6%</td>
<td>60.0%</td>
<td>28.3%</td>
<td>60.1%</td>
</tr>
<tr>
<td>Medicaid</td>
<td>3.5%</td>
<td>35.4%</td>
<td>4.2%</td>
<td>28.3%</td>
</tr>
<tr>
<td>Total</td>
<td>-2.9%</td>
<td>100%</td>
<td>3.7%</td>
<td>100%</td>
</tr>
</tbody>
</table>
## Service Line Dashboarding

### Inpatient - In/Out Migration

<table>
<thead>
<tr>
<th>Service Area</th>
<th>Market Total</th>
<th>Market Out Migration</th>
<th>Market In Migration</th>
<th>Net In-Migration</th>
<th>Client In Market</th>
<th>Client In Migration</th>
<th>Client Consolidated</th>
<th>Client In Market Share %</th>
<th>Client In Migration Share %</th>
<th>Client Consolidated Market Share %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cincinnati</td>
<td>53,253</td>
<td>3,678</td>
<td>8,345</td>
<td>4,667</td>
<td>15,264</td>
<td>977</td>
<td>16,241</td>
<td>28.7%</td>
<td>11.7%</td>
<td>26.4%</td>
</tr>
<tr>
<td>Lima</td>
<td>7,134</td>
<td>1,178</td>
<td>1,914</td>
<td>736</td>
<td>4,378</td>
<td>1,101</td>
<td>5,479</td>
<td>61.4%</td>
<td>57.5%</td>
<td>60.6%</td>
</tr>
<tr>
<td>Lorain</td>
<td>11,175</td>
<td>4,450</td>
<td>929</td>
<td>(3,631)</td>
<td>3,003</td>
<td>174</td>
<td>3,177</td>
<td>26.9%</td>
<td>18.9%</td>
<td>26.3%</td>
</tr>
<tr>
<td>Springfield</td>
<td>6,493</td>
<td>2,420</td>
<td>197</td>
<td>(2,223)</td>
<td>4,073</td>
<td>197</td>
<td>4,270</td>
<td>62.7%</td>
<td>100.0%</td>
<td>63.8%</td>
</tr>
<tr>
<td>Toledo</td>
<td>26,217</td>
<td>2,412</td>
<td>6,420</td>
<td>4,006</td>
<td>8,483</td>
<td>1,430</td>
<td>9,893</td>
<td>32.3%</td>
<td>22.3%</td>
<td>30.3%</td>
</tr>
<tr>
<td>Youngstown</td>
<td>20,040</td>
<td>2,785</td>
<td>1,103</td>
<td>(1,682)</td>
<td>11,092</td>
<td>524</td>
<td>11,616</td>
<td>55.3%</td>
<td>47.5%</td>
<td>54.9%</td>
</tr>
<tr>
<td>Paducah</td>
<td>6,684</td>
<td>453</td>
<td>2,152</td>
<td>1,699</td>
<td>2,288</td>
<td>725</td>
<td>2,963</td>
<td>33.6%</td>
<td>33.7%</td>
<td>33.6%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>131,809</td>
<td>17,997</td>
<td>21,100</td>
<td>3,103</td>
<td>48,723</td>
<td>5,178</td>
<td>53,901</td>
<td>37.0%</td>
<td>24.5%</td>
<td>35.3%</td>
</tr>
</tbody>
</table>

### Contribution Margin Incremental $

<table>
<thead>
<tr>
<th>Service Area</th>
<th>Client Out Migration Vol</th>
<th>Client Out Migration % Increase</th>
<th>Client In Migration Adv/Disadv</th>
<th>Client In Migration Vol Opportunity</th>
<th>Client In Migration Adj Vol</th>
<th>Client In Migration % Increase</th>
<th>Client Adjusted In-Mig Share</th>
<th>Total Incremental</th>
<th>Total % Increase</th>
<th>Contribution Margin Incremental $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cincinnati</td>
<td>1,054</td>
<td>6.5%</td>
<td>-17.0%</td>
<td>1,415</td>
<td>2,392</td>
<td>8.7%</td>
<td>28.7%</td>
<td>2,469</td>
<td>15.2%</td>
<td>$9,272,643</td>
</tr>
<tr>
<td>Lima</td>
<td>723</td>
<td>13.2%</td>
<td>-3.8%</td>
<td>74</td>
<td>1,175</td>
<td>1.3%</td>
<td>61.4%</td>
<td>797</td>
<td>14.9%</td>
<td>$4,731,435</td>
</tr>
<tr>
<td>Lorain</td>
<td>1,196</td>
<td>37.6%</td>
<td>-7.9%</td>
<td>73</td>
<td>247</td>
<td>2.3%</td>
<td>26.9%</td>
<td>1,269</td>
<td>39.9%</td>
<td>$3,689,719</td>
</tr>
<tr>
<td>Springfield</td>
<td>1,816</td>
<td>35.6%</td>
<td>37.3%</td>
<td>107</td>
<td>187</td>
<td>0.0%</td>
<td>100.0%</td>
<td>1,618</td>
<td>35.6%</td>
<td>$4,467,592</td>
</tr>
<tr>
<td>Toledo</td>
<td>779</td>
<td>7.9%</td>
<td>-10.0%</td>
<td>642</td>
<td>2,072</td>
<td>6.5%</td>
<td>32.3%</td>
<td>1,421</td>
<td>14.4%</td>
<td>$7,072,757</td>
</tr>
<tr>
<td>Youngstown</td>
<td>1,841</td>
<td>23.3%</td>
<td>-7.8%</td>
<td>87</td>
<td>611</td>
<td>0.7%</td>
<td>55.3%</td>
<td>1,628</td>
<td>14.0%</td>
<td>$4,867,675</td>
</tr>
<tr>
<td>Paducah</td>
<td>152</td>
<td>5.1%</td>
<td>74.5%</td>
<td>0</td>
<td>725</td>
<td>0.0%</td>
<td>33.7%</td>
<td>152</td>
<td>5.1%</td>
<td>$511,171</td>
</tr>
<tr>
<td>Grand Total</td>
<td>890</td>
<td>22.4%</td>
<td>8.2%</td>
<td>286</td>
<td>7,800</td>
<td>4.9%</td>
<td>37.0%</td>
<td>9,274</td>
<td>17.2%</td>
<td>$35,995,731</td>
</tr>
</tbody>
</table>
Demographic Dashboarding

Demographic Summary

Select Service Area in Table to Filter Dashboard

Select Age Group/Age Range in Table to Filter Dashboard

Income by Zip

Current Population

Copyright © 2018 by Environics Analytics (EA). Source: Claritas - Pop-Facts Advanced 2018; Current Year (CY) = 2018
### Age Group

**Service Area:** (All)  
**Zip Code:** (All)  
**Gender:** (All)  
**Age Group:** (All)

#### Age Group by Population CY

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Age Range</th>
<th>Population CY</th>
<th>% of Total</th>
<th>Population 5-Yr</th>
<th>5-Yr Net Growth</th>
<th>5-Yr % Net Growth</th>
<th>CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand Total</td>
<td>Total</td>
<td>406,675</td>
<td>100.0%</td>
<td>449,398</td>
<td>3,328</td>
<td>0.7%</td>
<td>0.1%</td>
</tr>
<tr>
<td>0-17</td>
<td>Total</td>
<td>104,675</td>
<td>23.5%</td>
<td>107,810</td>
<td>-65</td>
<td>-0.6%</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>0-4</td>
<td>28,562</td>
<td>6.4%</td>
<td>28,584</td>
<td>22</td>
<td>0.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>5-9</td>
<td>29,076</td>
<td>6.5%</td>
<td>29,383</td>
<td>-5</td>
<td>-0.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>10-14</td>
<td>29,019</td>
<td>6.5%</td>
<td>29,664</td>
<td>-373</td>
<td>-1.3%</td>
<td>0.3%</td>
</tr>
<tr>
<td></td>
<td>15-17</td>
<td>18,018</td>
<td>4.0%</td>
<td>18,197</td>
<td>179</td>
<td>1.0%</td>
<td>0.2%</td>
</tr>
<tr>
<td>18-44</td>
<td>Total</td>
<td>147,839</td>
<td>33.1%</td>
<td>149,559</td>
<td>1,720</td>
<td>1.2%</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>18-24</td>
<td>147,839</td>
<td>33.1%</td>
<td>149,559</td>
<td>1,720</td>
<td>1.2%</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>25-44</td>
<td>112,243</td>
<td>25.2%</td>
<td>106,070</td>
<td>-6,173</td>
<td>-5.4%</td>
<td>1.1%</td>
</tr>
<tr>
<td></td>
<td>45-64</td>
<td>54,310</td>
<td>12.2%</td>
<td>50,118</td>
<td>-4,194</td>
<td>-7.7%</td>
<td>1.6%</td>
</tr>
<tr>
<td></td>
<td>65+</td>
<td>35,364</td>
<td>8.1%</td>
<td>36,441</td>
<td>1,077</td>
<td>3.0%</td>
<td>0.8%</td>
</tr>
</tbody>
</table>

#### Population CY by Age Group

- 0-17: 104,675
- 18-44: 147,839
- 45-64: 112,243
- 55-64: 75,350 (3.6%)
- 75-84: 75,574 (2.4%)
- 85+: 65,313 (3.7%)

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*Data sources: Environics Analytics (EA), Claritas - Pop Facts Advanced 2018; Current Year (CY) = 2018.*
In Summary

• Developing a data analytic infrastructure that can turn data into information is no longer a competitive advantage, it’s a strategic imperative

• Flexible platforms that allow for on the fly analysis of relevant information are of paramount importance

• The data is out there…

Questions?