Thank you to the Florida Coalition for the Homeless
Presented by
Gaither Stephens

**INTRO**
Background Information on Gaither and Topics Discussed

**CONCEPTS**
Datasets, Visualizations, and Dashboards

**REALITY**
How to Build a Dashboard in Real-Time

**Q&A**
Open Floor for Questions and Discussion

A little bit about today's presenter and some info to get us started

We will go through the steps to build an actual data dashboard!

Overview of basic data ideas and how they are used to create dashboards

I like to talk and can guarantee we will not run out of things to discuss!
INTRODUCTION
Fun Facts

Bob Ross
*Happy Little Trees*

The Joy of Painting filmed less than a mile from Gaither's childhood home in Muncie, Indiana.

Gaithersburg, MD
*Dang Autocorrect*

Gaither's family founded Gaithersburg in the 1800’s near Washington DC. Autocorrect commonly changes Gaither to Gaithersburg.

Bill Gaither
*2nd Cousin Once Removed*

Gaither is related to six-time Grammy Award and thirty-four-time GMA Dove Award winner, Bill Gaither. If you don't know this is, chances are one of your older relatives will.

Family Life
*Personal Stuff!*

Gaither has a beautiful girlfriend, five kids, three cats, and a really cool drum set. He's lived in or near Marion, IN, Muncie, IN, Fort Wayne, IN, Florence, KY, Cincinnati, OH, Port Charlotte, FL, and Punta Gorda, FL.
Education

01 Burris Laboratory School
    Collegiate School at Ball State University

02 Purdue University
    Associate of Science in Information Systems & Computer Science

03 Indiana Wesleyan University
    Bachelor of Science in Business Administration

04 Boston University
    Master of Science in Computer Information Systems
Radio Manager
1996-2014
Gaither was an operations manager, general manager, and a regional manager for more than six radio stations in Indiana, Ohio, and Kentucky.

Data Analyst
2015-2016
Gaither was the HMIS data analyst and on-site IT specialist for The Homeless Coalition in Port Charlotte, FL.

CTO
2016-Current
Responsible for HMIS, IT, local, state, and federal reporting conducting the yearly PIT Count, data analysis and dashboards.

CEO
2019-Current
Gaither Dynamic creates data dashboards for communities to publish to their websites for community engagement.
CONCEPTS
The key to success is to take quality data, transform it into useful information, and then present that information in an easily digestible and accessible format for the masses.
ETL
For our purpose, we are extracting data from an existing data source (HMIS), transforming it so that it is easier for our visualization software to use, and then loading it into its new home where it can be accessed by our visualization tool to create and power our dashboards.

Data Quality
Dynamic data requires constant cleanup using an iterative process.

Correct
Look holistically at your data and consider that if data is incorrect in one area it may be incorrect in many.

Monitor
Educate users, create reports to keep an eye on known problem areas, and expect the unexpected.

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Data
Working with quality data is essential to providing accurate information to our dashboard and our community. It is okay to create a dashboard before data quality is perfect because the dashboard itself can be a tool to identify and help improve data quality.
Information

Four Stages of Data Analysis

Describe
Median days for Length of Time (LOT) homeless went up by 5 days for the entire Continuum of Care.

Diagnose
The Emergency Shelter had a large increase in LOT. This was due to the shelter becoming low-barrier leading to longer lengths of stay.

Predict
Our median days will increase even more next year because the shelter began prioritizing chronically homeless persons.

Prescribe
Allocate more funding to Rapid Re-Housing to help house shelter residents more quickly.
Presentation

Advantages of Web Accessible Data Dashboards

01 Dynamic Content
Ability to keep dashboards up to date and be flexible

02 Accessibility
Allows anyone to access information easily

03 Accountability
Creates transparency with community and stakeholders

04 Economics
Saves in printing and paper costs

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REALITY
The key to success is to understand the basic building blocks used in creating a data dashboard AND to be able to apply them using real world tools.
List of Tools
What we will be covering in this presentation

Google
- Google Drive
- Google Sheets works with Tableau Public for Free
- Google Apps Script
- Free
- Ability to import spreadsheets

Tableau
- Tableau Desktop used to create dashboards
- Tableau Public will host dashboards for free and updates nightly from Google Sheets
- $58 on TechSoup for non-profits
- Embed codes and prints to PDF

NameCheap
- Domain Name
- Web Hosting
- Softaculous
- WordPress
- Plugins
- Embed Tableau Public code into website

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Steps to Create and Display a Data Dashboard

1. Generate Data
   This can be a single spreadsheet or multiple tables that are joined together later in Tableau

2. Import Data
   Import the data into Google Sheets

3. Connect Data and Create Dashboard
   All done in Tableau

4. Publish Dashboard
   Create data extract and save dashboard to Tableau Public

5. Embed Dashboard
   Use embed code provided by Tableau Public to display dashboard on website

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DEMONSTRATION
Raw Data

Generate data from your system. This will generally be in non-aggregated form. This means that the data is separated out into individual rows and not aggregated into total amounts.

First, we will work on downloading a table filled with client data.

*Examples shown are from WellSky Community Services (formerly ServicePoint)
Client Data Table

We will be using multiple tables and joining them together.

We do this in order to get the veteran status.

It’s possible to join multiple tables together using either a primary key or a composite key.

Client ID is our primary key for this table so we select it and U.S. Military Veteran.
Next, we will get information from a table that has entry/exit information for the client.

We must make sure that we have a way to join our client table to our entry/exit table, so we select Client ID. When a field such as Client ID is a unique ID in a table it is called a Primary Key. When a matching ID is used in another table, but is not necessarily unique, it can be called a foreign key.

The Primary key in the Entry Exits table is the Entry Exit ID field.

Download the report (will have to unzip to get to the csv file).
Google Sheets

Create a new spreadsheet and import your Client data csv.

We use Google Sheets because Tableau Public allows free nightly updates of dashboards that use Google Sheets as their data sources. This allows us to upload new data, walk away, and have our dashboard automatically update itself overnight.
Google Sheets

Upload your data as a new Google Sheet and when it is done, click Open now >

You should have a spreadsheet filled with your client data.

You’ll notice that we do not have names or social security numbers.

We purposely left this information out when we downloaded our data file.

Go through the same process for your Entry/Exit csv data file.
Connect Tableau Desktop to your Google Sheet data by clicking on the Google Sheets option under the ‘To a Server’ section on the left-hand side of Tableau Desktop. Select the account you used to store your data in Google Sheets. Click the Allow button to give Tableau Desktop access to your data.
Tableau Desktop

Select your data source and then click the Connect button. At this point, Tableau Desktop will read the data from Google Sheets and show you your data with your selected data already in the data pane.

Click on the Add button to repeat the process for additional data.

If your data has corresponding primary and foreign keys that are easily recognizable, Tableau Desktop will join the data for you.
Tableau Desktop

We can see that Client Data and EEs are now available to us under the Connections section.

Tableau has also joined the two tables using the Client ID field. In the Client Data table, Client ID is a primary key. In the EEs table Client ID is a foreign key.

A primary key must be used only once in the table it exits. A foreign key may appear many times in a table.
We are now ready to create our first Sheet in Tableau.

Tableau is broken down into Sheets, Dashboards, and Stories. It is customary to have one visualization per sheet.

Sheets can then be used to build a dashboard.

Stories can be used to display multiple dashboards one dashboard at a time in a sequence.
Once we have our sheet view available, we have many options to choose from.

If you double click the Client ID object under Client Data, it will automatically be added to the sheet. You can also drag the Client ID object to the Rows section to perform the same function.
Tableau Desktop

If you hover over the Client ID ‘pill’ in the Rows section, it will bring up a menu that you can use to control what is displayed on the sheet. By selecting Measure > Count (Distinct) we can count how many distinct clients we have in our data. The sheet will automatically turn this into a bar chart.
Tableau Desktop

On the left side of the sheet screen there is a section called Marks. This section can be used to alter what is displayed on the sheet such as data color, size of visualizations, and more.

By dragging the Client Data pill onto the Text card in the Marks section, we can now see in an easy to read manner how many distinct clients are in our data.
Tableau Desktop

By dragging and dropping Primary Races (EEs) from the EEs section into the Rows section, we now have a count of races by number of clients.
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There may be historical answers that are no longer used in the system. When this happens, you can filter out the options you do not want displayed by dragging the Races (EEs) from the EEs section to the filter section. Select the options you want to keep.

<table>
<thead>
<tr>
<th>Primary Race (EEs)</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Null</td>
<td>6,679</td>
</tr>
<tr>
<td>Alaskan Native (HUD)</td>
<td>1</td>
</tr>
<tr>
<td>American Indian (HUD)</td>
<td>54</td>
</tr>
<tr>
<td>American Indian or Alaska…</td>
<td>209</td>
</tr>
<tr>
<td>American Indian/Alaskan…</td>
<td>15</td>
</tr>
<tr>
<td>American Indian/Alaskan…</td>
<td>38</td>
</tr>
<tr>
<td>Asian (HUD)</td>
<td>207</td>
</tr>
<tr>
<td>Asian &amp; White (new HUD 4…)</td>
<td>24</td>
</tr>
<tr>
<td>Black or African American…</td>
<td>9,430</td>
</tr>
<tr>
<td>Black/African American &amp;…</td>
<td>194</td>
</tr>
<tr>
<td>Client doesn’t know (HUD)</td>
<td>891</td>
</tr>
<tr>
<td>Client refused (HUD)</td>
<td>98</td>
</tr>
<tr>
<td>Cuban</td>
<td>5</td>
</tr>
<tr>
<td>Data not collected (HUD)</td>
<td>431</td>
</tr>
<tr>
<td>Haitian</td>
<td>10</td>
</tr>
<tr>
<td>Jamaican</td>
<td>2</td>
</tr>
<tr>
<td>Latino</td>
<td>213</td>
</tr>
<tr>
<td>Native Hawaiian (HUD)</td>
<td>3</td>
</tr>
<tr>
<td>Native Hawaiian or Other…</td>
<td>105</td>
</tr>
<tr>
<td>Other</td>
<td>548</td>
</tr>
<tr>
<td>Other Multi-Racial</td>
<td>110</td>
</tr>
<tr>
<td>Pacific Islander (HUD)</td>
<td>24</td>
</tr>
<tr>
<td>White (HUD)</td>
<td>40,440</td>
</tr>
</tbody>
</table>
Tableau Desktop

Use the ‘Show Me’ button located in the top right of Tableau to view available visualizations for your selected data.

By selecting the bar chart, Tableau will convert our data into a bar chart.

Double click on the Sheet 1 label at the bottom of the sheet view to rename the sheet.
In order to keep our dashboard in sync with our data stored in Google Sheets, we will need to create a data extract.

In the bottom left hand corner of Tableau, click on Data Source. In the data screen, change the connection type from Life to Extract. Click on our Races sheet again and you will be prompted to save your data extract.
Tableau Desktop

To save our visualization to Tableau Public, we click on Server > Tableau Public > Save to Tableau Public. Log in to Tableau Public with your free credentials. If you have not signed up for Tableau Public, do so now.
Once you’ve logged in to Tableau Public, name your dashboard. Next, be sure to check the box to keep your data in sync with Google Sheets. Lastly, click the Save button. If a pop-up window asks you to log in to your Google Sheets account, select your account and click Allow.
If all goes well, your dashboard will now be on Tableau Public.
Click Edit details and select the options you want to use.
I recommend unchecking the option to allow your workbook and all its data to be downloaded by others.
Also, make sure the box is checked for Google Sheets so that your dashboard will sync each night with your data.

<table>
<thead>
<tr>
<th>Toolbar Settings</th>
<th>Show view controls Undo, Redo, Revert</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Show author profile link</td>
</tr>
<tr>
<td></td>
<td>Allow workbook and its data to be downloaded by others</td>
</tr>
<tr>
<td>Google Sheets</td>
<td>Keep my data updated with Google Sheets every day</td>
</tr>
<tr>
<td>Other Settings</td>
<td>Show workbook sheets as tabs</td>
</tr>
</tbody>
</table>
Website Embed

By clicking on the ‘share’ icon you will be presented with two options to embed your dashboard into a web page, an Embed Code and a Link.
For our purposes, we’ll copy the Embed Code.

On a side note, the Link generated is good for using an iFrame in your web page.
There are many different ways to embed your dashboard into a website.

The simplest way is to create a new file, add .html as the extension, and then paste your embed your code from Tableau Public right into the body of the html file.
Website Embed

Once the html file is accessible with a web browser, the embed code will allow you to display your dashboard.

<table>
<thead>
<tr>
<th>Races</th>
<th>0K</th>
<th>2K</th>
<th>4K</th>
<th>6K</th>
<th>8K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Race (EEs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Indian or Alaska</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Native Hawaiian or Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White (HUD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Project Demographics

Enrolled Clients

Year of Data
- 2006: 1,179
- 2007: 1,097
- 2008: 1,179
- 2009: 772
- 2010: 872
- 2011: 827
- 2012: 786
- 2013: 827
- 2014: 1,699
- 2015: 1,856
- 2016: 2,506
- 2017: 3,176
- 2018: 3,875

Ages
- 1-18: 6,884
- 19-24: 6,740
- 25-34: 2,327
- 35-64: 2,458
- 65+: 1,375

Primary Race
- White: 11,449
- Black or African American: 2,163
- Hispanic or Latino: 1,575
- Not Hispanic or Latino: 3,015
- Veteran: 1,297
- Not a Veteran: 16,033
- Disability: 3,631
- No Disability: 12,894
## Project Enrollment

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Clients</td>
<td>2,554</td>
</tr>
<tr>
<td>Disabled</td>
<td>618</td>
</tr>
<tr>
<td>Veterans</td>
<td>229</td>
</tr>
<tr>
<td>Uninsured</td>
<td>1,212</td>
</tr>
<tr>
<td>Age 55+</td>
<td>725</td>
</tr>
<tr>
<td>Domestic Violence Victims</td>
<td>148</td>
</tr>
<tr>
<td>Average Days in Project</td>
<td>438</td>
</tr>
<tr>
<td>Average Monthly Income</td>
<td>$476</td>
</tr>
</tbody>
</table>
# One Charlotte Coordinated Entry - Snapshot

<table>
<thead>
<tr>
<th>Current Clients</th>
<th>Clients Housed</th>
<th>Days to Housing</th>
<th>Housing Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>167</td>
<td>494</td>
<td>116</td>
<td>80%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total One Charlotte Clients</th>
<th>Housing Success</th>
<th>Days to Negative Exit</th>
<th>Agency Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>645</td>
<td>79%</td>
<td>135</td>
<td>79%</td>
</tr>
</tbody>
</table>
One Charlotte Coordinated Entry – Inflow vs. Outflow
One Charlotte Coordinated Entry - Participation

[Chart showing participation rates and numbers by agency]
One Charlotte Coordinated Entry - Exits

Exits by Month

Exits by Type

Clients Housed
494
Success Rate
79%

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One Charlotte Coordinated Entry - Time

Days to Housing: 125
Days to Negative Exit: -135
Days in CE: 129

Average Days to Exit: Destination Type

- Long Term Care: 189.8 days
- Permanent Housing: 72.9 days
- Rental with VASH: 160.4 days
- Rental or Owned by Client: 161.7 days
- Staying with Family or Friend: 48.0 days
- Overdue: 343.4 days
- Emergency shelter, incl. host: 7.8 days
- Hotel or motel paid for with...: 87.0 days
- Institution: 553.9 days
- Place Not Shown for...: 72.2 days
- Staying or living with family: 71.3 days
- Stay or living with friend: 128.8 days
- Transitional Housing: 2.8 days
- Unknown: 0 days
One Charlotte Coordinated Entry - Vulnerability

Vulnerability Index for Individuals

Vulnerability Index for Families

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### GaitherDyn Demo Dashboard

Report Period: 2018-2019

Demonstration dashboard created from a zipped APR file out of HMIS.

#### How many people have we served and what are their experiences?

- **1,118 People Helped**
- **597 Came From Homeless Living Situations**

#### Who are some of the most vulnerable populations that we have served in our community?

- **193 Children**
- **156 Victims of Domestic Violence**
- **273 Veterans**
- **254 Chronically Homelessness**
SysPM Lite

2018 System Performance Measures for Punta Gorda/Charlotte County CoC

- How many people are experiencing homelessness on a daily basis in our community?
  - 164 ▼ -26% Decrease

- How many people did we help find or retain permanent housing?
  - 419 ▼ -6% Decrease

- How many people did we help that were homeless for the first time?
  - 401 ▼ -21% Decrease

- How many people became homeless again less than 2 years after they were housed?
  - 59 (12%)
Q&A
Thank You