

Minneapolis, MN April 6-8, 2020

Community Dashboards

A Journey of Data, Information, and Storytelling



HMIS + Communities: Working Together Across Systems to End Homelessness





Minneapolis, MN April 6-8, 2020

Webinar Instructions

- Webinar will last about 60 minutes
- Participants in 'listen only' mode
- Submit questions in Question and Answer box on right side of screen
- Webinar audio is provided through your computer speakers
- For technical issues, request assistance through the Question and Answer box
- Access to recorded version





2020 Spring Conference

Minneapolis, MN April 6-8, 2020

Agenda **INTRO** A little bit about today's presenter and some info to get us Background Information on Gaither and started **Topics Discussed** CONCEPTS Overview of basic data ideas and how they are used to create community dashboards **STORYTELLING** What can you learn from a data ılı. dashboard and what are some key components? Using Dashboards to Inform and Engage Your Community 2 I like to talk and can guarantee Q&A we will not run out of things to discuss! **Open Floor for Questions and** 3





2020 Spring Conference

Minneapolis, MN April 6-8, 2020

Gaither.Stephens





- @GulfCoastPartnership.org @GaitherDyn.com
- facebook.com/GaitherStephens
- @GaitherStephens
- in linkedin.com/in/gaitherstephens
 - 231.282.9453





2020 Spring Conference

Minneapolis, MN April 6-8, 2020

Fun Facts



A REAL FORMER

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 Famous Relative

Gaither is related to six-time Grammy Award and thirtyfour-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 five kids, three cats, and 2 drum sets. He's lived in Marion, IN, Muncie, IN, Fort Wayne, IN, Florence, KY, Cincinnati, OH, Port Charlotte, FL, and Punta Gorda, FL.

5





Minneapolis, MN April 6-8, 2020



Sponsored by the National Human Services Data Consortiun





Minneapolis, MN April 6-8, 2020

Current Organizations









CTO

FL-602 CoC & HMIS Lead

Responsible for HMIS, IT, local, state, and federal reporting, conducting the yearly PIT Count, data analysis, and dashboards. Communities Active in a Disaster Created coordinated intake system used to assist those affected by COVID-19 in Charlotte County, FL gain assistance. CEO Gaither Dynamic

Creates community dashboards for CoC's giving the ability to upload their own data whenever they want and to embed the dashboards into their own websites.

Founder CoC Alliance

Peer support groups for CoC Leads, Coordinated Entry Staff, and HMIS Administrators with over 400 active members nationwide



Minneapolis, MN April 6-8, 2020

Organizational Storytelling Ingredients







2020 Spring Conference

Minneapolis, MN April 6-8, 2020

Data – Quality

ETL

Extract data from an existing data source (HMIS), transform it so that it is easier for visualization software to use, and then load it into its new home where it can be accessed by a visualization tool to create and power community dashboards.



Data Quality

Working with quality data is essential to providing accurate information to a dashboard and the 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.

Analyze

Look for data inconsistencies. Compare calculations using multiple reports or data quality reports.

Correct

Look holistically at the data and consider that if data is incorrect in one area it may be incorrect in others.

Monitor

Educate users, create reports to keep an eye on known problem areas, and expect the unexpected! 9



Data – Aggregate Definition

- Aggregate data is data that has already been calculated/tabulated/processed
 - Examples would be total numbers that appear on a finalized report
 - 325 total clients in the month of March
 - 234 households
 - 74 veterans
 - 134 average days homeless



Minneapolis, MN April 6-8, 2020

Data – Aggregate Examples

- Examples
 - HUD's Annual Performance Report (APR CSV)
 - CAPER CSV
 - System Performance Measures and Data Quality Reports
 - Final HIC/PIT Reports
 - Dashboards
 - Most local, state, and federal reports



Data – Aggregate SysPM Example

FY2019 - Performance Measurement Module (Sys PM)

Measure 5: Number of persons who become homeless for the 1st time

Metric 5.1 - Change in the number of persons entering ES, SH, and TH projects with no prior enrollments in HMIS

	Submitted FY 2018	FY 2019	Difference
Universe: Person with entries into ES, SH or TH during the reporting period.	417	359	-58
Of persons above, count those who were in ES, SH, TH or any PH within 24 months prior to their entry during the reporting year.	60	66	6
Of persons above, count those who did not have entries in ES, SH, TH or PH in the previous 24 months. (i.e. Number of persons experiencing homelessness for the first time)	357	293	-64



Data – Aggregate PIT Example

2019 Point-in-Time Count FL-602 Punta Gorda/Charlotte County CoC

Population: Sheltered and Unsheltered Count

Persons in Households with at least one Adult and one Child

	Sheltered	
	Emergency	Transitional
Total Number of Households	7	0
Total Number of persons (Adults & Children)	25	0
Number of Persons (under age 18)	15	0
Number of Persons (18 - 24)	2	0
Number of Persons (over age 24)	8	0

Total

7

25

15

2

8



Minneapolis, MN April 6-8, 2020

Data – Aggregate Report Example

Total number of persons served	46
Number of adults (age 18 or over)	37
Number of children (under age 18)	8
Number of persons with unknown age	1
Number of leavers	8
Number of adult leavers	7
Number of adult and head of household leavers	7
Number of stayers	38
Number of adult stayers	30
Number of veterans	6
Number of chronically homeless persons	6
Number of youth under age 25	7



2020 Spring Conference

Minneapolis, MN April 6-8, 2020

Data – Aggregate APR CSV Example (zip file)

Name	^	
	Q4a.csv	
	Q5a.csv	
	Q6a.csv	
	Q6b.csv	
1	Q6c.csv	
X	Q6d.csv	
	Q6e.csv	
	Q6f.csv	
	Q7a.csv	



Data – Aggregate APR CSV Example (Q5a.csv)

"Total Number of Persons Served"	424
"Number of Adults (age 18 or over)"	374
"Number of Children (under age 18)"	49
"Number of Persons with Unknown Age"	1
"Number of Leavers"	0
"Number of Adult Leavers"	0
"Number of Adult and Head of Household Leavers"	0
"Number of Stayers"	424
"Number of Adult Stayers"	374
"Number of Veterans"	44
"Number of Chronically Homeless Persons"	131
"Number of Youth Under Age 25"	18
"Number of Parenting Youth Under Age 25 with Children"	2
"Number of Adult Heads of Household"	300
"Number of Child and Unknown-Age Heads of Household"	0
"Heads of Households and Adult Stayers in the Project 365 Days or More"	119



Data – Aggregate Data Custom Script

```
// unzip report with csv files and delete report file
unZipItAPR(folderId,reportName);
```

```
var vFolder = DriveApp.getFolderById(folderId); // gets folder ID
var vFiles = vFolder.getFiles(); // populates with a list of files in the folder
```

```
// gets the names of the files in the folder
while (vFiles.hasNext()) {
   var file = vFiles.next();
   var csvName = file.getName();
   if (csvName != 'Q4a.csv'
   && csvName != 'Q6e.csv'
   && csvName != 'Q6f.csv'
   && csvName != 'Q7b.csv'
   && csvName != 'Q8b.csv'
   && csvName != 'Q9a.csv'
   && csvName != 'Q9b.csv') {
}
```

```
// imports csv files into spreadsheet
importFile(file.getName(),folderId,spreadsheet);
```



Data – Aggregate Master Data Sheet/Table

Q05a - Report Validation Table	Q05a - Data	Personally Identifiable Information	Q06a - Client Doesn't Know/Client Refused	Q06a - Information Missing	Q06a - Data Issues
"Total Number of Persons Served"	1464	"Name (3.1)"	13	4	1
"Number of Adults (age 18 or over)"	1127	"Social Security Number (3.2)"	28	71	9
"Number of Children (under age 18)"	326	"Date of Birth (3.3)"	1	27	1
"Number of Persons with Unknown Age"	11	"Race (3.4)"	20	33	o
"Number of Leavers"	550	"Ethinicity (3.5)"	12	52	0
+ ≣ DATA -	Q4a - Q5a -	Q6a - Q6b -	Q6c - Q6d - 0	Q6e - Q6f - Q	7a - Q7b - 🔸



Minneapolis, MN April 6-8, 2020

Data – Aggregate Dashboard Example





Data – Aggregate Pros vs. Cons

- Pros
 - Calculations done for you
 - Easy to simply grab numbers and redisplay them
 - Many reports have extensive aggregate data displayed
 - Can usually be run a multitude of ways i.e. by date, providers, groups

Cons

•

- Inability to modify or check background calculations
- Inability to create custom calculations
- Lacks the ability to drill down into data
- Makes finding correlations and performing analysis more difficult
- Static dashboards



Data – Disaggregate Definition

- Disaggregate data is usually in row level format, sometimes in separate tables
 - Each row has a unique identifier
 - Imagine a table with individual transactions or for HMIS it could be entries or services
 - One client could have multiple entries
 - Granular, containing detailed information



Minneapolis, MN April 6-8, 2020

Data – Disaggregate Examples

- Examples
 - HUD CSV
 - LSA Export
 - PIT Survey Data
 - Flat table with all data in individual rows
 - Raw data before it has been aggregated



Data – Disaggregate Flat File vs. Tables

A flat file contains all of the data in rows in one table whereas relational data requires that joins are done (imagine Venn diagrams) on two or more tables creating relationships between the tables.

Multiple tables are used in relational databases for efficiency purposes. However, most visualization software translates the relationships into a flat file format before performing calculations.



Minneapolis, MN April 6-8, 2020

Data – Disaggregate Flat File Example

Provider	Client ID	Destination	Entry Date	Exit Date
GCP - Charlotte Behavioral Health Care - CEAP(1583)	1		4/14/2019	
GCP - Charlotte County Human Services - CEAP(1715)	1917	Staying or living wit	2/24/2020	2/24/2020
GCP - Charlotte County Human Services - CEAP(1715)	13937	Place not meant for	3/3/2020	3/3/2020
GCP - Charlotte County Human Services - CEAP(1715)	15341	Place not meant fo	12/18/2019	12/18/2019
GCP - Charlotte County Human Services - CEAP(1715)	19692	Place not meant for	9/11/2019	9/11/2019
GCP - Charlotte County Human Services - CEAP(1715)	19703	Other (HUD)	6/7/2019	6/7/2019
GCP - Charlotte County Human Services - CEAP(1715)	19874	Other (HUD)	6/7/2019	6/7/2019
GCP - Charlotte County Human Services - CEAP(1715)	20532	Psychiatric hospital	9/16/2019	9/16/2019
GCP - Charlotte County Human Services - CEAP(1715)	22676	Staying or living wit	2/28/2020	2/28/2020
GCP - Charlotte County Human Services - CEAP(1715)	27477	Hotel or motel paid	6/27/2019	6/27/2019
GCP - Charlotte County Human Services - CEAP(1715)	27481	Hotel or motel paid	6/27/2019	6/27/2019
GCP - Charlotte County Human Services - CEAP(1715)	27482	Hotel or motel paid	6/27/2019	6/27/2019



Minneapolis, MN April 6-8, 2020

Data – Disaggregate HUD CSV Example

Name	^	
Affiliation.csv		
Assessment.csv		
AssessmentQuestions.csv		
AssessmentResults.csv		
Client.csv		
CurrentLivingSituation.csv		
💁 Disabilities.csv		
EmploymentEducation.csv		



Data – Disaggregate Row Level Data Example

ExitID	EnrollmentID	PersonalID	ExitDate	Destination
83A086CA-BAD8-4EF1-A7FD-025859FB	83A086CA-BAD8-4EF1-A7FD-025859FB	768	3/4/20	10
46B38AA9-D22C-4A67-A192-0EBC5500	46B38AA9-D22C-4A67-A192-0EBC5500	863	12/31/19	10
8728071F-240D-41A8-A6E0-2C751286	8728071F-240D-41A8-A6E0-2C751286	864	12/31/19	10
F71F47E3-38CA-4CC1-82BC-09A1F5D2	F71F47E3-38CA-4CC1-82BC-09A1F5D2	865	12/31/19	10
0A322646-5E6D-4C6E-917F-E53803F2	0A322646-5E6D-4C6E-917F-E53803F2	1075	12/15/19	23
1B6AE292-070F-4E86-B526-6468212E	1B6AE292-070F-4E86-B526-6468212E	1435	12/31/19	10
13B0B652-FD4C-4A6F-BEF4-517395E7	13B0B652-FD4C-4A6F-BEF4-517395E7	1511	10/9/19	10
DBED9FBC-4E93-4CA4-8A18-6F9114B9	DBED9FBC-4E93-4CA4-8A18-6F9114B9	1576	2/3/20	22
176A5148-1E12-4DC4-88A2-2600E5CF	176A5148-1E12-4DC4-88A2-2600E5CF	1577	2/3/20	22
EDE2F82B-B431-47D3-9FC8-35D801AF	EDE2F82B-B431-47D3-9FC8-35D801AF	1917	3/1/20	22



Data – Disaggregate Row Level Data Example

PersonalID	NameDataQuality	SSNDataQuality	DOBDataQuality	AmIndAKNative	Asian	BlackAfAmerican	NativeHIOtherPacific	White	RaceNone	Ethnicity	Gender	VeteranStatus
763	1	1	1	1	. 0	0	0	1		1	1	99
765	1	1	1	1	. 0	0	0	1		1	1	99
766	1	1	1	1	. 0	0	0	1		0	0	0
768	1	1	1	O	0	0	0	· 1		0	0	0
779	1	1	1	0	0	0	0	1		0	1	99
780	1	1	1	0	0	0	0	1		0	0	0
798	1	9	1	0	0 0	0	0	1	8	0	1	0
840	1	1	1	0	0	0	0	1		0	0	0
841	1	1	1	0	0	0	0	1		0	0	0
863	1	1	1	0	0	0	0	1		0	0	0
864	1	1	1	0	0 0	0	0	1		0	1	99
865	1	1	1	0	0	0	0	1		0	0	99
997	1	1	1	C	0	0	0	1		0	0	99



Minneapolis, MN April 6-8, 2020

Data – Disaggregate Table Join Example

Enrollment	Client		J	oin	
	Exit	Inner	Left	Right	Full Outer
		Data Sour	ce		Client
	HealthAndDV	Personal ID	=	Persor	nalID (Cli
		Add new join o	lau		
	Master Dates				
	Project				



Minneapolis, MN April 6-8, 2020

Data – Disaggregate Dashboard Example





Data – Disaggregate Pros vs. Cons

- Pros
 - Custom calculations
 - Ability to do data dives
 - Greater analysis possibilities
 - Interactive dashboards
 - Improves ability to inspect data quality
 - Ability to create custom joins
 - Dynamic dashboards

- Cons
 - Requires a deeper understanding of table relationships
 - Calculations can be complex and difficult to implement
 - May require extra steps to ensure client privacy
 - May require more data 'checks' to ensure reliability



Data – Aggregate vs. Disaggregate Files

APR - Each csv contains aggregated data

Name		^
	Q4a.csv	
	Q5a.csv	
	Q6a.csv	
	Q6b.csv	
	Q6c.csv	
	Q6d.csv	
	Q6e.csv	
	Q6f.csv	
	Q7a.csv	

HUD CSV - Tables joined to form relationships

Name	~
	Affiliation.csv
	Assessment.csv
	AssessmentQuestions.csv
	AssessmentResults.csv
	Client.csv
	CurrentLivingSituation.csv
	Disabilities.csv
	EmploymentEducation.csv



Data – Literally Homeless Logic Specification

Skip these steps for Measure 1a. Additional nights homeless included in Measure 1b should only be included for "literally homeless" clients at project start, as defined below. Instructions specific to Measure 1b will refer to this definition without repeating these instructions. Literally homeless requires the following to be true:

https://files.hudexchange.info/resources/documents/System-Performance-Measures-HMIS-Programming-Specifications.pdf



Data – Literally Homeless Logic in Practice

@Literally Homeless Logic

IF [Project Type] = 1 OR [Project Type] = 4 OR [Project Type] = 8 OR ([Project Type] = 2 OR [Project Type] = 3 OR [Project Type] = 9 OR [Project Type] = 10 OR [Project Type] = 13 AND ([Living Situation] = 16 OR [Living Situation] = 1 OR [Living Situation] = 18 OR ([Living Situation] = 15 OR [Living Situation] = 6 OR [Living Situation] = 7 OR [Living Situation] = 25 OR [Living Situation] AND [Length Of Stay] = 2 OR [Length Of Stay] = 3 OR [Length Of Stay] = 10 OR [Length Of Stay] = 11 AND [Previous Street ESSH] = 1) OR ([Living Situation] = 29 OR [Living Situation] = 14 OR [Living Situation] = 2 OR [Living Situation] = 32 OR [Living Situat: AND [Length Of Stay] = 10 OR [Length Of Stay] = 11 AND [Previous Street ESSH] = 1)) THEN 1 ELSE Ø END

Х



Minneapolis, MN April 6-8, 2020

Information and the 4 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 lowbarrier 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.



Information – Descriptive Definition (What?)

Descriptive information simply summarizes data into simple and easy to understand formats. It is the basic transformation of data into more useful aggregate states. Descriptive data is the building blocks for telling simple stories about the data. Many times this is simply summing up individual records, people, sales, etc. While descriptive data is useful, it is really only the beginning of understanding the stories your data has the potential to tell.



Information – Diagnostic Definition (Why?)

Diagnostic information takes the data a step further and begins to tell more in-depth stories. This can be done by comparing descriptive data to itself over the course of time such as year-to-year sales, or a decrease in clients from one month to the next and realizing what caused the changes. An example of diagnostic information would be an increase in unsheltered homeless during the Point-In-Time (PIT) Count due to a downturn in the economy.



Information – Descriptive vs. Diagnostic

- Descriptive Examples
 - Total number clients
 - Number of veterans
 - First time homeless
 - Increase in PIT Count
 - Increase in Length of Time Homeless
 - Racial disparity

- Diagnostic Examples
 - Increase in PIT Count due to more volunteers and better coverage
 - Racial disparity caused by unfair policies and procedures
 - Increase in rent services due to recent pandemic



Information – Descriptive vs. Diagnostic Uses

Descriptive information is generally what is shown on dashboards, reports such as System Performance Measures, PIT/HIC, LSA, and most local, state, and federal reports.

Diagnostic information is generally used in narratives that describe why there are changes in the descriptive data from year-to-year. This is useful for providing explanations in the NOFA, context for dashboards, and informing local, state, and federal stakeholders.



Information – Descriptive vs. Diagnostic Uses

Descriptive information is generally what is shown on dashboards, reports such as System Performance Measures, PIT/HIC, LSA, and most local, state, and federal reports.

Diagnostic information is generally used in narratives that describe why there are changes in the descriptive data from year-to-year. This is useful for providing explanations in the NOFA, context for dashboards, and informing local, state, and federal stakeholders.





Minneapolis, MN April 6-8, 2020





2020 Spring Conference

Minneapolis, MN April 6-8, 2020





Presentation – Data Integrity and Access

While dashboards were initially created using custom reports from proprietary HMIS software, this approach made portability difficult and created risk due to aging vendor reporting system.

In order to increase portability, universal application, and software independence, more recent dashboards are created using HUD standardized data such as the HUD APR and the HUD CSV.



Minneapolis, MN April 6-8, 2020

Dashboard Examples – Coordinated Entry



43



2020 Spring Conference

Minneapolis, MN April 6-8, 2020

Dashboard Examples – Coordinated Entry





764



Dashboard Examples – Coordinated Entry





Dashboard Examples – Community Snapshot

1.53k Left for Housing	1 327 First Time Homeless			92.4 Days in Projects		128 Returned to Homelessness				
Project Type (All)	Project Name (All)			Start Date 4/2/2019		End Date 3/31/2020				
Hover or touch here for dashboard instructions or to reset the dashboard filters										
€ 2.96k People 1.5k Current ► 0% since February		1.72k H 877 C ► 0% sin		ent ebruary		€ 1.5k Homeless 560 Current ¥ 2% since February				



Dashboard Examples – Community Snapshot





HMIS + C Working to End Ho

HMIS + Communities: Working Together Across Systems to End Homelessness 2020 Spring Conference

Minneapolis, MN April 6-8, 2020

Dashboard Examples – Community Snapshot





Dashboard Examples – SysPM





Dashboard Examples – SysPM

