

OUTCOMES FOR ALL

Creating Interactive CANS Reports
with Tools You Already Have

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The Problem: Deriving Meaning from Data

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	FY	Docu ment ID	ReportDate	Assessment Type	Assessment TypeID	Client ID	Name	ProgramName	ProgramID	Presentation_NULL_ Psychosis_001	Presentation_NULL_ Impulse/Hyper_002	Presentation_NULL_ Depression_003	Presentation_NULL_ Anxiety_004	Presentation_NULL_ Oppositional_005	Presentation_NULL_ Conduct_006	Presentation_NULL_ Substance Use_007	Presentation_NULL_ Eating Disturbances_008	Presentation_NULL_ Behavioral Regression_009
20	2013			Initial	1					1	2	2	1	1	0	0	0	0
21	2013			Initial	1					0	0	2	0	0	0	0	0	0
22	2013			Initial	1					0	1	0	1	2	1	0	1	0
23	2013			Initial	1					0	1	2	0	0	0	0	0	0
24	2013			Initial	1					0	1	1	1	1	0	1	0	0
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26	2014			Initial	1					0	1	1	0	0	1	2	0	0
27	2013			Initial	1					2	0	2	0	0	0	0	0	0
28	2013			Initial	1					0	1	0	2	2	1	2	0	0
29								# of "2" Item Scores		1	4	12	7	4	0	3	0	0
30								# of "3" Item Scores		0	0	0	0	0	0	0	0	0
31								# of Actionable Item Scores/Clients		1	4	12	7	4	0	3	0	0
32								% of Clients Actionable (Initial)		3.7%	14.8%	44.4%	25.9%	14.8%	0.0%	11.1%	0.0%	0.0%
33								% of Clients Actionable (Most Recent)		7.4%	18.5%	22.2%	25.9%	18.5%	3.7%	18.5%	0.0%	0.0%
34								% Point Difference in % of Clients Actionable (Initial-Most Recent)		-3.7%	-3.7%	22.2%	0.0%	-3.7%	-3.7%	-7.4%	0.0%	0.0%
35																		
36	2014			Semiannua	5					0	2	1	1	1	1	1	0	0
37	2013			Semiannua	5					0	1	0	0	1	1	1	0	0
38	2013			Semiannua	5					0	0	1	1	1	1	2	0	0
39	2013			Semiannua	5					0	1	2	0	2	0	1	0	0
40	2013			Semiannua	5					0	1	0	0	1	1	1	0	0
41	2013			Semiannua	5					1	0	2	1	0	0	0	0	0
42	2013			Semiannua	5					0	1	1	2	0	0	1	0	0
43	2013			Semiannua	5					0	0	2	1	1	0	0	0	0
44	2014			Semiannua	5					0	0	1	2	0	0	0	0	0
45	2013			Update	2					0	0	1	1	1	0	0	0	0
46	2014			Semiannua	5					0	2	1	2	2	0	0	0	0
47	2013			Semiannua	5					0	0	1	1	1	0	0	0	0
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52	2014			Semiannua	5					0	0	1	1	1	0	1	0	0
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54	2014			Update	2					2	2	3	1	2	0	0	1	0
55	2014			Semiannua	5					0	0	1	1	0	0	0	0	0
56	2014			Semiannua	5					0	1	1	1	1	0	0	0	0
57	2013			Update	2					0	1	0	0	0	0	0	1	0
58	2013			Semiannua	5					0	2	1	1	1	0	2	0	0
59	2013			Semiannua	5					0	0	1	2	0	0	0	0	0
60	2014			Semiannua	5					0	0	1	0	2	2	2	0	0
61	2013			Semiannua	5					2	0	2	1	0	0	0	0	0
62	2013			Semiannua	5					0	2	0	2	2	1	2	0	0
63								# of "2" Item Scores		2	5	5	7	5	1	5	0	0
64								# of "3" Item Scores		0	0	1	0	0	0	0	0	0
65								# of Actionable Item Scores/Clients		2	5	6	7	5	1	5	0	0
66								% of Clients Actionable (Most Recent)		7.4%	18.5%	22.2%	25.9%	18.5%	3.7%	18.5%	0.0%	0.0%

Barriers to Effectively Using Data

Tools

Skills

Time

Business Intelligence (BI) Tools

“Traditional” BI



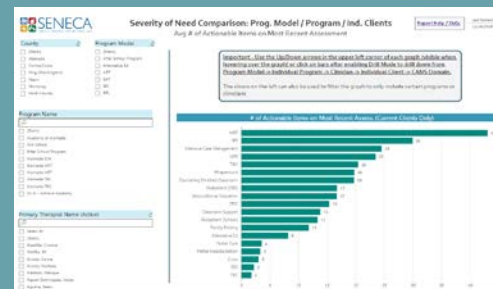
ORACLE
BUSINESS INTELLIGENCE

“Self-Service” BI



Qlik 

LIVE DEMO: SENECA'S CANS REPORTS



How Did We Get Here?

- Step-by-Step Development Process
 - I. *Identify Your Desired Final Product*
 - II. *Design Your Model*
 - III. *Get the Data*
 - IV. *Shape the Data to Fit Your Model*
 - V. *Build Your Calculations*
 - VI. *Visualize and Share Your Data*
- Further reading: “BI Lifecycle Methodologies”

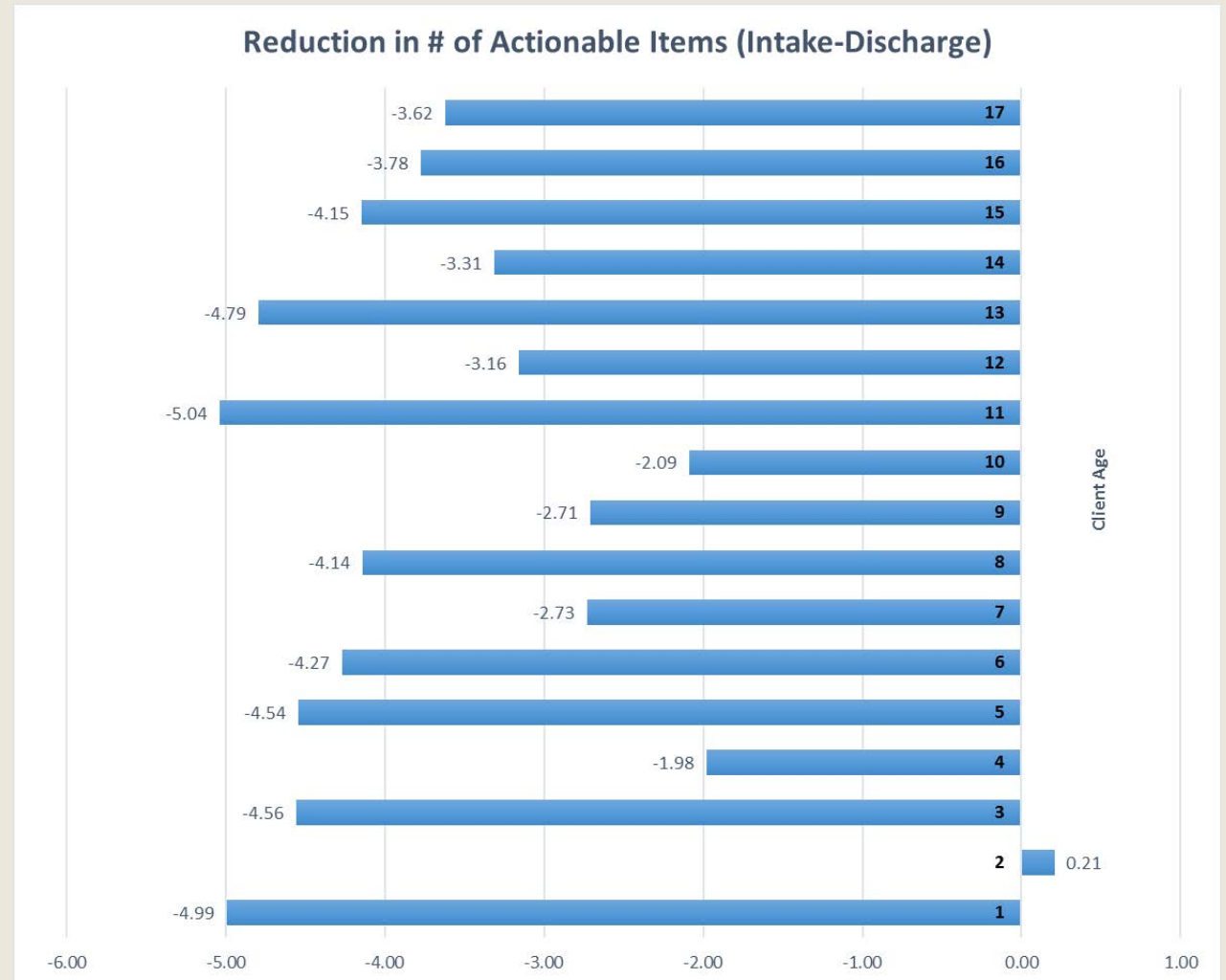


STEP-BY-STEP DEVELOPMENT PROCESS

I. Identify Your Desired Final Product

- What questions do you want to answer?
- Can you answer these questions with your data?
- What specific calculations do you need to produce?

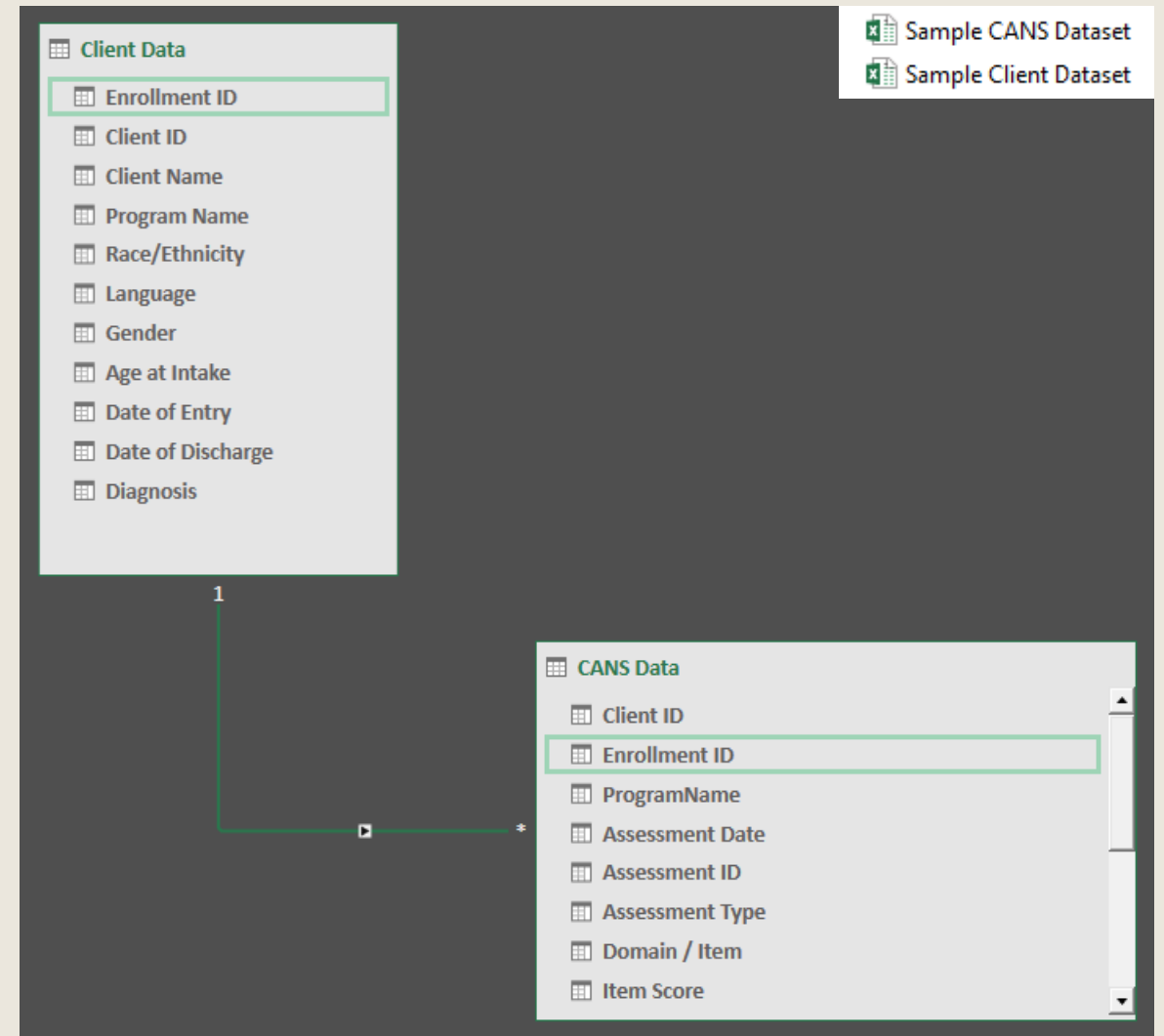
Today's Question: What is the average change in the # of actionable needs from intake to discharge?



II. Design Your Model

- A “mini data warehouse” in your Excel file (Power Pivot) or Power BI
- Consider all the ways you need to slice/analyze the data, anticipating future requests as well
- Final design should be relatively simple
- Further reading: “Dimensional Data Modeling”

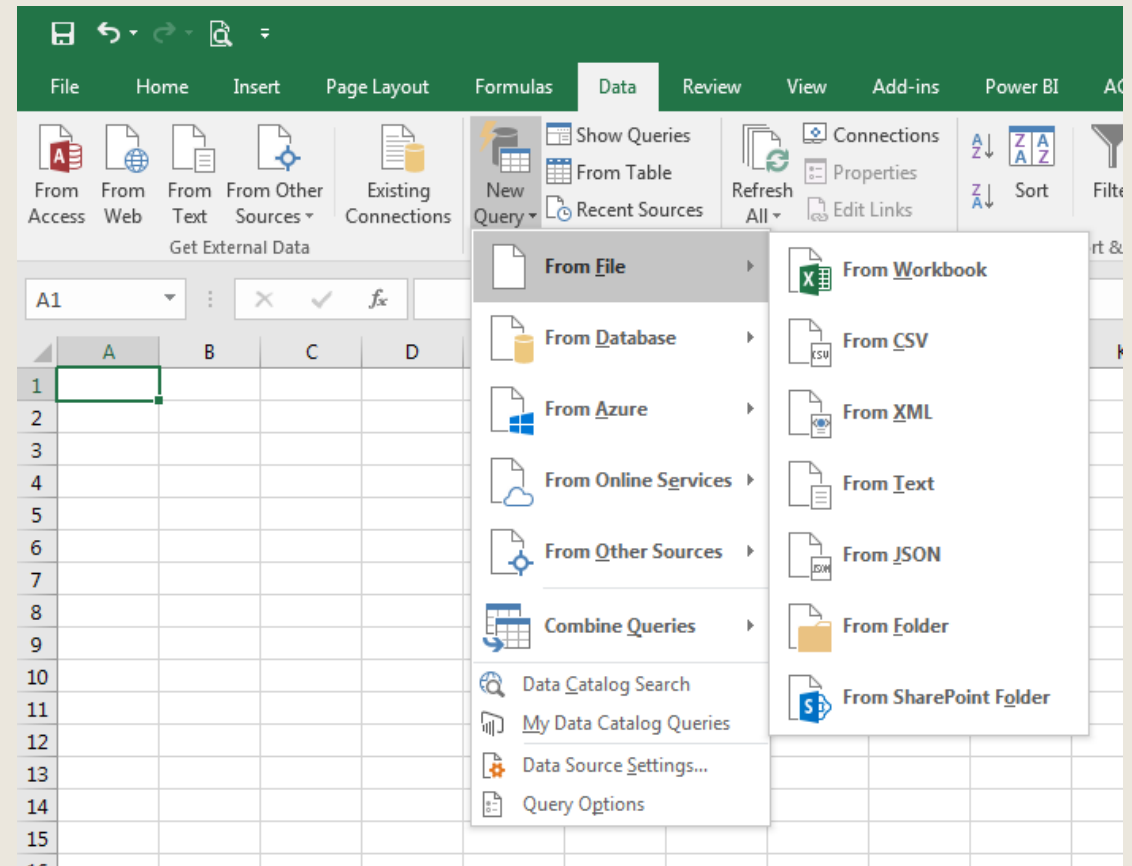
Today’s Model: Enable analysis by all client-level attributes. (Source: two standard EHR export files)



III. Get the Data

- Linking your model to a data source
- “Get & Transform” in Excel 2016
- “Power Query” in Excel 2010 & 2013
 - *Add-in requires manual install*
- “Get Data” in Power BI
- Can be a simple Excel or .csv file, a database, web pages, and many more

Excel 2016: “Get & Transform” under the Data tab



IV. Transform the Data

- Fine-tuning and shaping your data to fit the model you designed
- One of the most powerful and overlooked aspects of modern Excel and Power BI – automate your data cleaning!
- Truly a game-changer for your analysis
- Relatively easy to do (and you only need to do it once)

Turning this...

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Docu	Assessment	Assessment	Client						Presentation_RUILL	Presentation_RUILL	Presentation_RUILL	Presentation_RUILL	Presentation_RUILL	Presentation_RUILL	Presentation_RUILL	Presentation_RUILL	Presentation_RUILL
1	FF	ID	ReportDate	Type	TypeID	ID	Name	ProgramName	ProgramID	Psychosis_001	Impulse/Type_002	Depression_003	Anxiety_004	Oppositional_005	Conduct_006	Substance Use_007	Eating Disturbances_008	Behavioral Regression_009
20	2013			Initial	1					1	2	2	1	1	0	0	0	1
21	2013			Initial	1													
22	2013			Initial	1													
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26	2014			Initial	1													
27	2013			Initial	1													
28	2013			Initial	1													
29																		
30																		
31																		
32																		
33																		
34																		
35																		
36	2014			Semiannual	5													
37	2013			Semiannual	5													
38	2013			Semiannual	5													
39	2013			Semiannual	5													
40	2013			Semiannual	5													
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56	2014			Semiannual	5													
57	2013			Update	2													
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59	2013			Semiannual	5													
60	2014			Semiannual	5													
61	2013			Semiannual	5													
62	2013			Semiannual	5													
63										2	5	5	7	5	1	5	0	0
64										0	0	1	0	0	0	0	0	0
65										2	5	6	7	5	1	5	0	0
66										7.4%	18.5%	22.2%	25.9%	18.5%	3.7%	18.5%	0.0%	0.0%



Into THIS:

Client ID	Enrollment ID	ProgramName	Assessment Date	Assessment ID	Assessment Type	Domain / Item	Item Score
1	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Presentation/Psychosis	
2	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Presentation/Depression	
3	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Presentation/Substance Use	
4	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Presentation/Eating Disturbances	
5	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Impact on Functioning/Recreational	
6	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Impact on Functioning/Legal	
7	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Impact on Functioning/Physical	
8	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Impact on Functioning/Sexual	
9	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Impact on Functioning/School Behavior	
10	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Impact on Functioning/School Achievement	
11	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Impact on Functioning/School Attendance	
12	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Risk Behaviors/Suicide Risk	
13	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Risk Behaviors/Self Mutilation	
14	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Risk Behaviors/Other Self-Harm	
15	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Risk Behaviors/Danger to Others	
16	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Risk Behaviors/Sexual Aggression	
17	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Risk Behaviors/Runaway	
18	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Risk Behaviors/Delinquency	
19	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Risk Behaviors/Fire Setting	
20	80980	44532 Community Program 23	2/10/2015	1533932	Initial	Risk Behaviors/Sexually Reactive Behavior	
21	80980	44532 Community Program 23	2/10/2015	1533932	Initial	(Ext. Module) Suicide Risk/History of Attempts	
22	80980	44532 Community Program 23	2/10/2015	1533932	Initial	(Ext. Module) Suicide Risk/Substance Abuse	
23	80980	44532 Community Program 23	2/10/2015	1533932	Initial	(Ext. Module) Suicide Risk/Depression	
24	80980	44532 Community Program 23	2/10/2015	1533932	Initial	(Ext. Module) Suicide Risk/Conduct	

V. Build Your Calculations

- DAX, “Data Analysis Expressions,” in Excel (Power Pivot) and Power BI
- Natural and intuitive next step for Excel formula users
- Easy to start with and very powerful

Some of Today’s Sample DAX Formulas (“Measures”)

```
# of Item Scores = COUNT('CANS Data'[Item Score])
```

```
# of Actionable Item Scores = CALCULATE([# of Item Scores], 'CANS Data'[Item Score]>=2)
```

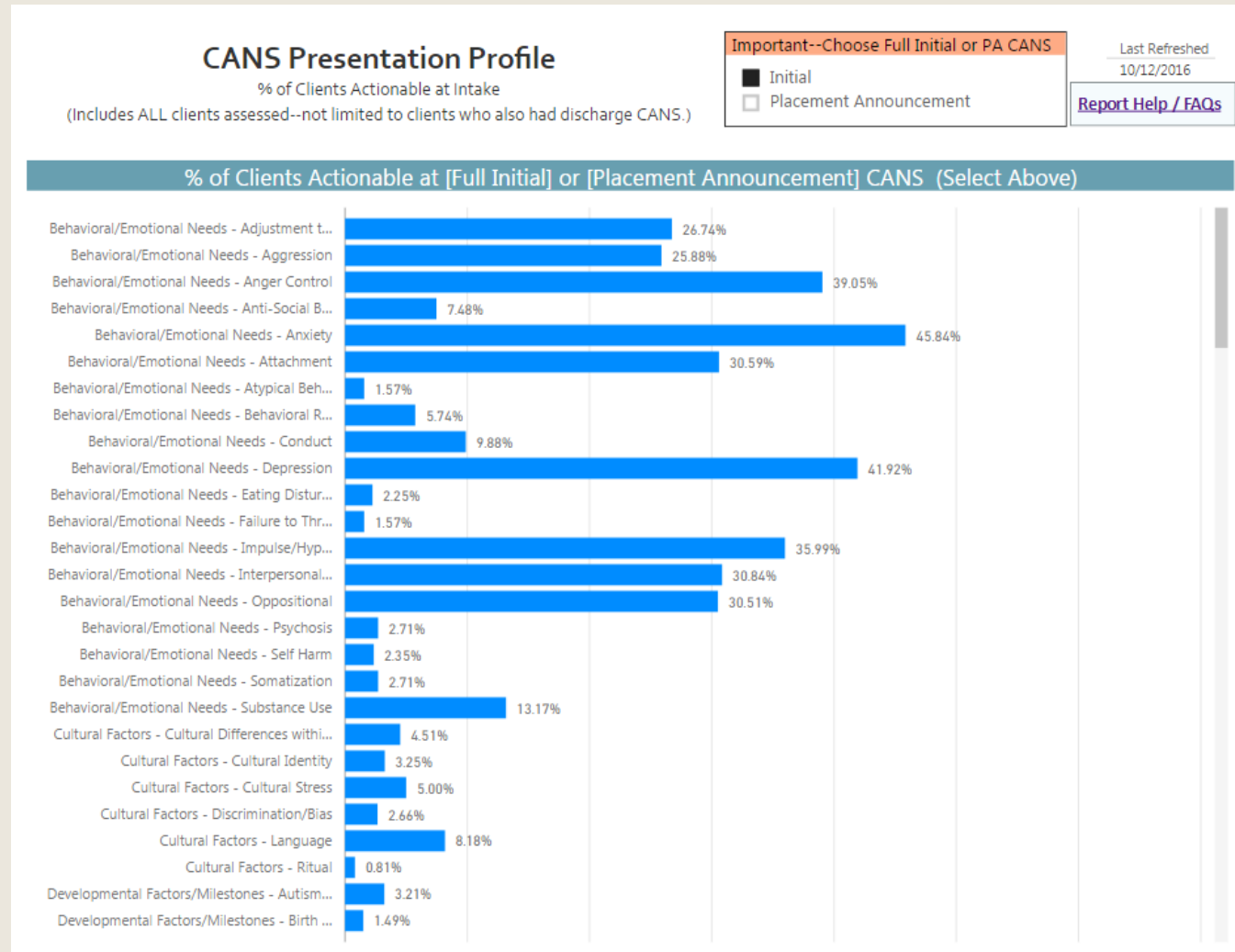
```
% Actionable Item Scores = DIVIDE([# of Actionable Item Scores], [# of Item Scores])
```

```
# of Actionable Item Scores Per Assessment (Initial) = CALCULATE([# of Actionable Item Scores Per Assessment], 'CANS Data'[Assessment Type]="Initial")
```

VI. Visualize and Share Your Reports!

- Familiar interface using Excel (pivot tables, pivot charts), and Power BI visuals are intuitive.
- Slicers make user control and customization intuitive and easy

A sample Power BI graph:



Takeaways

- You (or someone in your organization) can do it!
- Mining talent within your organization – Excel power users
- The democratization of business intelligence
- Further reading:
 - *BI Lifecycle Methodologies*
 - *Dimensional Data Modeling*
 - *DAX Formulas*

THANK YOU

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