Data Repository Network

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Data Repository Experts Since 1998

** Note the original version of this session has live videos which could not be included with this version. For more information, please contact Acmeware after the 2018 MUSE Conference. **

Custom Dashboards with BCA Visual Insight

2018 MUSE International

Tuesday Training #702

Tuesday May 29, 9:30-12:00

Presenter: Ian Proffer

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Today's Agenda

- ✓ Introduction – what are BCA and Visual Insight?
  - ✓ Reporting options in MEDITECH
- ✓ BCA technical architecture and data model
- ✓ Visual Insight walkthrough – build a new dashboard
- ✓ Using external data
- ✓ Summary & discussion

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Introductions

- A little about me
- Tell me about your MEDITECH system:
  - MAGIC, C/S, 6.something?
- Tell me about your role:
  - Report developer, analyst, management?
  - Experience with Data Repository or other MT reporting tools?

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What is BCA?

- "Business and Clinical Analytics" – MEDITECH's web-based business intelligence tool
- MEDITECH's goals for BCA are to:
  - drive operational efficiency
  - maximize financial performance
  - improve patient outcomes
- BCA has 2 ways to deliver reports:
  - Standard content dashboards, pre-built and automatically updated
  - Visual Insight (by Microstrategy) to build your own ad-hoc, custom dashboards

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Standard report examples

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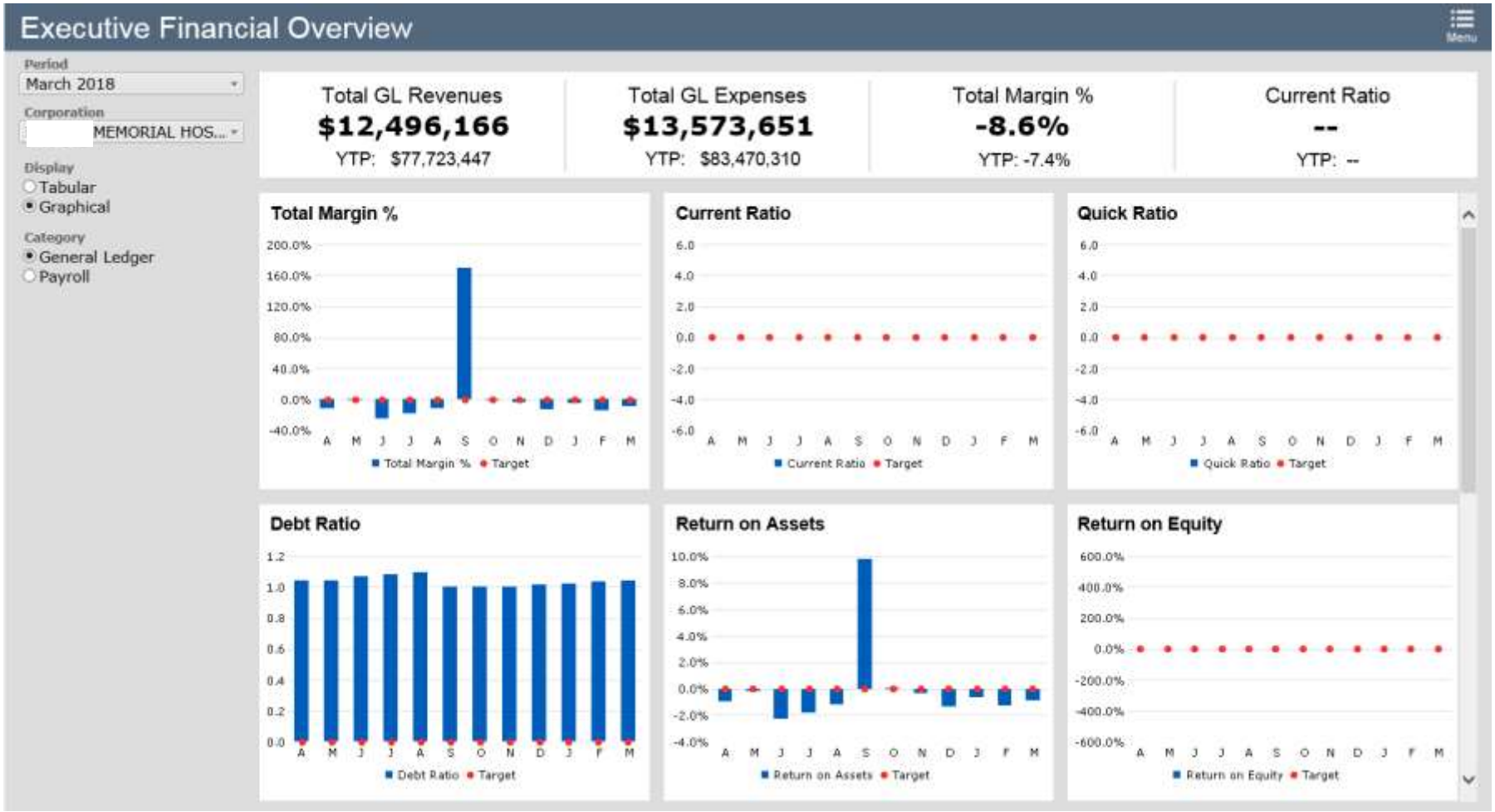
Financial Overview



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Operational Overview - Census

Executive Operational Overview

Menu

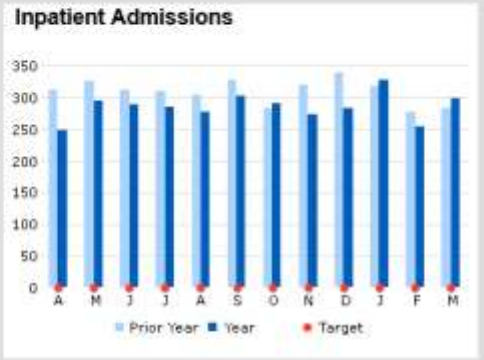
Period: March 2018

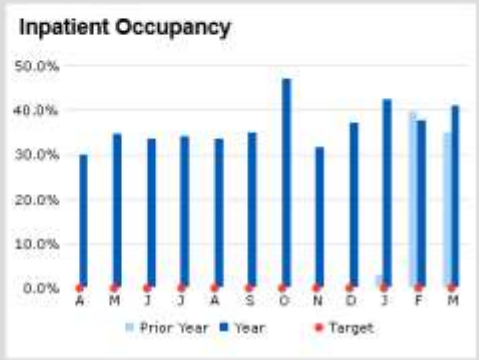
Facility: Memorial Hospital

Display: Tabular / Graphical

Category: Census / ED / Surgery

Average Occupancy	Average Census		Inpatient Admissions	Readmissions	OBS Admissions	Outpatient Visits
40.9%	40.5 IN	4.0 OBS	299	26	73	9,566





Inpatient Top 10 DRG Volume

Final DRG	Current Rank	Prior Rank
NORMAL NEWBORN	1	6
VAGINAL DELIVERY W/O COMPLICATING DIA	2	2
MAJOR HIP AND KNEE JOINT REPLACEMENT	3	4
CHRONIC OBSTRUCTIVE PULMONARY DISEA	4	8
CESAREAN SECTION W/O CC/MCC	4	13
PULMONARY EDEMA & RESPIRATORY FAILUR	6	2
HEART FAILURE & SHOCK W MCC	6	15
HIP & FEMUR PROCEDURES EXCEPT MAJOR J	6	122
KIDNEY & URINARY TRACT INFECTIONS W/O	6	10

Inpatient Top 10 DRG Net Revenue

Final DRG	Current Rank	Prior Rank
MAJOR HIP AND KNEE JOINT REPLACEMENT C	1	3
HIP & FEMUR PROCEDURES EXCEPT MAJOR JC	2	122
RESPIRATORY SYSTEM DIAGNOSIS W VENTIL	3	2
OTHER RESP SYSTEM O.R. PROCEDURES W M	4	27
MAJOR SMALL & LARGE BOWEL PROCEDURES	5	122
OTHER VASCULAR PROCEDURES W CC	6	21
HEART FAILURE & SHOCK W MCC	7	16
VAGINAL DELIVERY W/O COMPLICATING DIAC	8	9
RESPIRATORY INFECTIONS & INFLAMMATION	9	56

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Operational Metrics - ED

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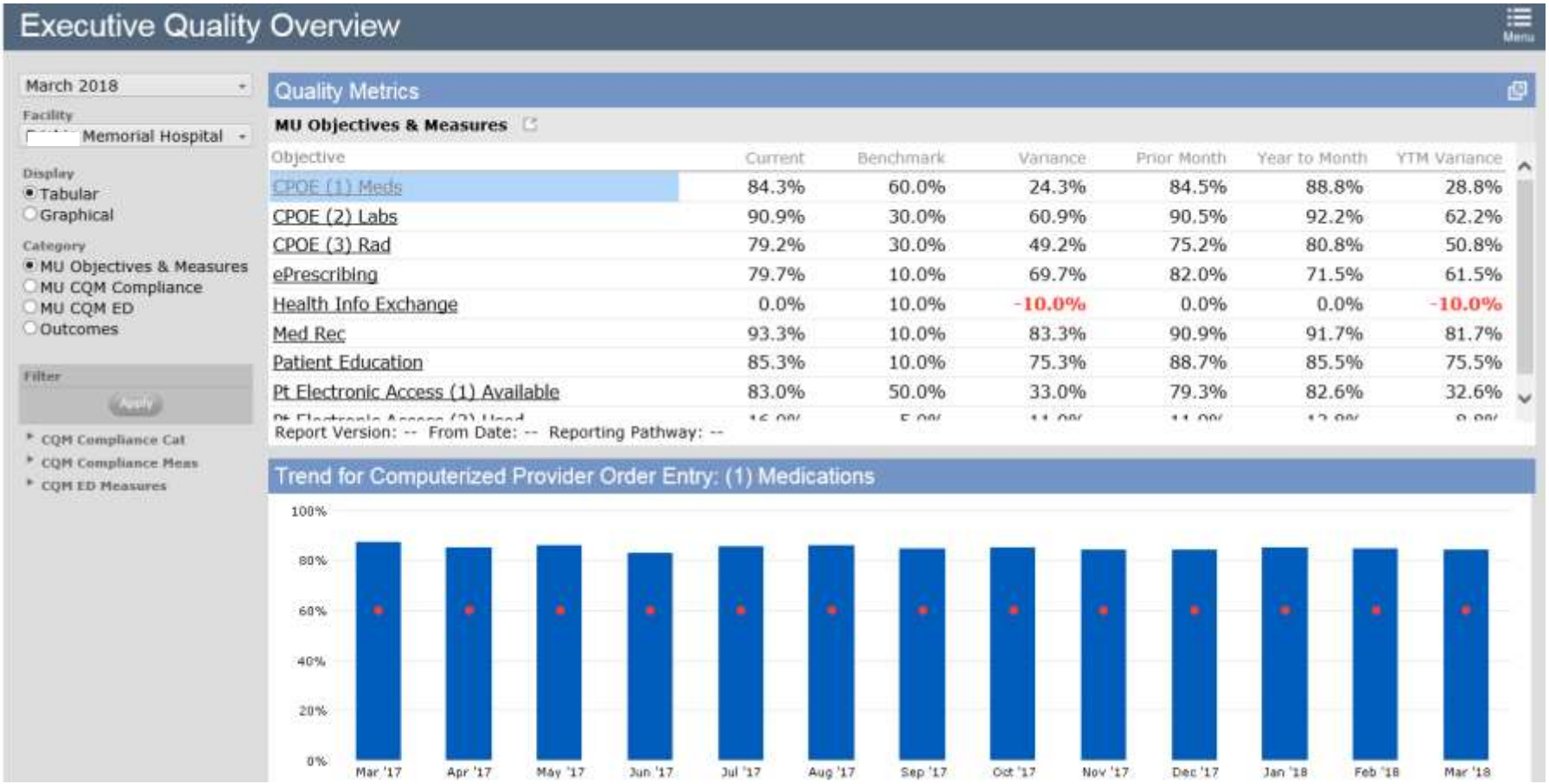
Quality Metrics – Meaningful Use



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Create your own dashboards

- Visual Insight (VI) is a software tool that allows you to build your own custom dashboards, beyond what the BCA standard dashboards offer.

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Where does BCA fit in the MEDITECH reporting puzzle?

MEDITECH Reporting Options

NPR Report Writer and Report Designer (NPR & RD)

- Proprietary technology provided with all MEDITECH systems
- Used for existing standard reports
- Requires IT staff to learn programming skills
- Which tool you use depends on your platform, version, and which application you're reporting from

Data Repository (DR)

- SQL Server platform lets you use industry-standard reporting tools
- Easily combines data from every MEDITECH application
- Requires SQL expertise, since MEDITECH provides just the platform, but no "pre-baked" reports

Business & Clinical Analytics (BCA)

- Optional application from MEDITECH available at additional cost
- DR and SQL Server-based
- Provides pre-configured summary reports with dynamic analysis tools
- Includes user-customizable reports with Visual Insight application

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What should I use? It depends…

- What kind of data do I need?
  - Summary level, retrospective? Or detailed records per patient, per transaction, etc.?
- Where does the data reside in MEDITECH?
  - NPR, M/AT, Data Repository?
- Does it need to be real-time? (Labels, wrist bands, printed instructions, etc.) Or is yesterday's data good enough?
- Will you access and run the report from a MEDITECH menu, web browser, or other desktop application?
- Who's looking at it? C-level executives, department heads and managers, clinical or informatic analysts?

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Ideal Scenarios for Visual Insight

- Summary level, retrospective information
  - E.g., BAR totals by month or period, not detailed transactions
- Anything related to SQL Server and Data Repository, including:
  - Using standard data from BCA to build custom dashboards
  - Building your own data models based on Data Repository data
  - Bringing in external data to display alongside DR data
- Meaningful Use/Quality Reporting

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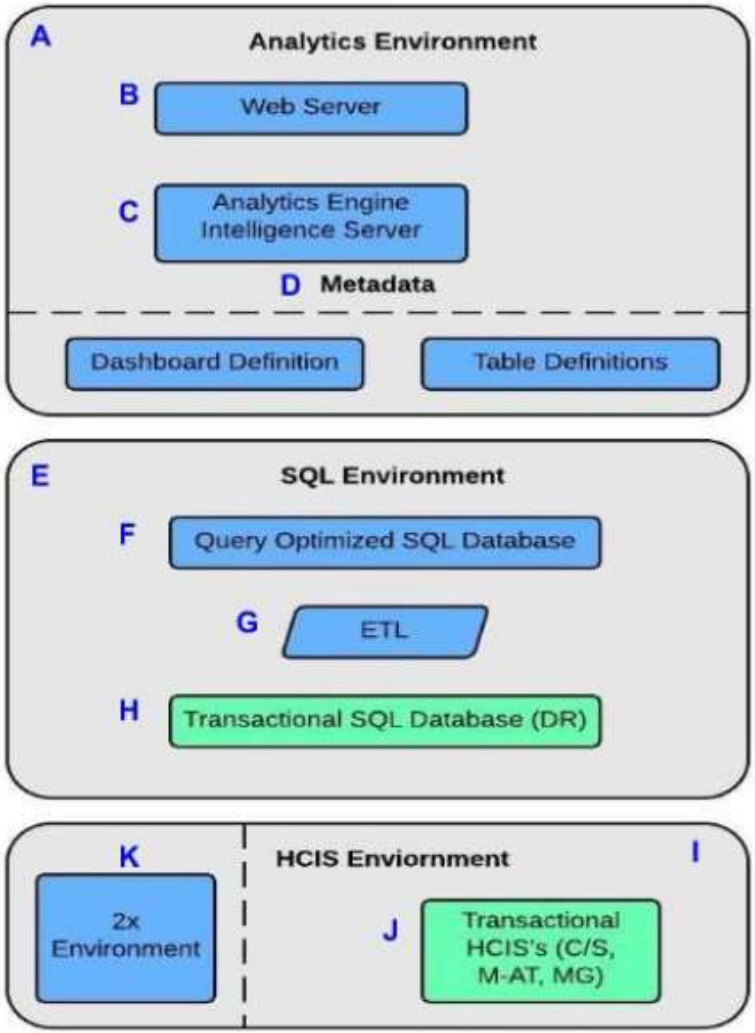
BCA Technical Architecture

Web/application server

Data Repository

MEDITECH



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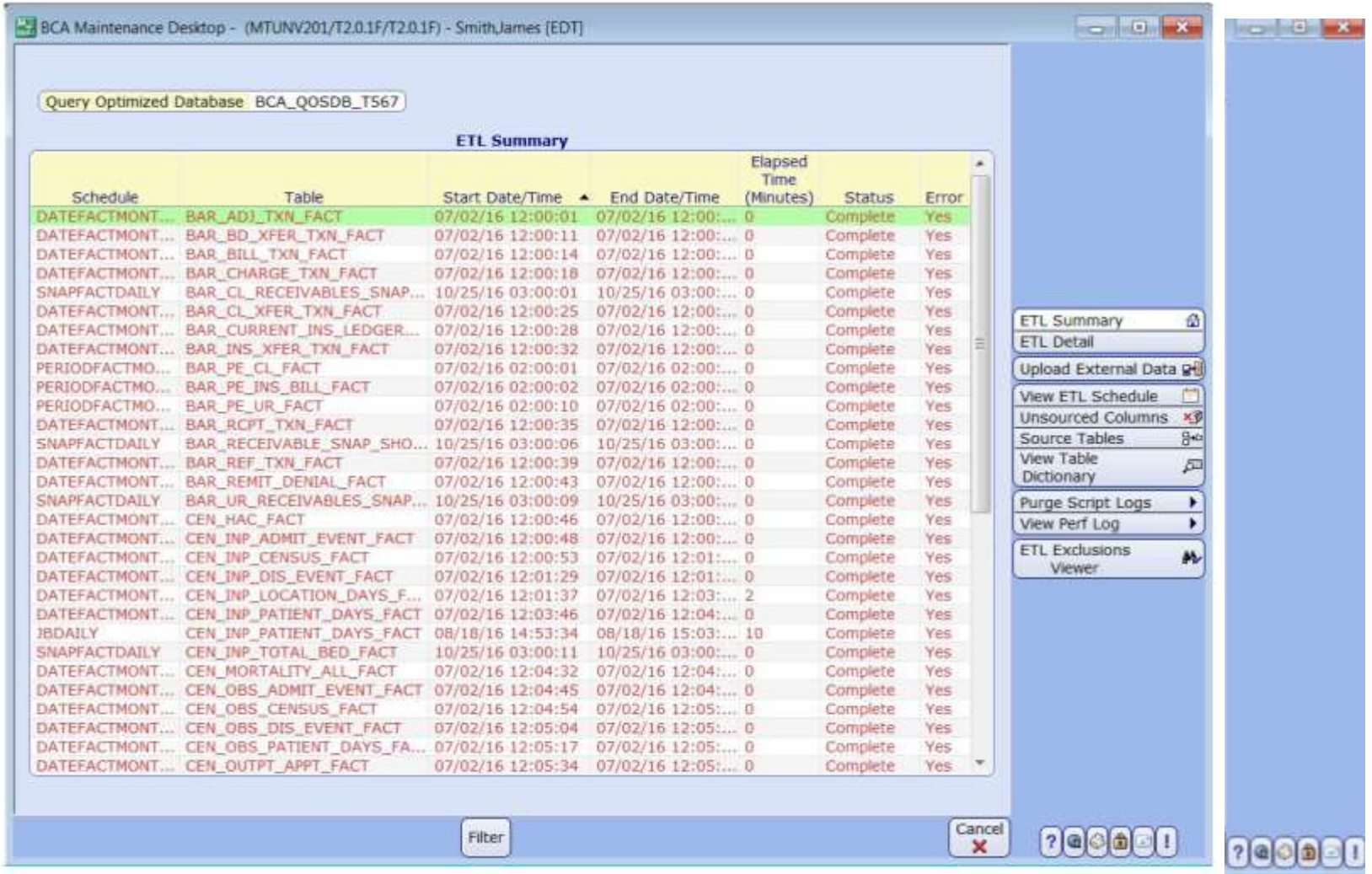
Managing BCA from MEDITECH



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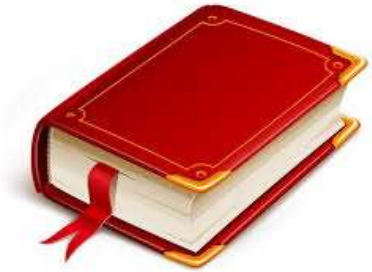
Glossary of VI terms



- Dashboard: a collection of visualizations.
- Visualization: a visual, graphical representation of data.
- Intelligent cube: a pre-aggregated data set stored at a granular level and automatically refreshed on a regular basis.
- Attribute: the descriptive data from the data warehouse that provide context for analyzing *facts*, also referred to as *dimensions*.
- Metric: a measurement used to gauge some quantifiable component of an organization's performance, typically measured across time.

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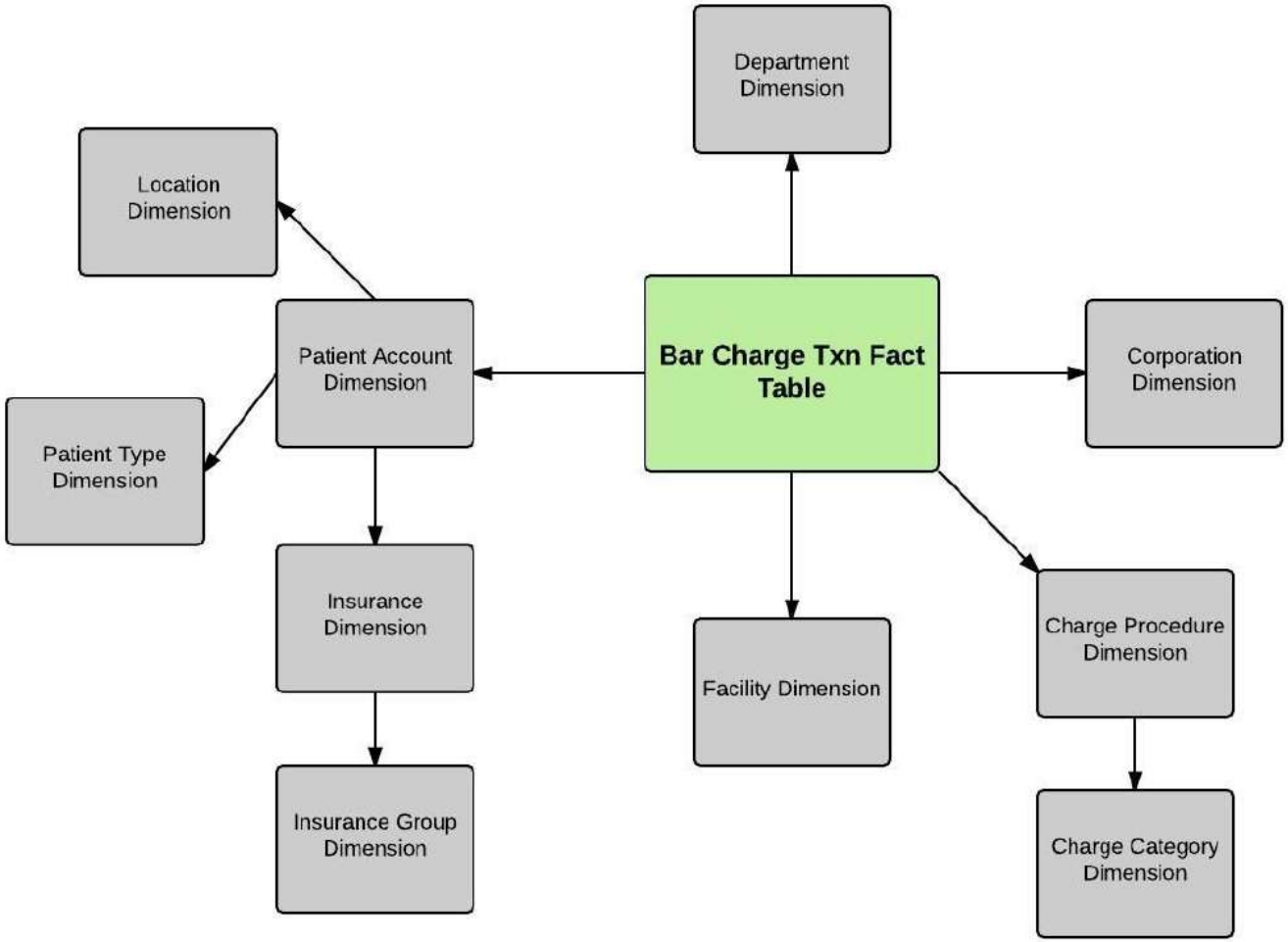
Fact & dimension tables



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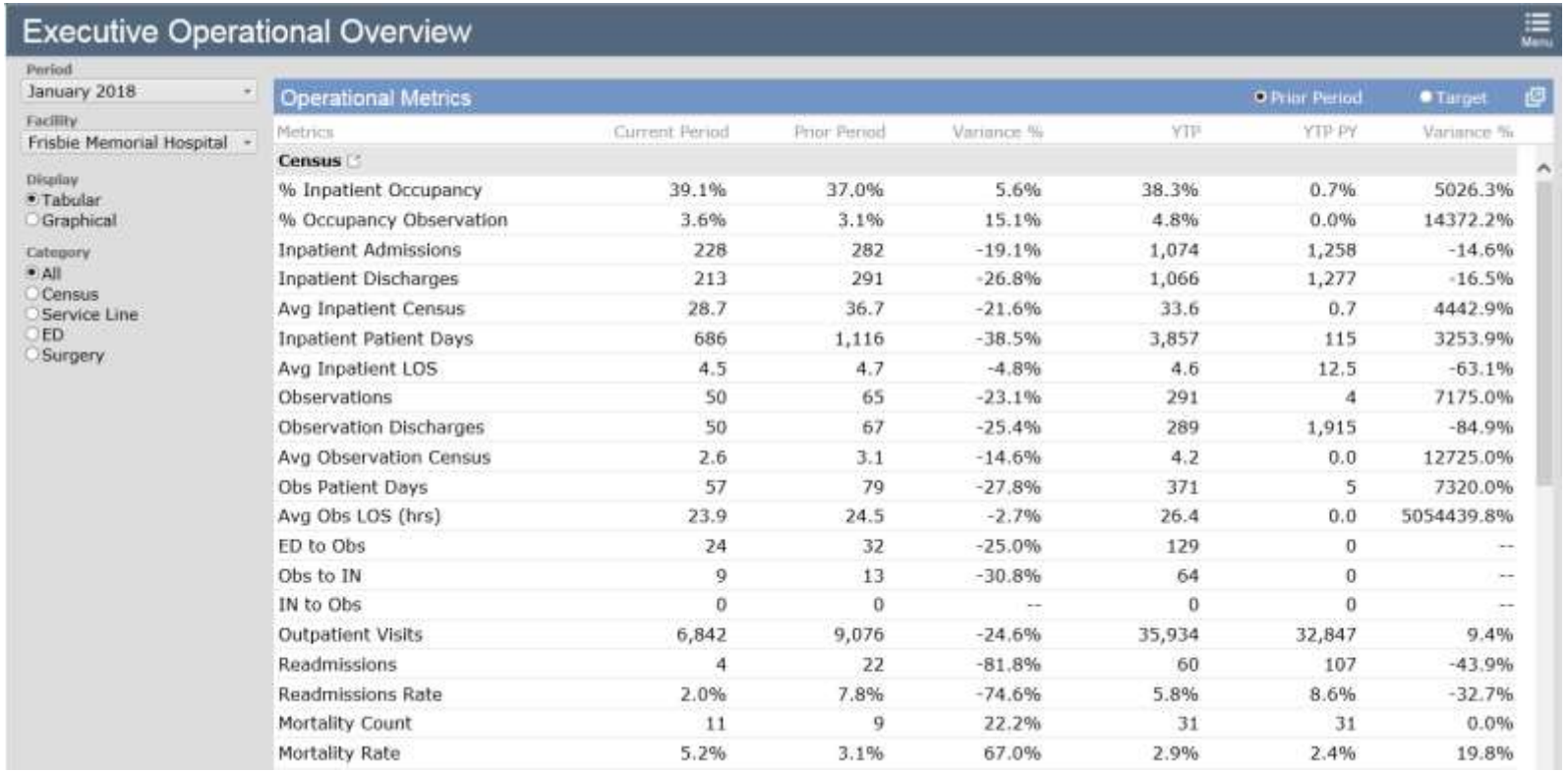
Build your own dashboard



Executive Operational Overview

Menu

Period: January 2018

Facility: Frisbie Memorial Hospital

Display: (•) Tabular ( ) Graphical

Category: (•) All ( ) Census ( ) Service Line ( ) ED ( ) Surgery

Operational Metrics

(•) Prior Period ( ) Target

Metrics	Current Period	Prior Period	Variance %	YTP	YTP PY	Variance %
Census						
% Inpatient Occupancy	39.1%	37.0%	5.6%	38.3%	0.7%	5026.3%
% Occupancy Observation	3.6%	3.1%	15.1%	4.8%	0.0%	14372.2%
Inpatient Admissions	228	282	-19.1%	1,074	1,258	-14.6%
Inpatient Discharges	213	291	-26.8%	1,066	1,277	-16.5%
Avg Inpatient Census	28.7	36.7	-21.6%	33.6	0.7	4442.9%
Inpatient Patient Days	686	1,116	-38.5%	3,857	115	3253.9%
Avg Inpatient LOS	4.5	4.7	-4.8%	4.6	12.5	-63.1%
Observations	50	65	-23.1%	291	4	7175.0%
Observation Discharges	50	67	-25.4%	289	1,915	-84.9%
Avg Observation Census	2.6	3.1	-14.6%	4.2	0.0	12725.0%
Obs Patient Days	57	79	-27.8%	371	5	7320.0%
Avg Obs LOS (hrs)	23.9	24.5	-2.7%	26.4	0.0	5054439.8%
ED to Obs	24	32	-25.0%	129	0	--
Obs to IN	9	13	-30.8%	64	0	--
IN to Obs	0	0	--	0	0	--
Outpatient Visits	6,842	9,076	-24.6%	35,934	32,847	9.4%
Readmissions	4	22	-81.8%	60	107	-43.9%
Readmissions Rate	2.0%	7.8%	-74.6%	5.8%	8.6%	-32.7%
Mortality Count	11	9	22.2%	31	31	0.0%
Mortality Rate	5.2%	3.1%	67.0%	2.9%	2.4%	19.8%

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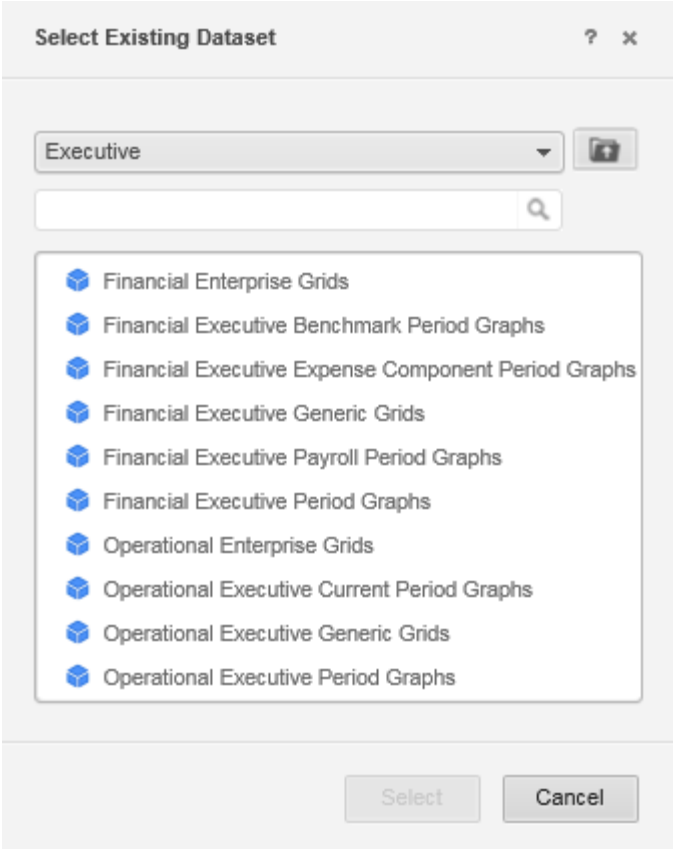
Use an existing dataset

- Use this option when you want to modify visualizations or add new ones to an existing report.
- Advantages: the attributes and metrics from the dataset are all pre-defined and related; good report performance.
- Disadvantages: existing datasets may not have the metrics or attributes you need.



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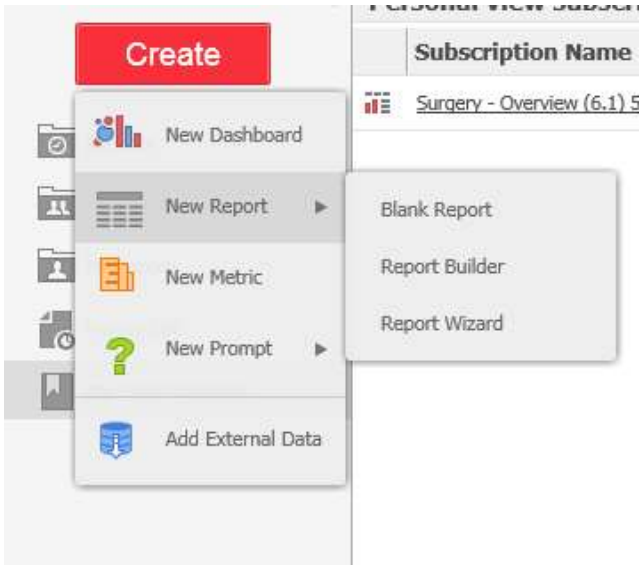
Create a new report



- Use this option when you need specific attributes and metrics that may not be part of an existing dataset.
- Advantages: the dataset will be tailor-made for your report and only have the data you need; you can also define data elements that may not be part of other cubes.
- Disadvantages: more work up front to correctly define the dataset; initial report performance may be slow, since it's not pre-cached.

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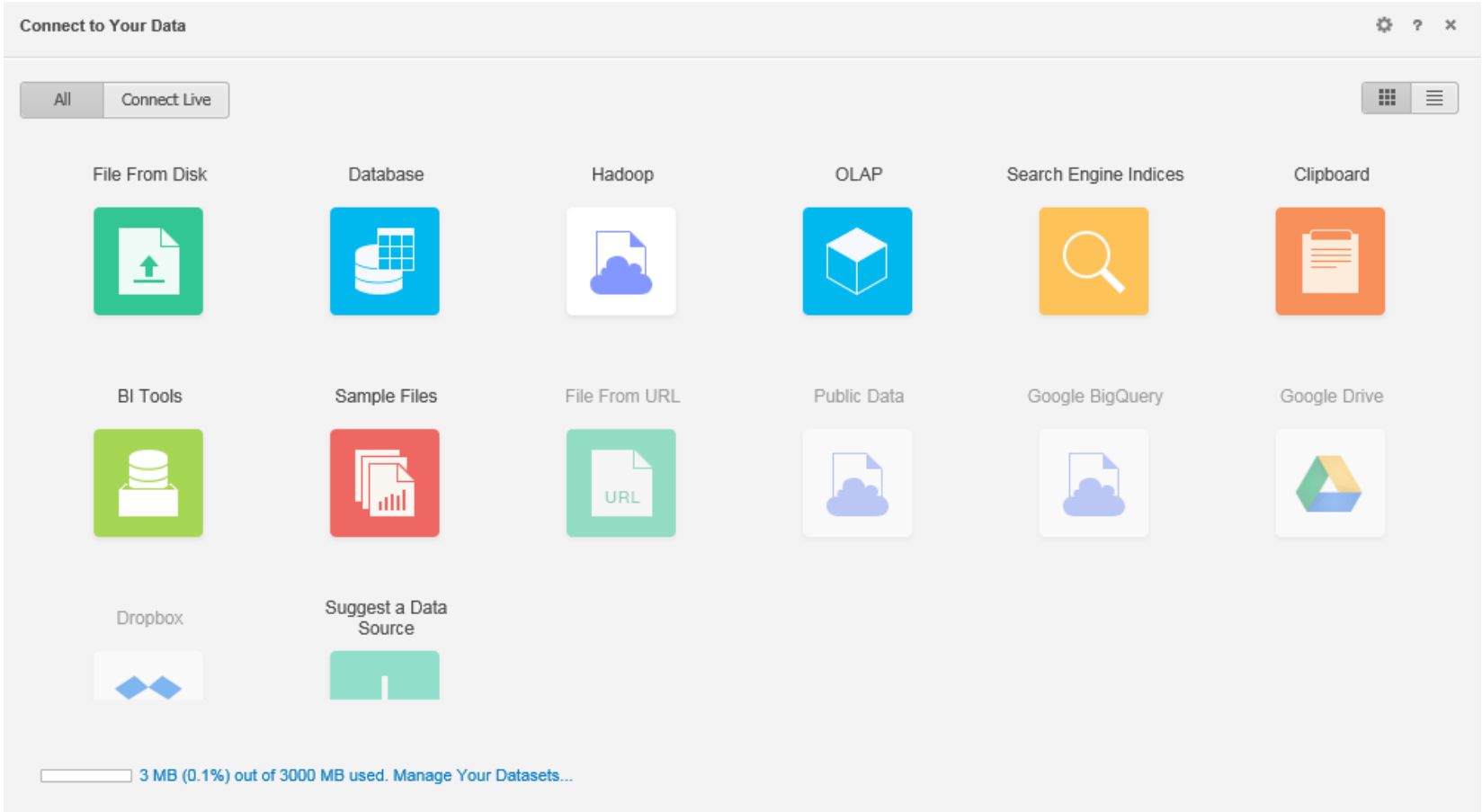
Add external data



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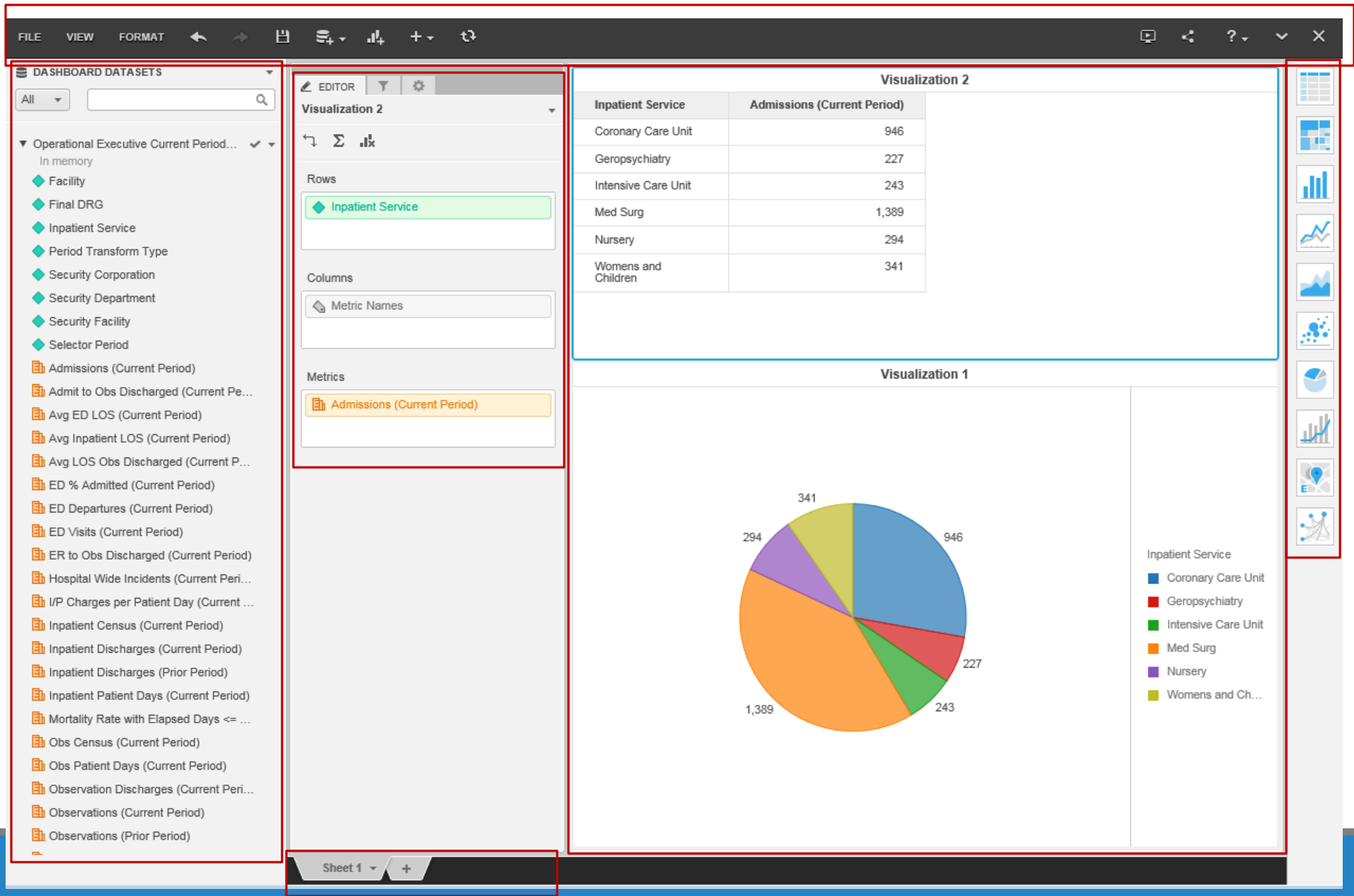
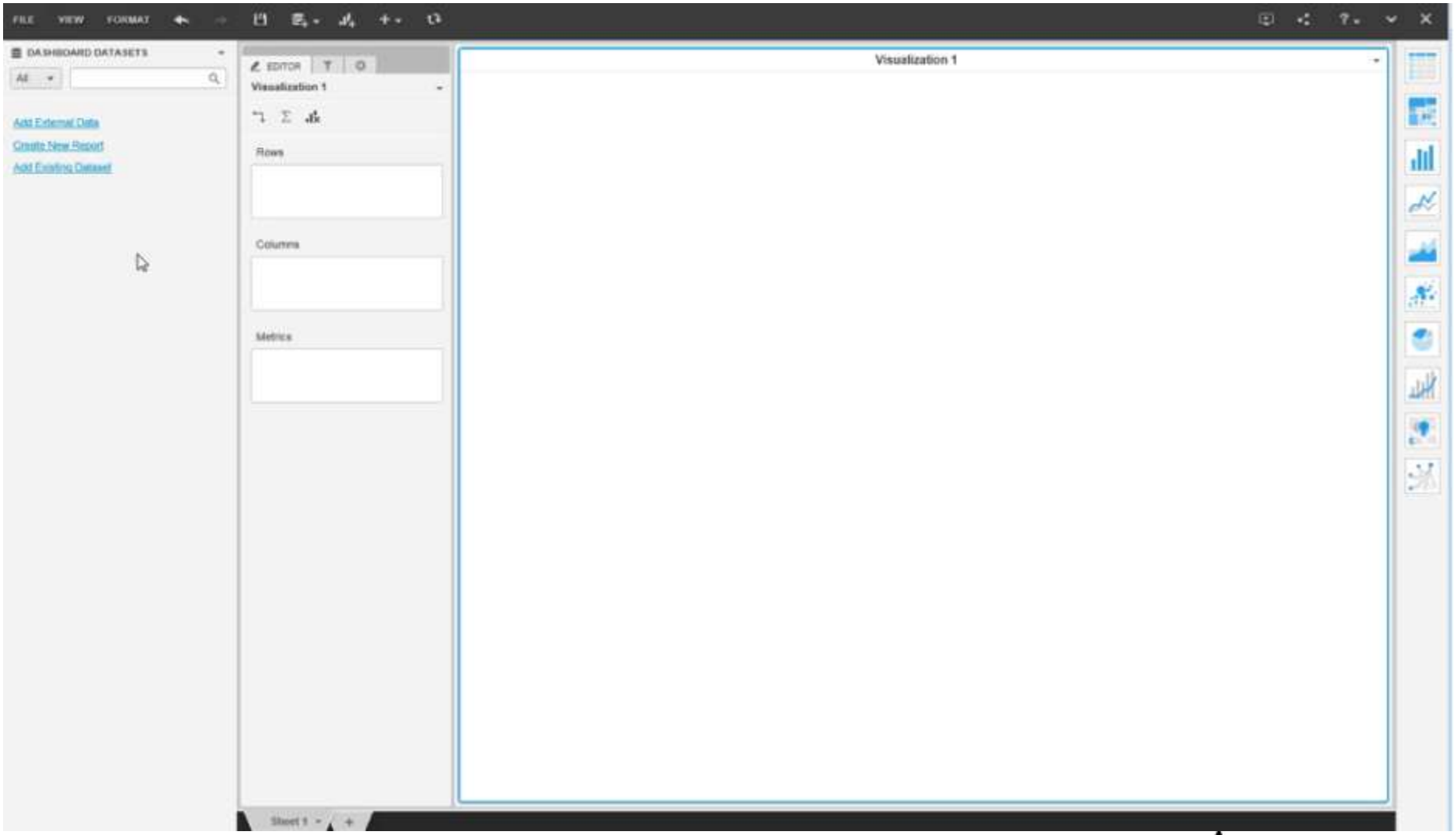
Design space overview by region



Build a new dashboard



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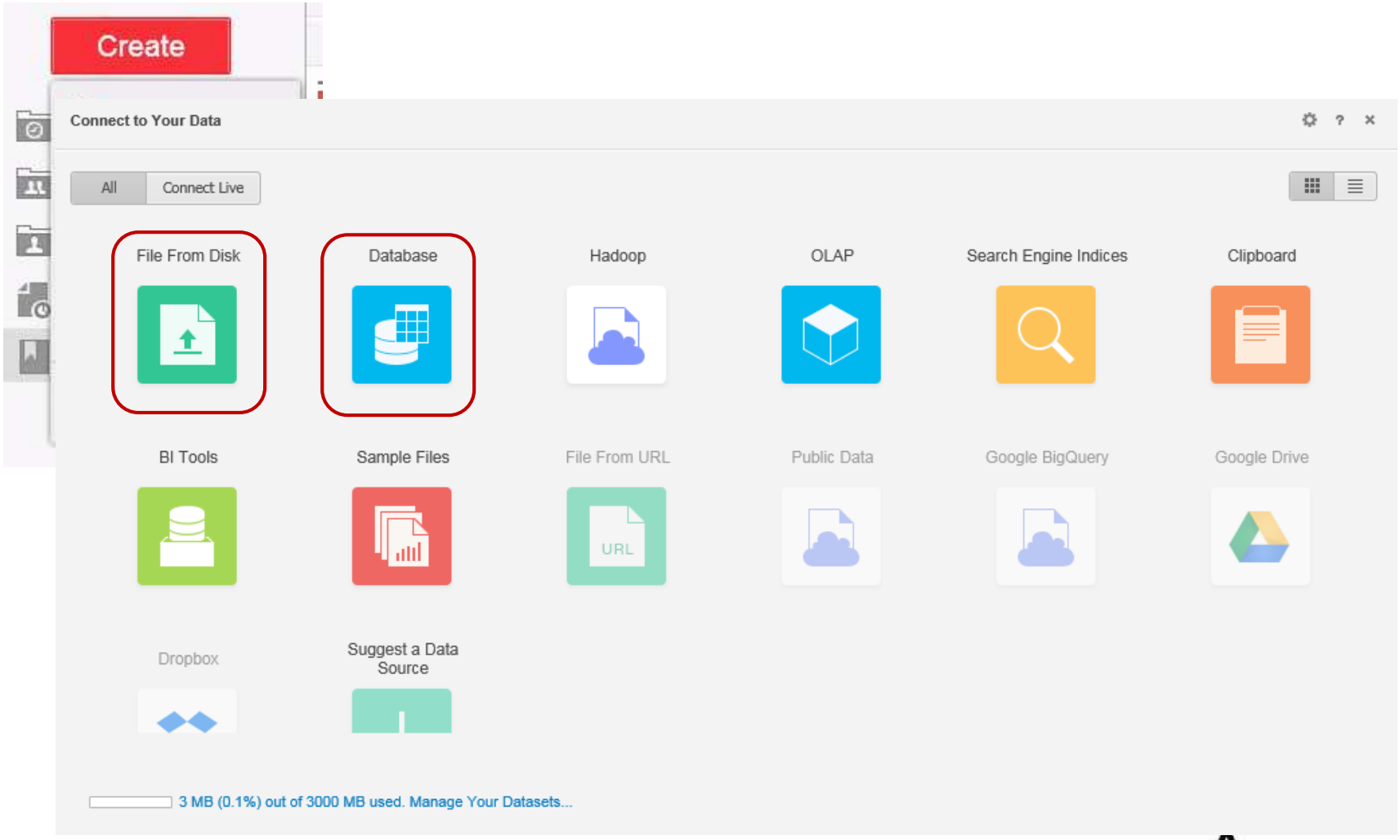
Using external data



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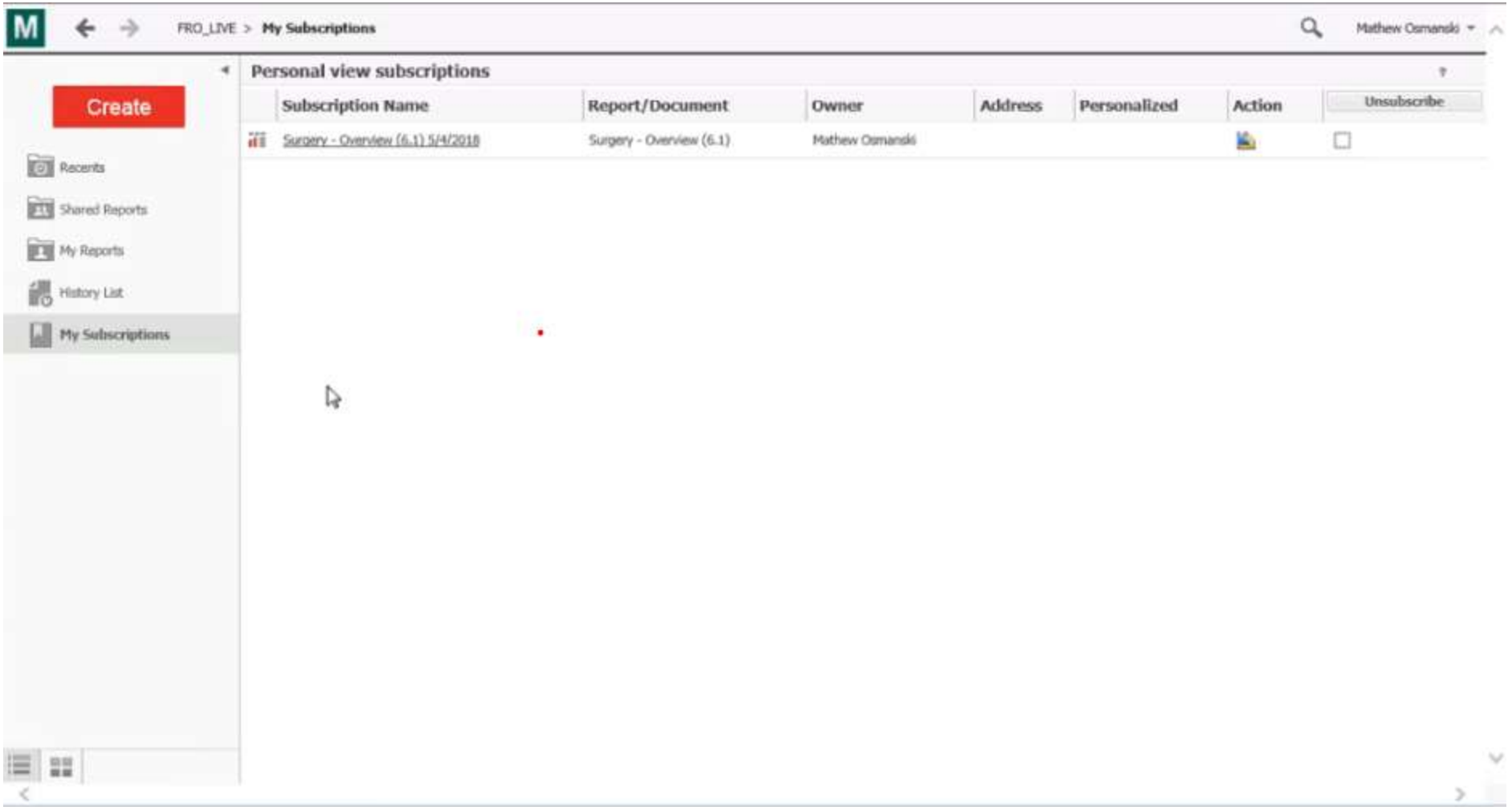
Using external data (from DR)



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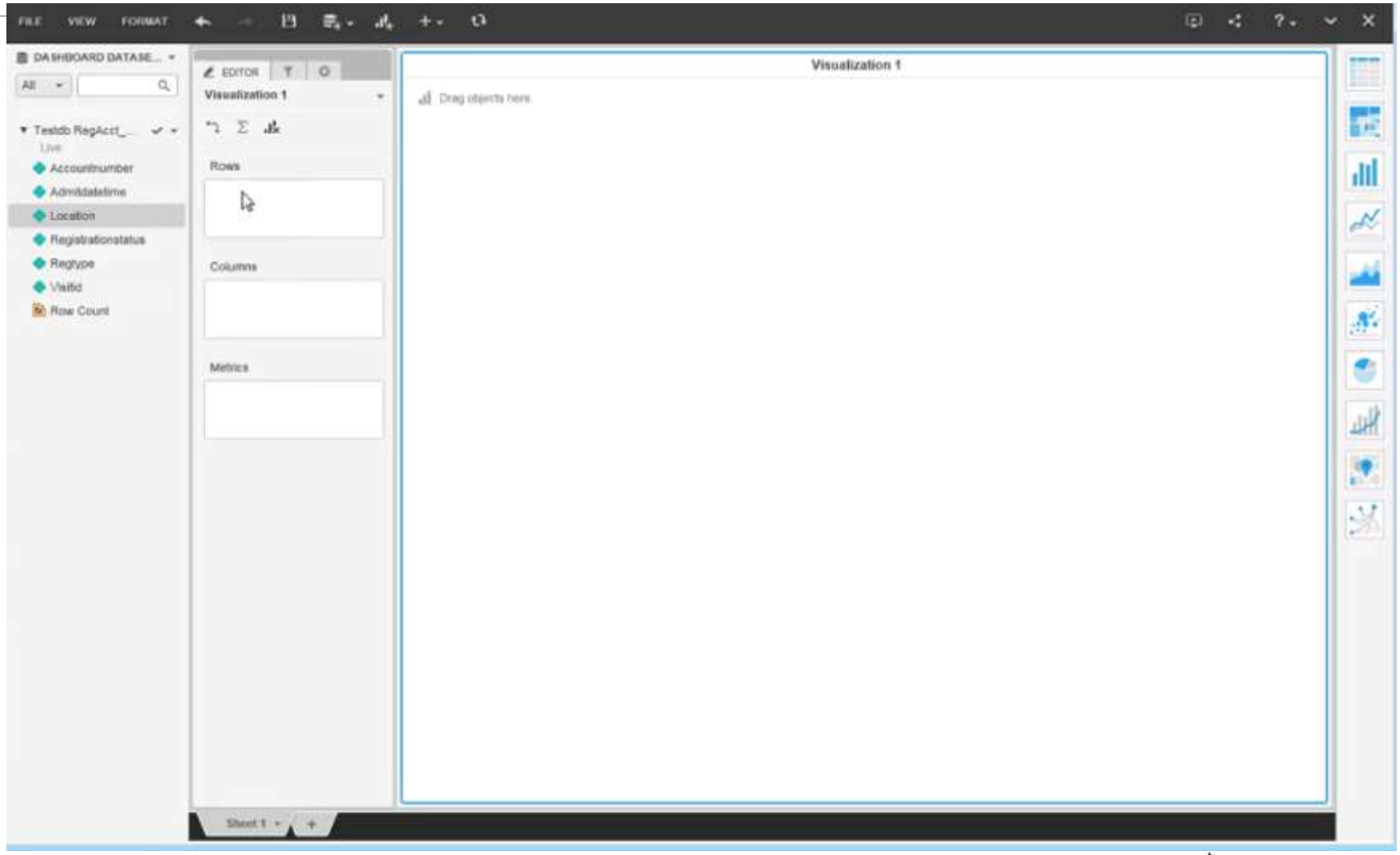

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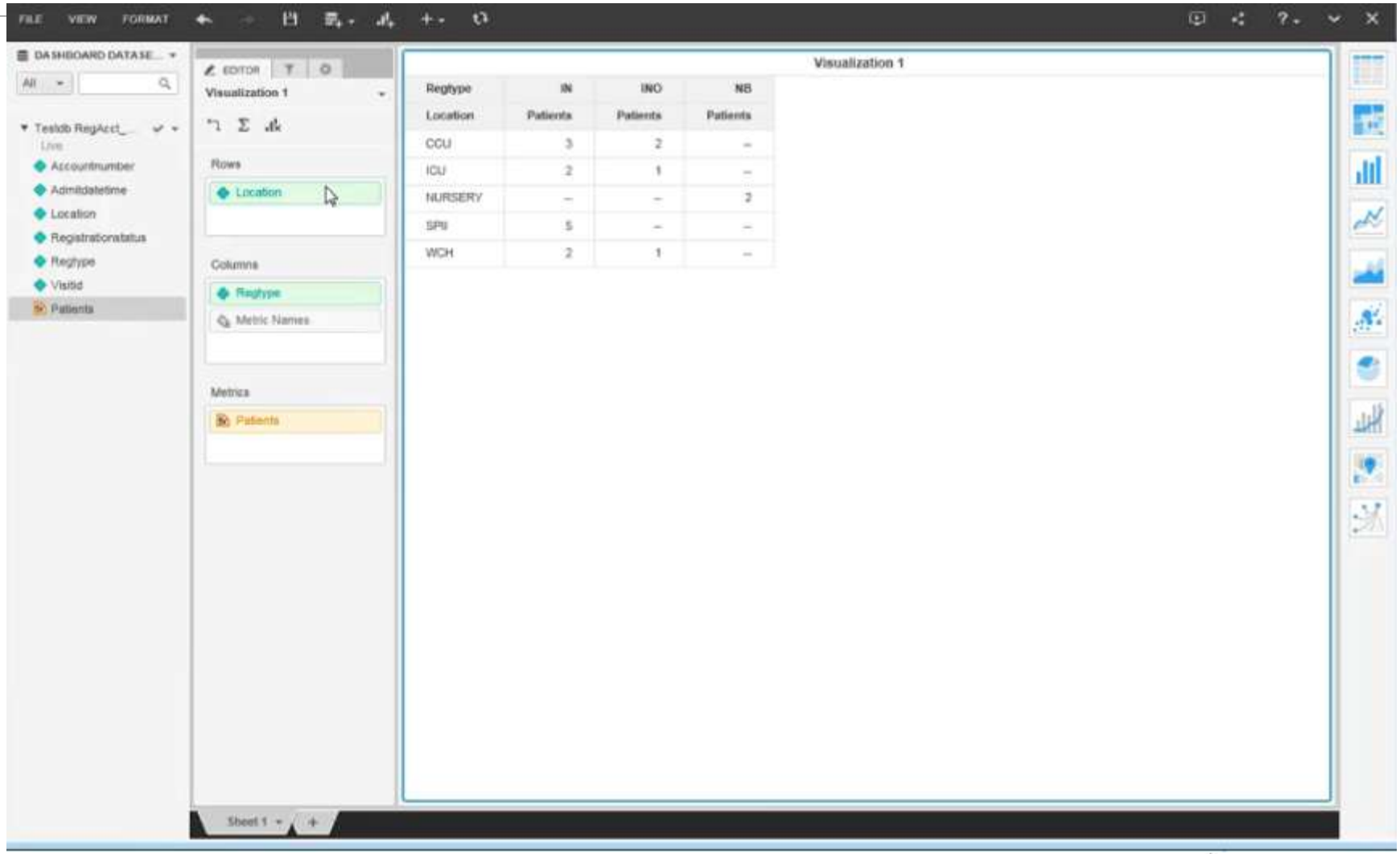

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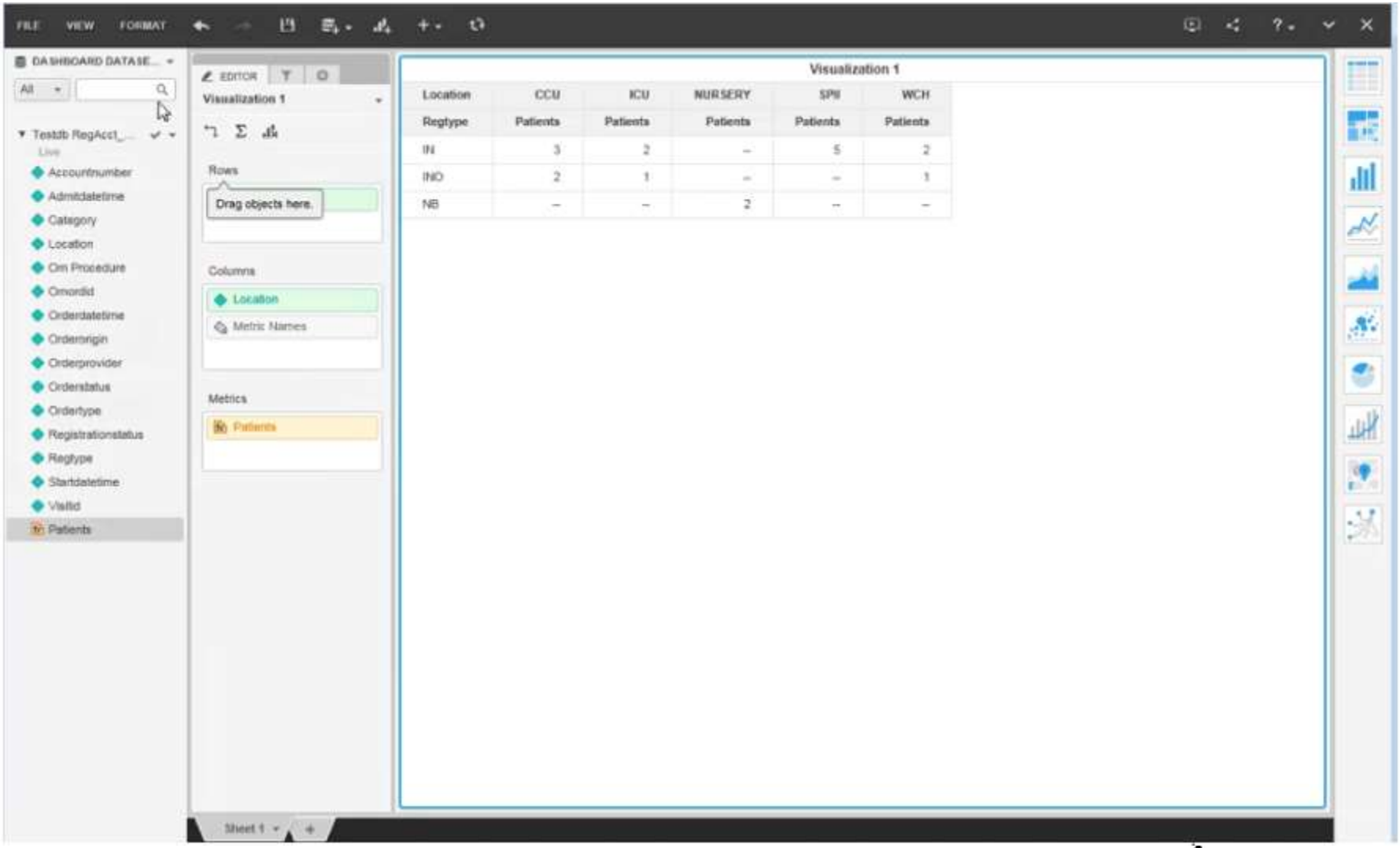

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Benefits of using DR directly

- If you're already using DR…you know the data.
- BCA datasets tend to be general purpose. Building your own from DR is more tightly controlled.
- You may have SQL code already built that you can re-use.

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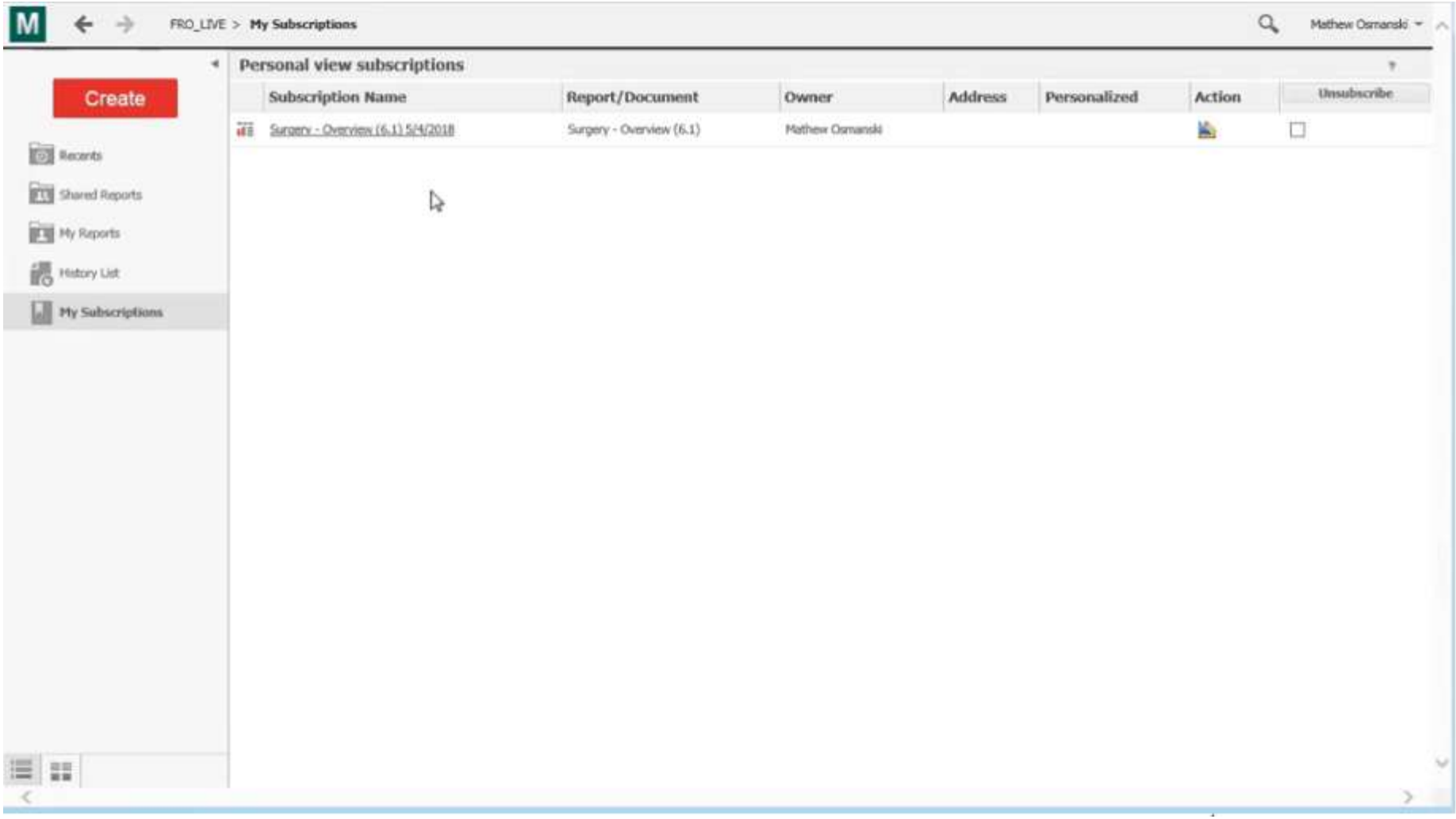
Wrangle external data



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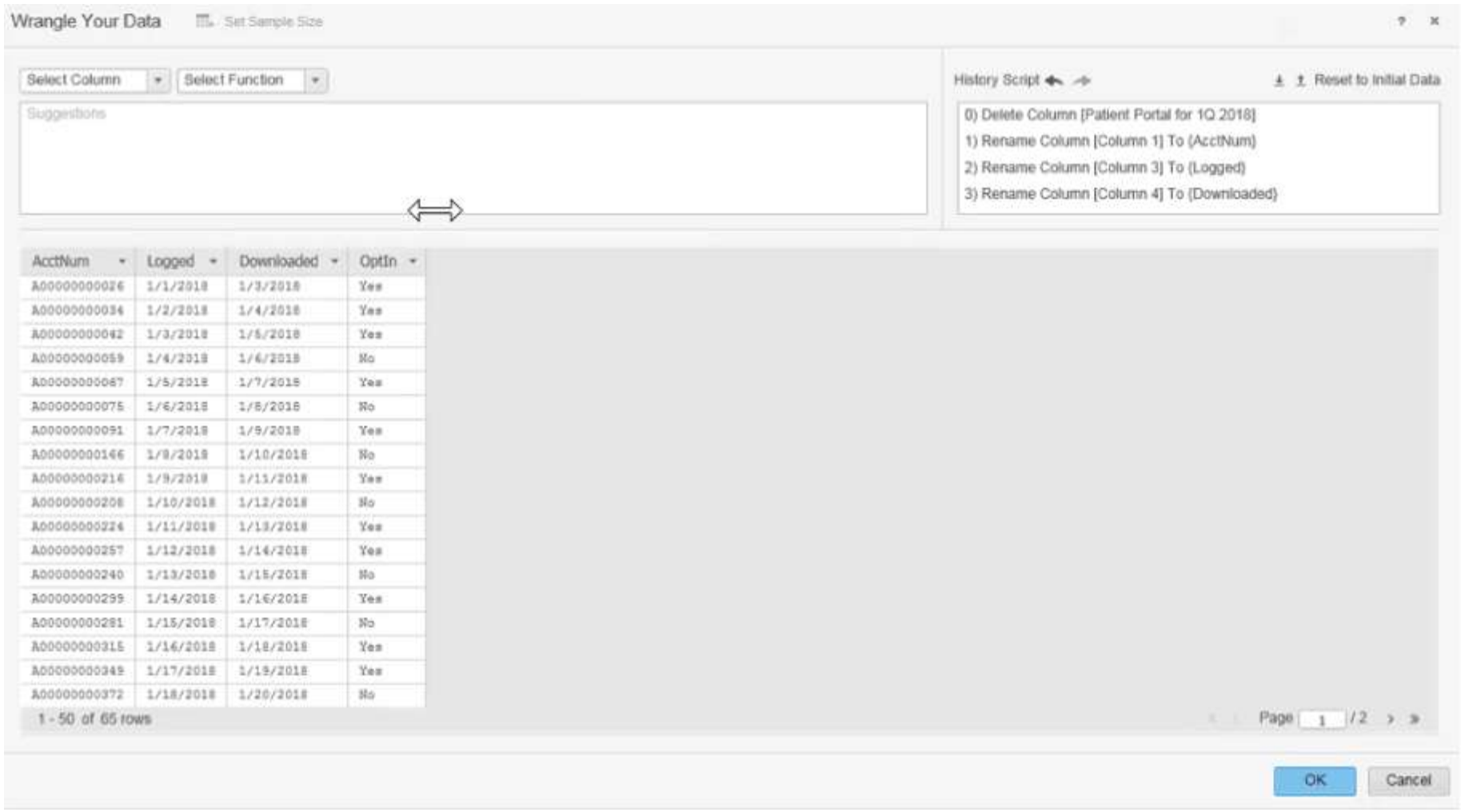

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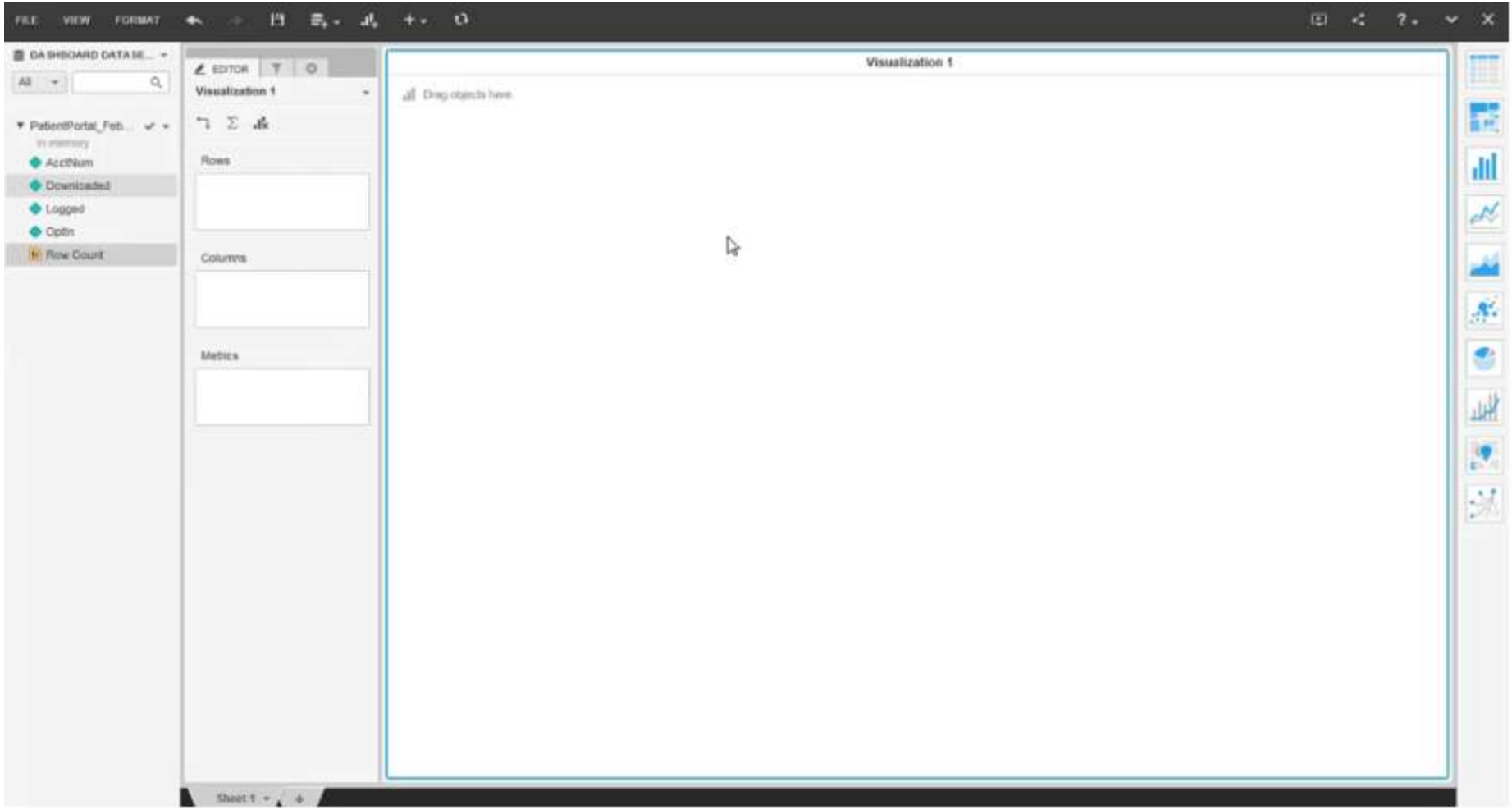
Put it together



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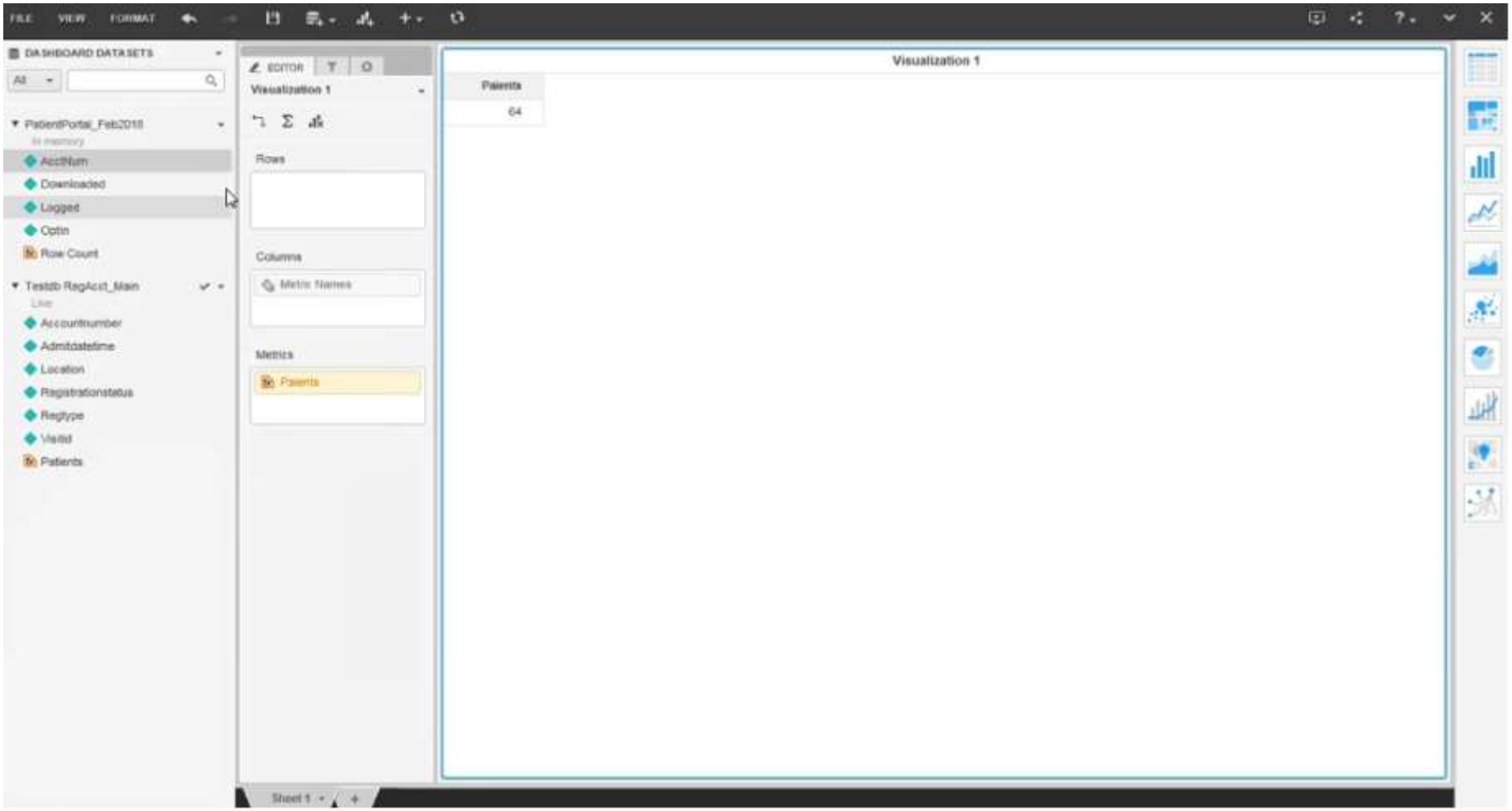
Put it together



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Some notes on external data

- Don’t bring in anything you don’t need.
- Clean the data as much as possible before importing it.
- If possible, use DR as a staging area to import data first, then link directly from Visual Insight.

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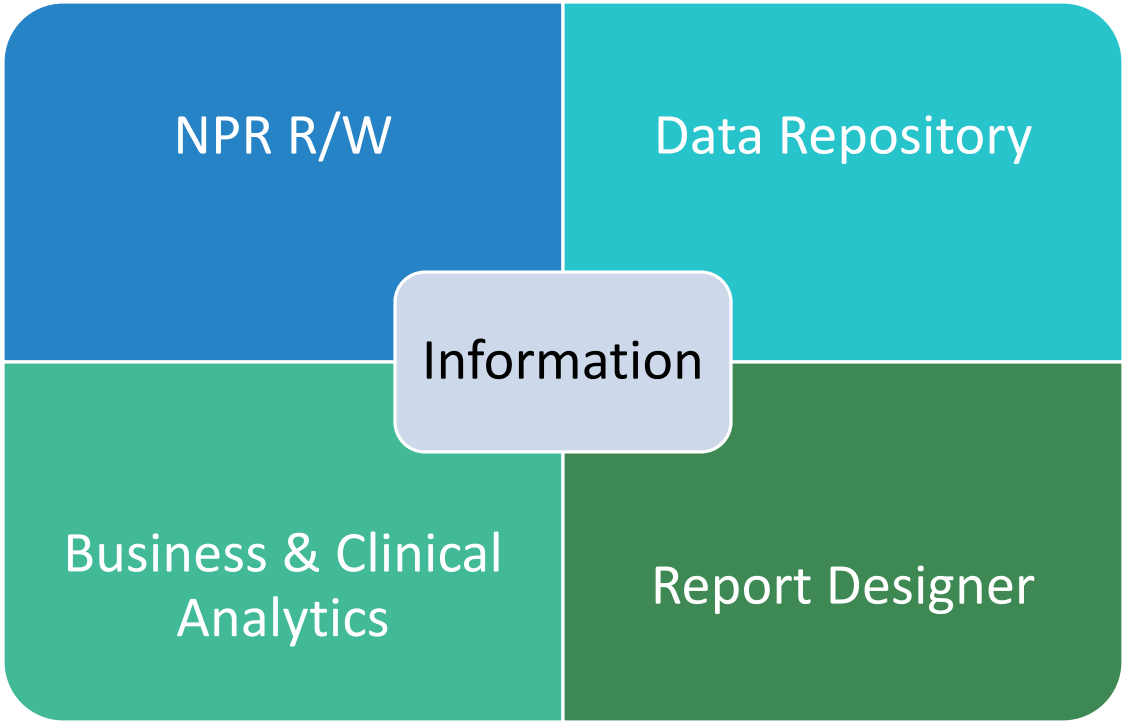
Final thoughts…



- MEDITECH has several reporting options – be sure to understand the benefits and limitations of each of them.

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Discussion, Q&A

Thank you!

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Look for our MUSE sessions

- Tuesday, May 29
  - 702 - Custom BCA Dashboards with Visual Insight
  - 703 - The Alphabet Soup of Clinical Quality Measures Reporting and Reimbursement: 2018 Updates
  - 704 - Soup to Nuts - Data Repository 101
  - 802 - Report Designer Fundamentals
  - 804 - Soup to Nuts – Data Repository 102
- 1010 Revenue Cycle Optimization: Tools and Strategies for Success – Wednesday 2:30 pm
- 1087 HIE: Effective Integration and Interoperability – Thursday 1:45 pm
- 1104 The DR Overnight DBA – Thursday 2:45 pm
- 1091 Electronic Reporting: Quality Management Cycle Concepts that Achieve Reliable Results – Friday 9:00 am
- 1103 The Report Request Lifecycle – Friday 10:00 am

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