2022 MUSE Inspire Conference
May 15-18   Gaylord Texan Resort & Convention Center | Dallas, TX

Inspire

1007: Microsoft Power BI

Reporting from Data Repository

May 16, 2:30-3:25

Presenter: Ian Proffer

Acmeware

2022 MUSE Inspire Conference

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Inspire

Welcome back! Come see our other sessions this year:

Day	Date	Time	Session
Sunday	May 15	9:30-12:00	701 - Power BI Fundamentals
			703 - MIPS: Don't Let it Sink Your Ship
		1:00 - 3:30	801 - Developing for DR with Power BI
Monday	May 16	2:30-3:25	1007 - Power BI and DR
Tuesday	May 17	10:00-10:55	1062 - Improve Quality Performance
Wednesday	May 18	10:00-10:55	1057 - Microsoft's Power Platform (Northeastern VT)
		11:00-11:55	1097 - OR Utilization Analysis (Northwestern Medical Center)

Our Agenda

> What is Power BI?

> Using Power BI with DR

> Real-world examples of Power BI reports

What is Power BI?

> **Power BI** is a collection of software services, apps, and connectors that work together to turn your unrelated sources of data into coherent, visually immersive, and interactive insights. Power BI lets you easily connect to your data sources, visualize and discover what's important, and share that with anyone or everyone you want.

> https://docs.microsoft.com/en-us/power-bi/fundamentals/power-bi-overview

What is Power BI?

> A Windows desktop application called **Power BI Desktop**

> An online SaaS (Software as a Service) service called the **Power BI service**

> Power BI mobile apps for Windows, iOS, and Android devices
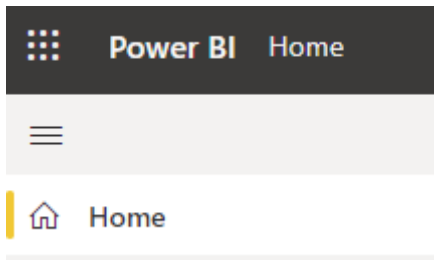
Other elements of Power BI

> **Power BI Report Builder**, for creating paginated reports to share in the Power BI service

> **Power BI Report Server**, an on-premises report server where you can publish your Power BI reports, after creating them in Power BI Desktop
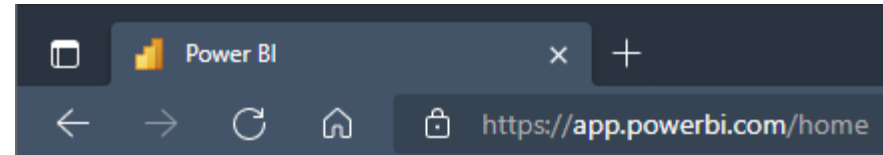

Power BI Report Server

Power BI Desktop

> A free desktop application that lets you connect to, transform, and visualize your data.
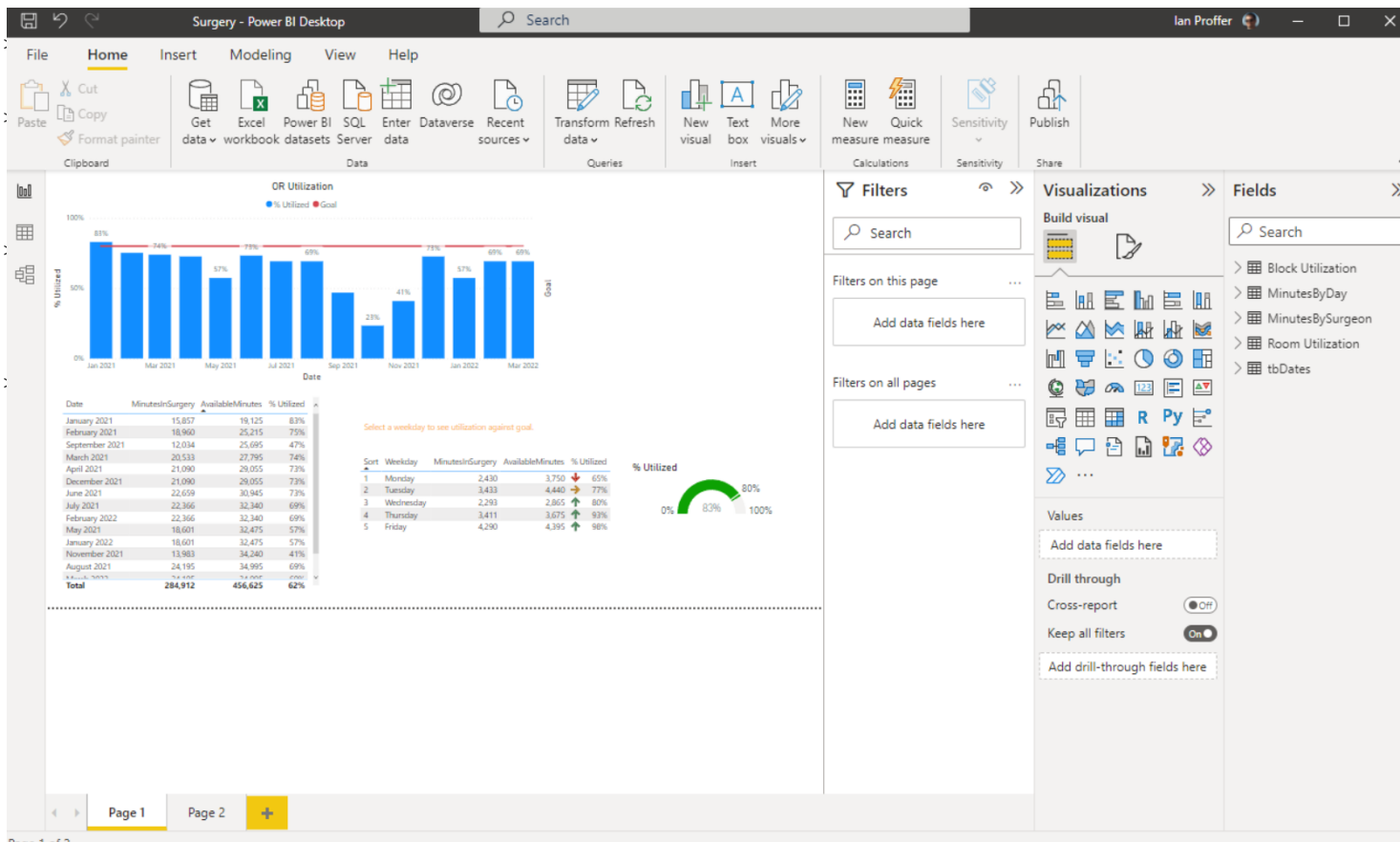
Power BI service

> Where you publish dashboards and share them across your organization. Dashboards and reports connect to datasets that bring all the relevant data together in one place.

> The service has some report creation abilities too but is more limited than Power BI Desktop.

https://www.powerbi.com/home

Working with Power BI

Power BI Desktop

Power BI service
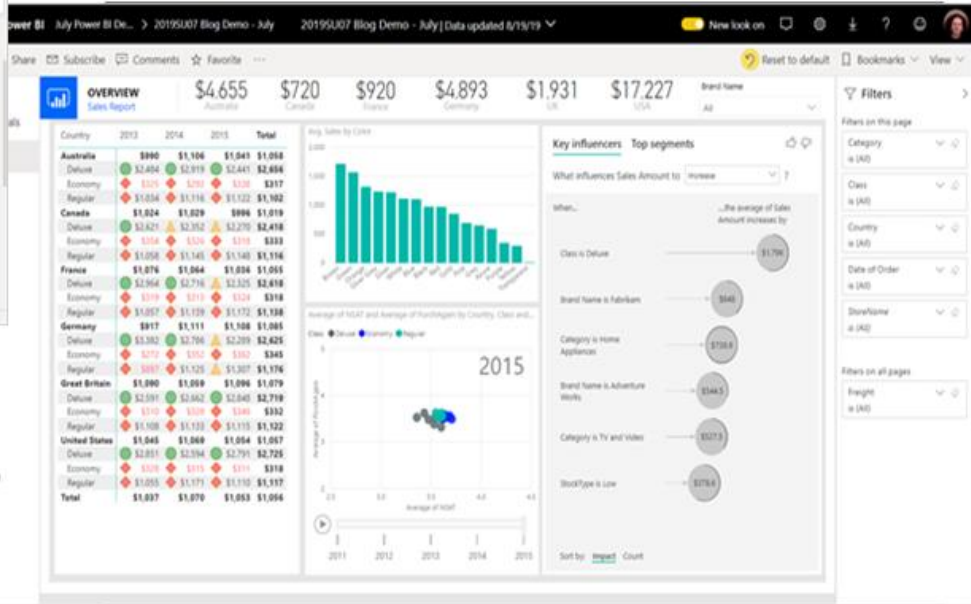
Power BI Mobile

Wait…what about SSRS?

> What's up with SQL Server Reporting Services? (SQL Server Data Tools/Visual Studio and the Report Manager/Report Server/web portal)

Power BI Report Builder

> A standalone desktop application for designing and publishing *paginated* reports to the Power BI server. Surprise, it's the rebranded "Microsoft Report Builder."

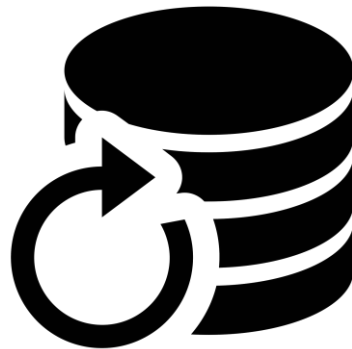> https://docs.microsoft.com/en-us/power-bi/paginated-reports/report-builder-power-bi

Power BI Report Server

> Power BI Report Server is an on-premises report server with a web portal in which you display and manage reports and KPIs. Along with it come the tools to create Power BI reports, paginated reports, mobile reports, and KPIs.
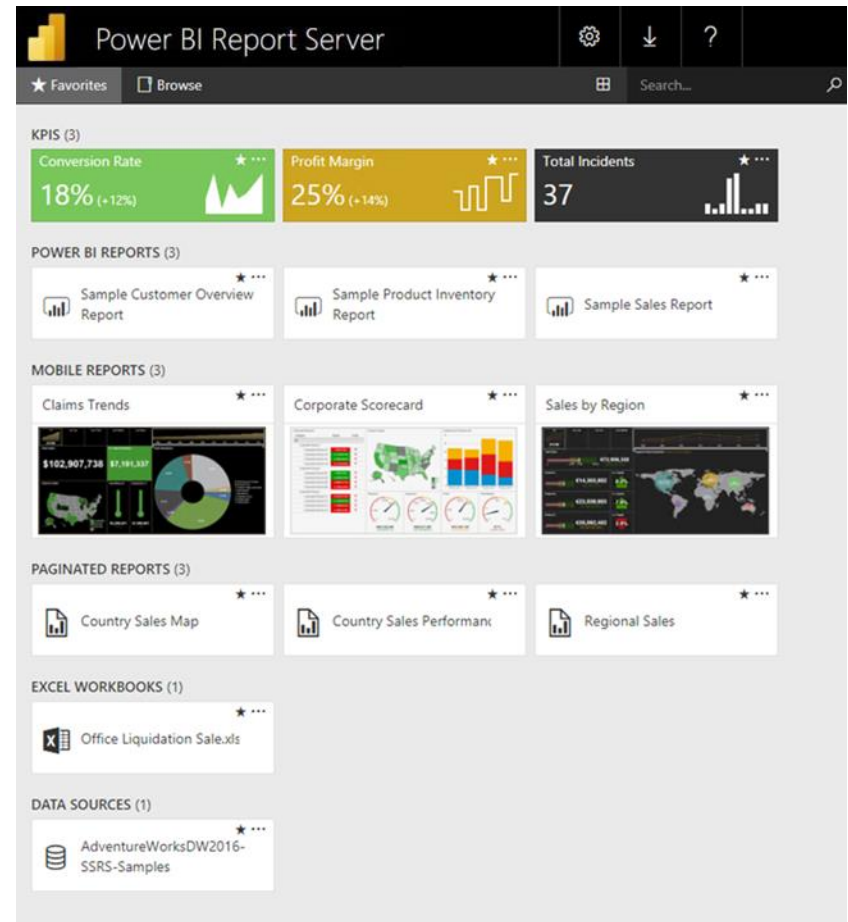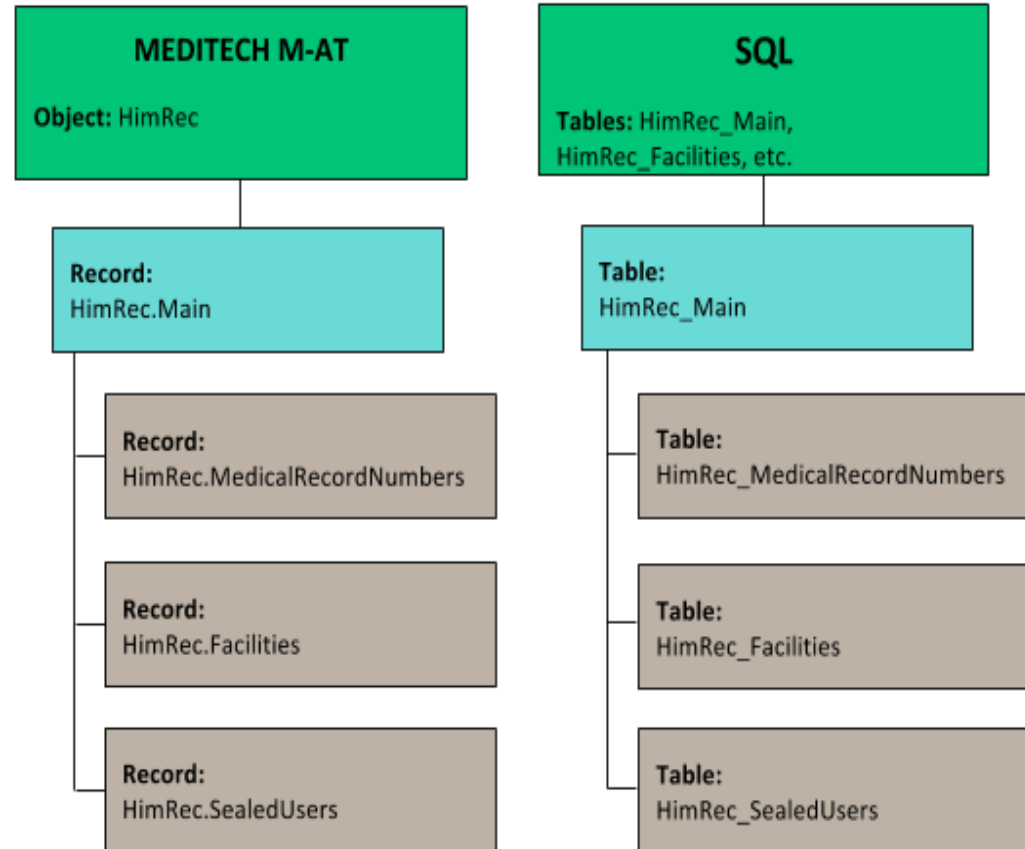
Using Power BI with DR

Review of DR design

> Power BI expects relational data sources to be normalized - the DR is not.

> The DR table schema is hierarchical like MT and lacks foreign keys, making it challenging for report development and data model design.
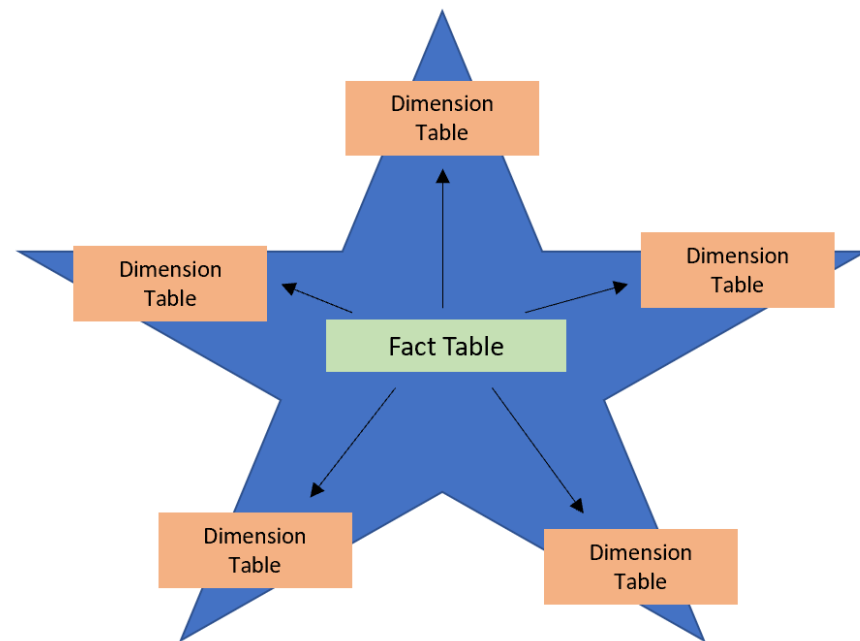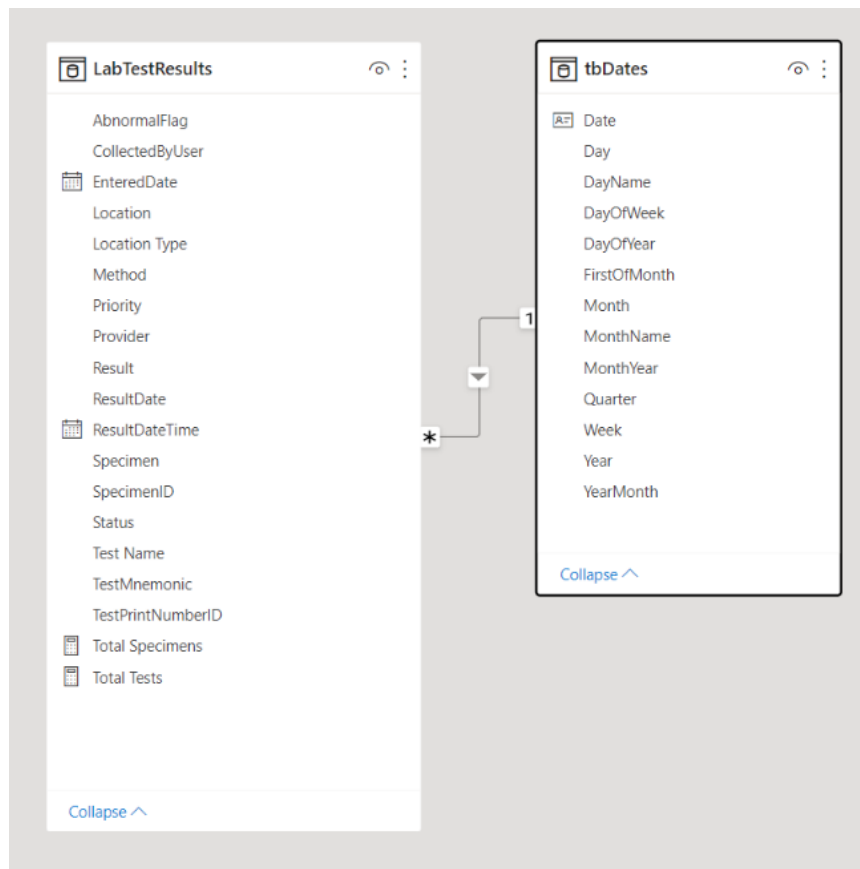
Considerations for DR

> Data model: "flat" or star schema?

> Connectivity: Import or DirectQuery?

> SQL coding: views, stored procedures, or embedded expressions?

> Power BI Gateway needed to connect to DR server

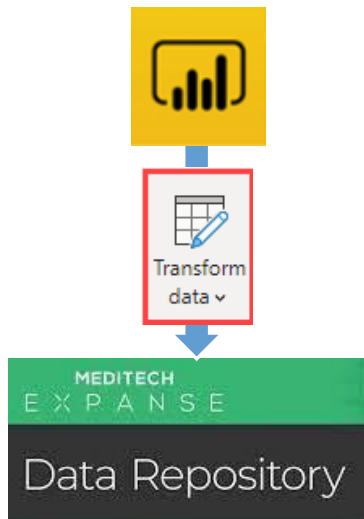> Report data refresh needs to be scheduled

The data model

> Should the data be "flat," like a single table or dataset, or based on a star-schema?
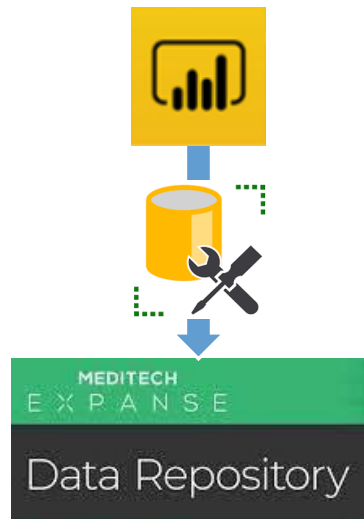
Accessing DR data with Power BI

How you choose to use Power BI with the DR is highly dependent on the Power BI developer's knowledge of the MEDITECH DR system!
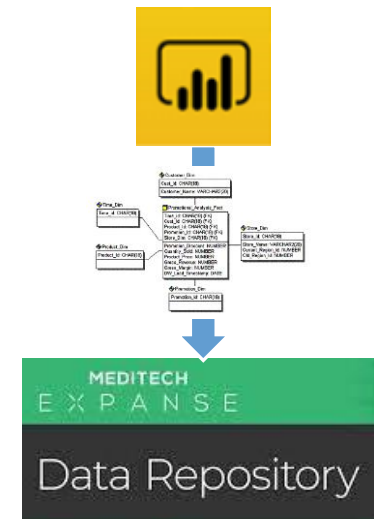
Direct to DR tables (No)

Via SQL object (Yes)

Via data model (Yes)

Getting data from SQL Server

Import

> Data cached on desktop and in Power BI service

> 1 GB limit for non-premium

> Data is compressed for efficiency

> Full use of DAX (data access expressions) function library

> Data sources require periodic refresh

DirectQuery

> Always uses current data

> Scalable, no 1GB limitation

> Significantly slower than data import mode

> Cannot combine data in Power Query

> Many DAX functions unavailable

Using SQL programming objects

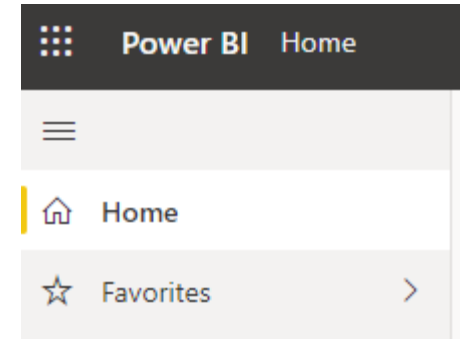> Views (i.e., virtual tables)

> Stored procedures

```
SELECT
        Name,
        AccountNumber,
        Facility,
        Location,
FROM AdmVisits
```

> Embedded queries

Power BI online - user experience

> Workspaces
> > share the ownership and management of dashboards, reports, and datasets
> > Use roles to determine permissions (manage, edit, view)

> Apps
> > Package related workspace content (dashboards, reports, and datasets)
> > Can use workspace permissions or be different

> Dashboards
> > Single-page canvas of tiles used to "tell the story"

Demo: Power BI online

Questions and discussion

> About the Power BI applications and services

> About using Power BI with Data Repository

Report Demo: Dan Deatrick

Open discussion

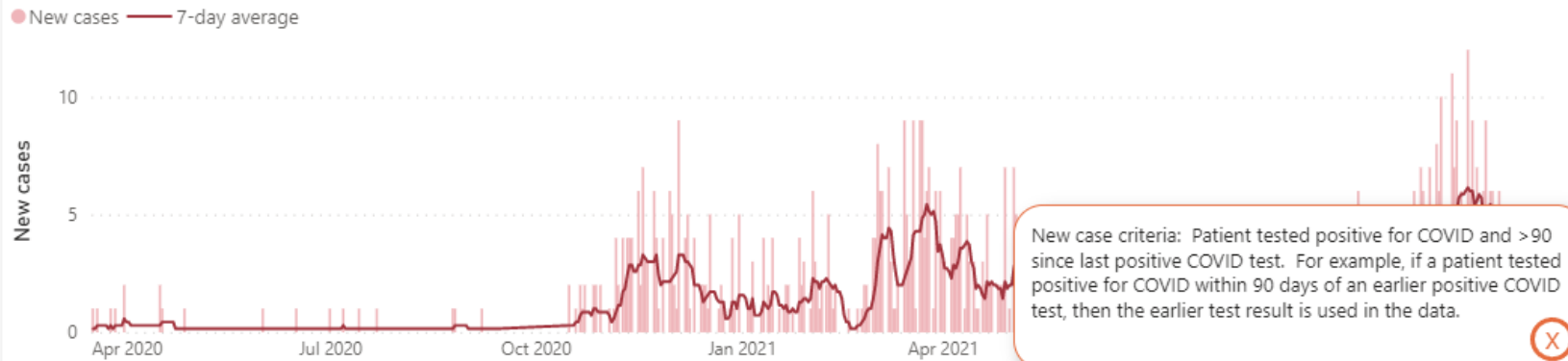> What questions do you have?

Microsoft Power BI

Keep in touch!

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