



Welcome

Onyeka Onyekwelu

Strategic Engagement Manager – London Office of
Technology and Innovation (LOTI)

Rebecca Mackenzie

Account Technology Strategist, Local Regional
Government – Microsoft

What's planned for today?

Morning Session: 10am-11.30am

- Introduction by Rebecca and Onyeka
- Context for today's challenge: Jay
 - London Boroughs: What are they doing with data?
 - IG, data quality
- PowerBI Overview, Demo and Q&A with Nat
- Logistics with sign-in: Nat, Jess, Anna

Time to complete the challenge: 11.30am-2pm

Presenting back your work: 2-3pm

- Key Takeaways and Learnings from today's session: Onyeka, Becky, Jess, Anna
- 5 Presenters share their work (2-3minutes): Onyeka
- Further Learning Resources & Learning Pathways: Nat

The role of data in Local Authority COVID-19 responses

Jay Saggar, LOTI



loti

Local Authority data teams have worked behind the scenes to support their organisations strategic and frontline responses to COVID-19

- Daily [Dashboard of national figures](#) for COVID-19 tests, cases, deaths for the UK
- [Latest statistics for NHS Test and Trace \(England\) and coronavirus testing \(UK\) - 9 September](#)
- Daily [progression dashboard](#) shows both the rate of triage for coronavirus (COVID-19) using NHS Pathways, and the number of people confirmed by a lab to have coronavirus (a positive test)
- Daily [coronavirus \(COVID-19\) shielded patient dashboard](#) is enabling partner organisations across government to support and protect those who need shielding at this time
- All other [NHS coronavirus dashboards](#)
- Weekly PHE Coronavirus Disease 2019 (COVID-19) [Surveillance Report](#)
- [ONS, Death registrations and occurrences by local authority](#)

Data in the public domain

- **NHS digital portal** (SEFT) - allows access to Tableau dashboards for Pillar 2 testing, Cases, 111 Call triaging and SPL list to postcode district.
- **PHE Power BI dashboard** - Provides access to CO-VIS (the interactive map), line list patient level data on infection and contact tracing.
- **PHE COVID-19 Local Authorities Report Store**
 - PHE, Regional Situational Awareness Report
 - Daily Exceedance Report
 - PHE Daily LA report
- **NHS Test and Trace web-based tool (formerly known as CTAS)** - the number of confirmed cases and contacts reported to the NHS Test and Trace system
- **NSSS** opt in for support service for Clinically Extremely Vulnerable (formally Shielding cohort). Run by GDS and MHCLG

Restricted Data

Dashboards:

- Dashboard to inform operational planning
 - Updated daily
 - Data sets: Local outbreak and NHS Line list (restricted)
- Dashboard to inform SLT and Members of trends and key issues
 - Updated weekly
 - Data set: a mix of restricted and public data
- Public dashboards for resident communication on council websites
 - Updated weekly
 - Data sets: public Covid-19 dashboard data

**How have
Boroughs used
COVID-19 data**

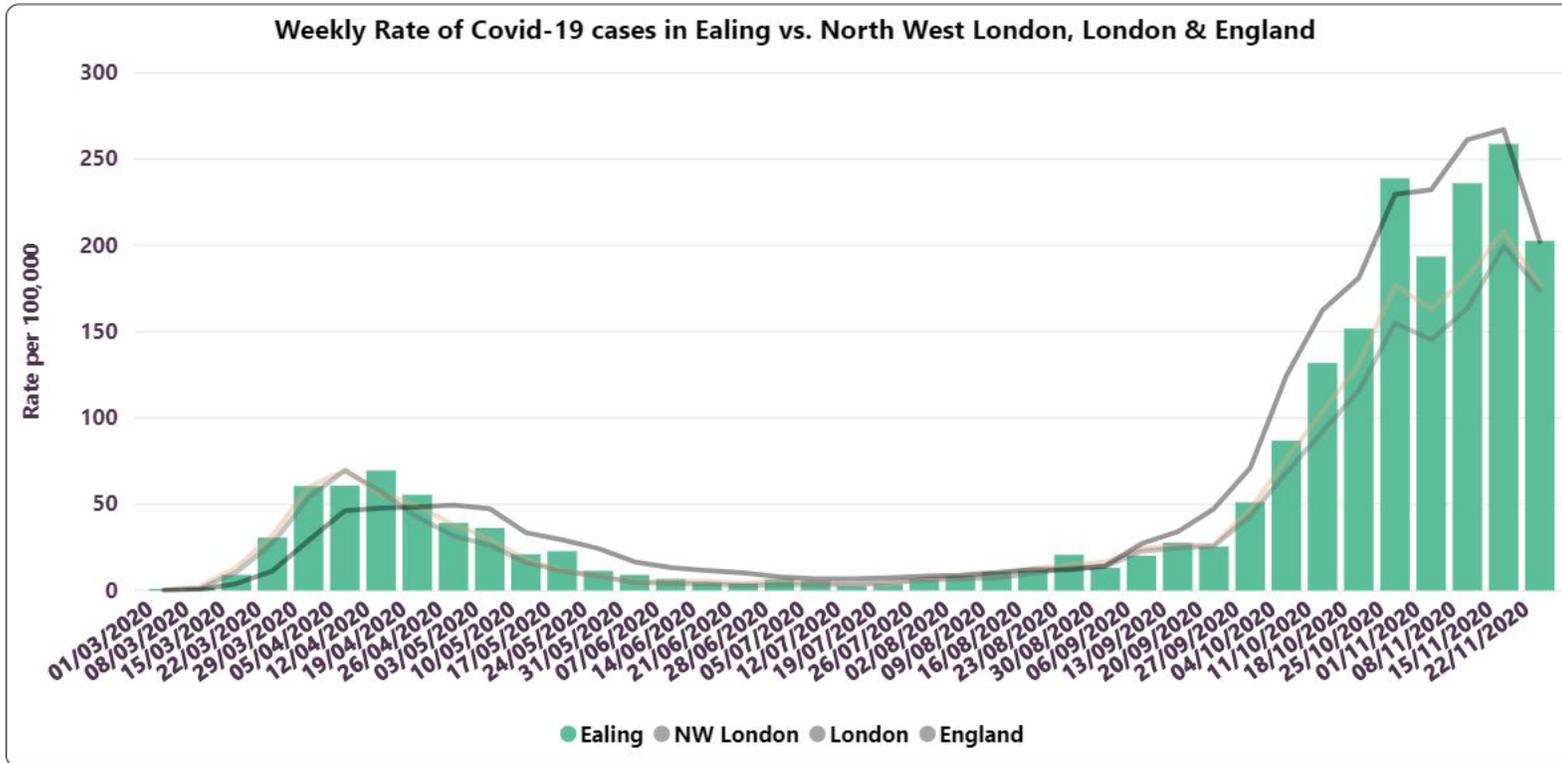
Ealing Covid-19 Dashboard

Weekly Cases (data up to: 22/11/2020)

Period Covered
16/11/2020 - 22/11/2020

Click to switch between weekly and total figures

Latest week



	Number of Infections	Rate per 100,000
Ealing	693	202.7
NW London	3,718	176.7
London	15,616	174.2
England	113,921	202.4

Click on any bar to view that week's figures; click on the same bar again or in any blank space in the chart to view total figures

Source: PHE - <https://coronavirus.data.gov.uk>

693 people were reported as having Covid-19 in Ealing during the week 16 - 22 November, taking the total number of people infected throughout the pandemic to 7,381. The weekly

Covid-19 cases by London Borough

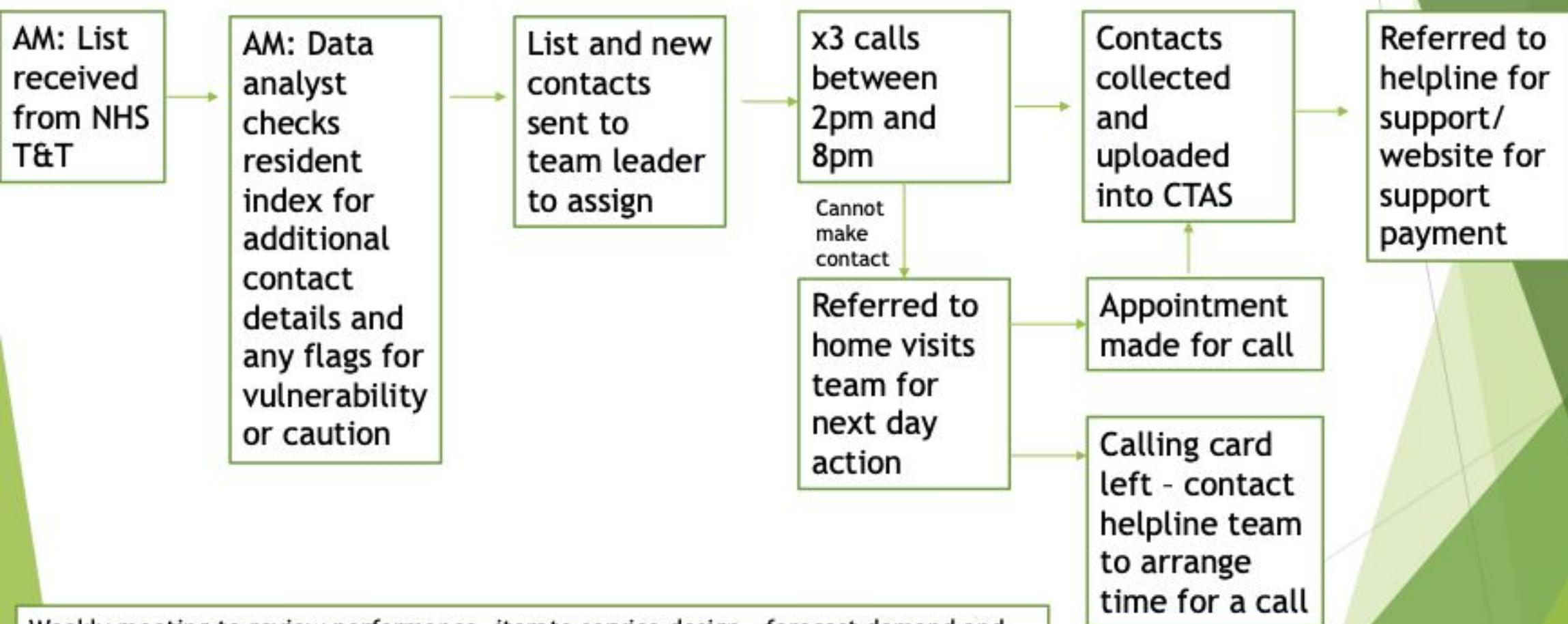


Contact Tracing

- Receive contact tracing data from PHE
- Enrich using other council data sources such as CTAX
- Contact those who the central tracing service have not reached after 24 hours
- Offer support to those required to isolate
- Update central government contact tracing database (CTAS)

Contact Tracing

Local contact tracing service design (7 days a week)



Weekly meeting to review performance, iterate service design, forecast demand and schedule resources. Dedicated service manager, team leaders and scheduler supported by flexible pool of staff to cope with different levels of demand

Supporting those Shielding and isolating

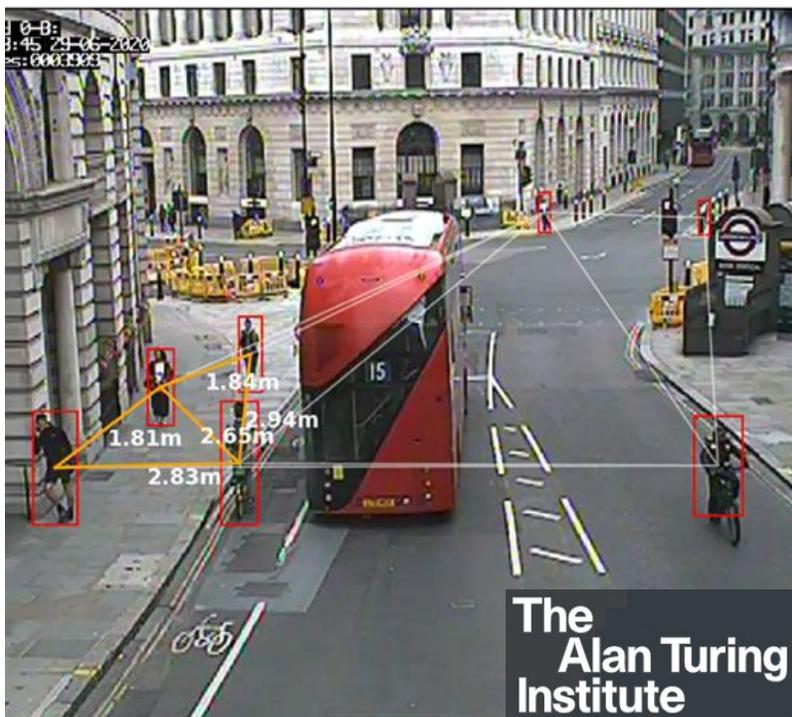
Shielding

- Receive SPL and NSSS weekly
- Process additions and subtractions
- Notify adult/children's social services if required
- Schedule welfare calls and record needs
- Refer to correct pathway or service
 - Food support
 - Prescriptions delivery
 - Finance/benefits support
 - Housing support

Supporting those shielding and isolating

Managing and mitigating local outbreaks

- Process daily and weekly public and private PHE data sets
- Present insights to inform outbreak management
- Supporting local business
- Monitor additional data sources such as o2, Mastercard and CCTV data to evaluate effectiveness of interventions



Managing and mitigating local outbreaks

- New and changing policy
- Data Governance
 - Handling new data sets
 - Unprecedented use cases
- Data quality
 - Data gathered from multiple evolving sources
 - Multiple transformations through transfers and analysis
 - Deliberate errors in some contact tracing data
- Missing and inadequate data documentation
- Matching data across multiple sources
- APIs for automating data downloads

Challenges

- Mass Testing
- New (and better!) central Test and Trace system from January
- Vaccine distribution
- Covid Recovery

Coming next

loti

Power BI – From Data to Decisions for Everyone

Nat Van Gulck
nathaniel.vangulck@microsoft.com
Power BI Technical Specialist



Why modern Business Intelligence?

- **Gut feel can no longer be trusted. Pause. Analyse. Act.** Changing landscape - COVID-19 and Brexit mean staff experience and gut feel cannot be relied on to make decisions. Big and small decisions must be supported by sound data analysis by and for *everyone*.
- **Let analysts analyse.** No more analysts updating reports manually by exporting data from backend systems, copying and pasting cells from one Excel workbook to another.
- **No more rear-view mirror “monthly” reports.** Instant web and mobile access to up-to-date interactive reports\dashboards is needed to create a genuine Data Culture.
- **Integration with productivity tools.** Users expect insights at their fingertips not just in yet another website.
- **Single version of the truth.** Users need to discover and rapidly slice-and-dice datasets that have been certified for use by data stewards.
- **Cross-agency work.** Local Government, NHS and other agency need to work together to improve outcomes for citizens. Secure online report sharing is a key part of bridging the divide.

Data Insights

Traditionally we've seen an unhealthy tug of war between centralised and decentralised Business Intelligence.

- **Centralised:** The BI team or IT takes ownership of reporting and publishes out to Business Users. This leads to bottlenecks, inflexibility and frustration.
- **Decentralised:** Business users take matters in their own hands, extract data as flat files from core systems and create\share disconnected Excel workbooks. This leads to multiple versions of the truth, unsafe data practices and wasted effort.
- **Best of both worlds:** What if business users can be empowered to derive and share their own data insights in a governed and secure fashion?

Microsoft Power Platform

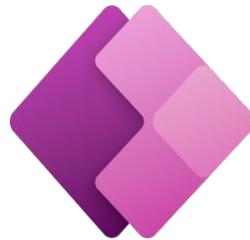
The low-code platform that spans Office 365, Azure, Dynamics 365, and standalone applications

Innovation anywhere. Unlocks value everywhere.



**Power
BI**

Business
analytics



**Power
Apps**

Application
development



**Power
Automate**

Process automation



**Power Virtual
Agents**

Intelligent chat bots

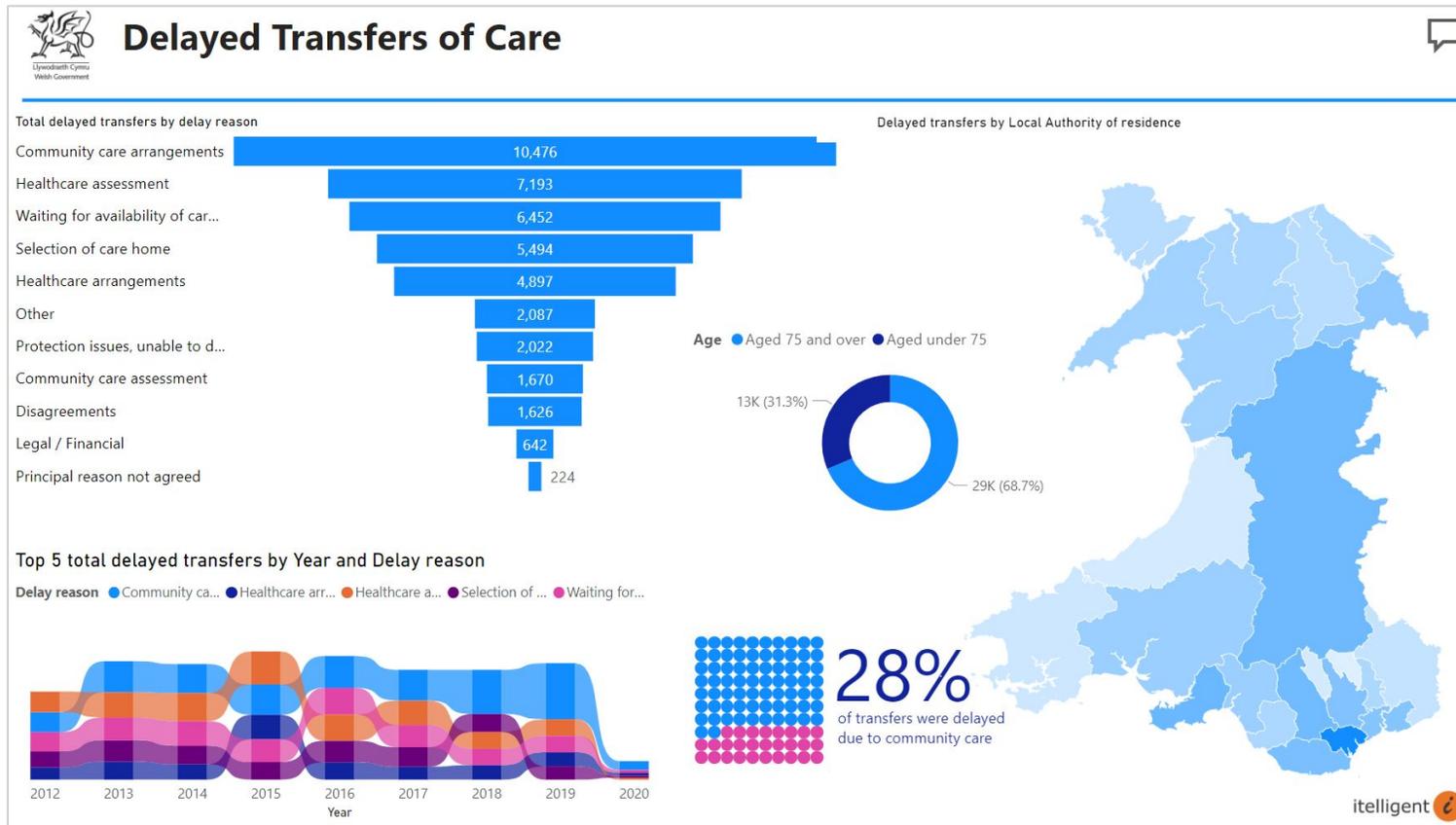
Power BI: the bridge between data and decisions



Cloud data

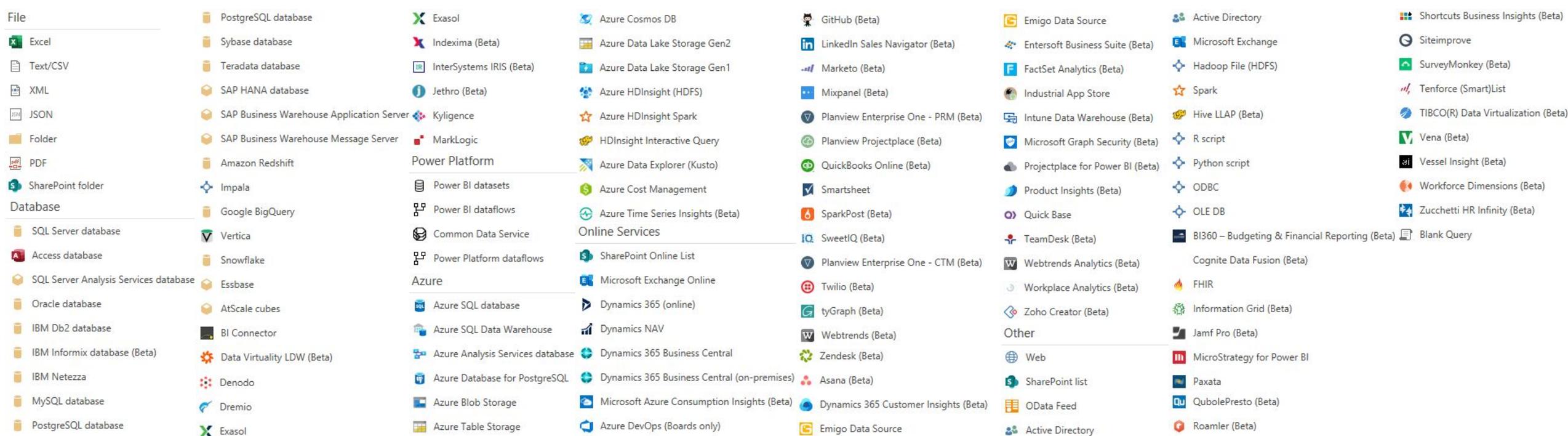


On-premises data



- Web
- On-premises
- Mobile
- Embedded
- Teams
- PowerPoint
- SharePoint
- Excel
- Power Platform
- "..."

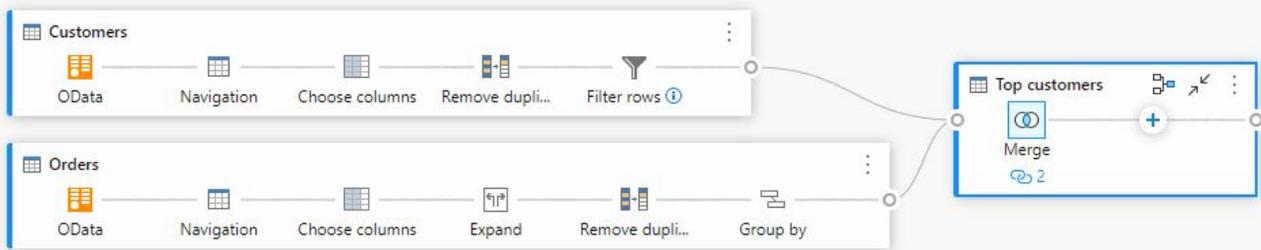
Discover value in any data



Home Transform Add column View

Get data, Enter data, Options, Manage parameters, Refresh, Properties, Advanced editor, Manage, Choose columns, Remove columns, Keep rows, Remove rows, Sort, Split column, Group by, Data type: Text, Use first row as headers, Replace values, Merge queries, Append queries, Combine files, Combine

Queries



Query settings

100%

Table.NestedJoin(Customers, {"CustomerID"}, Orders, {"CustomerID"}, "Orders", JoinKind.Inner)

	CustomerID	CompanyName	ContactName	ContactTitle	Address	City	Region	PostalCode	Country	Phone	Orders
	Valid 100%, Error 0%, Empty 0%	Valid 100%, Error 0%, Empty 0%	Valid 100%, Error 0%, Empty 0%	Valid 100%, Error 0%, Empty 0%	Valid 100%, Error 0%, Empty 0%	Valid 100%, Error 0%, Empty 0%	Valid 100%, Error 0%, Empty 0%	Valid 100%, Error 0%, Empty 0%			
	13 distinct, 13 unique	13 distinct, 13 unique	13 distinct, 13 unique	7 distinct, 3 unique	13 distinct, 13 unique	12 distinct, 11 unique	8 distinct, 6 unique	13 distinct, 13 unique	1 distinct, 0 unique	13 distinct, 13 unique	
1	RATTC	Rattlesnake Canyon Grocery	Paula Wilson	Assistant Sales Representati...	2817 Milton Dr.	Albuquerque	NM	87110	USA	(505) 555-5939	[Table]
2	WHITC	White Clover Markets	Karl Jablonski	Owner	305 - 14th Ave. S. Suite 3B	Seattle	WA	98128	USA	(206) 555-4112	[Table]
3	SPLIR	Split Rail Beer & Ale	Art Braunschweiger	Sales Manager	P.O. Box 555	Lander	WY	82520	USA	(307) 555-4680	[Table]
4	OLDWO	Old World Delicatessen	Rene Phillips	Sales Representative	2743 Bering St.	Anchorage	AK	99508	USA	(907) 555-7584	[Table]
5	LONEP	Lonesome Pine Restaurant	Fran Wilson	Sales Manager	89 Chiaroscuro Rd.	Portland	OR	97219	USA	(503) 555-9573	[Table]
6	THEBI	The Big Cheese	Liz Nixon	Marketing Manager	89 Jefferson Way Suite 2	Portland	OR	97201	USA	(503) 555-3612	[Table]

Create

Integrate with Office & Teams



Create, collaborate and share insights using Office



Seamlessly integrate fully interactive reports



Certified data sets accessible in Excel

The screenshot displays the Microsoft Excel interface with the 'Data' ribbon selected. The ribbon includes options for getting data from various sources: File, Database, Azure, Power BI dataset, Online Services, and Other Sources. The 'From Power BI dataset' option is highlighted with a red box. To the right, the 'Power BI Datasets' task pane is open, showing a list of certified and promoted datasets. The 'Supplier Quality' dataset is marked as 'Certified' and is also highlighted with a red box. Other datasets include 'Opportunity Analysis', 'Procurement Analysis', and 'Customer Profitability', all marked as 'Promoted'. The 'PivotTable Fields' task pane is also visible, showing a list of fields from the selected dataset.

From Power BI dataset

Power BI Datasets

Search

Select an enterprise dataset to create a PivotTable.

Dataset	Endorsement
Supplier Quality Workspace: Production Owner: Adi Bhargava Refreshed: 4 hours ago	Certified
Opportunity Analysis Workspace: Sales and Marketing Owner: Adi Muller Refreshed: a month ago	Promoted
Procurement Analysis Workspace: Finance Owner: Binh Satish Refreshed: 15 hours ago	Promoted
Customer Profitability Workspace: Finance Owner: Binh Satish Refreshed: 2 days ago	Promoted

Drag fields between areas below:

Filters	Columns

Rows	Values

Teams integration

Microsoft Teams interface showing a dashboard for Contoso. The dashboard includes various charts and tables for revenue and customer data.

General Posts Files Wiki Customer 360

Contoso

Top 10 Customers in Revenue

Customer	Revenue
Proseware, Inc.	41M
Litware	25M
Humongous Insurance	22M
Wide World Importers	17M
Blue Yonder Airlines	15M

Revenue by Status

54M (19.2%) Won, 220M (78.67%) Open, 0.1M Lost

Revenue by Closed Date

Line chart showing revenue from 2017 to 2019. Key values: 3.4M (2017), 3.3M (2018), 2.9M (2018), 4.3M (2019).

Open Opportunity by Sales Stage

Sales Stage	Revenue
Qualify	19M
Propose	16M
Develop	11M
Close	7M

Revenue by Status Summary

Status	Revenue	Revenue %
Won	219,879,025	78.67%
Won	219,879,025	78.67%
Open	53,665,504	19.20%
In Progress	50,797,483	18.17%
Delivered	2,868,021	1.03%
Lost	5,963,163	2.13%
Out-Sold	4,000,000	1.43%
Cancelled	1,963,163	0.70%
Total	279,507,692	100.00%

Revenue by Location

Map showing revenue distribution across Asia, North America, Europe, South America, and Australia.

Revenue by Product - Rank

Product	Revenue
Litware Laptop Keyboard X105	3.2M
Litware Wireless Mouse M35	3.2M
Proseware All-in-One Printer M500	3.2M
Southridge 55" LCD	3.2M
WWI Desktop PC2.33 X2330	3.2M
J6689	2.9M
Fabrikam Laptop16 M6000	1.3M
Fabrikam Tablet M100	1.3M
3D Printer	0.2M

Case Count Summary

- Total Case Count: 158
- Case Resolved %: 7.0%

Case Count by Status

Status	Count
In Progress	146
Problem Solved	11
Cancelled	1

Table: Customer Revenue and Estimates

Customer	Revenue	Estimates	Variance
Proseware, Inc.	41,369,173	45,143,310.0	-3,774,137
Litware	24,885,124	45,019,281.0	-20,134,157
Humongous Insurance	21,646,157	27,967,513.0	-6,321,356
Wide World Importers	17,195,331	24,421,105.0	-7,225,774
Blue Yonder Airlines	15,495,717	22,370,217.0	-6,874,500
Wingtip Toys	13,785,010	14,496,556.0	-711,546
The Phone Company	13,608,528	24,718,826.0	-11,110,298
Total	263,478,272	428,898,685.5	-165,420,413

AI Powered Analytics



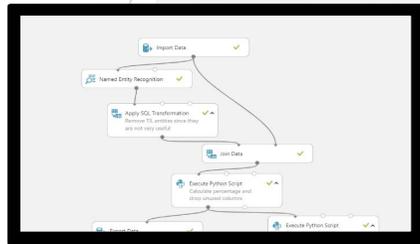
Data Scientists



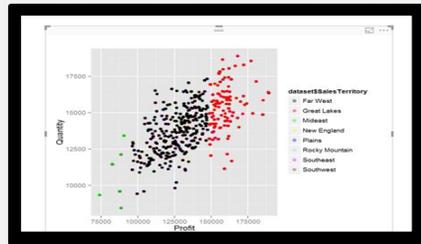
Analysts



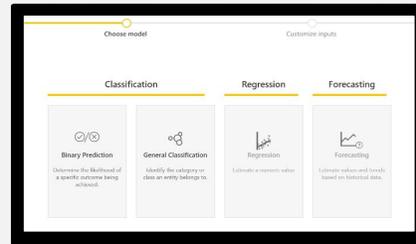
End users



Extend with Azure ML



R Integration



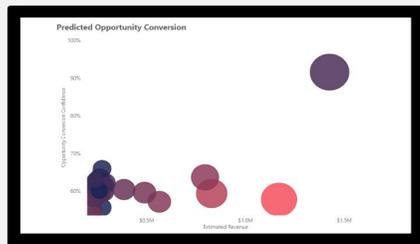
Create ML models



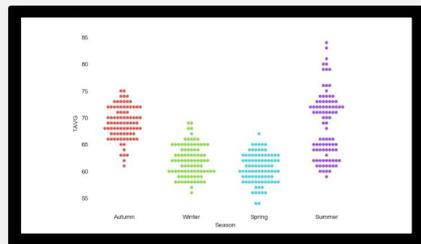
Sentiment Analysis



AI Visualizations



Integrate into reports



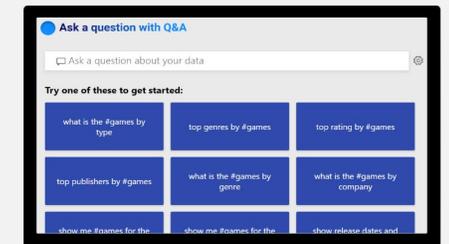
Python Integration



Explore predictions



Key Phrase Extraction



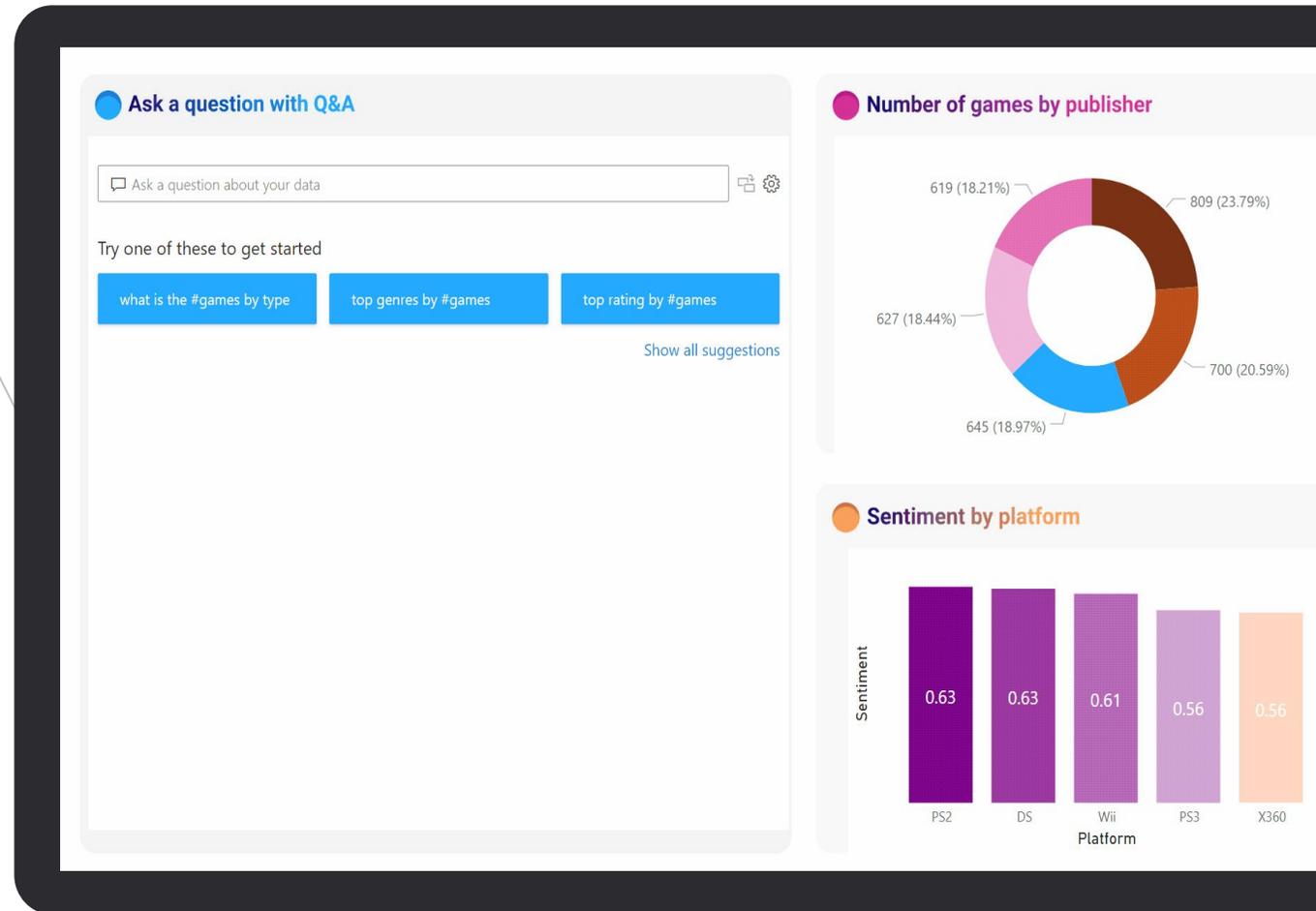
Natural Language

Enabling users – Q&A Visual

Ask natural language questions and get answers in the form of a visual

Consumers can quickly get answers to their data

Designers can create visuals in report by simply double-clicking anywhere on the report canvas, and then using natural language to get started



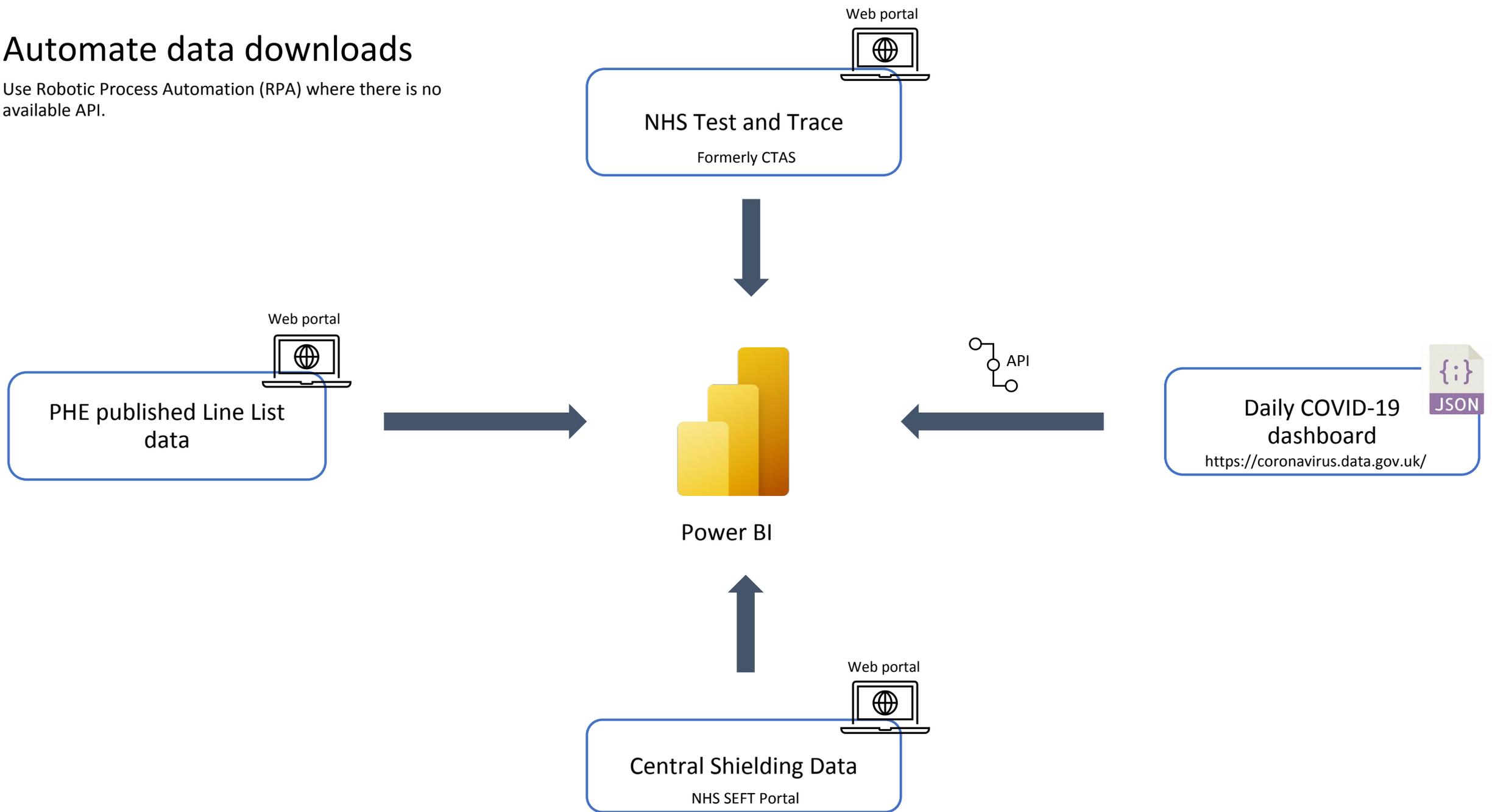


Power BI Demo

Nat Van Gulck

Automate data downloads

Use Robotic Process Automation (RPA) where there is no available API.





Search

[About NHS England](#)

[Our work](#)

[Commissioning](#)

[Get involved](#)

Our advice for clinicians on the coronavirus is here.

If you are a member of the public looking for health advice, go to the [NHS website](#). And if you are looking for the latest travel information, and advice about the government response to the outbreak, go to the [gov.uk website](#).

[Statistics](#)

[Statistical work areas](#)

[COVID-19 Daily Deaths](#)

[COVID-19 Hospital Activity](#)

[A&E Attendances and
Emergency Admissions](#)

[Ambulance Quality Indicators](#)

[Bed Availability and
Occupancy](#)

[Cancelled Elective Operations](#)

[Home](#) > [Statistics](#) > [Statistical work areas](#) > [COVID-19 Hospital Activity](#)

COVID-19 Hospital Activity

A number of data collections have been implemented to support incident management. The collections were activated at short notice and the content of the collections has evolved as the incident has developed. The data collected is classified as management information. It has been collected on a daily basis with a tight turn round time. No revisions have been made to the dataset. Any analysis of the data should be undertaken with this in mind.

The publication covers

Today's Challenge

Context

COVID-19 has further emphasized the need for joint working between Local authorities and local NHS Partners to improve transfers of care along a “discharge to assess” model (see Warwickshire case study at <https://aka.ms/ukpsworkshop>) so the hospital social care teams can support people leaving hospital early.

Task

As a Local Authority analyst you have been asked to help develop an understanding of pressures at local NHS Partners and the impact that COVID-19 has had along with discharge trends and volumes.



Demo

Nat Van Gulck



Workshop Intro

Nat Van Gulck

Today's Challenge [TBD – Nat Van Gulck]

Context

There has been an increase in the number of reported Covid-19 cases in your borough and the press are covering this at an alarming pace every day. The public are interested in better understanding who is infected and what leaders in your borough are doing to mitigate an outbreak. You've been informed that your borough is supporting the NHS's roll-out of the new mass testing, and the Leader will be delivering the news in a press conference at 5pm today.

Task

Before any of that, the Leader would like to better understand what's going on in the borough and...

Using PowerBI, can you show... using the datasets available publicly to support your borough leader to shape the narrative?

Today's Challenge

Context

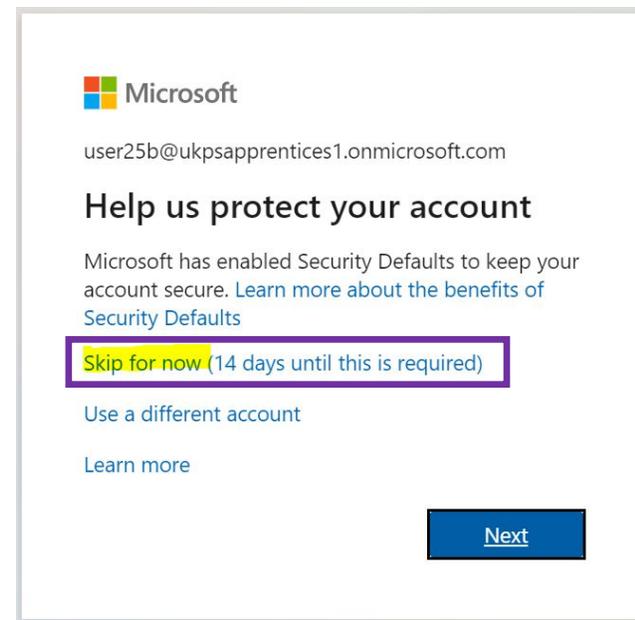
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Task

As a Local Authority analyst you have been asked to help develop an understanding of pressures at local NHS Partners and the impact that COVID-19 has had along with discharge trends and volumes.

Signing in

1. Open a private browser session
2. Go to <https://app.powerbi.com>
3. Sign in using credentials provided (see screenshot)
4. Navigate to the Power BI workspace associated with your username
5. Select the “COVID Analysis” report
6. Select “Edit” in the toolbar
7. Right-click the “Overview” page and select “Duplicate”
8. Modify, delete and create your own charts
9. Add as many new report pages as you need
10. Regularly save your work by going to “File > Save”



Question? Please ask in meeting chat or come off mute.

Workshop

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Presentations intro

Onyeka Onyekwelu

Strategic Engagement Manager – London Office of
Technology and Innovation (LOTI)

Rebecca Mackenzie

Account Technology Strategist, Local Regional
Government – Microsoft

Agenda

2:00 – 2:05 pm

Introduction – Onyeka Onyekwelu and Rebecca Mackenzie

2:05 - 2:15 pm

Presentation 1 + Q&A

2:15 – 2:25 pm

Presentation 2 + Q&A

2:25 – 2:35 pm

Presentation 3 + Q&A

2:35 – 2:45 pm

Presentation 4 + Q&A

2:45 – 2:55 pm

Presentation 5 + Q&A

2:55 – 3:00 pm

Close

Power BI Workshop Winners



#1 – User5

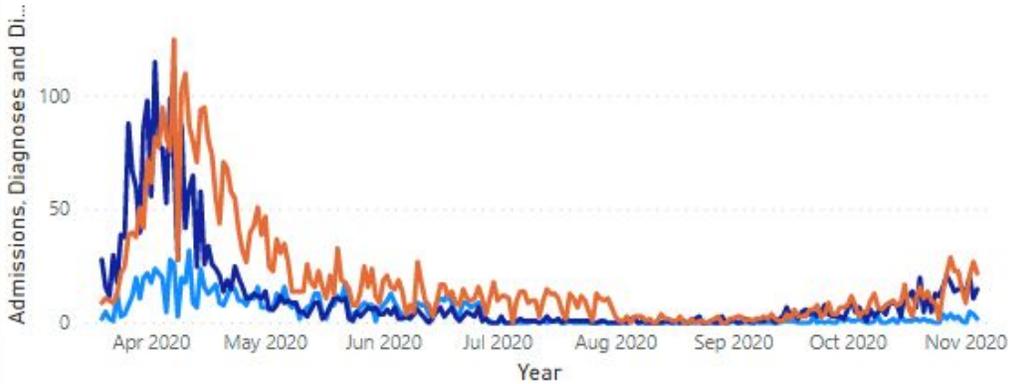
Ripon Miah

Apprenticeship
Levy Manager,
Tower Hamlets

1,105 Admissions 2,647 Diagnoses 4,309 Discharges

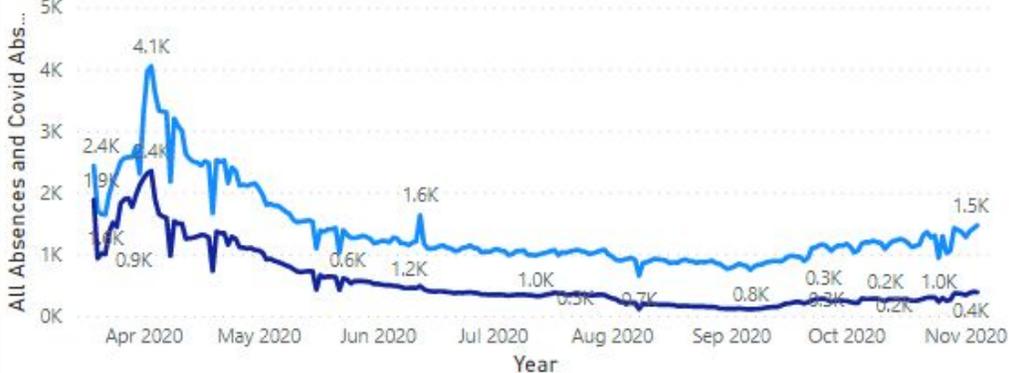
Admissions, Diagnoses and Discharges by Year, Quarter, Month and Day

● Admissions ● Diagnoses ● Discharges



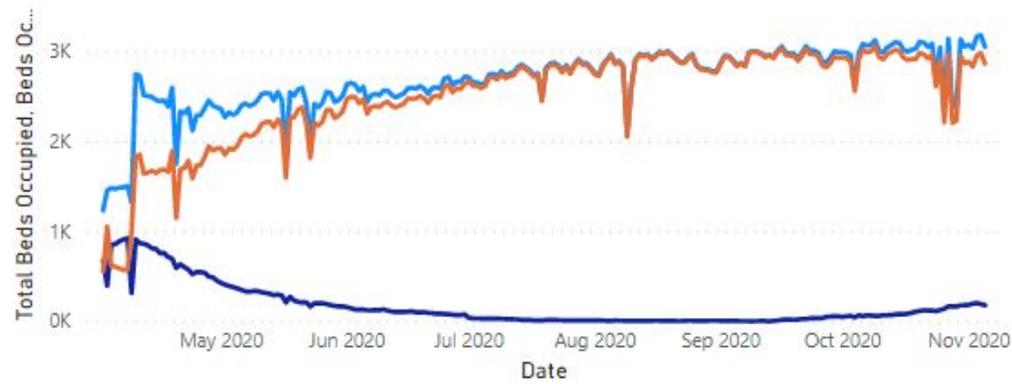
All Absences and Covid Absences by Year, Quarter, Month and Day

● All Absences ● Covid Absences



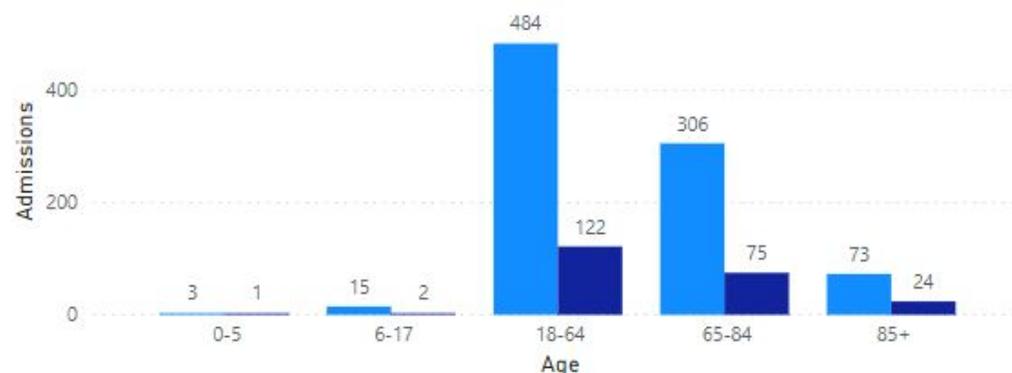
Total Beds Occupied, Beds Occupied Covid and Beds Occupied Non-covid by Date

● Total Beds Occupied ● Beds Occupied Covid ● Beds Occupied Non-covid



Admissions by Age and Day Type

Day Type ● Weekday ● Weekend



Filters 🔍

Search

Filters on this page ...

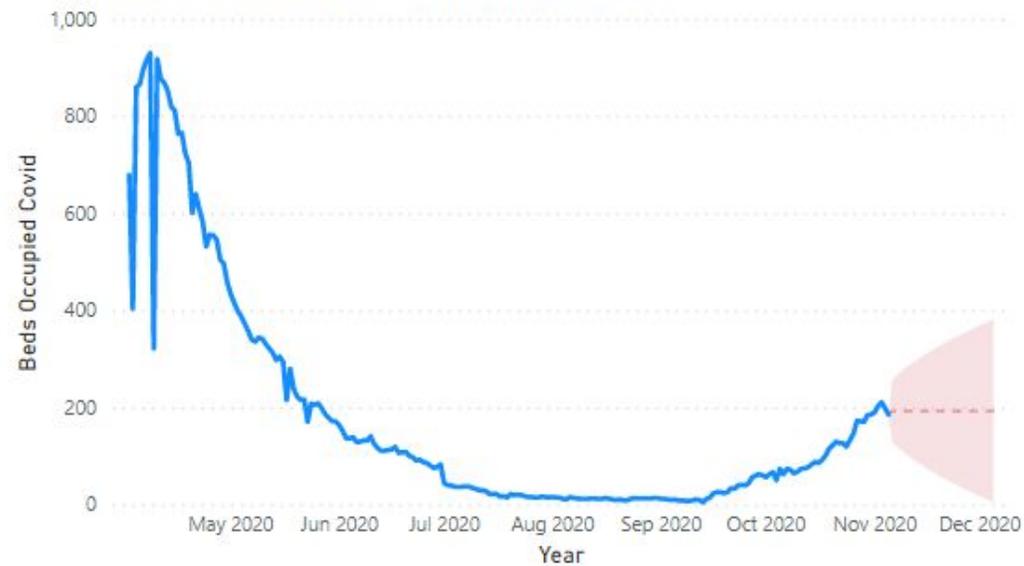
Add data fields here

Filters on all pages ...

Local Authority ...
is TOWER HAMLETS

Add data fields here

Beds Occupied Covid by Year, Quarter, Month and Day



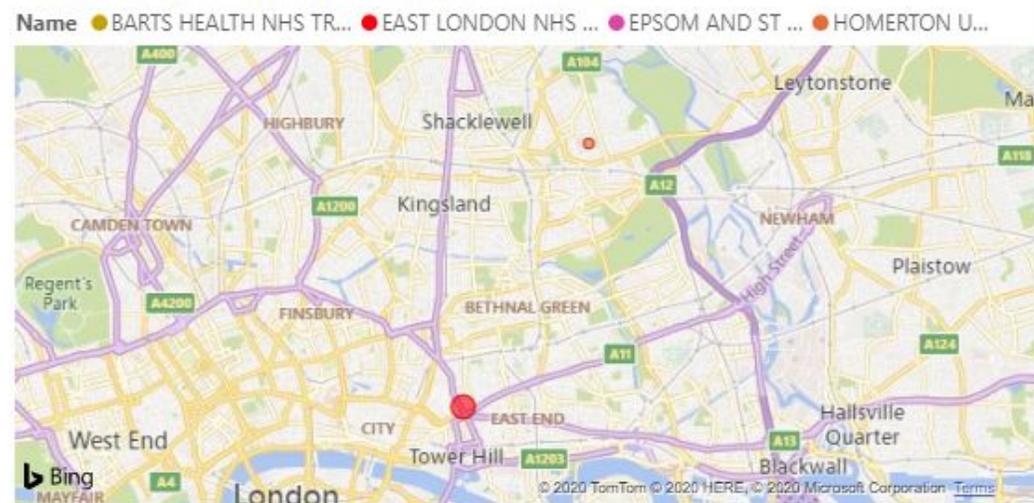
Beds Occupied Covid trended down, resulting in a 95.05% decrease between April 2020 and November 2020.

Value averaged 4,817.25 per month between April 2020 and November 2020.

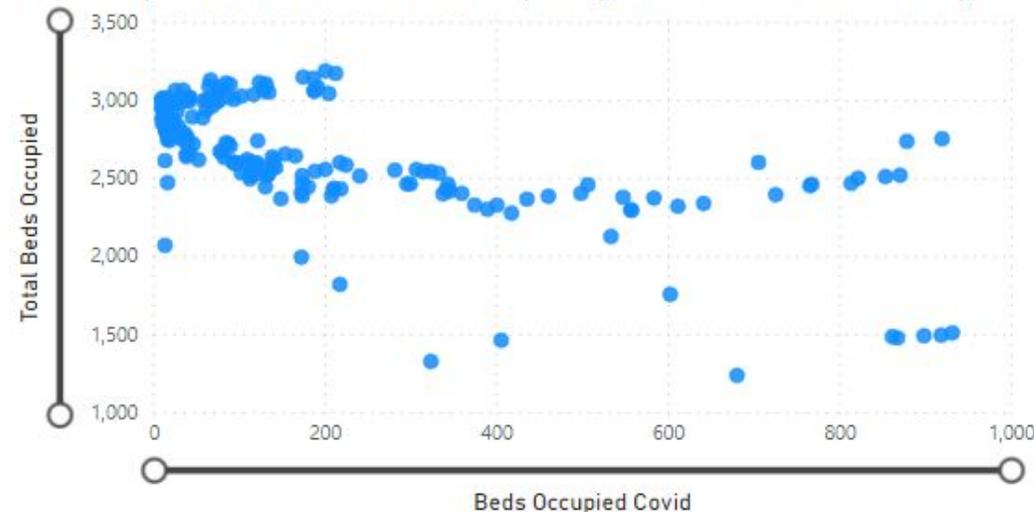
Beds Occupied Covid experienced the longest period of decline (-19668) between April 2020 and August 2020.

Beds Occupied Covid decreased for the last 1 month on record.

Covid Absences by NHS Trust Postcode and Name



Beds Occupied Covid and Total Beds Occupied by Year, Quarter, Month and Day





#2 – User58

Shaun Madziva
Systems Support
Apprentice,
Southwark Council

2,082

Admissions

5,349

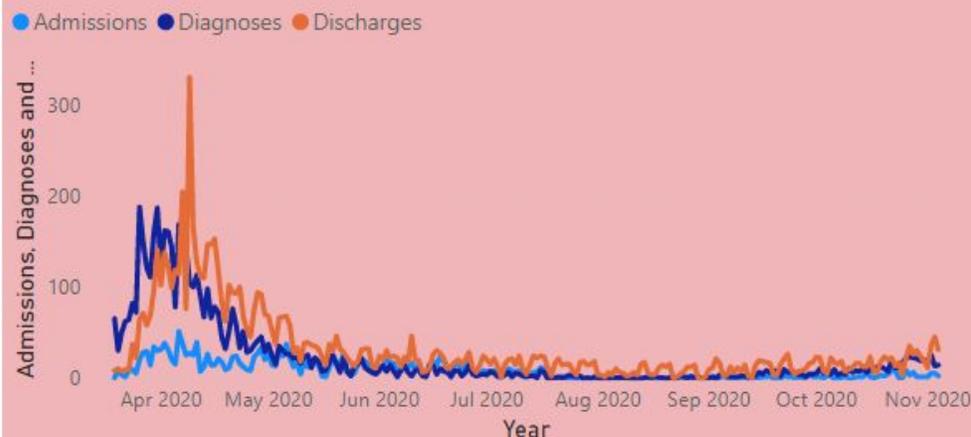
Diagnoses

7,557

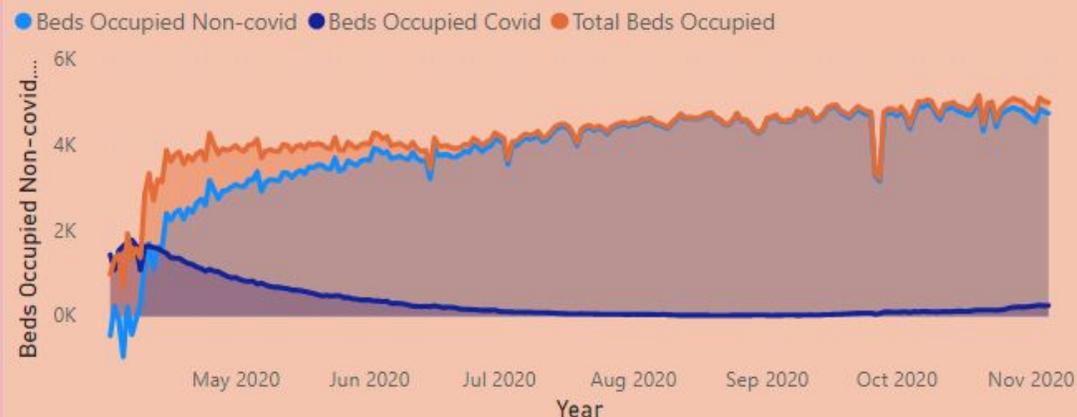
Discharges

2/1/2020 12/1/2020

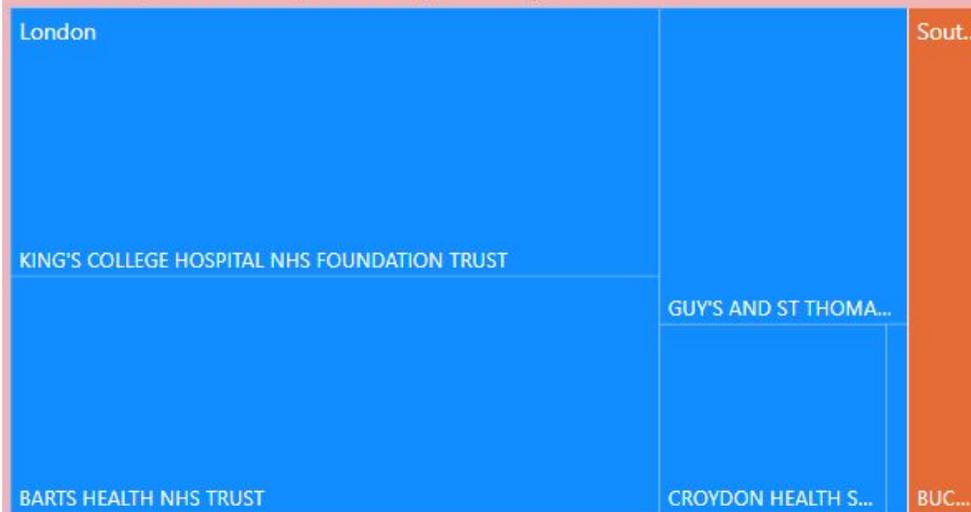
Admissions, Diagnoses and Discharges by Year, Quarter, Month and Day



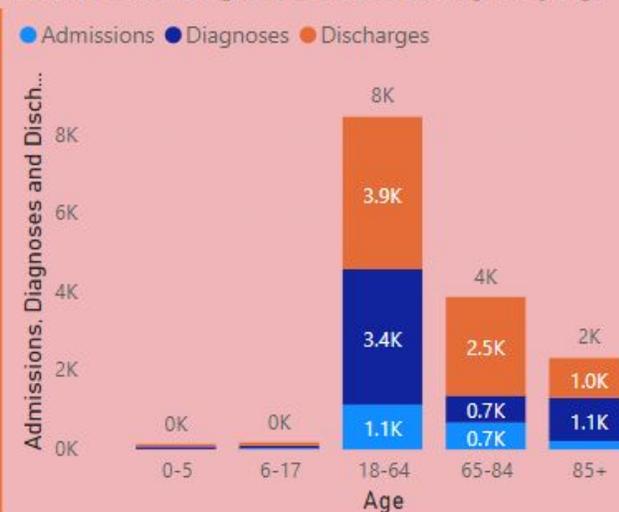
Beds Occupied Non-covid, Beds Occupied Covid and Total Beds Occupied by Year, Quarter, Month and Day



Beds Occupied Covid by NHS England Region and Name



Admissions, Diagnoses and Discharges by Age



Between Thursday, March 19, 2020 and Wednesday, November 4, 2020, Discharges had the largest increase (255.56%) while Diagnoses had the largest decrease (77.27%).

Between Thursday, March 19, 2020 and Wednesday, November 4, 2020, Discharges had the highest average at 32.71, followed by Diagnoses at 23.16 and Admissions at 9.01.

Admissions experienced the longest period of decline (-22) between Wednesday, April 29, 2020 and Monday, May 18, 2020.

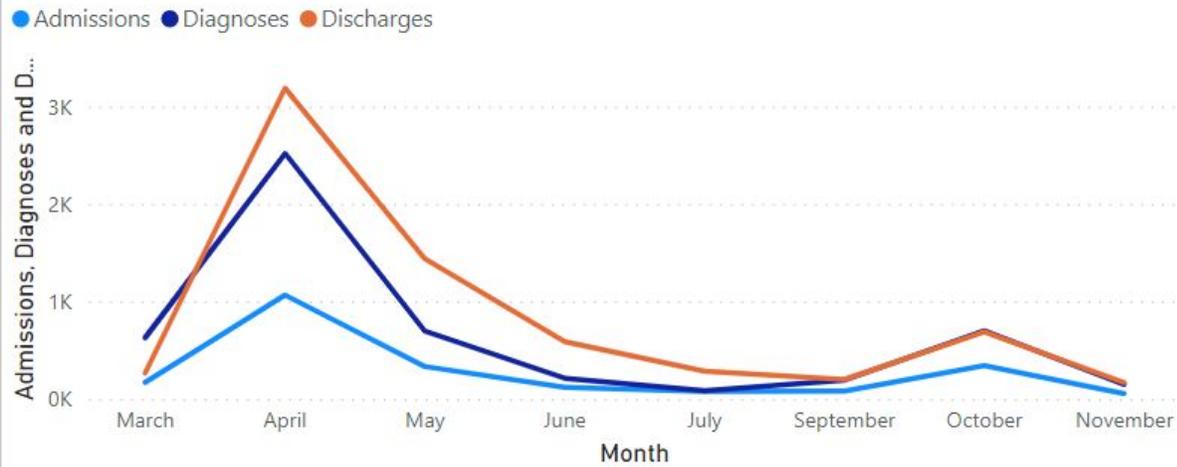
Across all metrics, Discharges had the most interesting recent trend with a



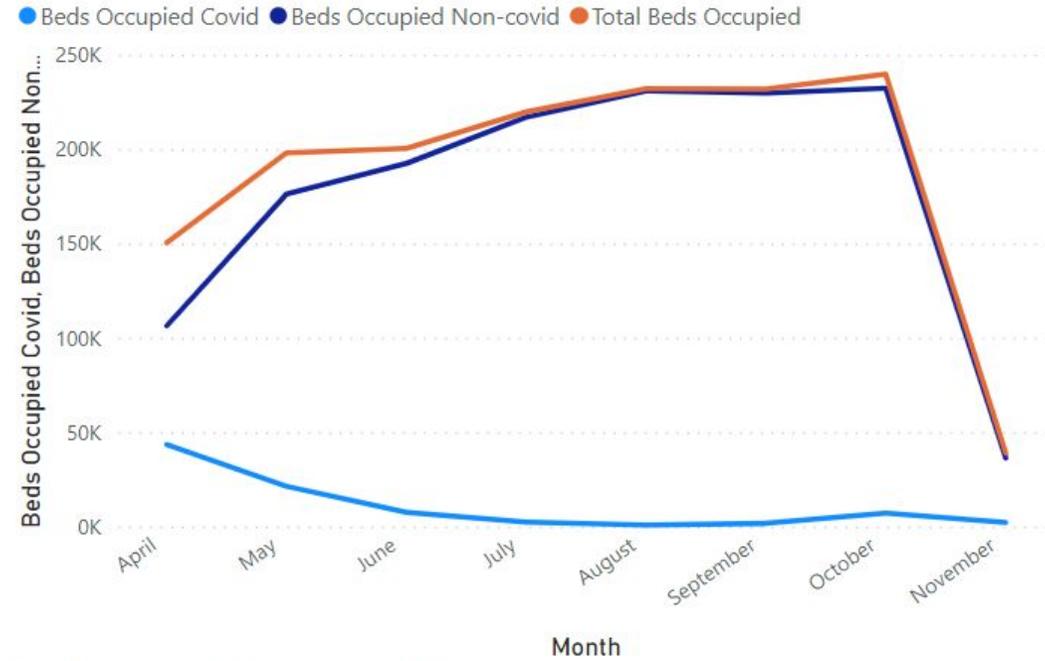
#3 – User50

Pooja Majur
Krishnadas
Process Engineer

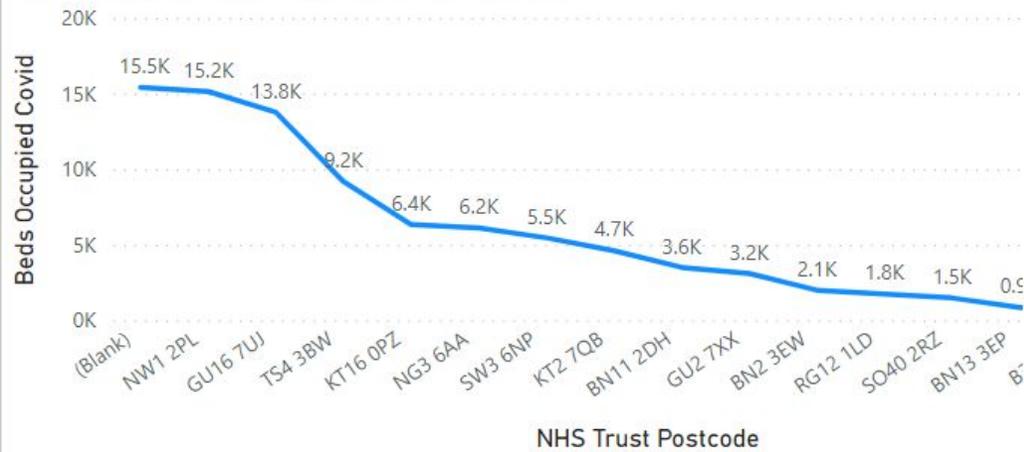
Between March 2020 and November 2020, Discharges had the highest average at 860.88, followed by Diagnoses at 656.38 and Admissions at 289.13. Across all metrics, Diagnoses had the most interesting recent trend with a 78.14% decrease in the last 1 month on record.



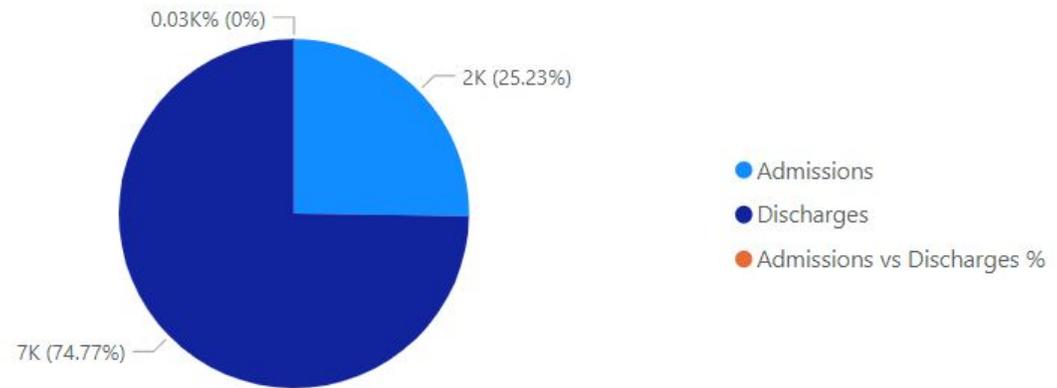
Beds Occupied Covid, Beds Occupied Non-covid and Total Beds Occupied by Month



Beds Occupied Covid by NHS Trust Postcode



Admissions, Discharges and Admissions vs Discharges %



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Local Authority Name is SURREY

loti

Goodbye

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