Intro to Exploring Healthcare Data in Looker

We've put together a quick start guide for your first time exploring data with Looker.

Using the Explore Environment in Looker allows you to **ask questions** and then find the **answers using data**. You will always start by asking a question. Maybe you are interested in knowing how many encounters have occurred by hospital? Maybe you then want to see for a specific hospital, the number of encounters broken down by the month a patient was admitted and the code name for the admission. Here is the Explore environment we will be using.

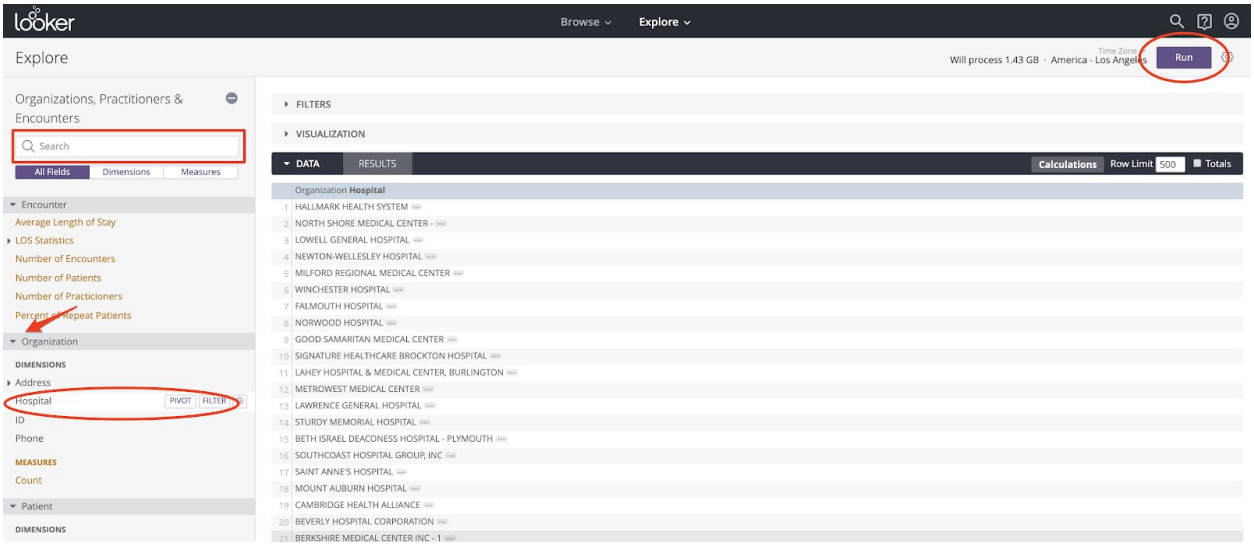
Key Terms:

Dimension - Attributes or categories you might use to group your data.
Measure - Aggregate Values (i.e. Totals, Counts, Averages). Appear in orange font.
Filter - Enables you to isolate and limit your data to only the values you care about.
Pivot - Enables you to view dimensions horizontally. Each value in the dimension will become a column in your data.

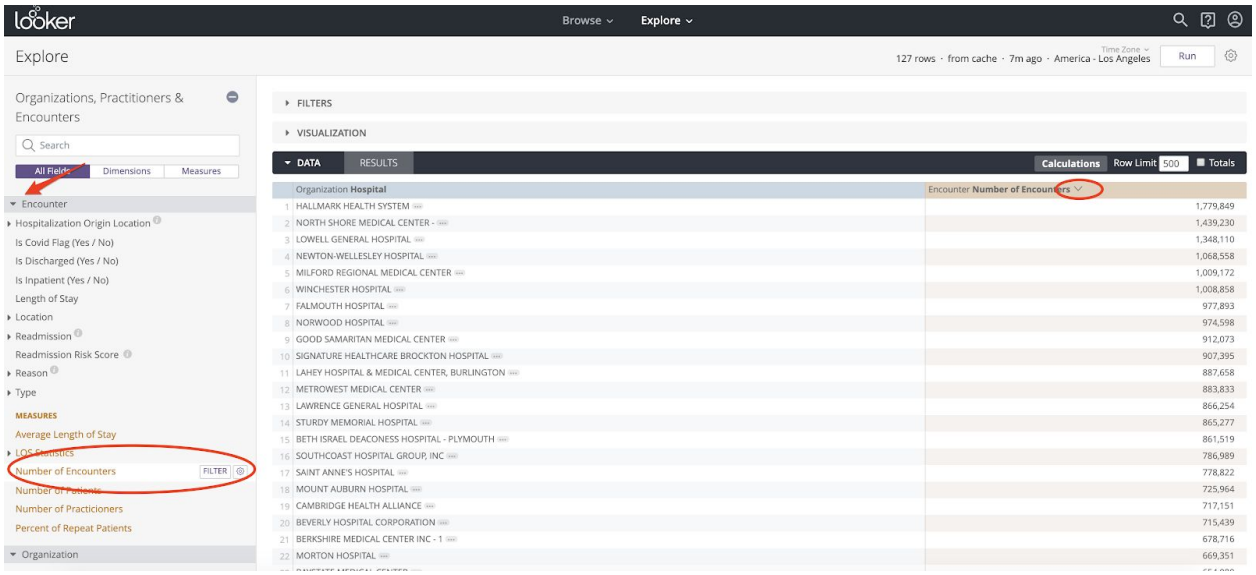
Let's Explore:

Once you have your question, you will need to break it down to identify the data that you need. To answer the question *"How many encounters have occurred by hospital?"*, you will need to figure out the **Number of Encounters** for each **Hospital**.

To find this out, you would start by clicking on **Hospital**. If you click on Hospital and hit Run, you will see a unique list of all hospitals.

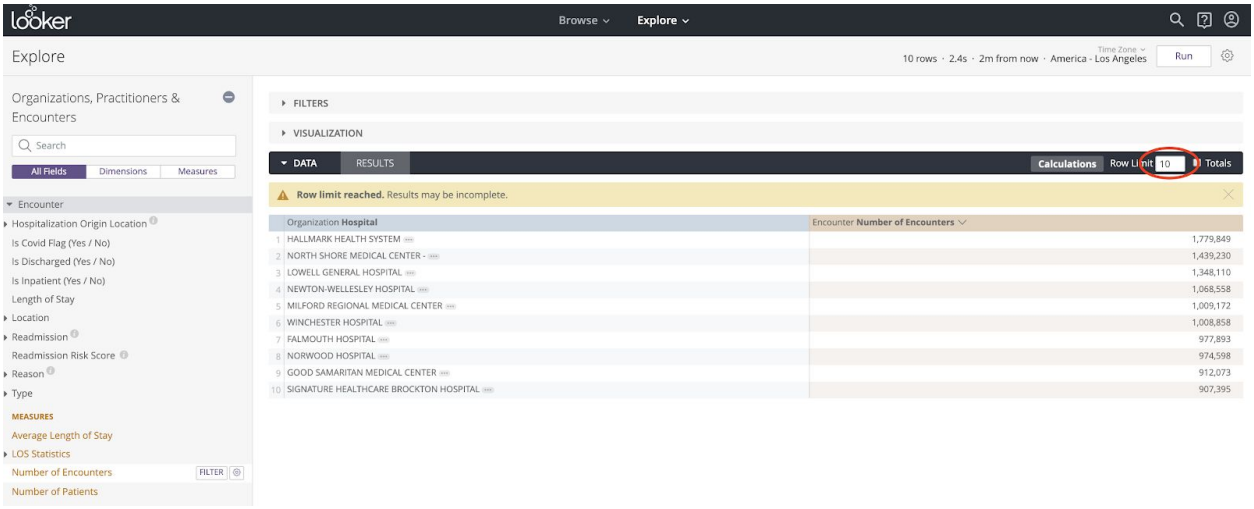


Now we want to find out the Number of Encounters per Hospital. You would need to add a measure into your data set. Clicking on the measure **Number of Encounters** and hitting Run will show us the number of the Number of Encounters by each Hospital.



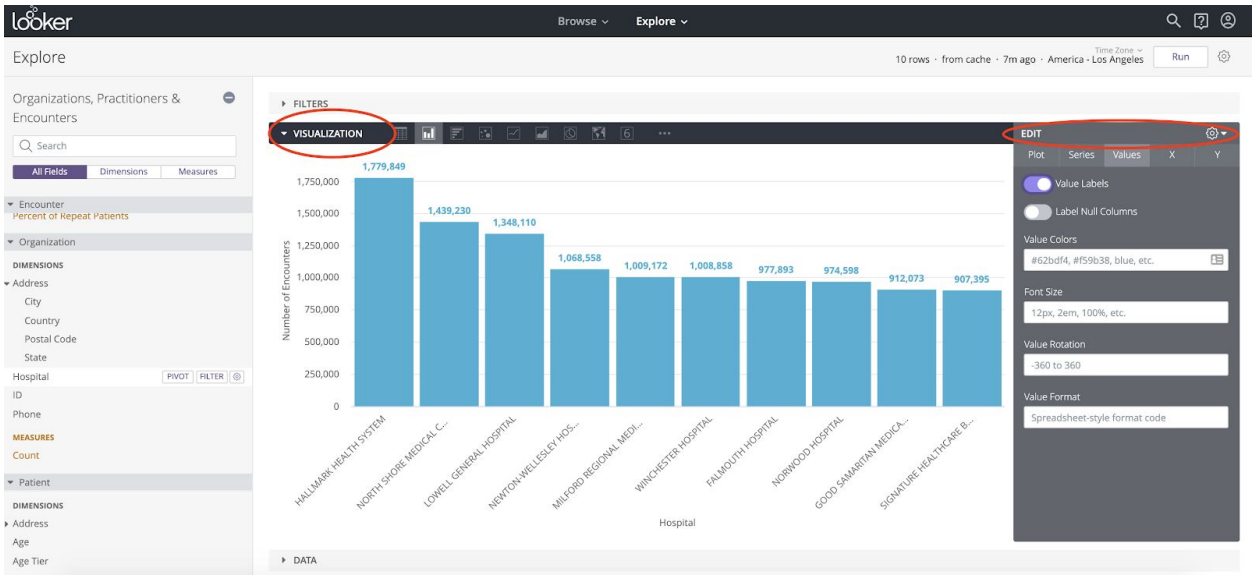
The downward arrow that you see in the column header of the Number of Encounters measure means that the data is **sorted**, or ordered, by Number of Encounters. It's in descending order, meaning that the Hospital with the most Number of Encounters are listed first. To change the order or field you want to sort by just click on the column header.

If you want to limit your results to only show, say, the **top 10 Hospitals**, you could use a Row Limit. This will simply limit the number of results that you see on the page.



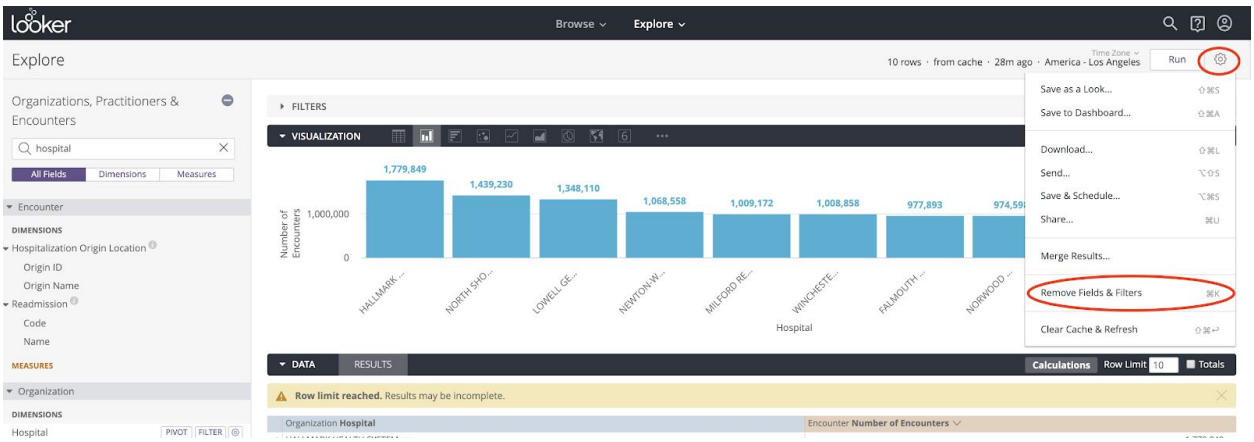
Congratulations! You now have all of the data that you need to answer your question. It's time to interpret the results. It is clear to see from the data that Hallmark Health System has the **most encounters**. Visualizing these results can make it very easy to share your findings with others.

To visualize the data set, use the visualization pane to select a chart. You can then make additional adjustments to the visualization by using the **Edit menu** in the upper right corner of the visualization pane.



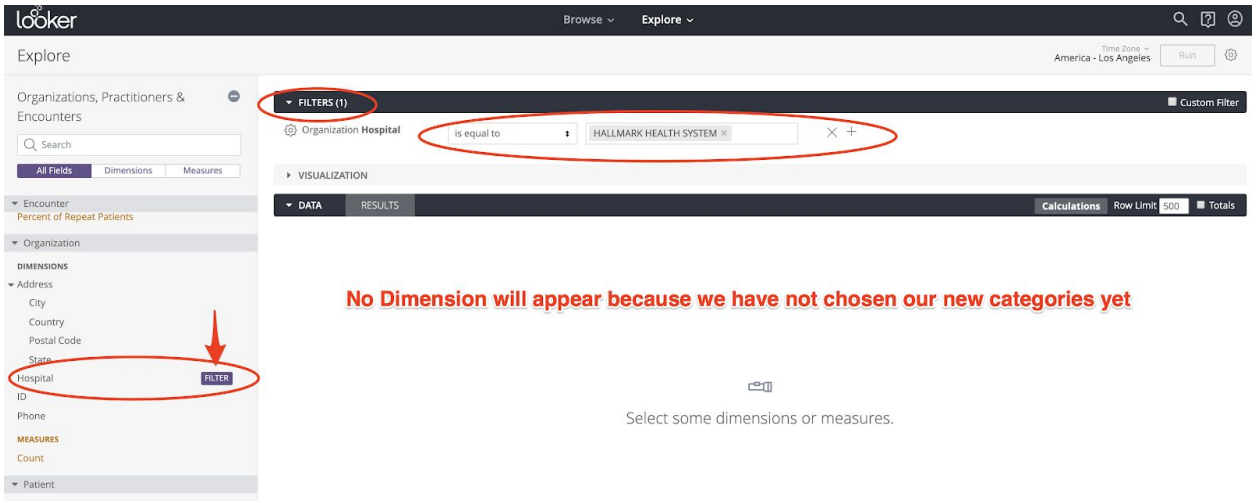
Now you might want to dig a bit deeper to find out more information about the types of encounters at the Hallmark Health System Hospital.

Let's clear the canvas to ask a new question by clicking on the Gear sign in the top right hand corner and clicking **Remove Fields and Filters**.

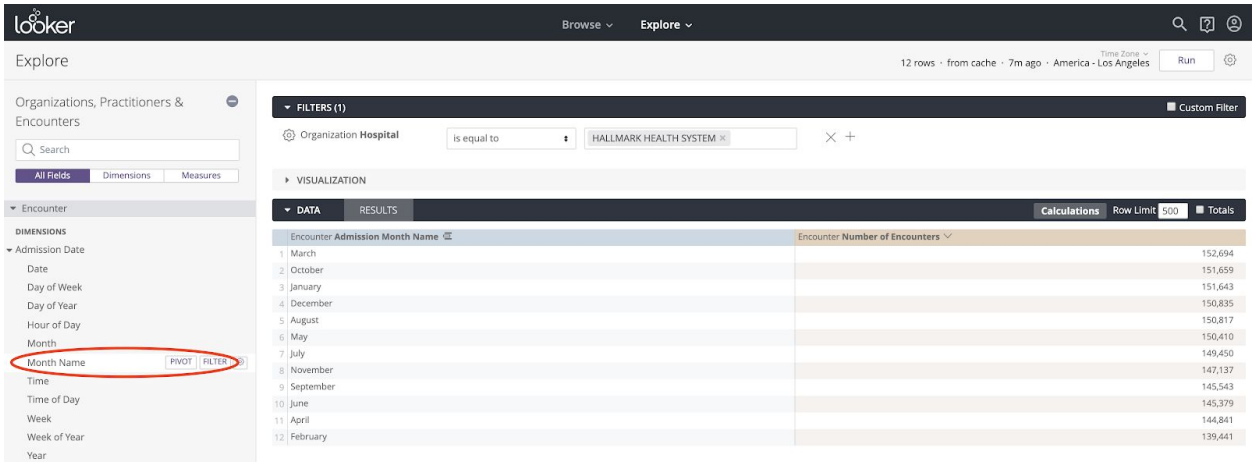


You can start to investigate what types of encounters are accounting for the admissions to Hallmark Health System. You want to look at Number of Encounters by Admission Month and Code Name.

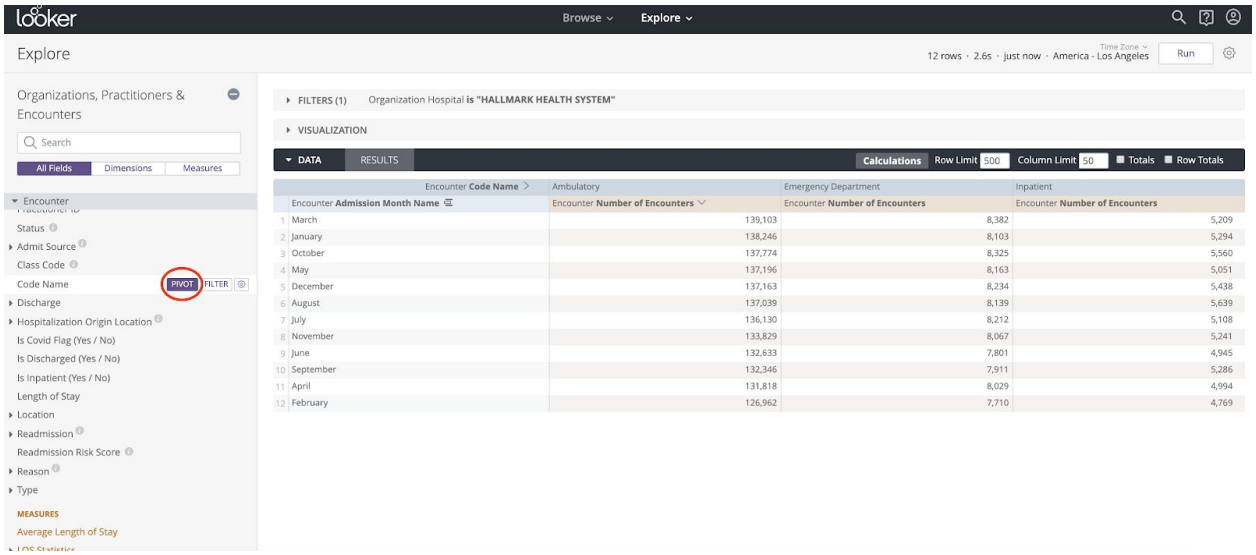
To focus on only the Hallmark Health System Hospital, you need to apply a Hospital filter. To do this you **hover** over the Hospital dimension and **click on Filter** to add a filter into the Filter pane of the Explore. You can then type in Hallmark Hospital System so that the filter reads “Hospital is equal to Hallmark Health System”.



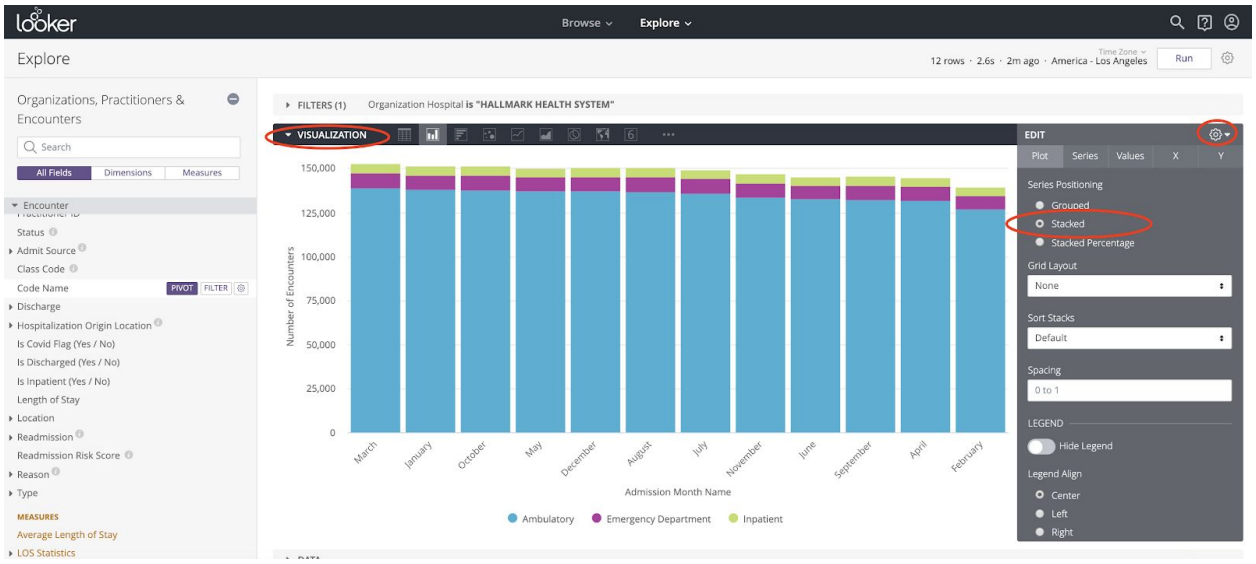
You now want to select Admission Month Name and Number of Encounters. This will show us the Number of Encounters by Admission Month for only the Hallmark Health System hospital.



Lastly, you also want to look at this by Code Name. Since this is our second dimension, we may want to see each Code Name as a separate column. In order to do this, we can **Pivot** on Code Name. To do this **hover** over Code Name and click **Pivot.** Then Run this again so we can get our results.



You now have the data set, so it's time to interpret the results. Looking at data across multiple dimensions may indicate that we would like to visualize this with a stacked bar chart.

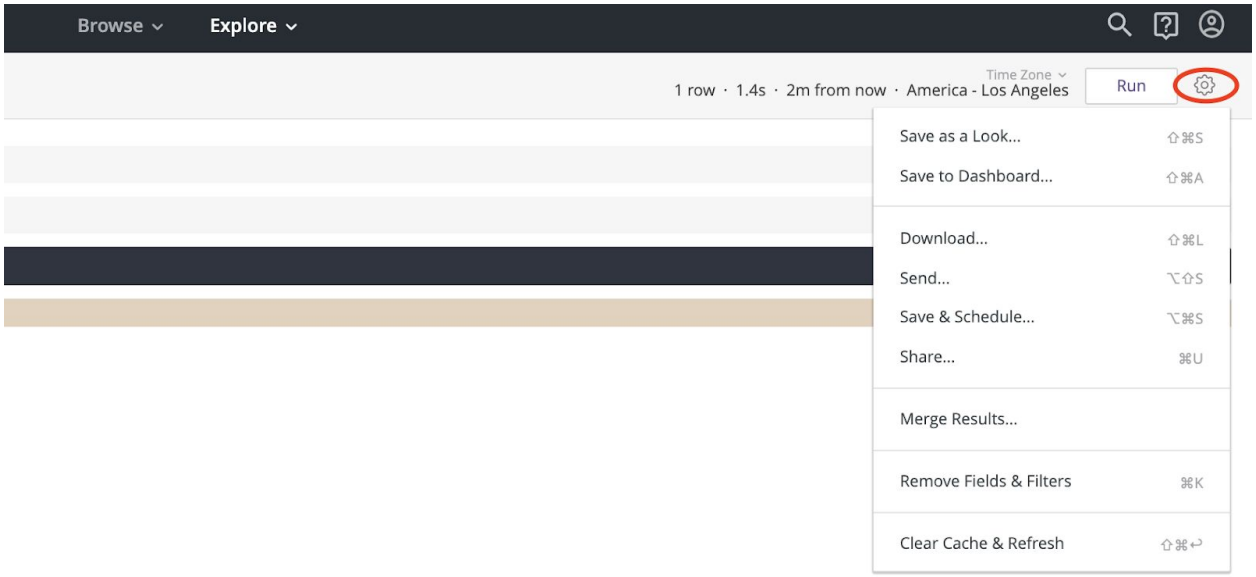


It’s easy to see from the chart that Ambulatory Encounters were by far the most prominent admission type at Hallmark Health System, and that is pretty consistent every month of the year. Perhaps Hallmark Health System will now make sure that more staff and ambulances are available to serve the community.

Let’s Share our Findings:

It’s easy to save, share and collaborate on our findings. Here are a few ways we can do that.

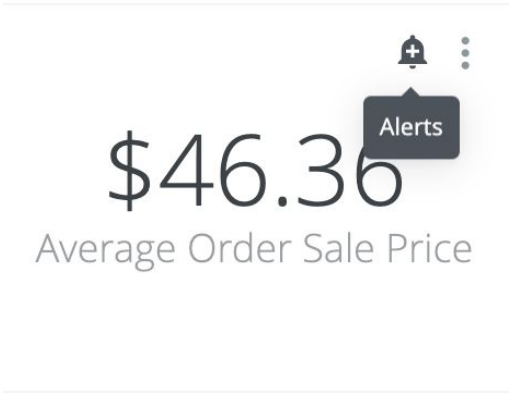
Click on the **Gear sign in the top right corner** and you will see the following options:

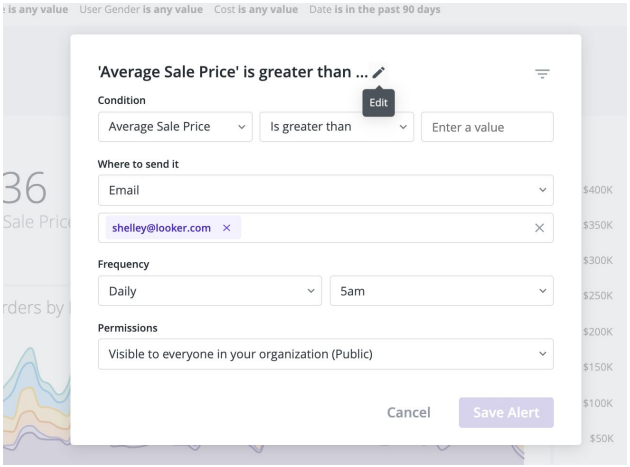


1. Save
    a. Dashboard - Save directly to a dashboard. It will only live on that dashboard.
    b. Look - Save as an individual report. Can then be added to multiple dashboards.
2. Send and Schedule
    a. Share URL -You can copy/paste the URL from the browser URL bar and send.
    b. Send - One time send to an external application (i.e. email, slack, etc…)
    c. Save & Schedule - Set up a schedule to automatically update and send the report. This can be on a time cadence or when a specific condition is met.

Set up Alerts:

Set up an alert on the data so you can proactively be alerted when a condition is met. On any tile on a dashboard, **hover** over the tile and click on the **Alerts Bell**. You can then specify the conditions around your alert.





Now you know how to keep asking and keep digging! Who knows what you'll uncover.

Additional Practice:

Try asking and answering these questions:

1. How many total patients were treated in the past year?
2. What are the Length of Stay (LOS) percentiles?
3. What is the breakdown of the number of encounters by age tier and code name in the past year?
4. What age group and gender account for the highest number of patients?
5. How many At Risk Patients were discharged in the past week? (Hint use Readmission Risk Score)

Answers:

1. https://trial.looker.com/x/lvd6tR5XDGSjmTn9jHQ0z7
2. https://trial.looker.com/x/mQt4EpzUJTwvK9pQliP6yX
3. https://trial.looker.com/x/ylZQJCBAXtEvyKGyG9GlYf
4. https://trial.looker.com/x/KaUK7DKlBr1XgrUJG4v4k5
5. https://trial.looker.com/x/sL5liYKvU6v0lSsNsEO8mL

More Resources:

Viewing Dashboards Guide
Viewing Individual Visualization Guide
Data Consumer Training
Building Reports Training
Looker User Guide