Geonetric
Digital with care.

Storytelling with Data

Data Visualization for Healthcare

Today's presenter

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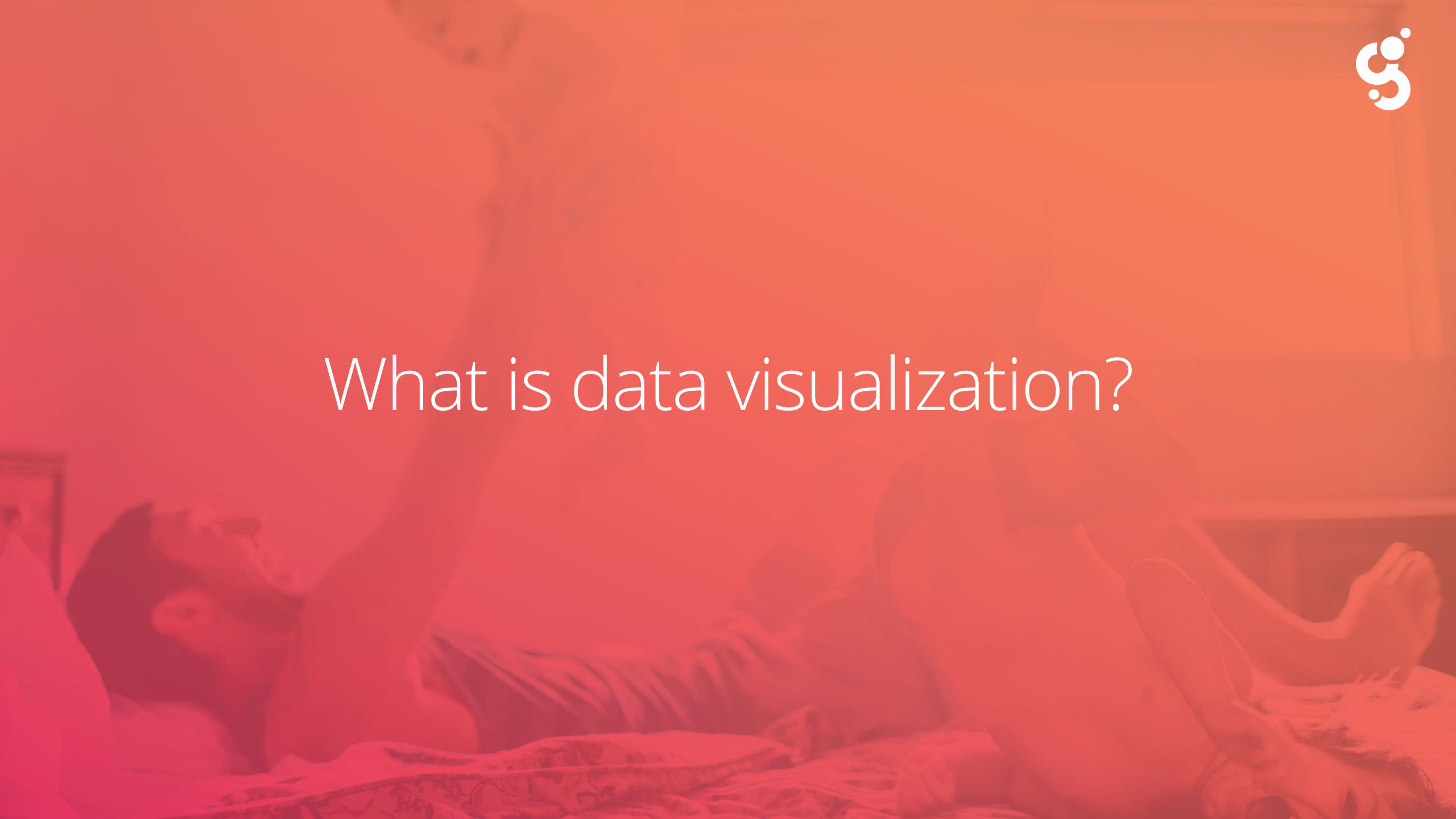


What is data visualization?

"Most of us need to listen to the music to understand how beautiful it is. But often that's not how we present {data}: we just show the notes, we don't play the music."

— Hans Rosling

What is data visualization?

Data visualization is

- Valuable as an analytical and communicative tool because the insights it provides through visually apparent cues, patterns, and trends makes data more digestible;
- Customized to meet the information needs of specific intended audiences/stakeholders; and
- Designed to reduce the likelihood of stakeholders misunderstanding or misinterpreting data

Data visualization is not

- Emphasizing presentation over message in a way that distorts or distracts from meaning; or
- More complex or creative than it needs to be to accurately convey data meaning

Why does it matter?

- 90% of the information transmitted to the brain is visual
- Humans process images 60,000 times faster than text
- 70% of our sensory receptors are in our eyes
- 65% of people are visual learners

Studies have also shown that while only 10-20% of written or spoken data is remembered, 65% of information is remembered when it's presented visually.

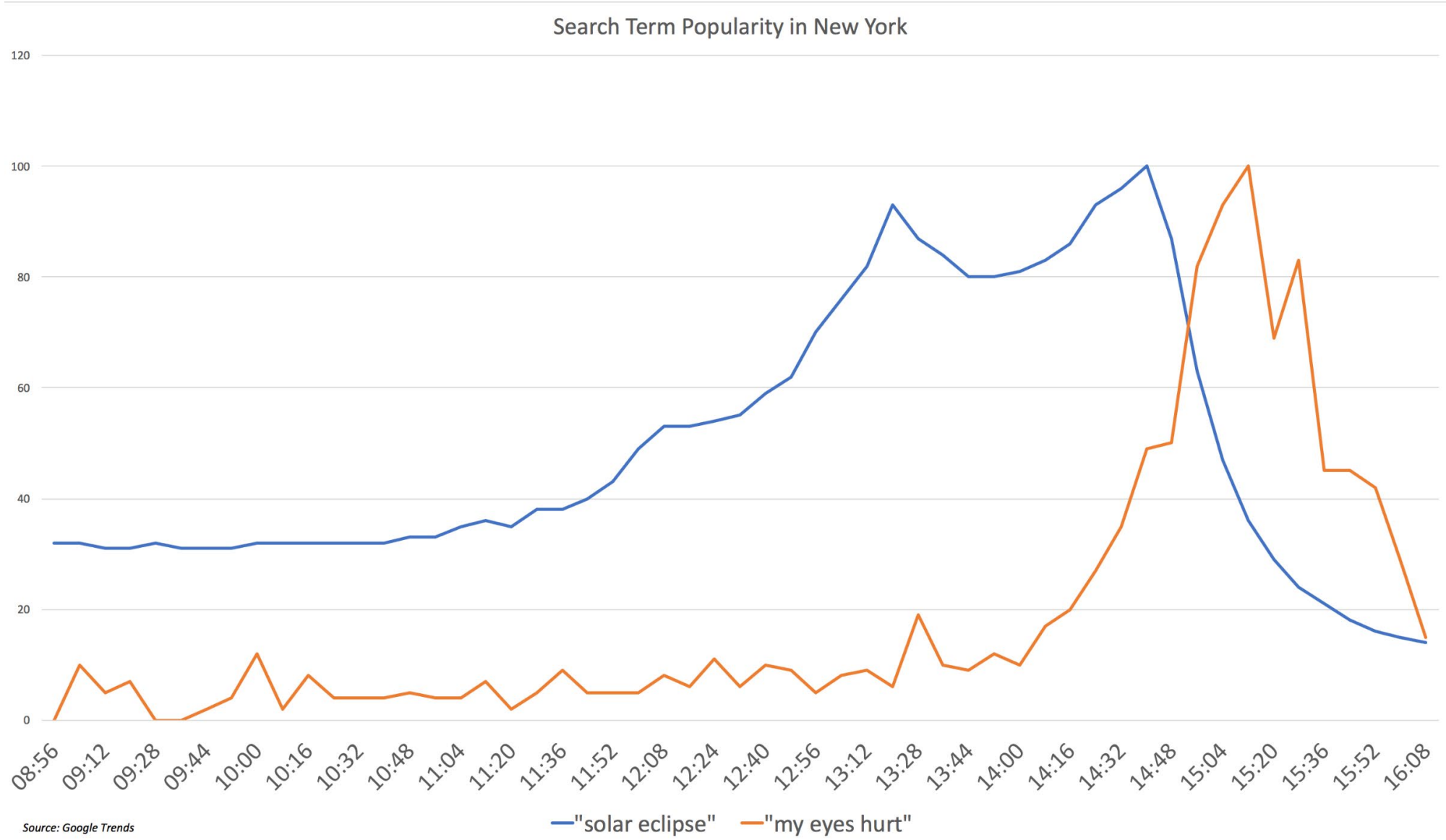
In short, visual data is easier to remember than words.

*University of Minnesota
**Massachusetts Institute of Technology

What is data visualization?

Time	Term	Volume
10:00	Solar eclipse	35
10:00	My eyes hurt	15
11:00	Solar eclipse	38
11:00	My eyes hurt	8
12:00	Solar eclipse	55
12:00	My eyes hurt	11
13:00	Solar eclipse	72
13:00	My eyes hurt	12
14:00	Solar eclipse	80
14:00	My eyes hurt	13
15:00	Solar eclipse	28
15:00	My eyes hurt	100
16:00	Solar eclipse	18
16:00	My eyes hurt	18

What is data visualization?



Source: Google Trends

Knowing what data to use

Ask the right questions

- Why are you doing this?
- What story are you trying to tell?
- Who is your audience?
- How actionable is this data?

Ask the right questions

- Why are you doing this?
  - Optimizing a campaign
  - Providing ROI data to stakeholders
  - Analyzing site performance
  - Mapping user behaviors
  - Understanding your {potential} patients

Ask the right questions

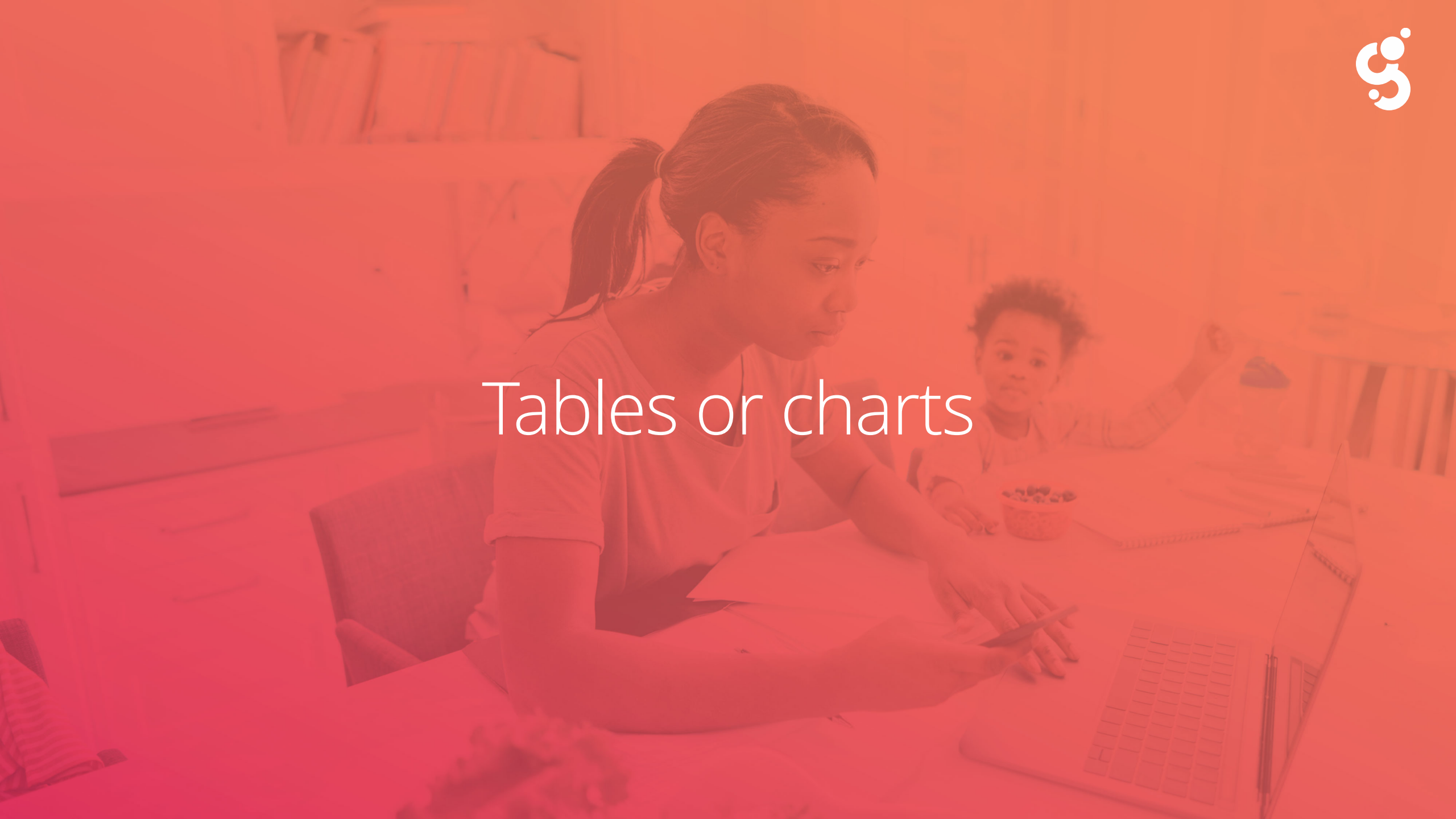
- What story are you trying to tell?
  - Comparing data
  - Identify how data sets interact and align
  - Understand your data distribution
  - Analyze trends
  - Showcase results/growth/ROI

Ask the right questions

- Who is your audience?
  - Yourself
  - Stakeholders
  - Your marketing team
  - Your agency/partner(s)
  - Your patients/visitors

Ask the right questions

- How actionable is this data?
  - The best data gives you a clear next step
  - Your audience should be able to make a decision or understand your decision
  - Your data should correlate with your measureable goal(s)


Tables or charts

When to choose a table vs. a chart

Tables

- Large amounts of data
- Ability to drill down
- Figures must be precise
- Data requires attention

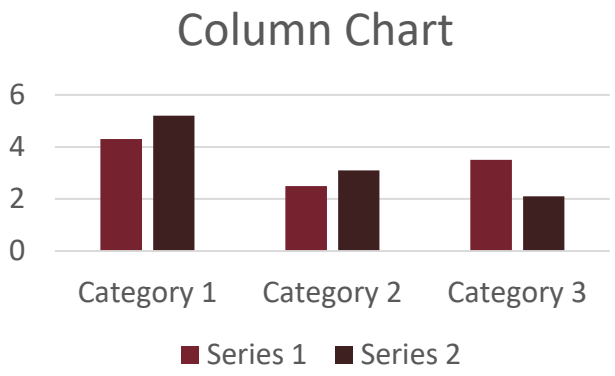
Charts

- Fewer datasets
- Data needs simplified
- Data is quantitative
- Trying to showcase trends

Types of charts & when to use them

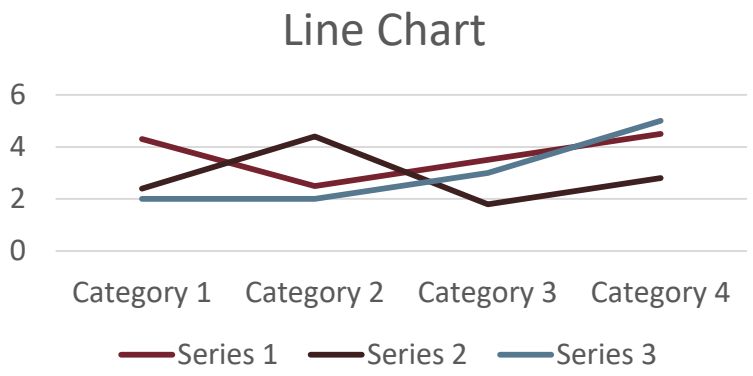
Column/Bar

- Compare trends between different groups
- Track more significant changes over time



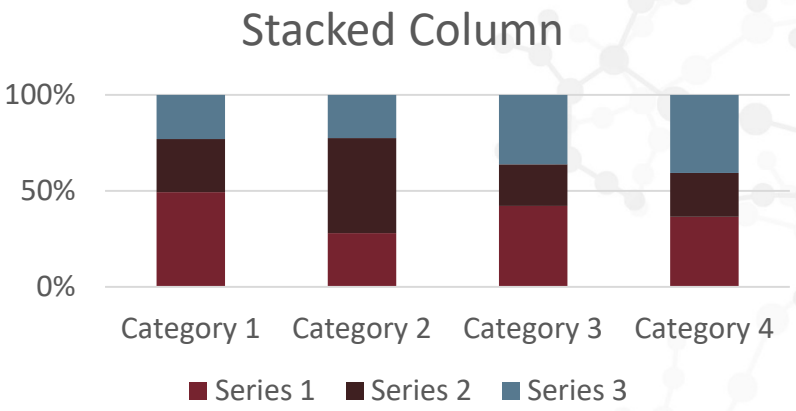
Line

- Better for showing an overall trend
- Easier to see small fluctuations than on a column/bar graph
- Compare changes over time for more than one group



Stacked (Column/Bar/Line)

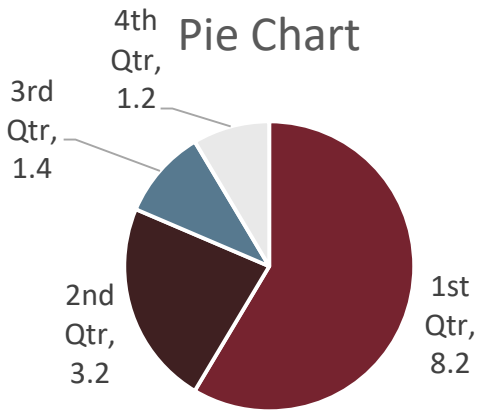
- Use a stacked chart when the focus of the chart is to compare the parts of multiple totals



Types of charts & when to use them

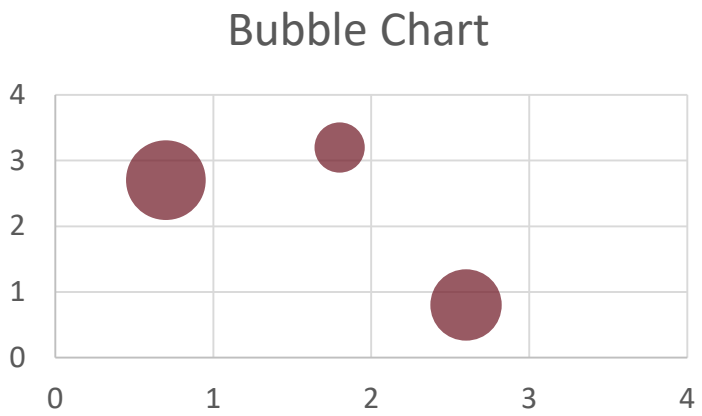
Pie

- Used to compare parts of a whole
- Not used to compare changes over time
- Do not use more than 8 slices



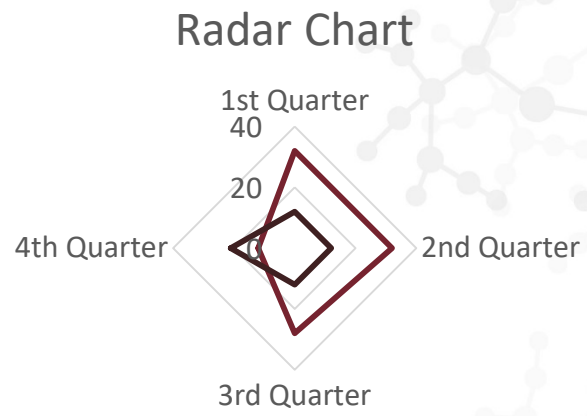
Bubble Chart

- Used to display 3-4 metrics on one chart by using the x-axis, y-axis, size of the bubble, and color of the bubble



Radar Chart

- Used to measure results vs. a goal



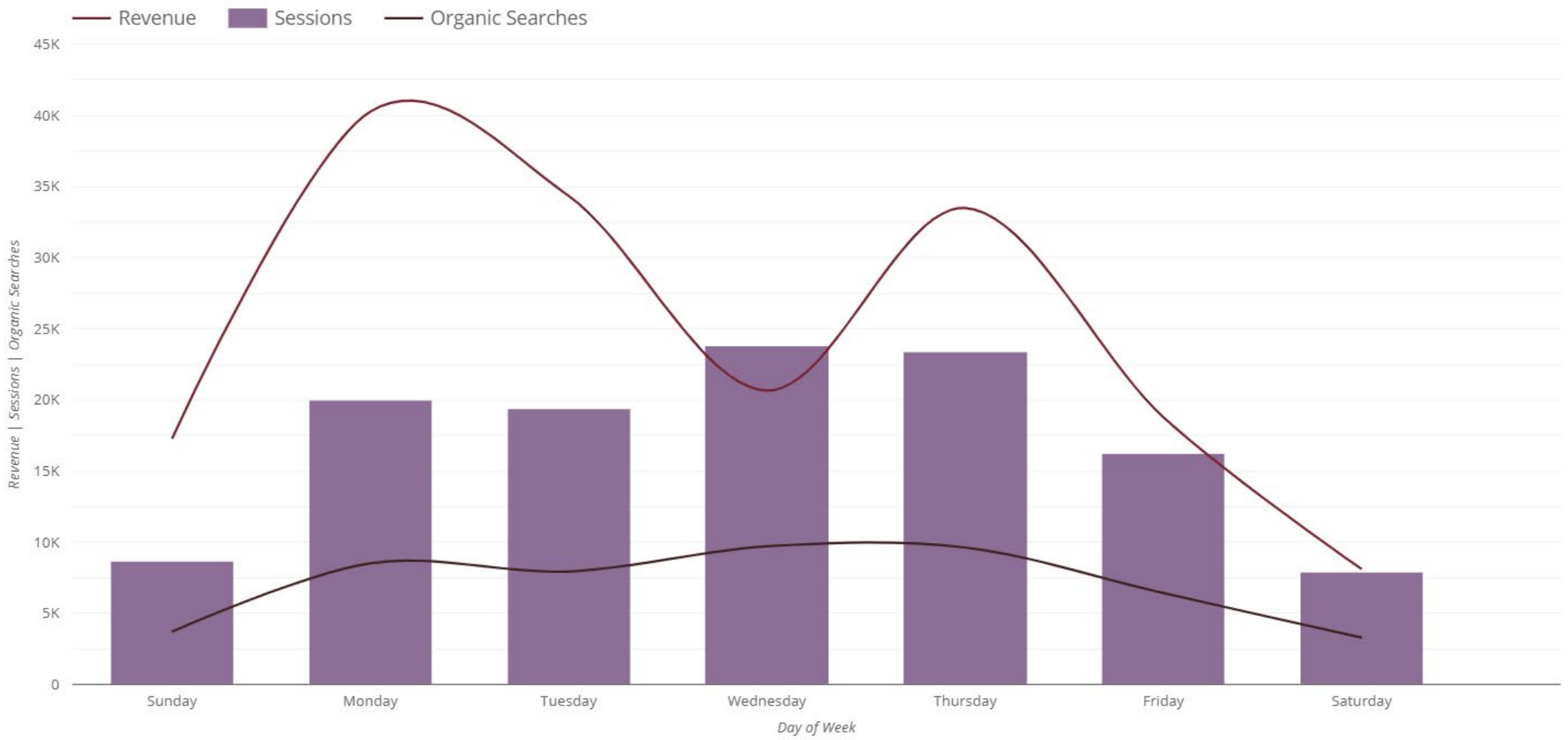
Combining visual elements

Combining visual elements

When should you combine visual elements?

- Showcasing trends with static data
- Highlighting micro data within a macro chart
- Telling multiple stories with one graphic

Combined charts



Tables

	Gender	Age	Medium	Bounce Rate	Avg. Session Duration	Revenue
1.	female	35-44	organic	48.5%	00:03:11	
2.	female	25-34	organic	47.75%	00:02:55	
3.	male	25-34	organic	50.4%	00:02:49	
4.	male	45-54	organic	49.08%	00:03:20	
5.	male	55-64	organic	47.9%	00:03:03	
6.	male	35-44	organic	50.13%	00:02:48	
7.	female	18-24	organic	46.36%	00:03:02	
8.	female	65+	organic	43.38%	00:02:34	
9.	female	55-64	organic	47.49%	00:02:57	
10.	female	45-54	organic	45.86%	00:02:46	
11.	male	65+	referral	50.82%	00:01:06	
12.	male	65+	organic	49.92%	00:02:53	
13.	female	55-64	referral	70.67%	00:01:18	
14.	female	55-64	cpc	47.69%	00:01:44	
15.	male	25-34	cpc	36.17%	00:01:45	
16.	female	45-54	cpc	48.24%	00:02:07	
17.	female	25-34	referral	61.83%	00:03:19	
18.	male	65+	cpc	59.52%	00:00:54	
19.	male	55-64	cpc	61.36%	00:00:30	
20.	female	65+	referral	53.68%	00:02:18	

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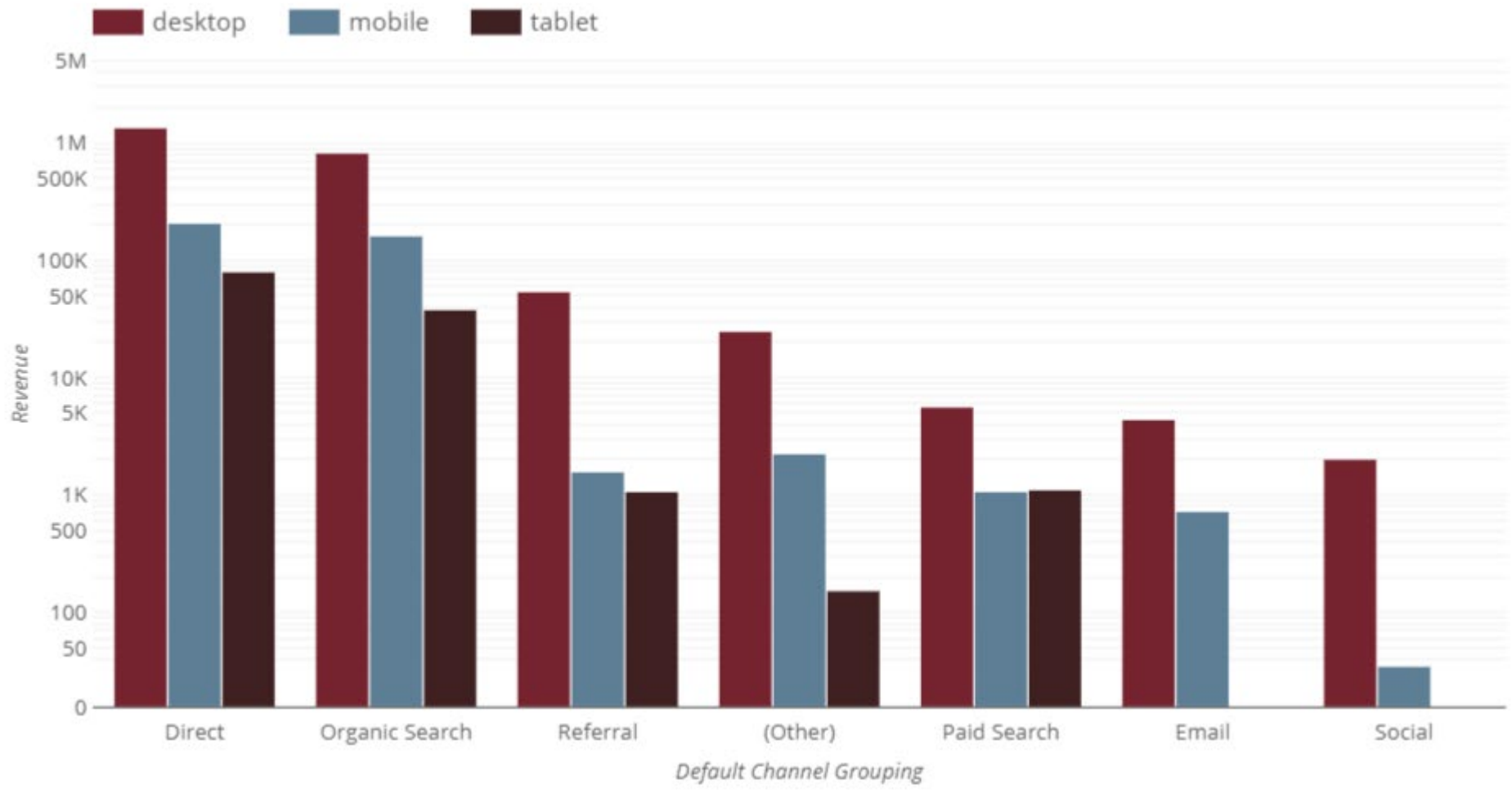
Comparative data

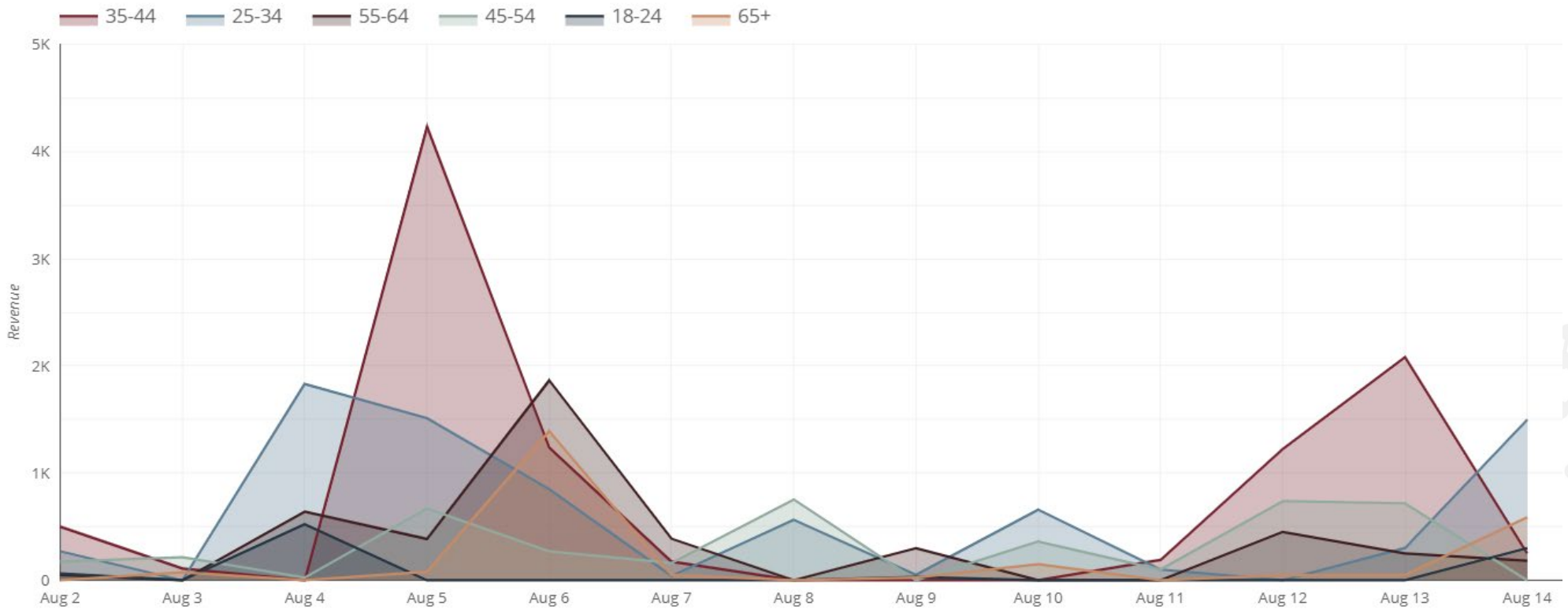
When to use comparative data

- Deciding next steps
- Showing growth/reduction
- Analyzing ROI
- Tracking strategic initiatives

Comparing multiple data sets



Comparing data within a set

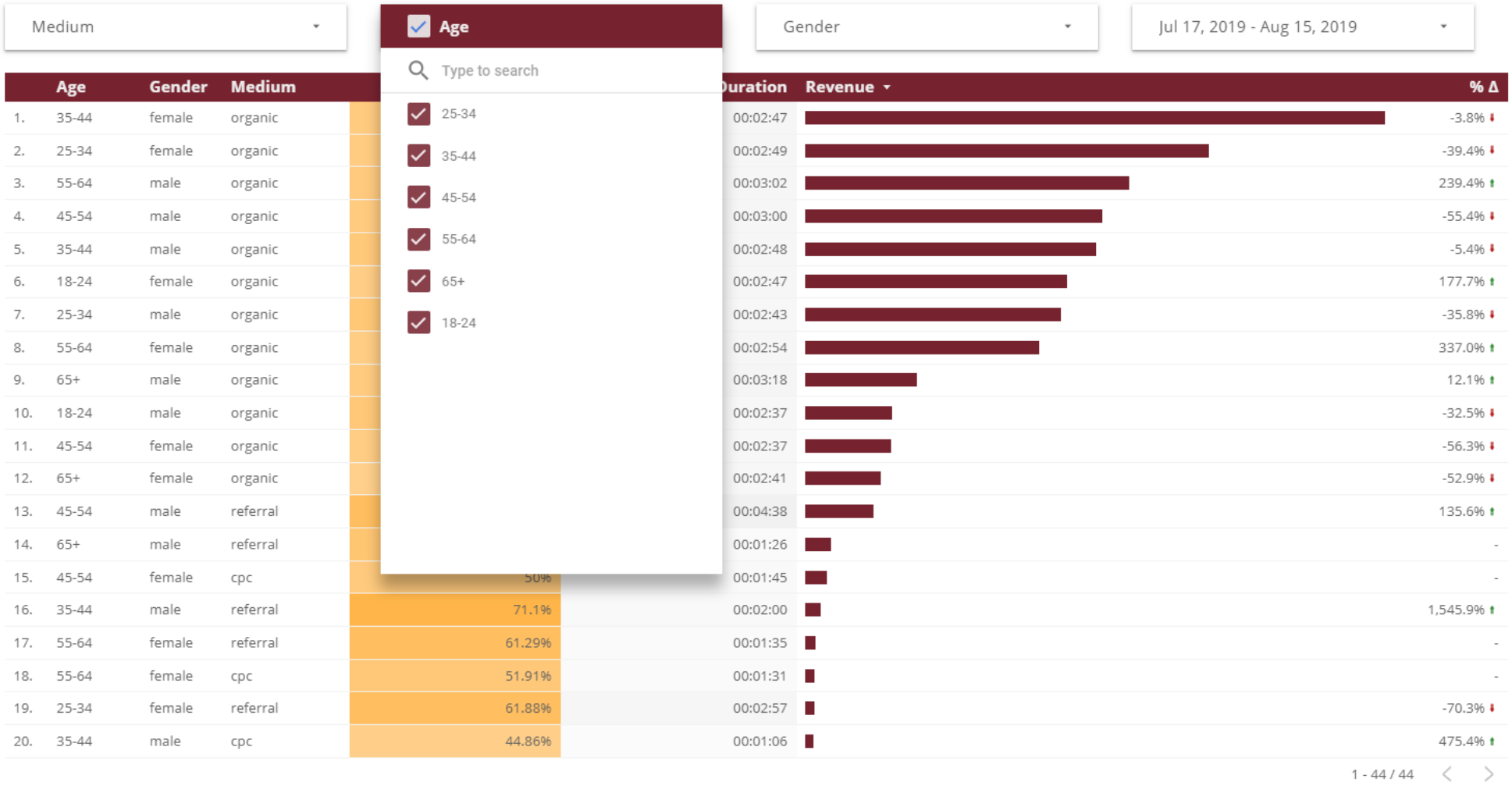


Utilizing filters

Why use filters?

- Further dissect data
- Tell a more compelling story
- Granular understanding of ROI
- Make data less overwhelming

Filtering data dynamically



	Age	Gender	Medium		Duration	Revenue	% Δ
1.	35-44	female	organic		00:02:47		-3.8%
2.	25-34	female	organic		00:02:49		-39.4%
3.	55-64	male	organic		00:03:02		239.4%
4.	45-54	male	organic		00:03:00		-55.4%
5.	35-44	male	organic		00:02:48		-5.4%
6.	18-24	female	organic		00:02:47		177.7%
7.	25-34	male	organic		00:02:43		-35.8%
8.	55-64	female	organic		00:02:54		337.0%
9.	65+	male	organic		00:03:18		12.1%
10.	18-24	male	organic		00:02:37		-32.5%
11.	45-54	female	organic		00:02:37		-56.3%
12.	65+	female	organic		00:02:41		-52.9%
13.	45-54	male	referral		00:04:38		135.6%
14.	65+	male	referral		00:01:26		-
15.	45-54	female	cpc	50%	00:01:45		-
16.	35-44	male	referral	71.1%	00:02:00		1,545.9%
17.	55-64	female	referral	61.29%	00:01:35		-
18.	55-64	female	cpc	51.91%	00:01:31		-
19.	25-34	female	referral	61.88%	00:02:57		-70.3%
20.	35-44	male	cpc	44.86%	00:01:06		475.4%

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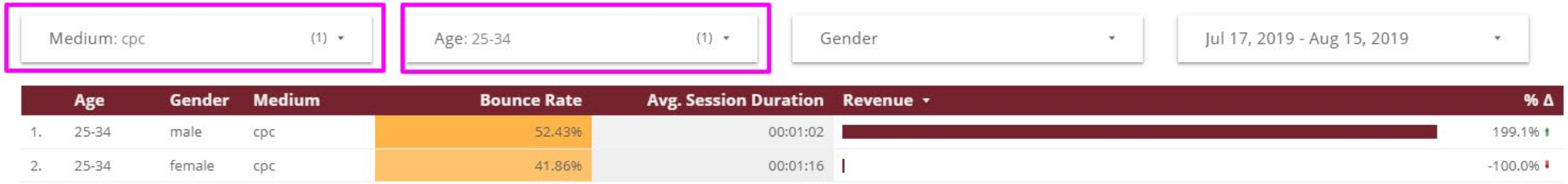
Filtering data dynamically



	Age	Gender	Medium	Bounce Rate	Avg. Session Duration	Revenue	% Δ
1.	25-34	male	cpc	52.43%	00:01:02		199.1%
2.	25-34	female	cpc	41.86%	00:01:16		-100.0%

- Age: 25-34
- Medium: cpc (paid advertising)
- Decision: adjust paid advertising strategy to target men


Data driven decisions

Data driven decisions

- Take the guess work out of paid advertising
- Easier buy-in from internal stakeholders
- Connect with your patients
- Higher conversion rates
- More ROI

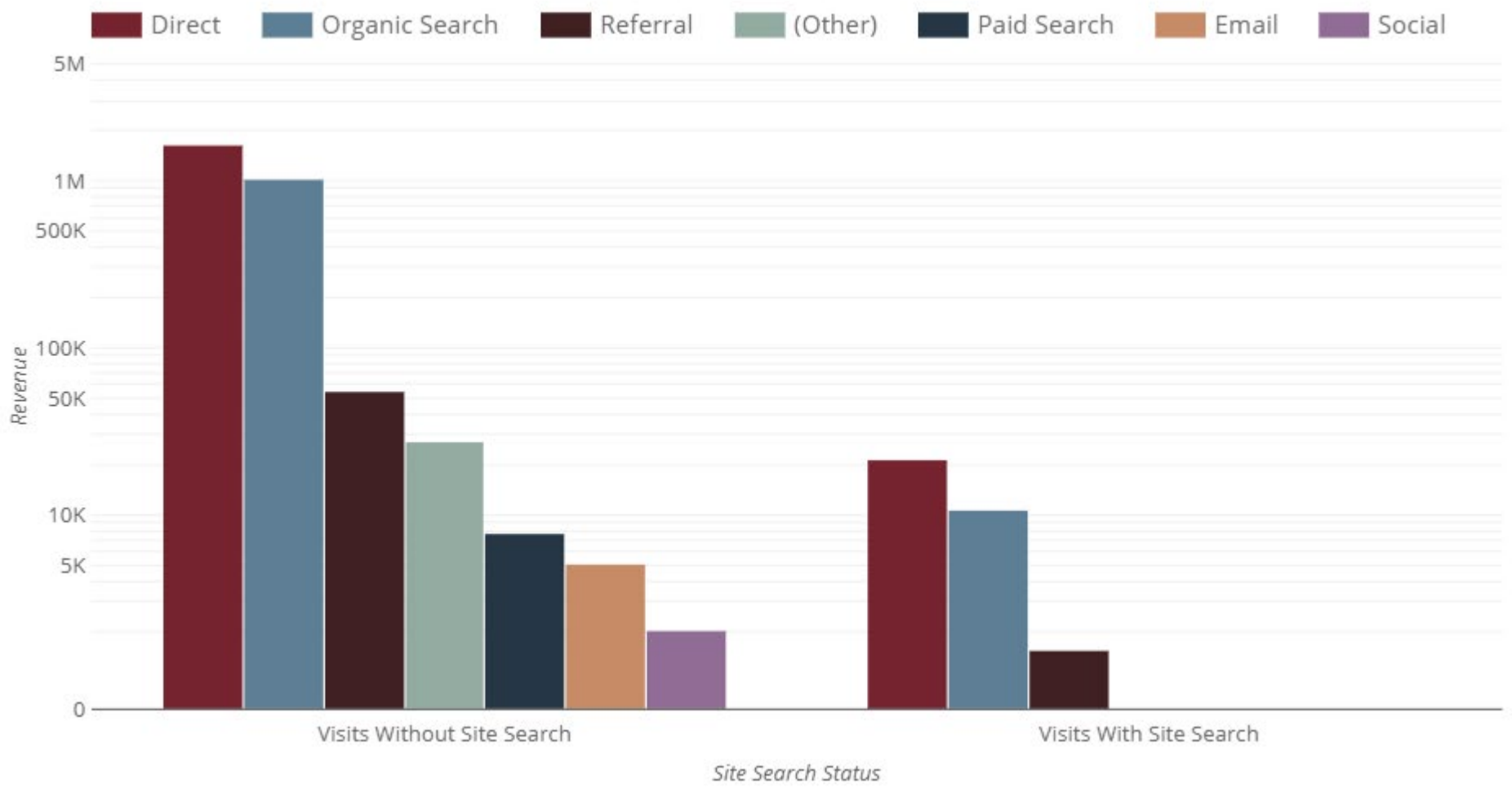
Using data to answer a question

Question(s)

Are users naturally finding what they need?

- Do you need to revisit your UX?
- Does a user's ability to navigate your site impact revenue?

Data to answer questions



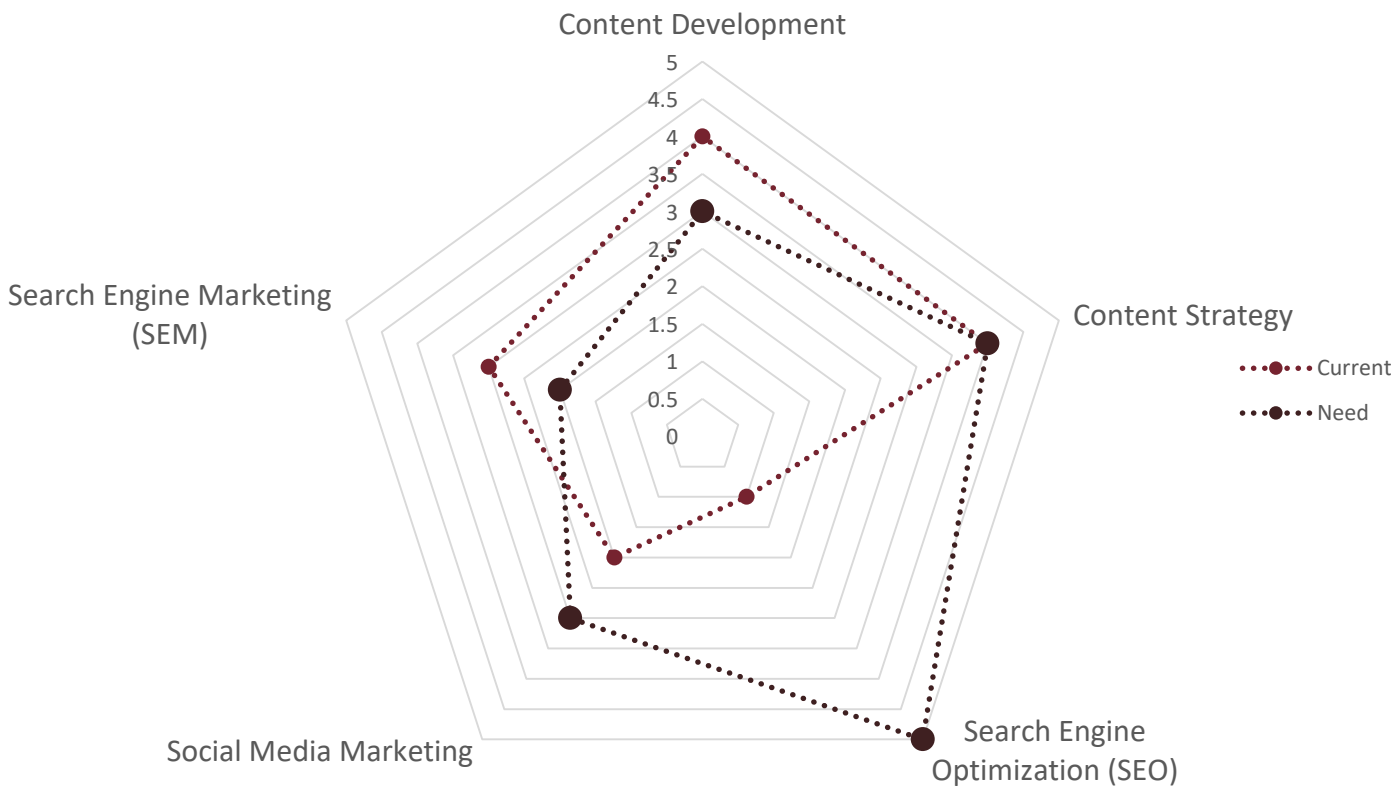
Data to solve a staffing problem

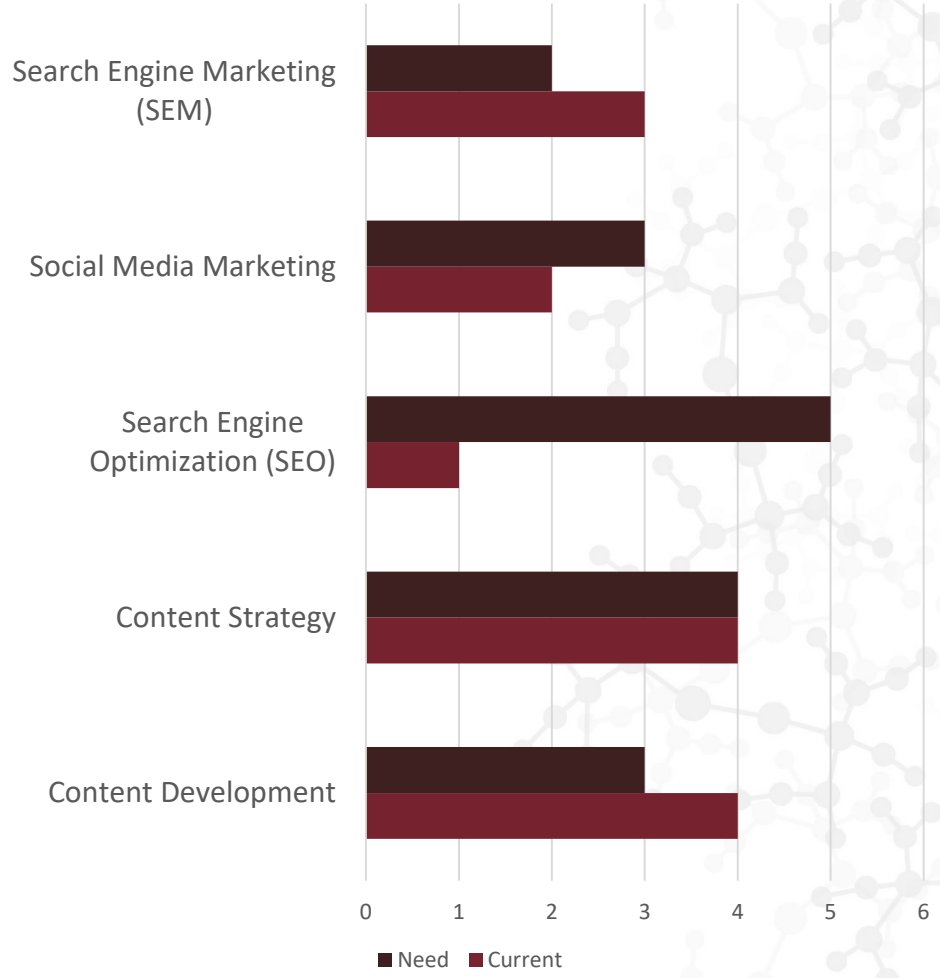
Problem

Your marketing team is working on their staffing budget for the next few years.

- How do you determine where to spend those dollars?

Team needs


Content Development
Content Strategy
Search Engine Optimization (SEO)
Social Media Marketing
Search Engine Marketing (SEM)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Current
Need


Search Engine Marketing (SEM)
Social Media Marketing
Search Engine Optimization (SEO)
Content Strategy
Content Development
0
1
2
3
4
5
6
Need
Current

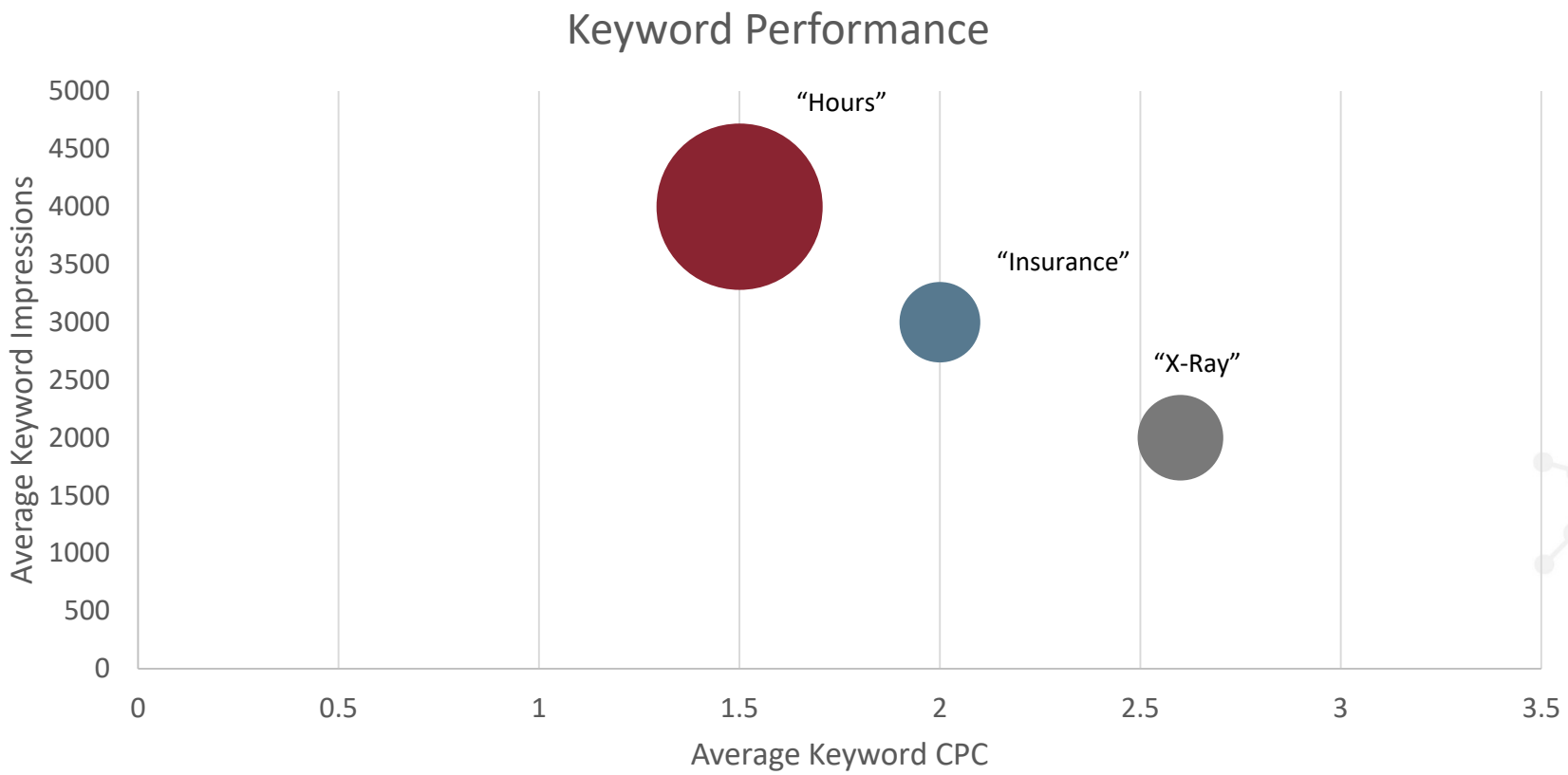
Data to solve a marketing problem

Problem

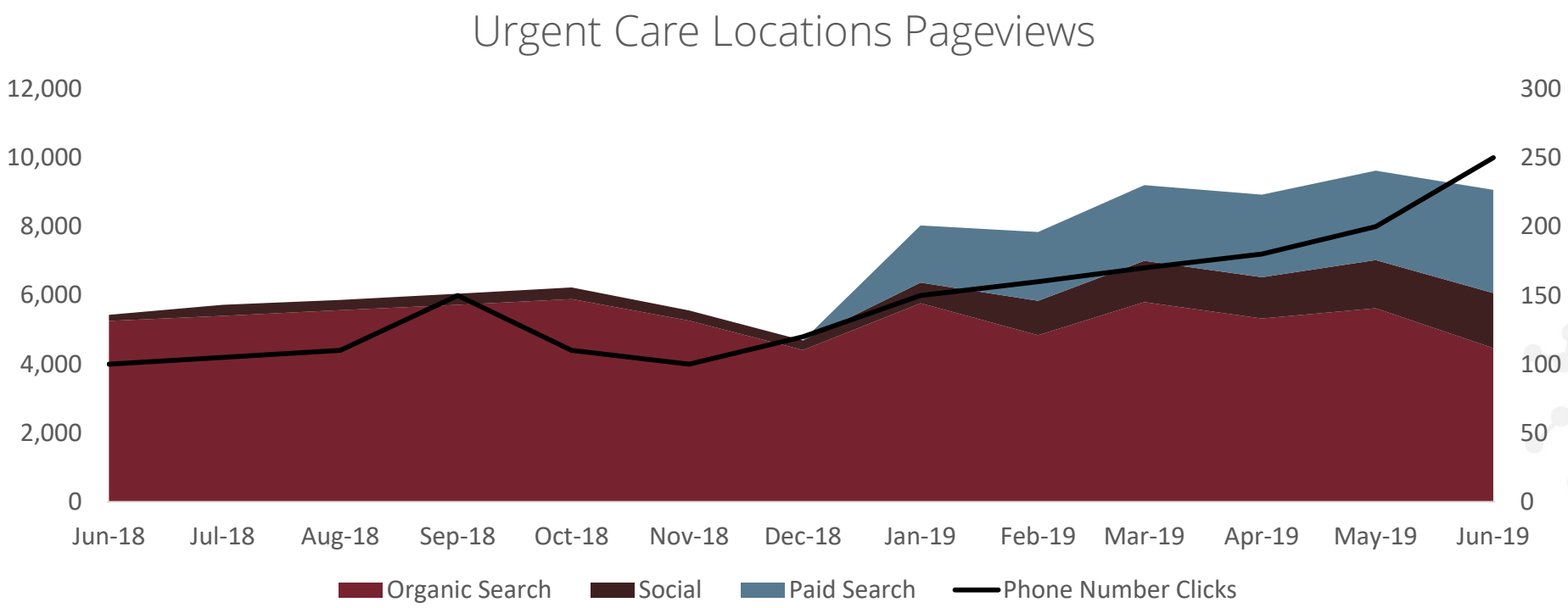
Your hospital just opened an urgent care in North Carolina, where there is a lot of competition.

- How do you decide how to distinguish yourself from the competition?
- How do you get buy in from stakeholders for the direction you want to take your paid advertising strategy?

Data visualization – connect with your patients



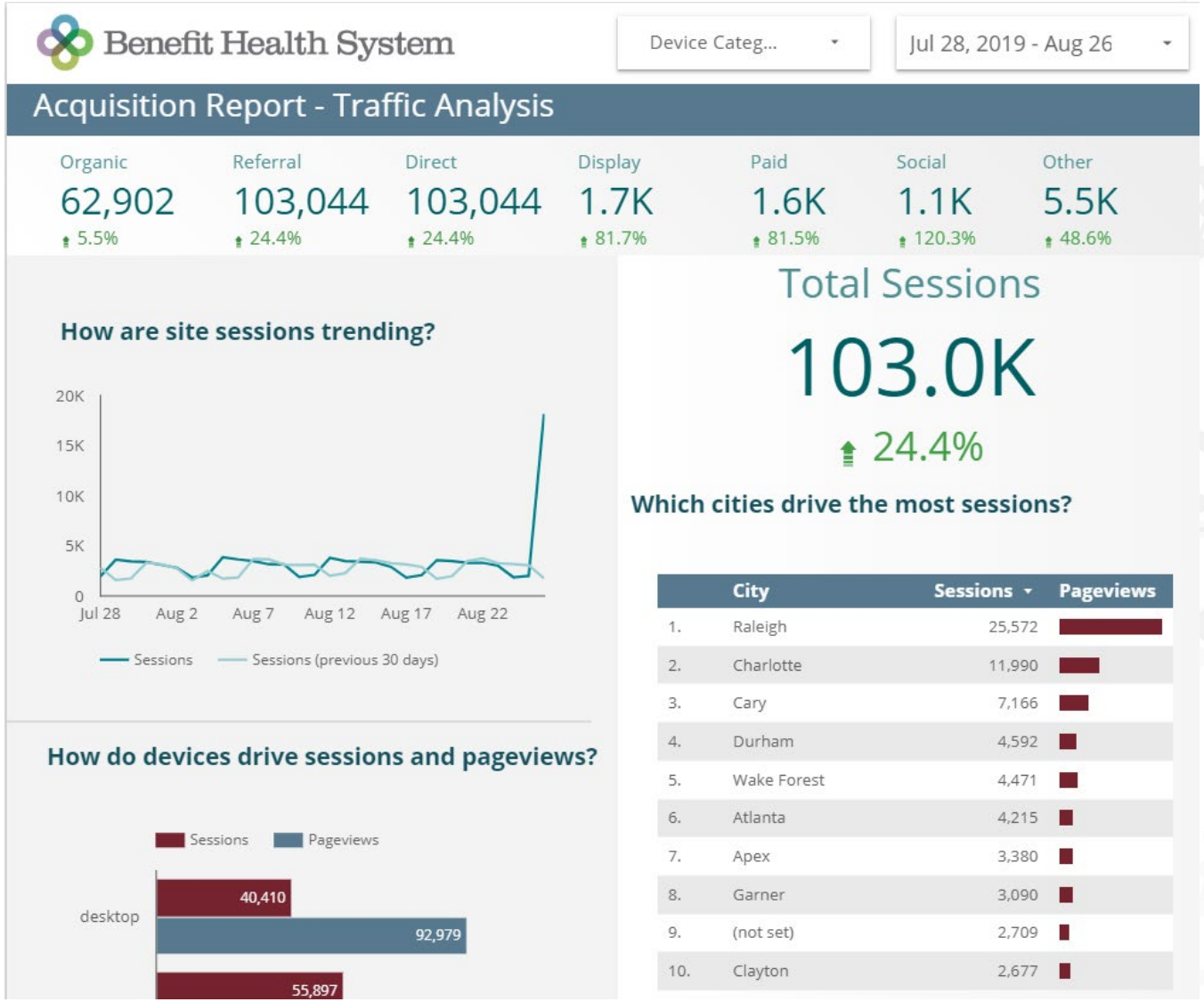
Data visualization - performance



Putting it all together + key takeaways

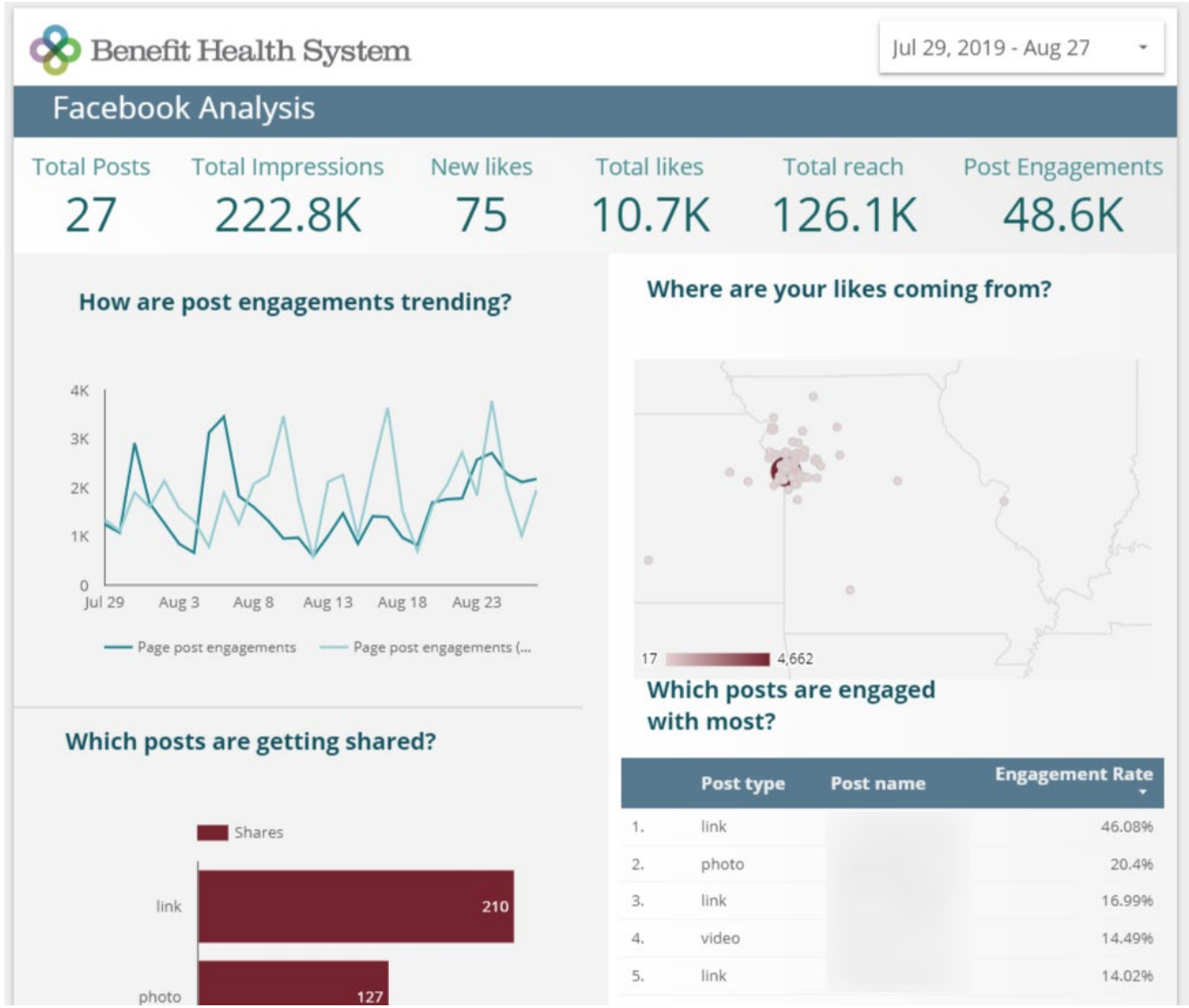
Putting it all together

- Stay up-to-date with the data that matters to you
- Track progress towards organizational goals
- Create dynamic dashboards for stakeholders



Putting it all together

- Analyze social media performance
- Develop post strategy
  - Take advantage of insights
- Get to know the humans behind your data



Don’t forget to ask the right questions

- Why are you doing this?
- What story are you trying to tell?
- Who is your audience?

90%

What percent of information transmitted to the brain is visual?

Key takeaways

- Visual data is easier to remember
- Know what data to use
  - What problem are you trying to solve?
  - Who is your audience?
  - Is your data actionable?
- Choose the best way to visualize your data
  - Charts, tables, single data points, comparative data, dashboards
- Put your data visuals into action