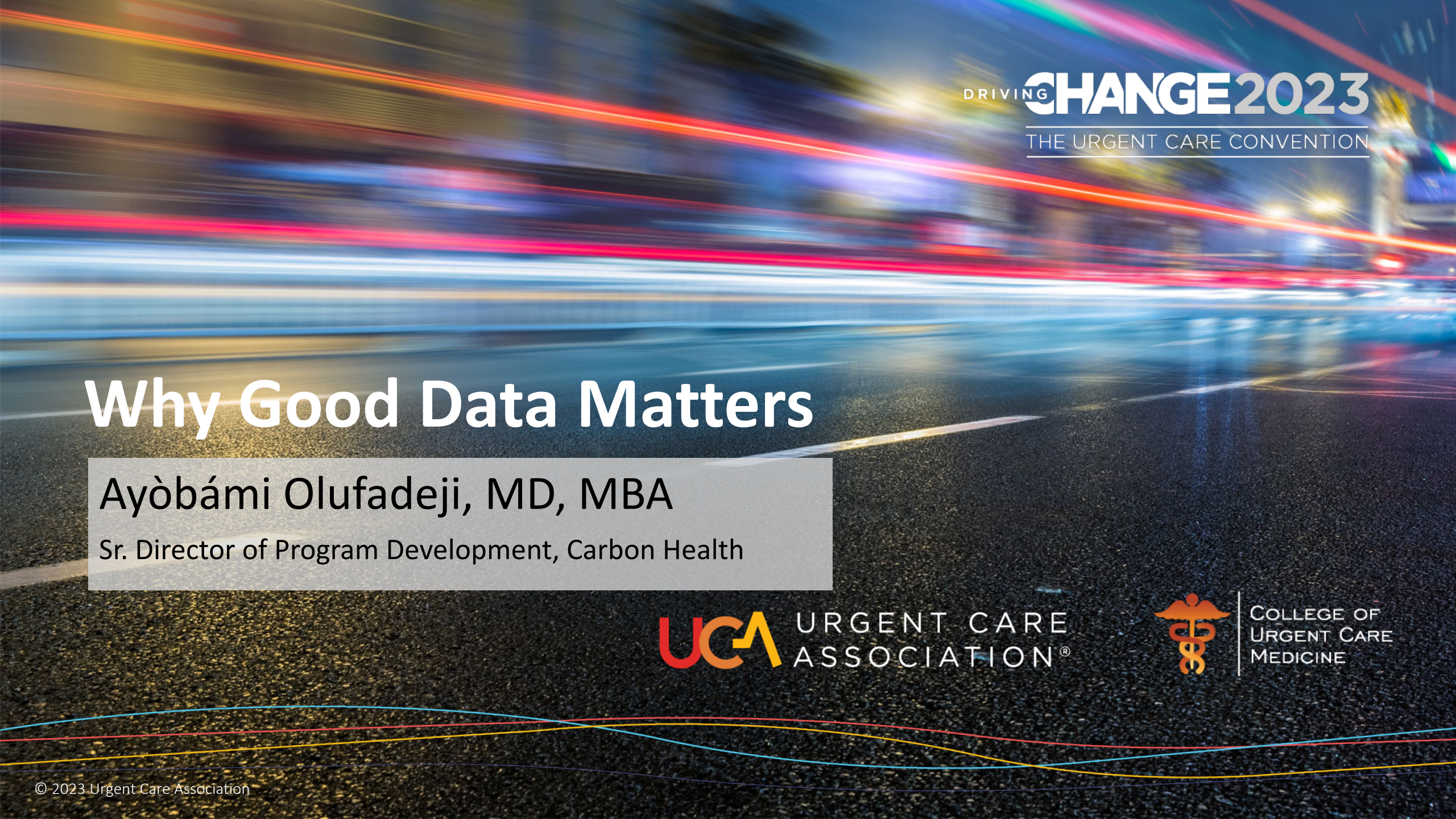

Why Good Data Matters

Ayòbámi Olufadeji, MD, MBA

Sr. Director of Program Development, Carbon Health

URGENT CARE ASSOCIATION®

COLLEGE OF URGENT CARE MEDICINE

Introduction

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THE URGENT CARE CONVENTION

UMBC

DARTMOUTH MEDICAL SCHOOL 1797

1900

Beth Israel Deaconess Medical Center
HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

Carbon Health

My favorites…

Movie: Hard to pick because I never remember movies, but for some reason, Argo comes to mind
TV Show: Game of Thrones, Succession
Food: Takeout - Thai
Cook at home - Nigerian food
Past time/activity/hobby: Cooking, traveling
Music/band: Afrobeats to the world!

Data is all around us …

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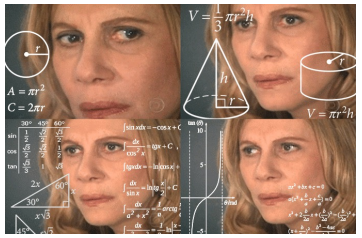
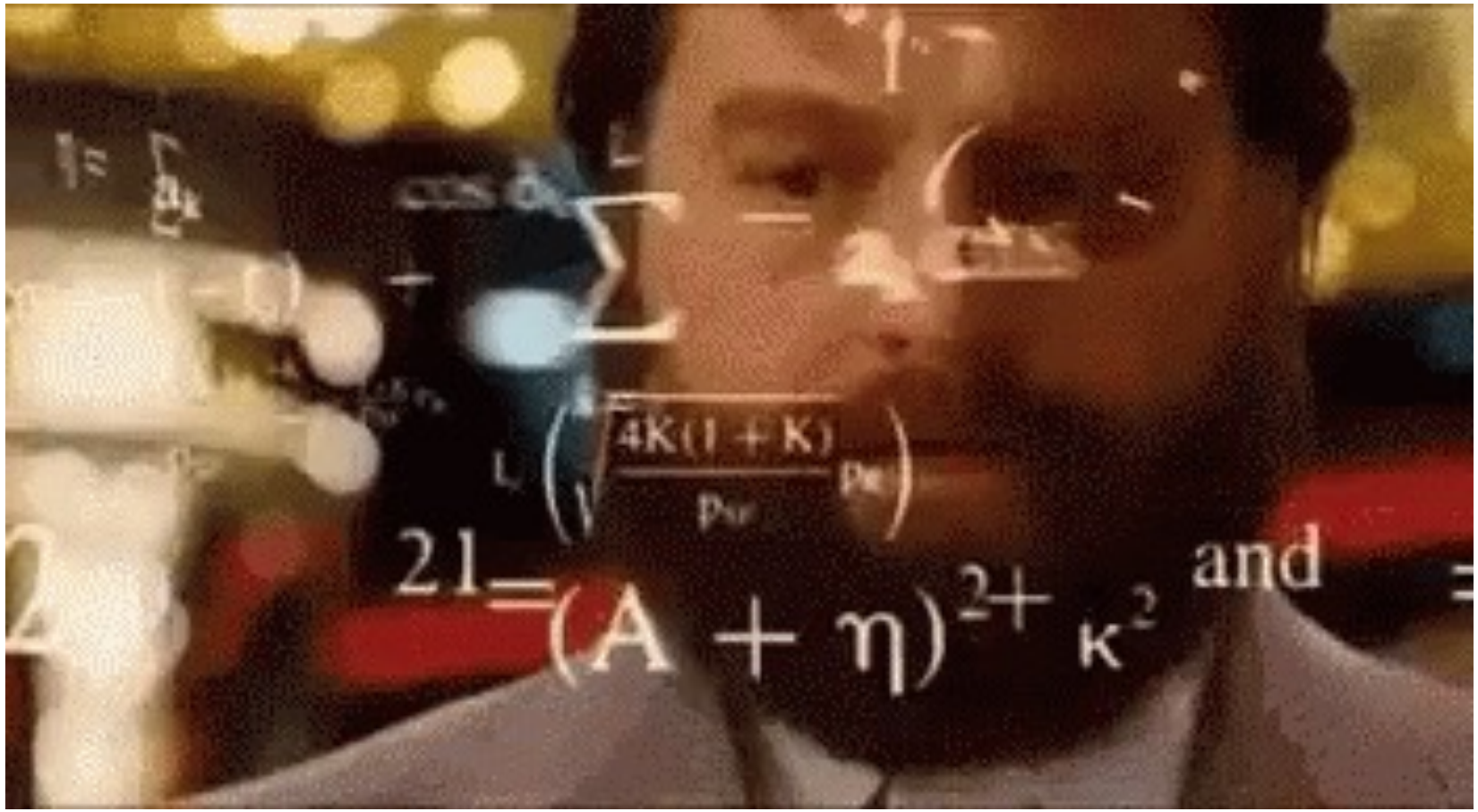
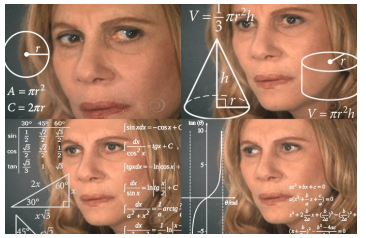
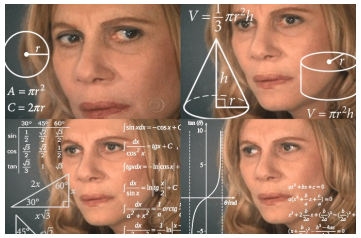
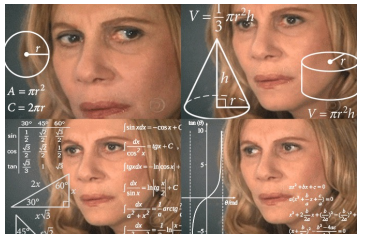
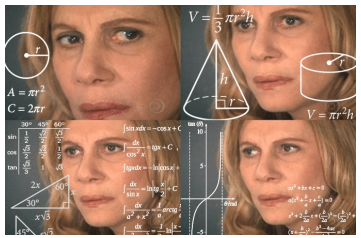
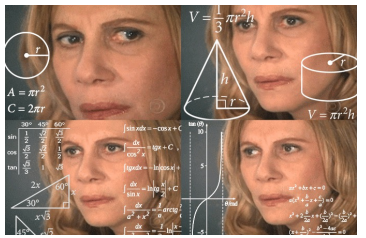

Agenda

- Quality Data & Good Questions
- Using Data to Improve Clinical Care
- Clinical Practice Innovation
  - Understand bias about what exists
  - Measure the new thing
- Objectifying subjective data
- Data Fallacies

Learning Objectives

- Understand how to identify good data
- Understand how data is crucial for clinical practice innovation
- Understand the philosophy behind objectifying subjective data

What Is Good Data?

Data Quality & Good Questions

Data is only as good as the questions you ask. To derive value from data sets, it's important to ask good questions

How to Ask a Good Question

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Goal – Seek approach (WIP)

The idea is that the best questions to ask when looking at data are extremely specific and are identified by thinking through the **drivers** of each outcome you are looking for.

Much like the goal-seek function in excel – it works to find the correct input when the output is known.

So, instead of asking, *"How can I raise revenue?"*, you should ask: *"What are the channels we should focus more on in order to raise revenue while not raising costs very much, leading to bigger profit margins?"*. Or even better: *"Which marketing campaign that I did this quarter got the best ROI, and how can I replicate its success?"*

Case Study – STD test roll-out

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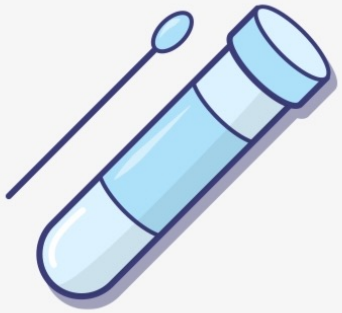
Plan to roll a new STD test in new clinics.

Looked at the data to estimate volume and anticipated 7 – 10 tests per clinic per week.

At “steady-state” we averaged 4.5 tests per clinic per week.

What was missing in the initial question?



Case Study – STD test roll-out

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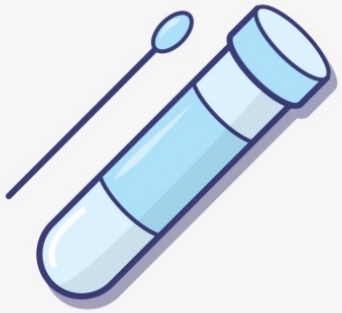
Plan to roll a new STD test in new clinics.

Adjusted volume estimate to 5 tests per clinic per week

A few months later, we realized a select number of clinics were consistently averaging 7 – 10 patients per week.

What was missing in the initial question?



Data + Clinical Care

Improving Clinical Care..

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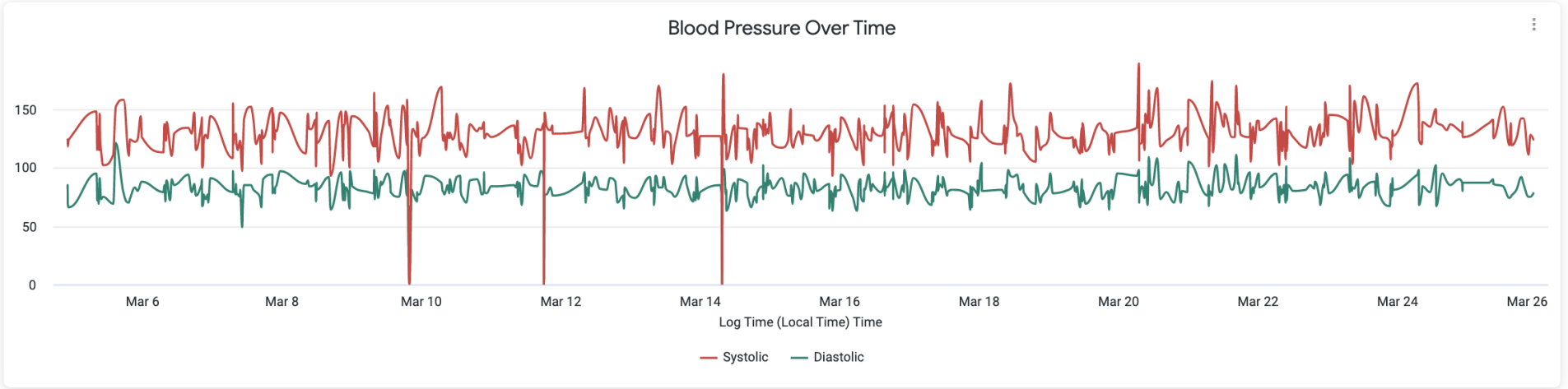
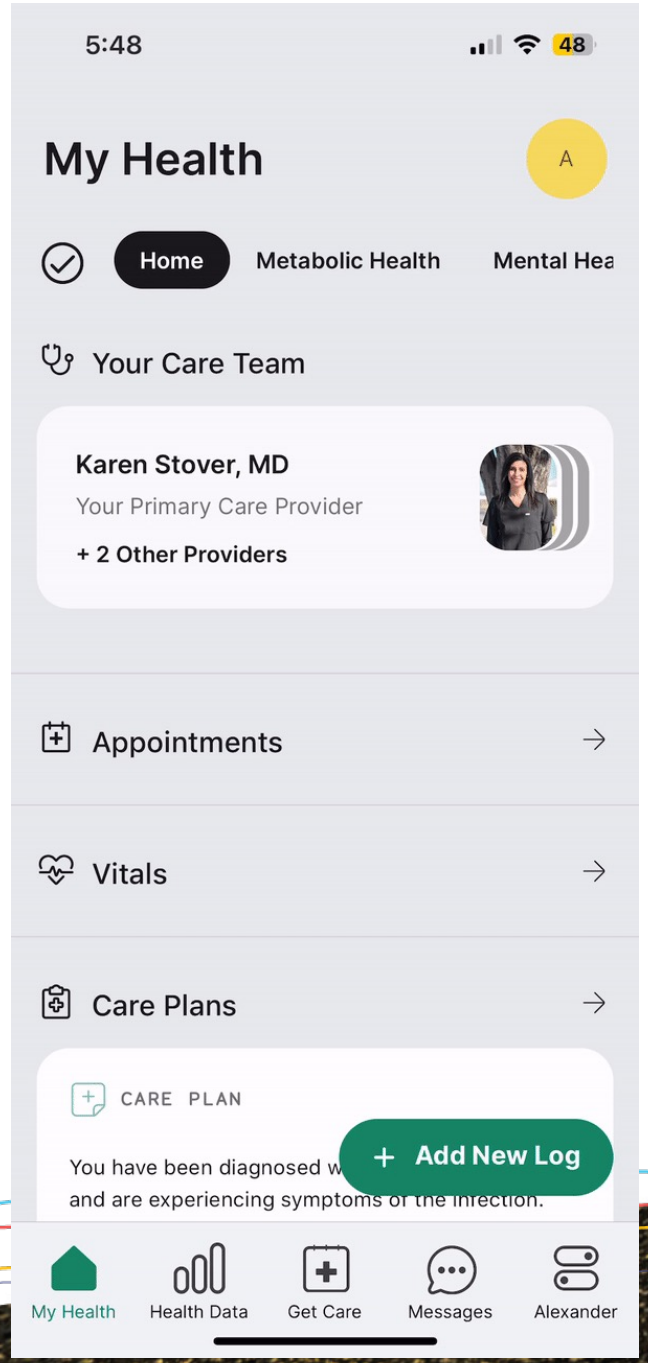
At Carbon we have integrated patient's home blood pressure readings directly into the app so that a PCP can look at their patients briefly and glean insight into their BP control



Tabular BP Data

	Log Time (Local Time) Time	Logging Type (Text)	Primary Response	Hypertension Risk
1	2023-02-26 06:03:01	Blood Pressure Logging	154/89	Stage 2 Hypertension
2	2023-02-26 07:10:24	Blood Pressure Logging	156/96	Stage 2 Hypertension
3	2023-02-26 10:26:10	Blood Pressure Logging	114/74	∅
4	2023-02-26 10:28:12	Blood Pressure Logging	155/86	Stage 2 Hypertension
5	2023-02-26 10:50:52	Blood Pressure Logging	144/81	Stage 2 Hypertension



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Our patients can also log Well-being, PHQs, GADs, Cough, Headache, and Pain

- Log supplemental questions regarding these four categories
  - Single select
  - Multiple select
  - Date/time
  - Free text entry
  - Integers
- Create a new Log Entry from the My Health tab as well as the Health Data tab

Clinical Practice Innovation

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Innovation – The change made to **something established** by introducing new methods, ideas, or products with the goal of realizing a **predetermined outcome**

- Ask good questions (already covered)
- Check biases about / baseline what already exists
- Measure the outcome

Data + Clinical Practice Innovation

Check Biases About / Baseline What Exists

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We embarked on a project to rename the primary care appointment types to make it easier for patients and the care teams. We have a legacy appointment type called “establish care” and almost everyone shared the sentiment that this was a very favorable appointment type.

What did the data say? …..

	Chief Complaint	Count of Finished Appts
1	Annual Physical	
2	New Problem	
3	Existing Condition	
4	General Follow Up	
5	Health Service Visits	
6	Women's Health	
7	Blood Draw Only	
8	Establish Care - New Patient	
9	UC Follow Up [New PC Patient]	

Check Biases About / Baseline What Exists

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We embarked on a project to improve our follow-up rates for better care gap closure and ease of booking for our patients. Anecdotal knowledge amongst our team was that UC follow up rates should be 20 – 30%.

What did the data say? …..

	Count of Finished Appts	Follow through initiative	Percent of visits that meet Follow through initiative criteria
1	475,199	48,09	10%

Measure the outcome

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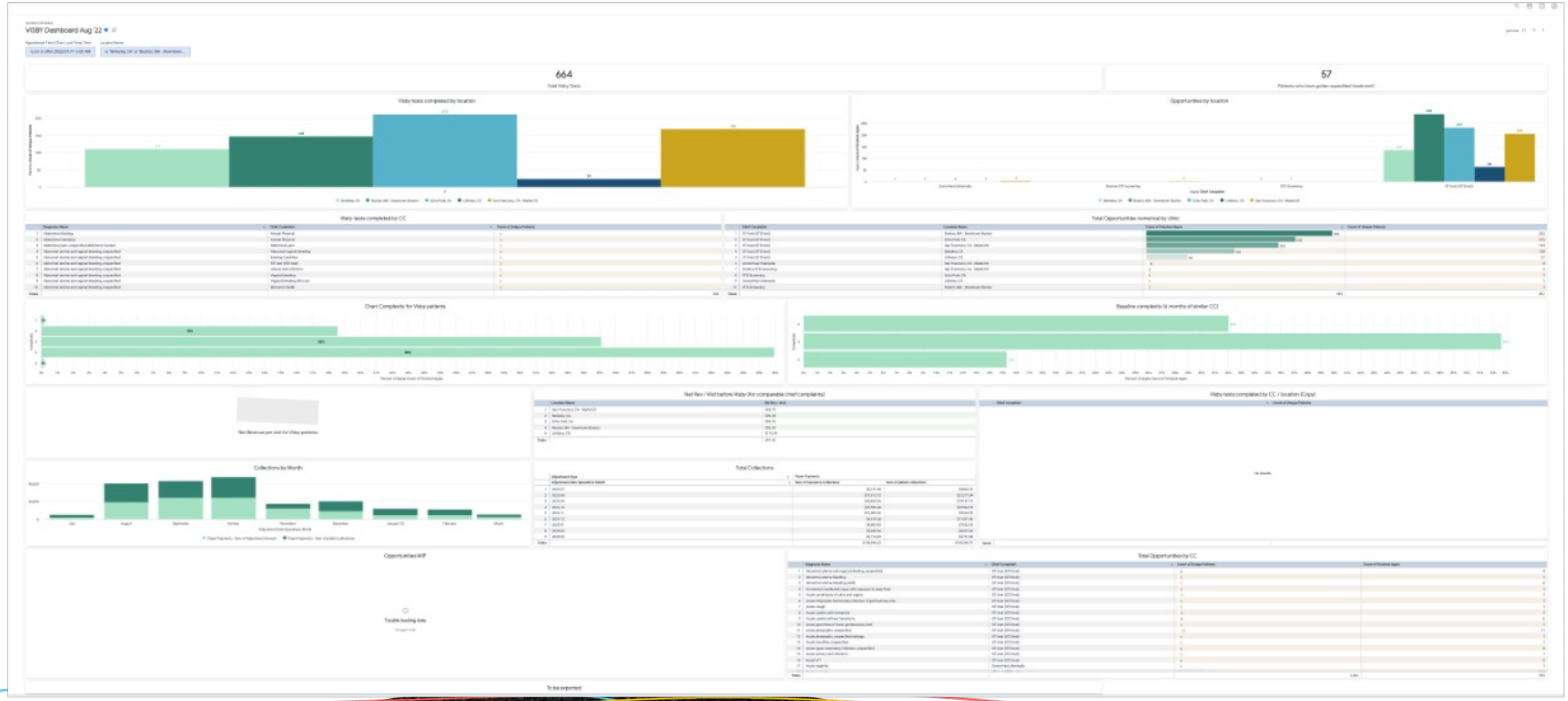

Measure the outcome

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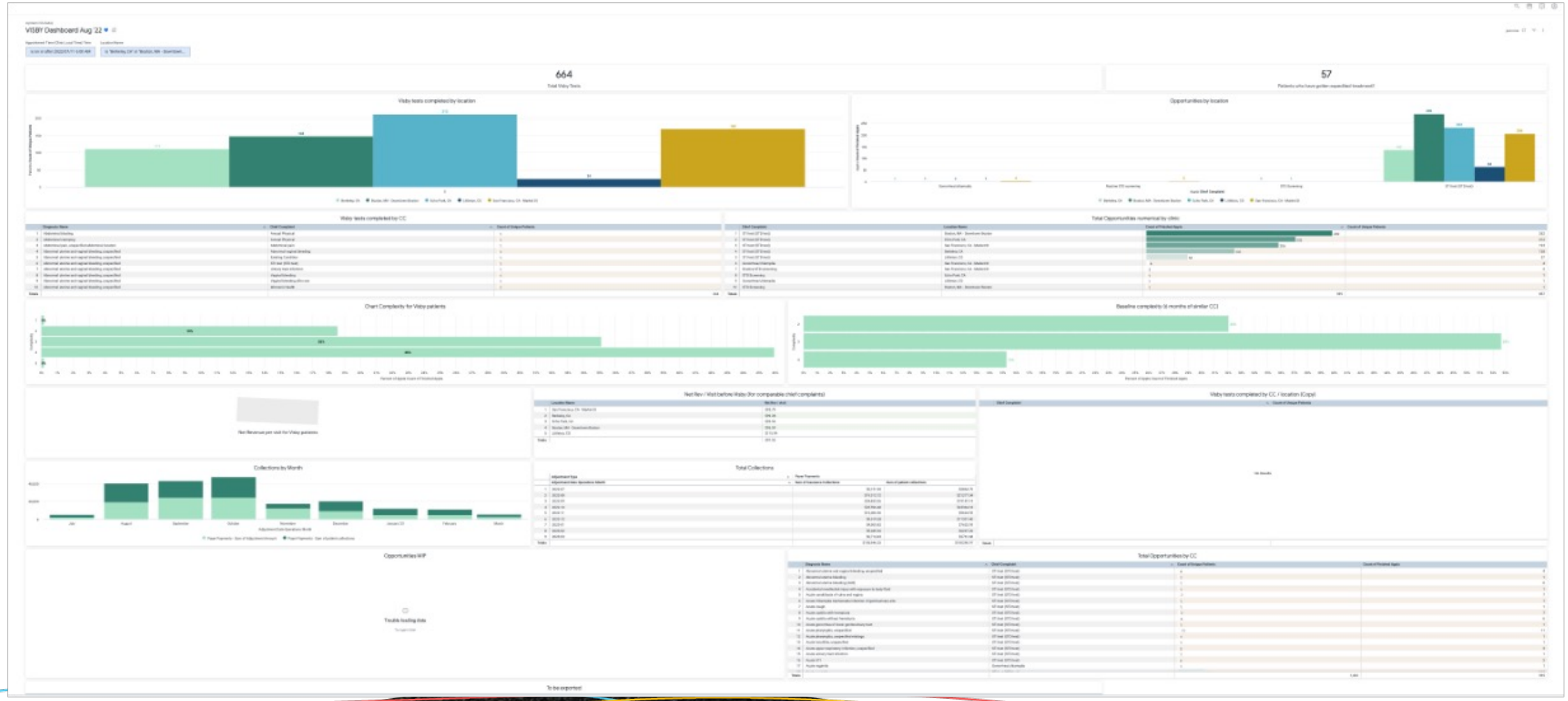

Objectifying Subjective Data

Objectifying Subjective Data

It is often difficult to collect accurate and complete data sets. Even when the numbers / objective components are intact, there's value in solving for and better trying to understand the subjective elements.

Trying to quantify the "people + system" effect has been helpful with

- Assessing our ability to take on new projects
- Getting alignment for the change management process

Magnitude of Change Rubric

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People	How many different roles are impacted? How open are these types of roles to change? What percentage of the clinic's workforce has to own this change?	Score 1- 10
Process	How much disruption does this change bring to the current workflow? How many workflow adjustments need to be made? Is the baseline process something that is used often / familiar with?	Score 1- 10
Resources	What are the training resources needed? How much training time do we anticipate is needed?	Score 1- 10
Technology	Does our current tech stack support this well? Is this a workaround to a current tech problem? Do we have enough tech support to allow this succeed?	Score 1- 10
Measurability	Is this change easy to measure? Will we be able to communicate progress to teams in a way that is easily digestible?	Score 1- 10

Avg Score 1 - 3
Low Impact

Avg Score 4 - 7
Medium Impact

Avg Score 8-10
High Impact

Magnitude of Change Rubric (Example)

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People	This change does affect a number of roles in the clinic. However the impact on their roles is minimal Clinicians - already diagnose and treat STDs MA/XRTs - already familiar with performing similar POC tests	Score 5
Process	This new process brings about little changes to the current workflow. The baseline process is something that is used often and many people are familiar with	Score 5
Resources	Training resources are provided by the partnering company and are comprehensive. We anticipate ~1 week of training time Inventory - supplies can be easily procured. There is slight disruption here because it goes outside of our usual ordering portal.	Score 3
Technology	No tech concerns	Score 1
Measurability	Use of the test is easy to measure Revenue generated is easy to measure	Score 3

Avg Score 3.4
Low Impact

Avg Score 1 - 3
Low Impact

Avg Score 4 - 7
Medium Impact

Avg Score 8-10
High Impact

Data Fallacies

Data Fallacies to Avoid

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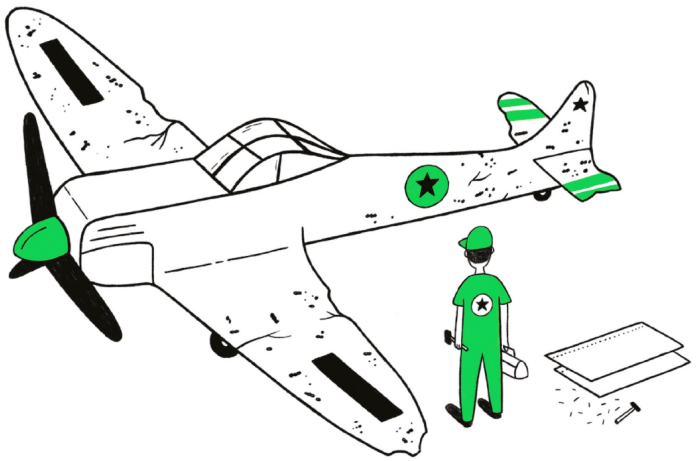
Individual Bias – Share your data with people with different POV so they can ask questions that are in your blind spots. Even when we have complete data sets, we are likely to slice the data in a way that it only answers the question we are interested in, which might not always be the right question

Survivorship Bias | Cobra Effect | Danger of Summary Metrics

Survivorship Bias



Drawing conclusions from an incomplete set of data, because that data has 'survived' some selection criteria.

When analyzing data, it's important to ask yourself what data you don't have. Sometimes, the full picture is obscured because the data you've got has survived a selection of some sort. For example, in WWII, a team was asked where the best place was to fit armour to a plane. The planes that came back from battle had bullet holes everywhere except the engine and cockpit. The team decided it was best to fit armour where there were no bullet holes, because planes shot in those places had not returned.

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Cobra Effect

When an incentive produces the opposite result intended. Also known as a Perverse Incentive.

Named from a historic legend, the Cobra Effect occurs when an incentive for solving a problem creates unintended negative consequences. It's said that in the 1800s, the British Empire wanted to reduce cobra bite deaths in India. They offered a financial incentive for every cobra skin brought to them to motivate cobra hunting. But instead, people began farming them. When the government realized the incentive wasn't working, they removed it so cobra farmers released their snakes, increasing the population. When setting incentives or goals, make sure you're not accidentally encouraging the wrong behaviour.

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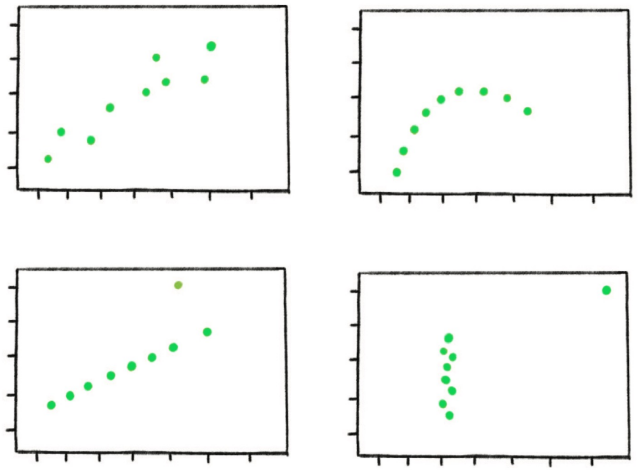
Danger of Summary Metrics



It can be misleading to only look at the summary metrics of data sets.

To demonstrate the effect, statistician Francis Anscombe put together four example data sets in the 1970s. Known as Anscombe's Quartet, each data set has the same mean, variance and correlation. However, when graphed, it's clear that each of the data sets are totally different. The point that Anscombe wanted to make is that the shape of the data is as important as the summary metrics and cannot be ignored in analysis.

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Session Evaluation

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- Your feedback is valuable, take a moment to complete the survey for this session.
- To claim CME, you must complete a separate survey available after the convention.