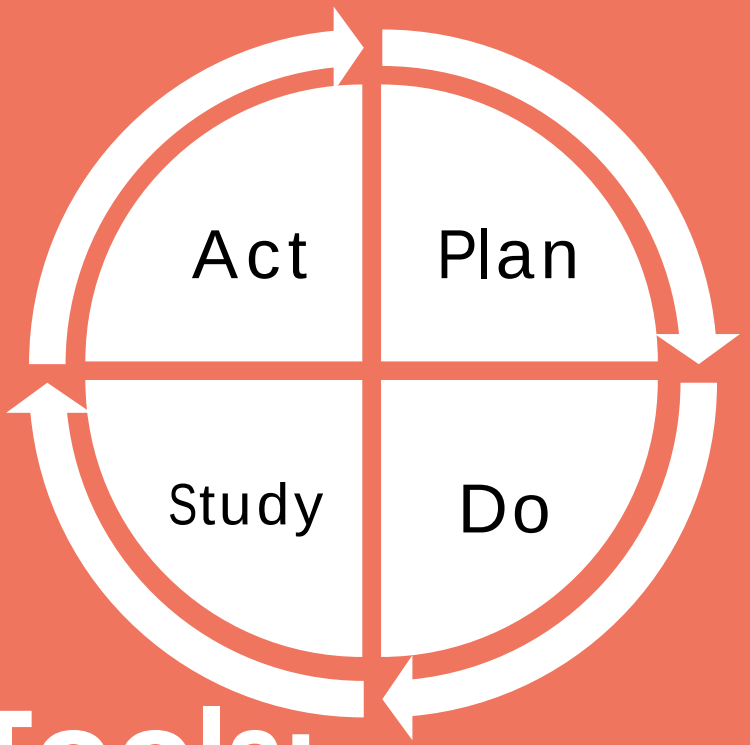


Plan-Do-Study-Act and QI Tools: Part 2

Missouri Virtual Learning Opportunity #4

August 25, 2020

Agreements for Our Time Together

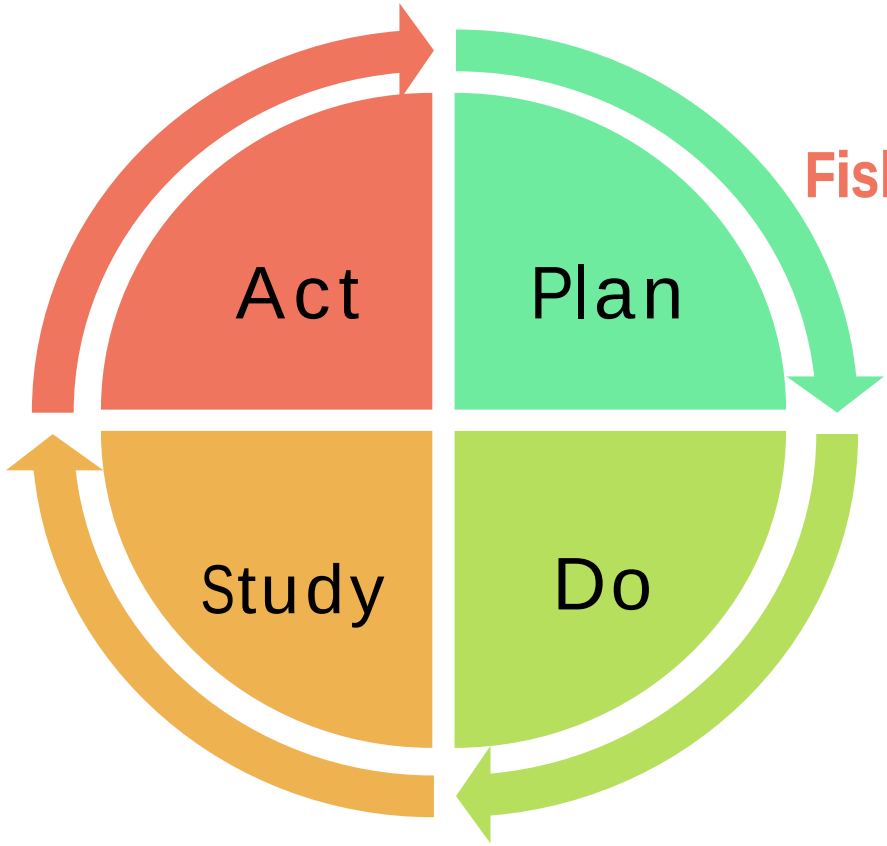
- Remain **available-to-be-on-mic.** You can mute while others are speaking/presenting, but be ready to participate.
- Remain **on-camera** as you are able.
- Avoid **distractions** as you are able.
- Feel free to **raise your hand** in Zoom using feature in participant list or on camera.
- Have the **chat** open and use it as needed.
- Have **fun**!

Welcome and Introductions

Identify	A QI tool for root cause analysis
Discuss	Developing measures and collecting data
Explore	Run charts and how they are used to track data
Engage and Learn	Together!

Our Time Together

The Plan Stage



Fishbone Diagram

Run Charts

Go to **www.menti.com** and use the code **31 94 10 4**

When you hear 'root cause', what are 3 words that come to mind?

Root Cause Analysis Helps You

Identify and examine underlying or root causes of a problem

Identify a target for your improvement that is likely to lead to change

Identify gaps in knowledge that require additional data collection or exploration

Importance of Exploring Root Causes

- Useful process for understanding a problem so it can be solved permanently – goes beyond ‘putting a fire out’
- Provides time and space for exploring all the possible causes for why a problem might exist
- Uncovers relationships between the causes and symptoms of a problem

Go to **www.menti.com** and use the code **31 94 10 4**

What tools have you used for root cause analaysis in your QI efforts? (Select all that apply)

Fishbone Diagram

Five Whys

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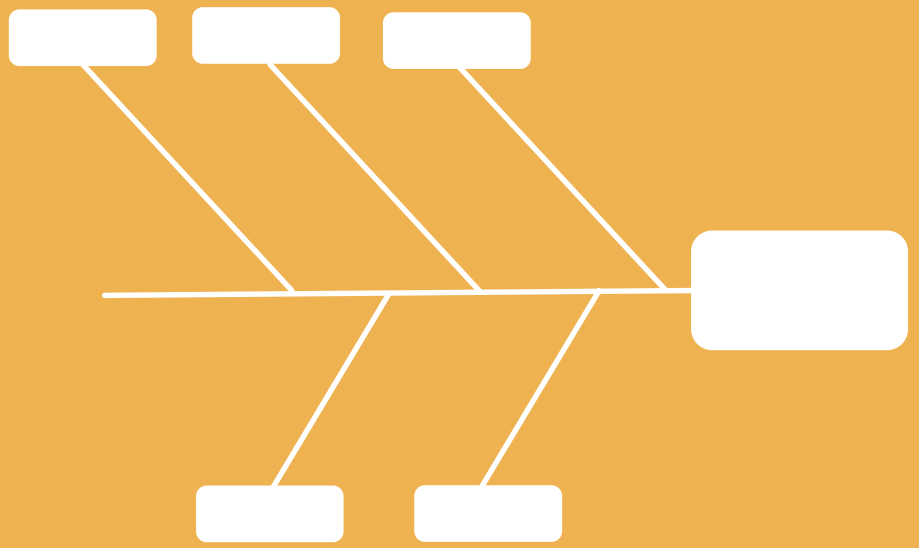
Force Field Analysis

Tree Diagram

Other

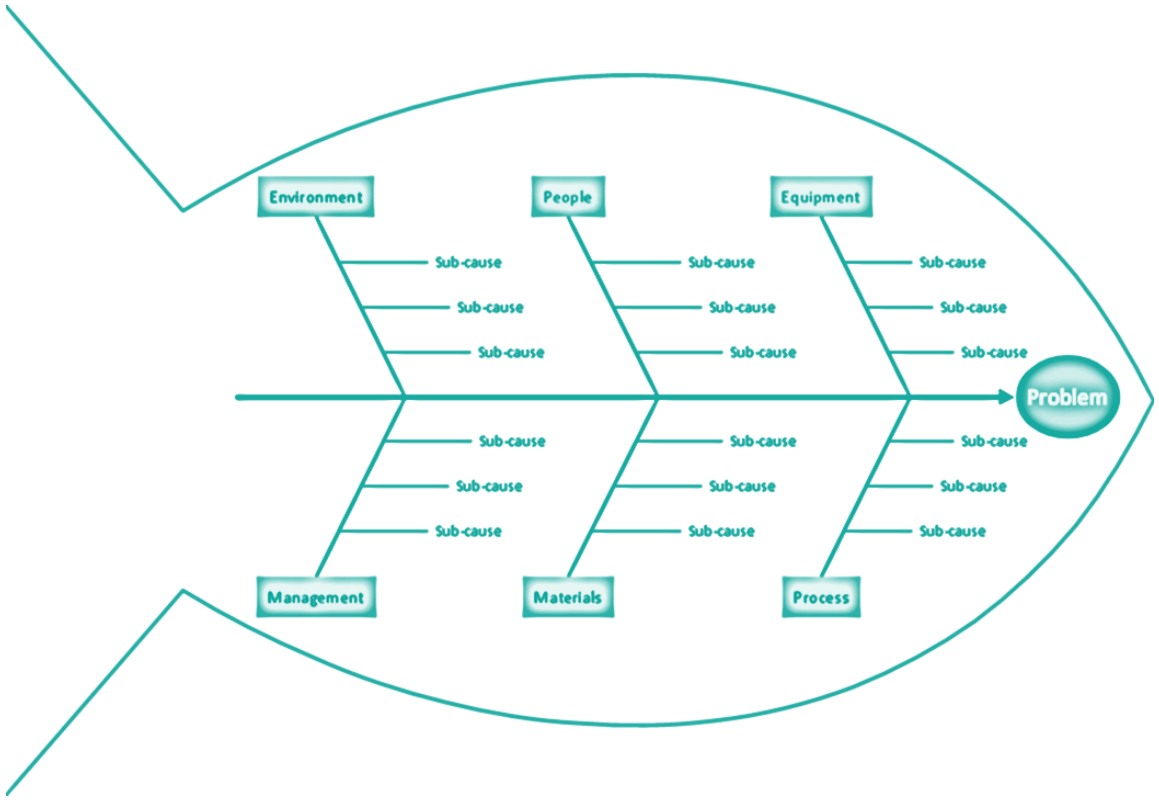


Fishbone Diagram: Tool For Root Cause Analysis

Fishbone Diagram

Purpose

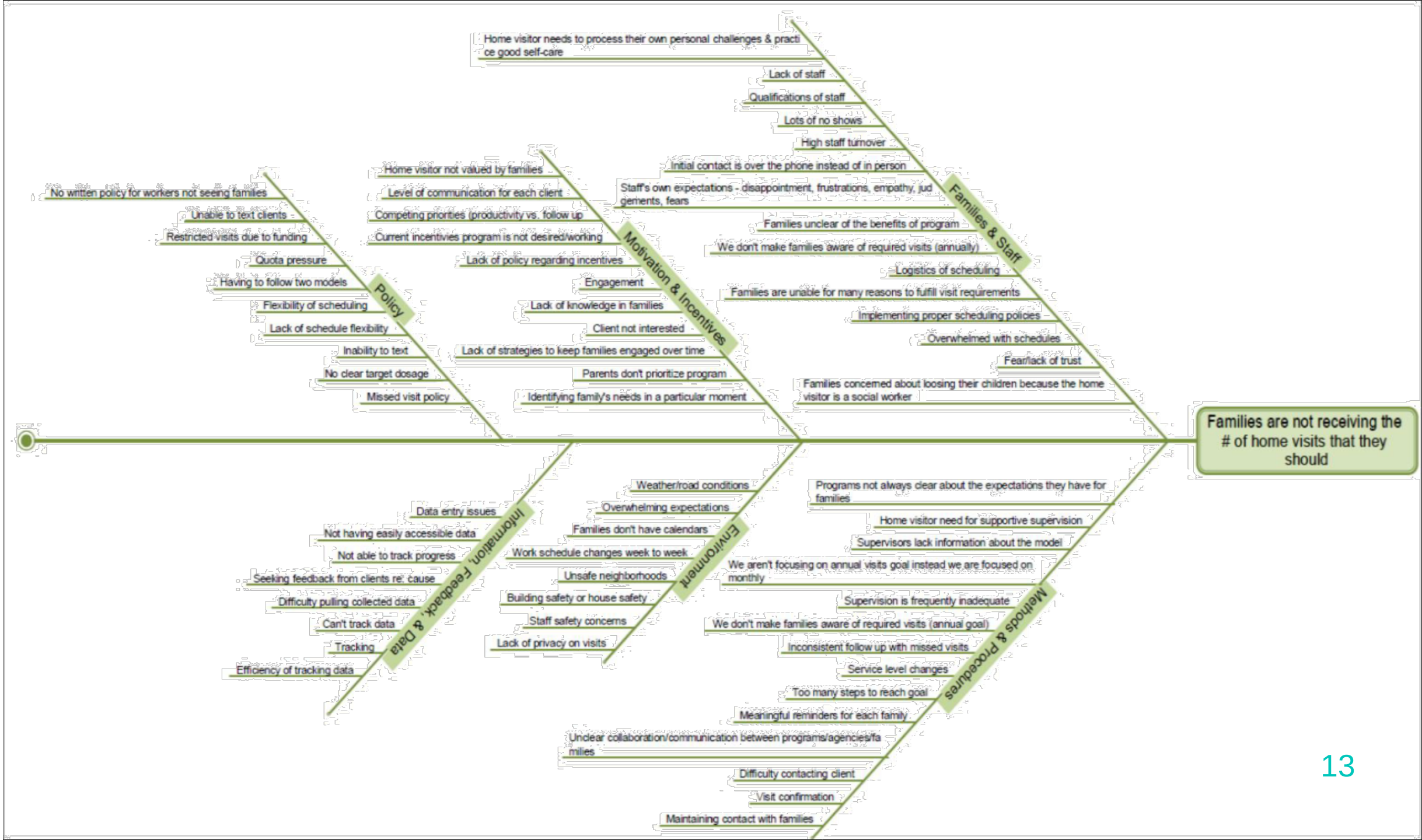
- Broadly supports exploration of the problem
- Brings focus to the content of the problem
- Creates a shared understanding of the problem among team members
- Focuses on causes, not symptoms



Fishbone Diagram Construction

1. • **Revisit problem statement and revise as needed.**
2. • **Brainstorm and determine major root causes needed to build the fishone diagram.**
3. • **Construct your fishbone diagram noting the problem statement and the major root causes.**
4. • **For each major cause, brainstorm related minor causes. Place each minor cause on the diagram along the major bone(s) they coorespond with.**
5. • **Interpret your completed Fishbone Diagram and select a specific root cause to focus the PDSA cycle on.**

Fishbone Diagram Example



Interpreting Your Fishbone Diagram

What causes came up again and again?

What causes came as a surprise?

What causes are within the group's control or influence?

What causes seem particularly important to the team?

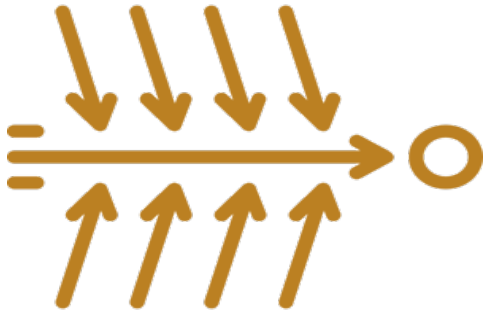
Do you know enough about these possible causes to identify a root cause to address?

What root cause will the team address through the PDSA cycle?

Hints and Tips

- Find the right problem statement

- Find causes that make sense and that the team can impact



Fishbone Diagram Development Tool

Using a Fishbone Diagram to Explore Root Cause

Developing a Fishbone Diagram

1. Revisit problem statement, revise as needed.
2. Brainstorm and determine major root causes needed to build the fishone diagram.
3. Construct your fishbone diagram noting the problem statement (step 1) and the major root causes (step 2).
4. For each major cause, brainstorm related minor causes. Place each minor cause on the diagram (copy and paste boxes) along the major bone(s) they coorespond with.
5. Interpret your completed Fishbone Diagram and select a specific root cause to focus the PDSA cycle on.

Step 1:

What problem statement is your team working to address (copy and paste problem statement from team charter here)?

Fishbone Breakout Activity

Let's Practice Together!

- Use the fishbone diagram development tool
- Brainstorm root causes to the following problem/ opportunity for improvement:

Families are not staying engaged in home visiting services until program completion.

Developing Measures and Collecting Data

Developing/ Identifying Measures

- Process vs. Outcome Measures
  - Process – assess parts of a process to determine how that part is working
  - Outcome – look at the end result of a process
- Proportion or Count
  - Proportion – part of a whole
  - Count – total number of occurrences
- Specific Definitions
- Frequency Data will be Collected and Analyzed

Examples

Process Measures

- % of program participants who have reached 3 months of enrollment (proportion)
- # of families who have at least one goal identified (count)

Outcome Measures

- % of program participants who stopped services before completion (proportion)
- # of program participants whose needs were addressed as a result of program participation(count)

Examples Continued

Measure	Numerator	Denominator	Timing of collection	Frequency of analysis
% of program participants who have reached 3 months of enrollment (proportion)	# participants who reached 3 months of enrollment	# number of enrolled program participants	At least once per month at home visit Tracked in program data system	Monthly
# of program participants whose needs were addressed as a result of program participation (count)	NA	NA	Upon program completion Tracked in program data system	Monthly

Data Sources

- Model standards and measures
- Performance measures from funders
- Family feedback
- Staff feedback
- Survey data
- Etc.

Collecting and Compiling Data

- **Check Sheet**
  - Turn observational data into numeric data
  - Find patterns using an organized approach that reduces bias

- **Simple Excel Spreadsheet/ Form**
  - Pull and compile data (quantitative or qualitative) from existing home visiting forms
  - Collect new or different pieces of data (quantitative or qualitative) related to improvement effort

Collecting and Compiling Data

- **Survey/ Assessment (often Pre/Post)**
  - Helps to collect information from staff, partners, families necessary for improvement effort
  - Helps to identify changes in knowledge, confidence, comfort, satisfaction, etc.
  - Can be used to collect both quantitative and qualitative data
- **Interview**
  - Asking a few questions of a staff member, partner, client, etc. to gather qualitative information
  - Enrich the quantitative data, understanding the “why” behind the numbers

Go to **www.menti.com** and use the code **31 94 10 4**

When it comes to past and current improvement efforts, how have you collected and complied data?

Press **ENTER** to pause scroll

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Decisions to make when collecting and compiling data:

Decide on a collection method

- Observation (check sheet)?
- Simple Excel Spreadsheet?
- Survey/ Assessment?
- Interview?

Define when to collect your data

- Point in time?
- Pre-post?
- Comparison group?

Develop a process for collecting

- Using similar steps & words across people and over time

What does this look like in Practice?

- **Identify a topic:** Early Learning Language and Literacy
- **Problem statement:** Half of the enrolled families are reporting that they are not reading, telling stories, and/or singing songs with their child every day.
- **Consider possible measures that would be meaningful:**
  - % of families who increased by at least one day the number of days they read, sing, tell stories to their child;
  - % of families who shared they used the materials/ resources provided between home visits to support reading, singing, and storytelling with their child;
  - Questions that could be asked of families to gather some qualitative data about their practices

What does this look like in Practice?

- **Determine measure(s) of focus: %** of families who increase by at least one day the number of days they report they read, sing, tell stories to their child
  - Numerator: # of families who increase by at least one day the number of days they report they read, sing, tell stories to their child
  - Denominator: Total # of families involved in the test
- **Decide on collection method:** simple Excel spreadsheet
- **Define when to collet:** at each visit
- **Process for colleting:** home visitor will check in with family at each visit during the month on # of days

Run Chart: Tool For Tracking Process Performance

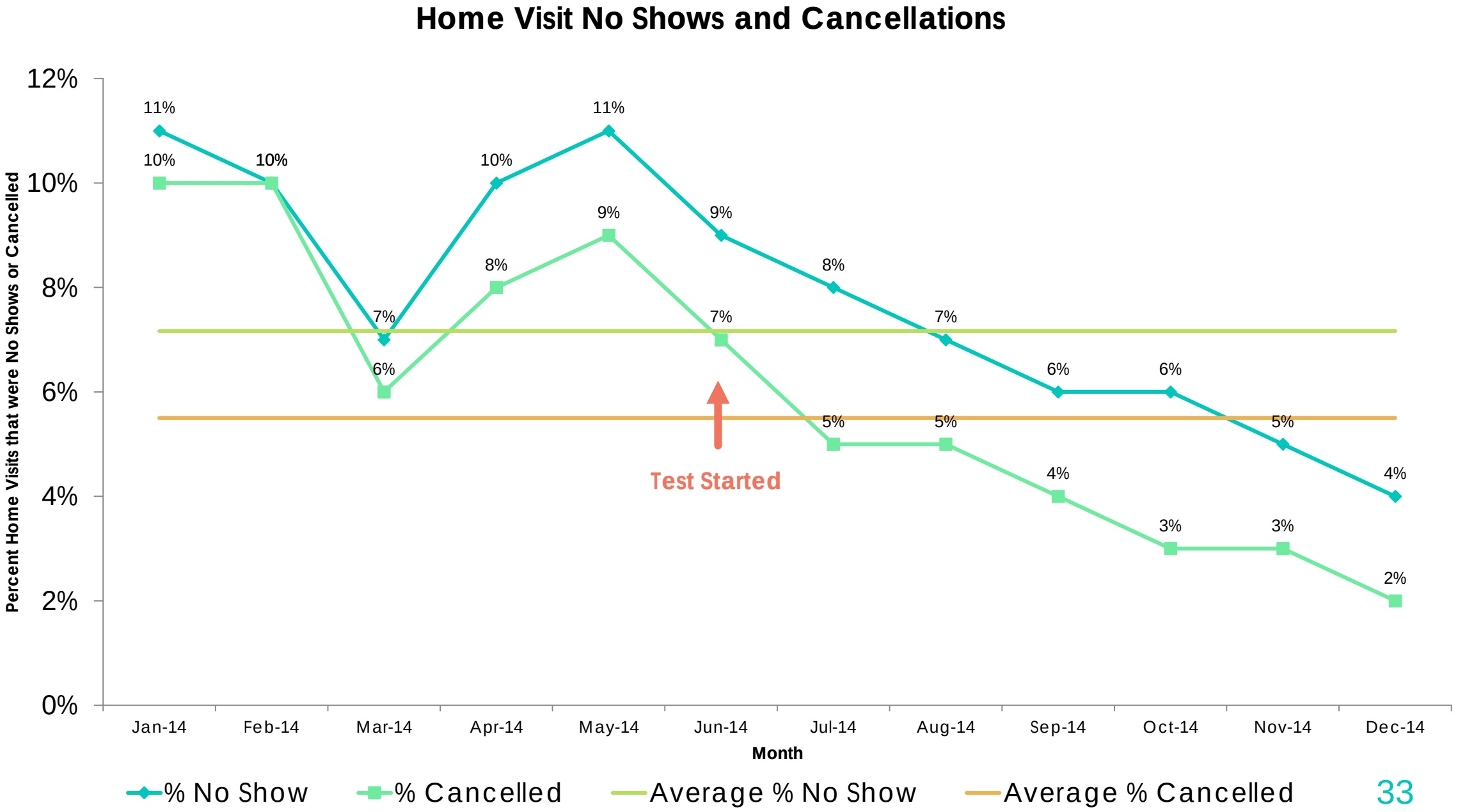
Run Charts: Purpose

- To study data measured over time
- Run charts help to:
  - Study the performance of a process
  - Assess the stability of a process
  - Identify trends
  - Measure change in performance following a change in process

Run Charts: Step by Step

1. • **Decide what data is needed and if it is already tracked or needs to be collected**
2. • **Determine the timeframe (weekly, monthly, etc.) and number of data collection points (try to include 20+ to establish a trend)**
3. • **Gather the data**
4. • **Graph the data (see example)**
5. • **Make sense of the results by examining the data**

Run Charts Example



Interpreting Run Charts

- Does the mean reflect an appropriate level of service or outcome of the process?
- Is there a set of data that should be investigated?
  - Is there a **shift** in the data? Are there 6 or more consecutive points on one side of the center line?
  - Is there a **trend** in your data? Are there 5 consecutive jumps in the same direction (up or down)?
  - Is there a **pattern** in your data? Does a pattern recur 6 or more times in a row?
  - Is there a data point that is an **outlier** (one that is on it's own)?
- Does the process appear to be stable?

Run Chart Example

Run Charts: Hints and Tips

- Every process will have some variation
  - Be cautious about assuming that variation from the average has meaning

- Be sure to track data over a long enough period of time
  - This will help you identify the true mean and the true level of variability within the process

A Few Common Data Tools to Consider

	When to Use	Tips
Check Sheets	Translate observed events into numeric data	• Get sheet format feedback from others • Provide clear, consistent guidance on use • Update the sheet as it is tested out
Run Charts	Trending data over time	• Label axes • Use contrasting colors or patterns for lines • Include a target line
Pie Charts	Demonstrate proportions of the whole	• Keep number of slices to a minimum • Pull out a slice to emphasize it • Use contrasting colors or shades
Bar Charts	Comparisons	• Label axes • Clarify bar values • Emphasize a bar by using a different color

A Few Tips for Charting Data

- Make sure there is agreement regarding what data you would like to chart.
- Don’t forget to label your chart!
- Be sure to check your chart for accuracy.
- Check the auto-defined range on the axes.
- Be careful about what data is charted – remember to only include necessary data.
- Don’t forget to study and discuss the results of your chart!

QUESTIONS?

Thank you!

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