

# Root Cause Analysis

FACILITATOR GUIDE

FEBRUARY 2019

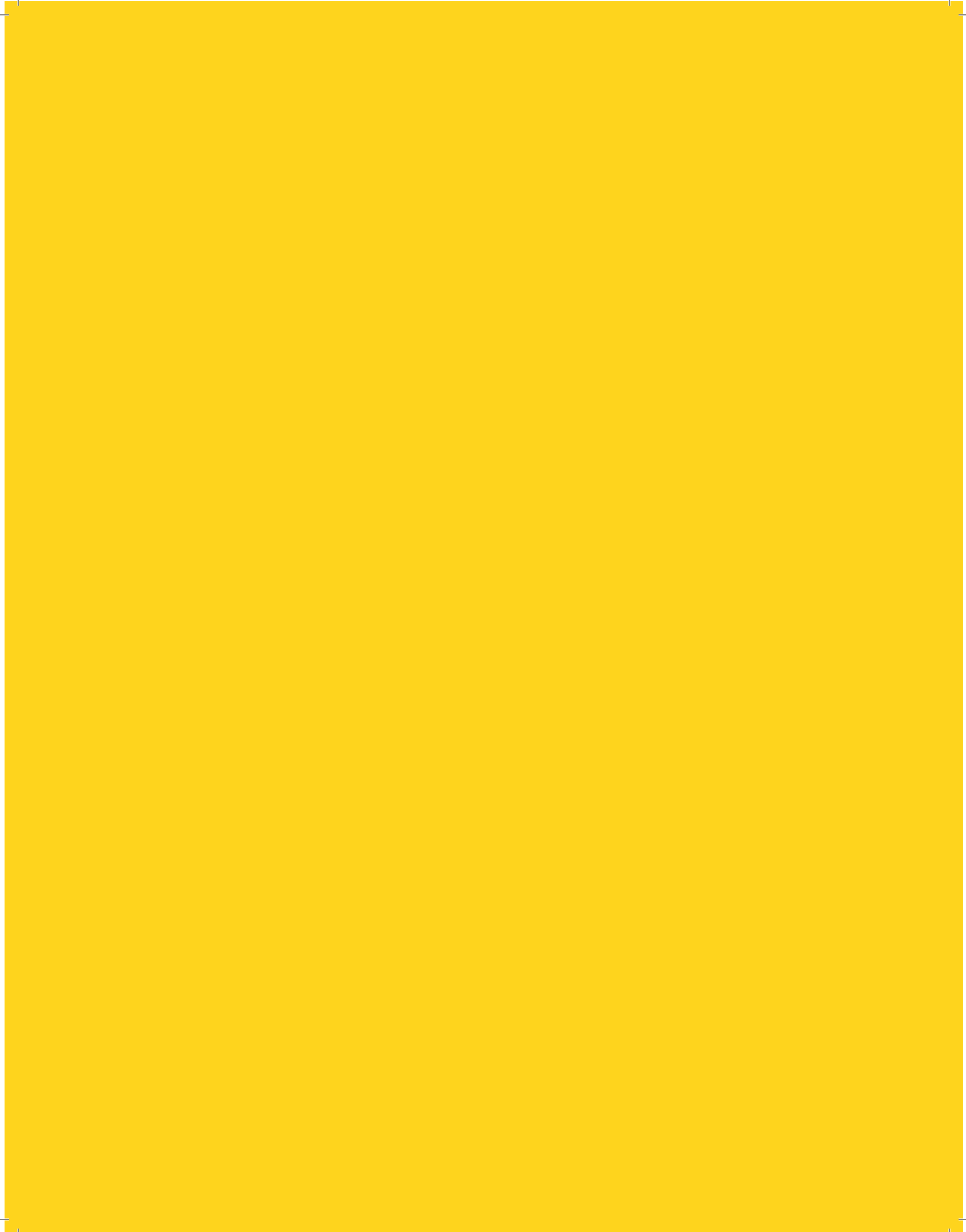


COLLEGE OF  
EDUCATION  
CENTER FOR EDUCATIONAL  
INNOVATION AND IMPROVEMENT



UNIVERSITY OF  
MARYLAND





# Using the Facilitator Guide

This facilitator guide contains protocols designed to engage school leaders and stakeholders in the early steps of a root cause analysis process from identifying a specific, actionable problem and its root causes to prioritizing the root causes for importance and feasibility to address in the school's continuous improvement efforts.

The time frames provided are estimates to guide the specific planning and facilitation. Activities may be shortened or lengthened based on participants' needs, understandings, and familiarity with the content. Appendices A and B provide two sample agendas: Appendix A is a sample agenda for crafting the problem statement and Appendix B is a sample agenda for identifying and prioritizing the causal factors. Appendix C contains a list of the school stakeholders that are required to participate in the causal system analysis process.

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## Craft a Problem Statement Based on Data

### STEP GOAL(S):

1. Determine a problem statement to drive analysis of root causes.
2. Identify stakeholders for large-group workshops.

### STEP OUTPUT(S):

- Problem statement
- Participant list for stakeholder root cause analysis (RCA) workshop

### MATERIALS:

- School and local school system data
- Problem statement worksheet (Figure 2)
- Successes and challenges questions/worksheet

### PARTICIPANTS:

- School leadership team
- Local school system leader (i.e. principal supervisor, school improvement lead)
- Optional: School stakeholder team (See Appendix C)



### Part 1. Review School Data and Results

60 minutes

Materials:

School Report Card  
Needs Assessment Report  
Current and Prior School Improvement Plans  
Additional School and District Data

**Directions:** Guide participants through conversation to understand their current data and previous performance and indicators with attention focused on the factors related to their identification as a Comprehensive Support and Improvement (CSI) school.

1. Following the discussion of each data source, prompt participants to reflect on and capture their key thoughts and takeaways for that data source.
2. Once all data sources have been examined, have participants reflect on themes and similarities among the data sources that stand out to them.

### Driving Questions:

- What do successful student outcomes look like, and where are the biggest gaps between what you would like to see and where you are currently?
- Where is this not happening, and to what extent is it not happening (are there specific grades, subjects, subgroups, etc.)?
- Why was the school identified as a CSI school, and how is that reflected in the data?
- What data points support this as being a major gap?

FIGURE 1. DATA FINDINGS

Data Source	Key Takeaways (2-3)	
<i>Needs Assessment</i>	<i>80% of African-American students scored a level 1 or 2 on state assessments. Level 1 is “did not yet meet expectations” and level 2 is “partially met expectations”.</i>	
Themes Across Data Sources		Ranking (Part 2)
<i>African-American students in 3<sup>rd</sup> and 5<sup>th</sup> grade have 8 times higher incident of out-of-school suspension.</i>		
Remaining Questions		

Part 2. Categorize Problem Areas and Develop Themes		
<i>45 minutes</i>	Materials	School Report Card Needs Assessment Report Current and Prior School Improvement Plans Additional School and District Data
<p><b>Directions:</b> School leadership and University of Maryland facilitators discuss the themes evident in the data and how these themes relate to the criteria for prioritizing recommendations that will be determined in the end of the process. The key consideration in this step is selecting problems for focus that will lead to investigating issues key to achieving notable improvement in student outcomes related to the reasons for which the school was identified as a CSI school.</p> <ul style="list-style-type: none"> <li>● Discuss major themes evident in the data as they relate to the school’s identification as a CSI school.</li> <li>● Consider the number of priorities that have arisen during the previous discussion and how related they are to each other. Priorities and themes in the data may need to be consolidated toward larger scope issues or prioritized to focus on a single problem statement that has a systemic organizational reach.                         <ul style="list-style-type: none"> <li>○ Why has this emerged as a theme?</li> <li>○ How many criteria does this theme meet?</li> <li>○ Which themes are rising to the top for you? Why?</li> </ul> </li> </ul>		

- Rank themes based on their alignment to criteria and discussion results. Add ranking to themes table from Part 1.

**Criteria for Prioritizing Problem Statements:**

- How important is the problem to addressing our needs?
  - Student outcomes will be improved.
  - Teacher efficacy will be increased.
  - Organizational systems will be improved.
- How feasible is it to address this problem?
  - Available resources are adequate.
  - Available staff and capacity are adequate (or can be developed through training and recruitment).
  - Support and buy-in are sufficient.
- How aligned is the problem to our need?
  - Problem is related to the reason the school identified as a CSI school.
  - Problem can be addressed by effective selection and implementation of evidence-based practices.

### Part 3. Craft Problem Statement

30 minutes

Materials:

Problem Statement Guidance  
Problem Statement Examples

**Directions:** School leadership and University of Maryland facilitators craft a problem statement that describes the overall scope of the highest ranked problem themes uncovered in the review of district and school data. The problem statement will focus the analysis of root causes.

1. Use the problem statement guidance (Figure 2) to guide participants through a discussion of how their identified priorities align with the conditions of a problem statement.
2. Write a problem statement that describes the conditions to capture an agreed-upon problem statement.

**Problem Statement Criteria:**

An effective problem statement describes a problem:

- Who is impacted?
- What is the focus?
- Where the problem occurs?
- When the problem occurs (grade level, education process)?
- Gap or connection; the problem statement can be explicitly connected to the reason for engaging in the investigation.
- *Note of caution:* When discussing “who” in crafting the problem statement, avoid blaming individuals or groups. Focusing on who experiences the problem instead of who causes it (1) doesn’t blame individuals or stakeholder groups (engaged in the process) and (2) avoids diagnosing root causes prematurely.

**Problem Statement Examples:**

*Example:* In Grades 3–8, 82% of students did not score at the Meets or Exceeds on the English language arts (ELA) statewide assessment.

*Non-example:* Our students are not meeting expectations on state assessments.

*Example:* Multiple data sources indicate that a high percentage of students in the English language learner (ELL) and special education subgroups in Grades 9–12 are not meeting college and career readiness standards.

*Non-example:* ELL and individualized education program (IEP) students are performing below their peers.

FIGURE 2. PROBLEM STATEMENT GUIDANCE

Well-developed problem statements set the stage for a successful root cause analysis. These statements may describe a situation, issue, barrier, impediment, or challenge that a school must address to meet its obligation to its community and to prepare students to be contributing citizens, or it may define a gap between current reality and desired performance.		
Condition	Condition Present? (Y/N)	Description
To <b>whom</b> does it happen?		
<b>What</b> is the nature of the problem? What happened?		
<b>Where</b> and <b>when</b> does it occur?		
Is there a defined <b>gap</b> ?		
How does it <b>affect</b> or connect to our desired state?		
<b>Step Output. Problem Statement:</b>		
<i>Student (whom) achievement (what) in English language arts at all grades (where and when) is 15% to 25% lower than average on district and state assessments (gap).</i>		

## Brainstorm Causal Factors

### STEP GOALS:

1. Determine factors contributing to the occurrence of the problem statement.
2. Identify themes that organize brainstormed “factors” to drive further investigation into the underlying causes.

### STEP OUTPUT(S):

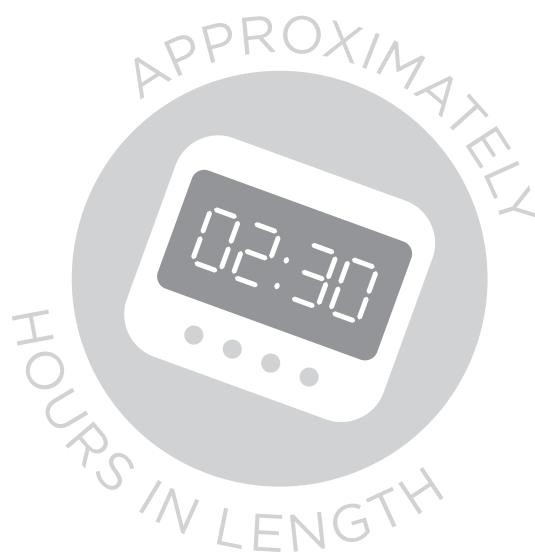
- Causal factor categories/statements

### MATERIALS:

- Problem statement
- Post-its
- Markers and pens
- Fishbone diagram

### PARTICIPANTS:

- School leadership team
- Local school system representative (i.e. principal supervisor, school improvement lead, etc.)
- School and community stakeholder
- School stakeholder team (See Appendix C)



### Data and Problem Statement Review

30 minutes

Materials:

Data Sources

Problem Statement

Problem Statement Guidance Results

**Directions:** Share process and agreed-upon problem statement and allow time for participant understanding and reflection.

1. Share data and process used to determine agreed-upon problem statement.
2. Share problem statement and guidance results.
3. Small groups discuss problem statement.

**Discussion Question:** How does this problem statement reflect what you care about at your table? Were the relevant data included in the discussion? If not, write down what questions you still have and hold on to it for later in the day.

4. Small-group share out:
  - One way the statement connected with the people at your table
  - One question you still have (if you have a question) about the problem statement
5. Whole-group discussion.



## Part 1. Brainstorm Causal Factors

45 minutes

Materials:

Post-its  
Pens

**Directions:** Brainstorm individual factors contributing to the existence or recurrence of the problem statement.

In small groups of five to eight participants each:

1. Individually brainstorm and write individual factors/possible causes on Post-it Notes (one causal factor per Post-it). Allow three to five minutes for this activity.
2. Pass all Post-its to the left, review Post-its, and brainstorm additional causal factors. Allow another five minutes.
3. Repeat a third rotation.

About brainstorming:

4. Remind participants to keep these criteria in mind throughout this activity:
  - a. Record a single idea on a single Post-it note.
  - b. Avoid naming solutions.
  - c. Avoid blaming people.
  - d. Focus on what is under the school's control.
  - e. Use statements, not questions.
5. It is important to keep in mind that in brainstorming, "more is better," and "there is no such thing as a bad idea."
6. The next steps in this process will focus on organizing and analyzing causal factors to determine what is most likely and feasible to inform future action. For now, we are generating ideas.

## Part 2. Organize Causal Factors to Identify Themes

45 minutes

Materials:

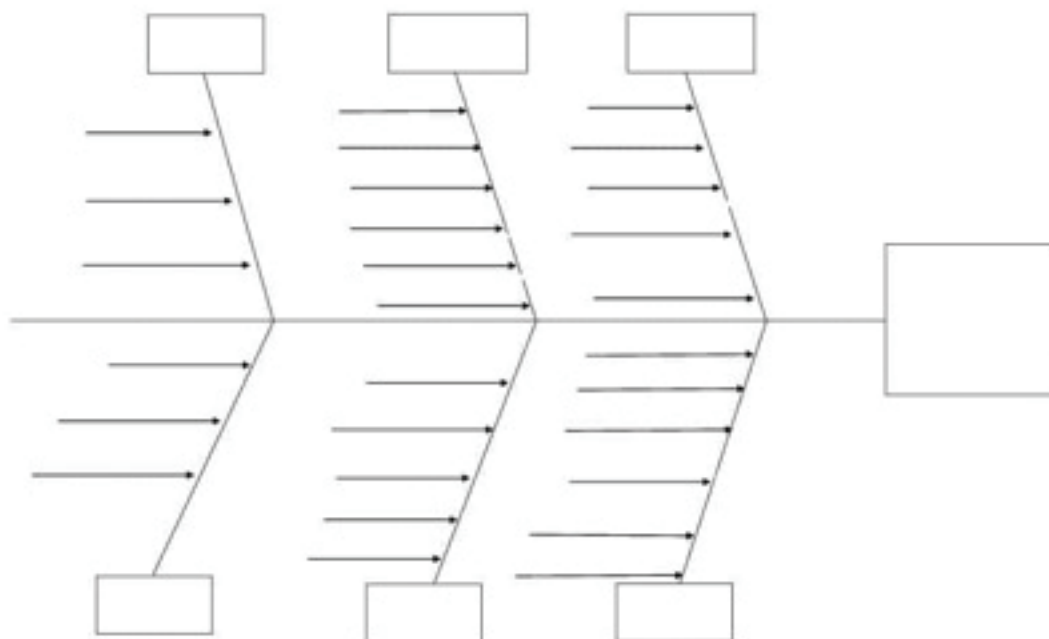
Fishbone Diagram (Chart Paper and Marker)  
Post-its With Ideas From Part 1

**Directions:** Small groups organize causal factors into categories or themes of related factors using a fishbone diagram (see Figure 2). The large group discusses all identified themes and combines or consolidates themes across groups to create a single set of causal factor themes.

1. There is no single "right way" to complete this step; here are some ideas on how to approach this activity:
  - a. **Read aloud.** Distribute individual factors among all participants. Take turns reading aloud to the group, asking clarifying questions as needed. Group members discuss ideas about related factors and possible categories.
  - b. **Read silently.** Distribute individual factors among all participants. Participants read their Post-its silently and individually share thoughts on emerging themes with group. Group members share and discuss ideas about possible categories.
  - c. **Group sort.** This is often the choice for "standing groups." Participants organically read factors and collaboratively discuss possible categories. Participants ask clarifying questions as needed and move around Post-its as needed. Participants break into smaller groups to review the initial categories and reconvene as a large group to confirm that the initial categories work and exchange Post-its as necessary.

3. Large-group carousel to review all identified themes and causal factors informing these themes. Participants can contribute to other groups' work by adding:
  - a. Questions for clarification
  - b. Additional factors to support the theme
  - c. Possible areas of overlap to other themes
4. Small groups revisit original poster and look for areas of needed consolidation across themes.

FIGURE 3. FISHBONE DIAGRAM TEMPLATE



### Part 3. Craft Causal Factor Statements

30 minutes

Materials:

Complete Fishbone Diagram With Themes  
Causal Factor Statement Guidance

**Directions:** Small groups craft a statement that describes the overall condition or factor described by the selected “theme” that is contributing to the problem statement. Each “theme” of factors organized previously in Part 2 is crafted in to a single causal factor statement. Small groups share out their draft statements, and other groups have the chance to ask clarifying questions.

1. Participants review the causal factors and discuss how this theme relates back to the problem statement or how it relates to why the school has been identified as a CSI school.
2. Complete the causal factor statement guidance (Figure 3) and draft a statement.
3. Repeat Steps 1 and 2 as many times as needed/as time allows for each group’s set of themes. Large groups may want to break in half to work through more statements more quickly.
4. Small groups share out their results, and other groups may ask clarifying questions.

FIGURE 4. CAUSAL FACTOR STATEMENT GUIDANCE

Well-developed causal factor statements describe the theme for further investigation to describe the similarities and conditions across the causal factors within the theme. These statements summarize the main points and rationale for combining the causal factors as a theme.		
Condition	Condition Present? (Y/N)	Description
To <b>whom</b> does it happen?		
<b>What</b> is the nature of the problem? <b>What</b> happened?		
<b>Where</b> and <b>when</b> does it occur?		
<b>Why</b> or <b>to what extent</b> is this an issue?		
<b>Step Output. Causal Factor Statements:</b>		
<i>Example: High rates of absence during the testing window in grades 3-5 impact student preparation for state testing.</i>		
<i>Non-example: Students don't come to school.</i>		

## Analyze Underlying Causes to Identify Root Causes



**STEP GOALS:**

1. Determine underlying cause(s) that address the identified problem statement.
2. Identify which underlying causes are primary “root” cause(s).

**STEP OUTPUT(S):**

- List of root and contributing causes

**MATERIALS:**

- 5 Whys protocol (Figure 5)
- Root versus contributing cause decision tree (Figure 6)
- Root cause list (Figure 7)

**PARTICIPANTS:**

- School leadership team
- Local school system leader (i.e. principal supervisor, school improvement lead)
- School and community stakeholder

### Part 1. Determine Underlying Causes

30 minutes

Materials:

Causal Factor Statements (on Posters or Displayed on Screen)  
Stickers or Markers (for Voting)

**Directions:** Discuss each potential cause (causal factor statement) identified through Step 2 that will be used to explore underlying cause(s) and (if necessary) prioritize potential causes for order of exploration.

1. Group facilitator reads each potential cause aloud, participants ask questions for clarification. Note that this step is first about ensuring understanding; this step is not about building consensus or determining priority.
2. Revisit consolidation step “organize contributing factors to identify themes” (if necessary).
3. Individuals vote to prioritize causal factor statements for further investigation in Part 2, Dig Deeper, and facilitator selects top prioritized statements to drive the next round of activity.

## Part 2. Dig Deeper for Root Causes

60 minutes

Materials:

5 Whys Organizer

**Directions:** Explore potential causes for underlying cause(s) using the 5 Whys questioning protocol. Once the underlying cause of one potential cause has been determined, repeat the process with the next prioritized potential cause (causal factor statement).

1. Create new groups, assigning one group to ensure that participants are in new mixed groups so that each small group from Step 2 has been reconfigured and the new groups include representation from all (or most) of the previous groups to the extent possible. Determine group size and configuration based on the number of participants and number of potential causes to explore.
2. Facilitator uses the 5 Whys protocol with each potential cause, recording responses from participants. If more than one possible response is offered, come to agreement on the “most likely” response to continue to investigate, recording the additional responses in case they need to be revisited later.
3. At the end of the 5 Whys questioning for each potential cause, group arrives at a consensus on a final statement describing the underlying cause.

FIGURE 5. 5 WHYS ORGANIZER

GUIDING QUESTION		POSSIBLE EXPLANATIONS	
<b>Causal Factor Statement:</b> <i>High rates of absence during the testing window in grades 3-5 impact student preparation for state testing.</i>			
<b>Why do we have this challenge?</b>  <i>Note: During this phase of the process, ask the question “why” until arriving at the underlying cause.</i>		First Response:	
		Why is that the case?	
		Why is that the case?	
		Why is that the case?	
		Why is that the case?	
		Why is that the case?	
<b>Underlying Cause:</b> <i>The school does not publicize the importance of testing and prepare families for it.</i>			

## Part 3. Determine Root versus Contributing Causes

30 minutes

Materials:

Root versus Contributing Cause Decision Tree  
Root Cause List

**Directions:** Determine which underlying causes are root causes that must be addressed through implementation priorities and contributing causes that may inform necessary actions.

1. Facilitator introduces the decision tree flow chart and reviews the questioning process leading to a determination of root versus contributing cause.
2. Group examines each final statement using the decision tree questioning protocol.
3. Each underlying cause statement is assessed as either a root or a contributing cause and captured within the worksheet (Figure 6).
4. Participants complete the worksheet template by asking additional questions related to each cause (Figure 7) .

FIGURE 6. ROOT VERSUS CONTRIBUTING CAUSE

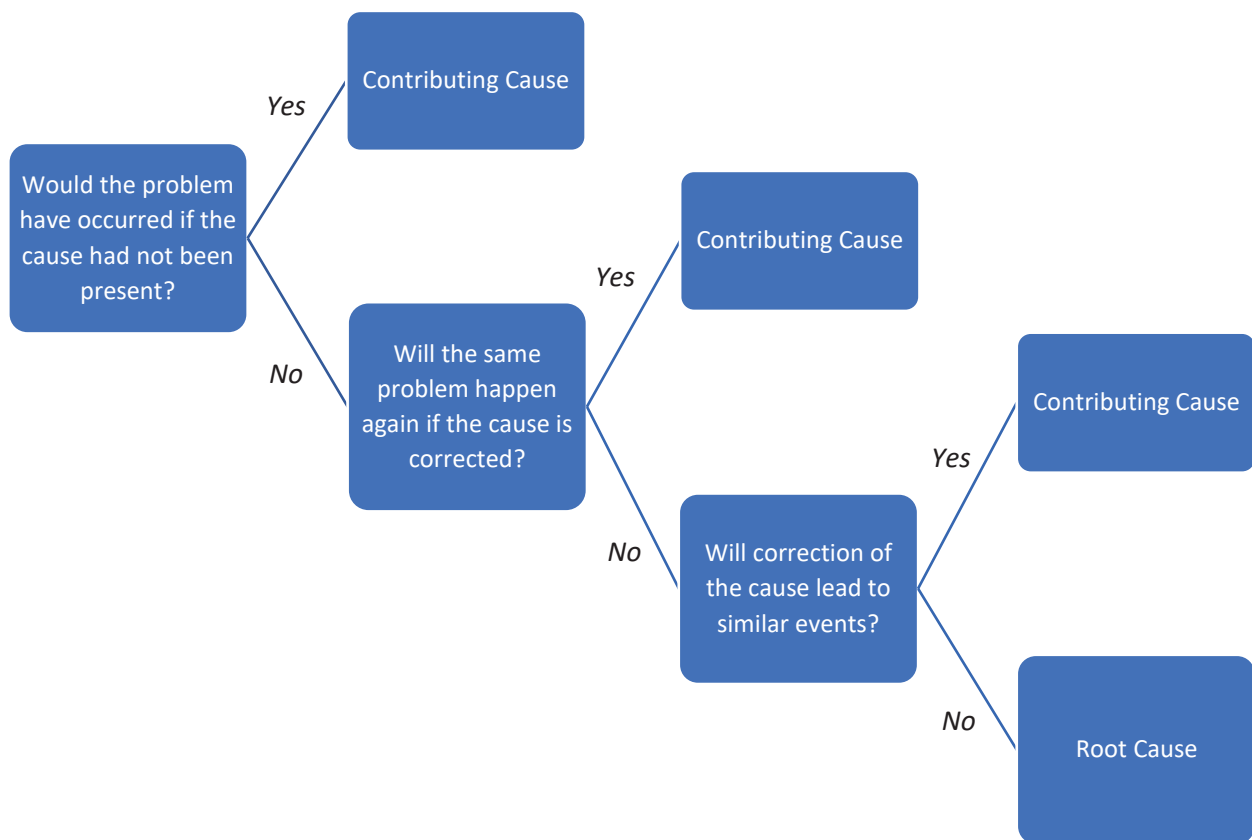


FIGURE DEVELOPED FROM PREUSS, P. G. (2003). *SCHOOL LEADER'S GUIDE TO ROOT CAUSE ANALYSIS*. LARCHMONT, NY: EYE ON EDUCATION.

FIGURE 7. ROOT CAUSE LIST

Underlying Cause Statement	Is this a root (R) or contributing (C) cause?	What data should we review or analyze related to this cause?	How will we obtain and review the data?
<i>The school does not publicize the importance of testing and prepare families for it.</i>	C	<i>School assembly plans Parent communications</i>	<i>By asking parents in survey By asking students in survey</i>

## Prioritize Root Causes for Intervention

### STEP GOAL(S):

- To prioritize the root causes for the importance of impacting student outcomes and feasibility of implementation to inform integration into school improvement plans.

### STEP OUTPUT(S):

- Priority root causes for recommendations

### MATERIALS:

- Stickers or markers

### PARTICIPANTS:

- School leadership team
- Local school system leader (i.e. principal supervisor, school improvement lead)
- School and community stakeholder



Part 1. Criteria for Prioritization		
20 minutes	Materials:	None
<p><b>Directions:</b> Participants review and come to a consensus on criteria for prioritizing root causes.</p> <ul style="list-style-type: none"> <li>Present and discuss criteria for prioritizing root causes for participant reflection and feedback.</li> <li>Come to a final consensus as a group on what constitutes a root cause most critical to move forward to recommendations.</li> </ul> <p><b>Criteria for Prioritizing Root Causes:</b></p> <ul style="list-style-type: none"> <li>How important is the problem to addressing our needs?                             <ul style="list-style-type: none"> <li>Student outcomes will be improved.</li> <li>Teacher efficacy will be increased.</li> <li>Organizational systems will be improved.</li> </ul> </li> <li>How feasible is it to address this problem?                             <ul style="list-style-type: none"> <li>Available resources are adequate.</li> <li>Available staff and capacity are adequate (or can be developed through training and recruitment).</li> <li>Support and buy-in are sufficient.</li> </ul> </li> <li>How aligned is the root cause to our need?                             <ul style="list-style-type: none"> <li>Root cause is related to the reason the school identified as a CSI school.</li> <li>Root cause can be addressed by effective selection and implementation of evidence-based practices.</li> </ul> </li> </ul>		



## Part 2. Individually Prioritize

*20 minutes*

Materials:

Chart Paper With Final Root Causes  
Completed Root Cause List Worksheets  
Stickers or Pens

**Directions:** Identify those root causes that are most likely to lead the school toward the identification of effective evidence-based practices.

1. Participants vote on root causes to identify which ones are the priorities to address through implementation based on the criteria in Part 1.
2. Organize and prioritize root causes according to participant voting.

## Part 3. Generate Preliminary Recommendations for Improvement

*20 minutes*

Materials:

None

**Directions:** Priorities will lead to the group's recommendations for improvements that inform the final root cause analysis report.

## APPENDIX A.

### SAMPLE AGENDA—CRAFTING A PROBLEM STATEMENT

#### AGENDA

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8:30–8:45 a.m.	Welcome and Introductions
8:45–9:00 a.m.	Overview of the Root Cause Analysis Process
9:00–10:00 a.m.	Review School Data Results
<b>10:00–10:15 a.m.</b>	<b>Break</b>
10:15–11:00 a.m.	Categorize Problem Areas and Develop Themes
11:00–11:30 a.m.	Craft Problem Statement
11:30–11:45 a.m.	Next Steps and Adjourn

## APPENDIX B.

### SAMPLE AGENDA—IDENTIFY CAUSAL FACTORS

#### AGENDA

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8:30–8:45 a.m.	Welcome and Introductions
8:45–9:00 a.m.	Overview of Root Cause Analysis
9:00–9:30 a.m.	Review Data and Problem Statement
<b>9:30–9:45 a.m.</b>	<b>Break</b>
9:45–10:30 a.m.	Brainstorm Causal Factors
10:30–11:15 p.m.	Organize Causal Factors to Identify Themes
11:15–11:45 p.m.	Craft Causal Factor Statements
<b>11:45–12:45</b>	<b>Lunch</b>
12:45–1:00 p.m.	Review Causal Factor Statements
1:00–1:30 p.m.	Determine Underlying Causes
1:30–2:30 p.m.	Dig Deeper for Root Causes
<b>2:30–2:45 p.m.</b>	<b>Break</b>
2:45–3:15 p.m.	Determine Root versus Contributing Factors
3:15–3:50 p.m.	Criteria for Prioritization
3:35–3:55p.m.	Individually Prioritize
3:55–4:15p.m	Generate Preliminary Recommendations for Improvement
4:15–4:30 p.m.	Next Steps and Adjourn

## APPENDIX C.

### STAKEHOLDER GROUP REQUIREMENTS

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Mandatory stakeholder participants are listed below. Add other participants based on individual school team composition, which should be driven by school context/need (i.e. school's with a high special education population should have a special education representative on the team)

- Principals
- Parents
- Local Community Leaders
- Local Employer Leaders (Business Community)
- Local Government Leaders
- Central Office Staff Members (i.e Principal Supervisor, Content Specialists)
- Teachers
- School Staff
- The Exclusive Bargaining Representative.

# Root Cause Analysis Tool for Maryland

## COMPREHENSIVE SUPPORT AND IMPROVEMENT (CSI) SCHOOL NEEDS ASSESSMENT

The root cause analysis process translates the successes and challenges identified through the CSI needs assessment into priorities to inform actionable goals in a school implementation plan. This tool walks schools through the four steps of the root cause analysis that lead to identified recommendations for evidence-based practice selection.

### **STEP 1: Craft a Problem Statement**

### **STEP 2: Brainstorm Causal Factors**

### **STEP 3: Analyze Underlying Causes to Identify Root Causes**

### **STEP 4: Prioritize Root Causes for Intervention**

#### HOW TO USE THIS TOOL

The Root Cause Analysis tool is divided into four parts, one for each step of the process. Each step describes the purpose of that step, the result of the step, and provides any worksheets required for that step, with brief directions for the worksheet. The final piece of the section is a place to capture the final output of the step.

The root cause analysis process is carried out through a combination of small- and large-group activities. Each set of activities produces a result for that group and activity. Each small group should choose a notetaker to capture an official record of the activity result for that group and a timekeeper to help keep the group activities on track. The facilitator will combine the small-group results from each step to create a single comprehensive version.

This tool is best used in combination with the Root Cause Analysis Tool: *Facilitator Guide*.

#### TERMINOLOGY

**PROBLEM STATEMENT**—Concise description of the problem or issue that needs to be addressed

**CAUSAL FACTORS**—Discrete issues or causes contributing to the occurrence of the problem being addressed

**CAUSAL FACTOR STATEMENTS**—Describes a theme evident in the causal factors that needs further investigation to understand the underlying causes of the problem that must be addressed

**UNDERLYING CAUSES**—Causes of the problem that must be addressed that are deeper than the obvious symptoms

**CONTRIBUTING CAUSES**—Causes underlying the initial problem that may be significant or relevant but do not need to be addressed in order to resolve the initial problem.

**ROOT CAUSES**—The critical cause underlying the initial problem that must be addressed in order to resolve the problem and prevent it from recurring

## Craft a Problem Statement

Determine the scope of the overarching problem(s) of practice that will inform the school's efforts to realize its desired state and based on the *available school, local school system, and state data*. Discuss individual data sources, and, once all data sources have been examined, reflect on themes and similarities among the data sources.

Data Source	Key Takeaways (2-3)	
<i>Needs Assessment</i>	<i>80% of African-American students scored a level 1 or 2 on state assessments. Level 1 is "did not yet meet expectations" and level 2 is "partially met expectations".</i>	
Themes Across Data Sources		Ranking (Part 2)
<i>African-American students in 3<sup>rd</sup> and 5<sup>th</sup> grade have 8 times higher incident of out-of-school suspension.</i>		
Remaining Questions		

Discuss major themes across data sources as they relate to the reason for the school’s identification as a CSI school. Use the discussion to determine what area(s) of focus are most likely to have an impact on student outcomes through adult behaviors and actions. Craft a problem statement that reflects this focus area and provides a direction for the root cause analysis.

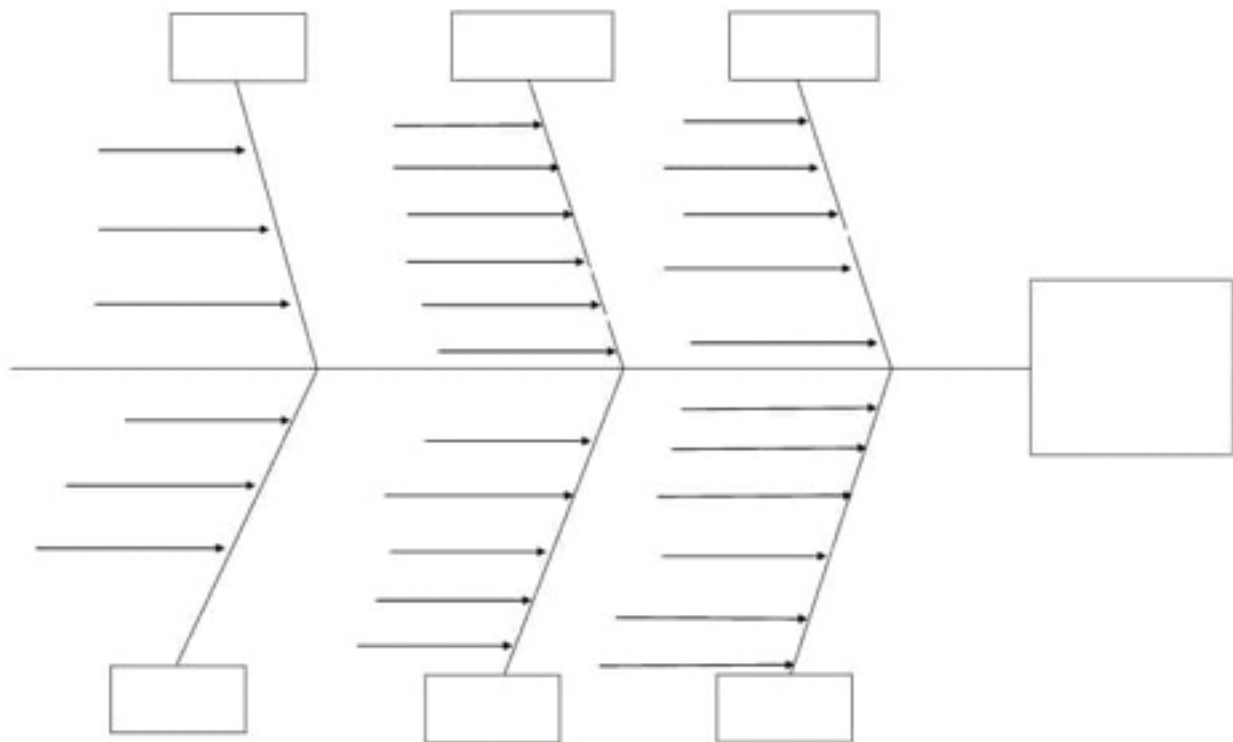
Well-developed problem statements set the stage for a successful root cause analysis. These statements may describe a situation, issue, barrier, impediment, or challenge that a school must address to meet its obligation to its community and to prepare students to be contributing citizens, or it may define a gap between current reality and desired performance.		
Condition	Condition Present? (Y/N)	Description
To <b>whom</b> does it happen?		
<b>What</b> is the nature of the problem? What happened?		
<b>Where</b> and <b>when</b> does it occur?		
Is there a defined <b>gap</b> ?		
How does it <b>affect</b> or connect to our desired state?		
<b>Step Output. Problem Statement:</b>		
<i>Student (whom) achievement (what) in English language arts at all grades (where and when) is 15% to 25% lower than average on district and state assessments (gap).</i>		

## Brainstorm Causal Factors

Capture the collective knowledge and capacity of the people in the room by brainstorming *causal factors* that may contribute to the occurrence of the problem statement. Using the Post-it Notes on your table, identify individual factors related to the overall problem statement.

- Brainstorm individual factors on notes.
- Pass notes to left, review the notes, and add any additional causal factors (repeat this step one more time).
- Share brainstormed notes across the group, removing duplicates.

Organize the factors into like groupings or themes and populate the fishbone for the overall problem statement. On the fishbone diagram, the problem statement becomes the top organizational level, or the “head”; the themes become the intermediate organizational level, represented by rectangles; and the individual causal factors (captured on notes) are represented by the arrows.



Craft causal factor statements that describe the overall condition or themes contributing to the problem statement. Each theme represented on the fishbone diagram is crafted into a single causal factor statement.

Well-developed causal factor statements describe the theme for further investigation to describe the similarities and conditions across the causal factors within the theme. These statements summarize the main points and rationale for combining the causal factors as a theme.		
Condition	Condition Present? (Y/N)	Description
To <b>whom</b> does it happen?		
<b>What</b> is the nature of the problem? <b>What</b> happened?		
<b>Where</b> and <b>when</b> does it occur?		
<b>Why</b> or <b>to what extent</b> is this an issue?		
<b>Step Output. Causal Factor Statements:</b>		
<i>Example: High rates of absence during the testing window in grades 3-5 impact student preparation for state testing.</i>		
<i>Non-example: Students don't come to school.</i>		

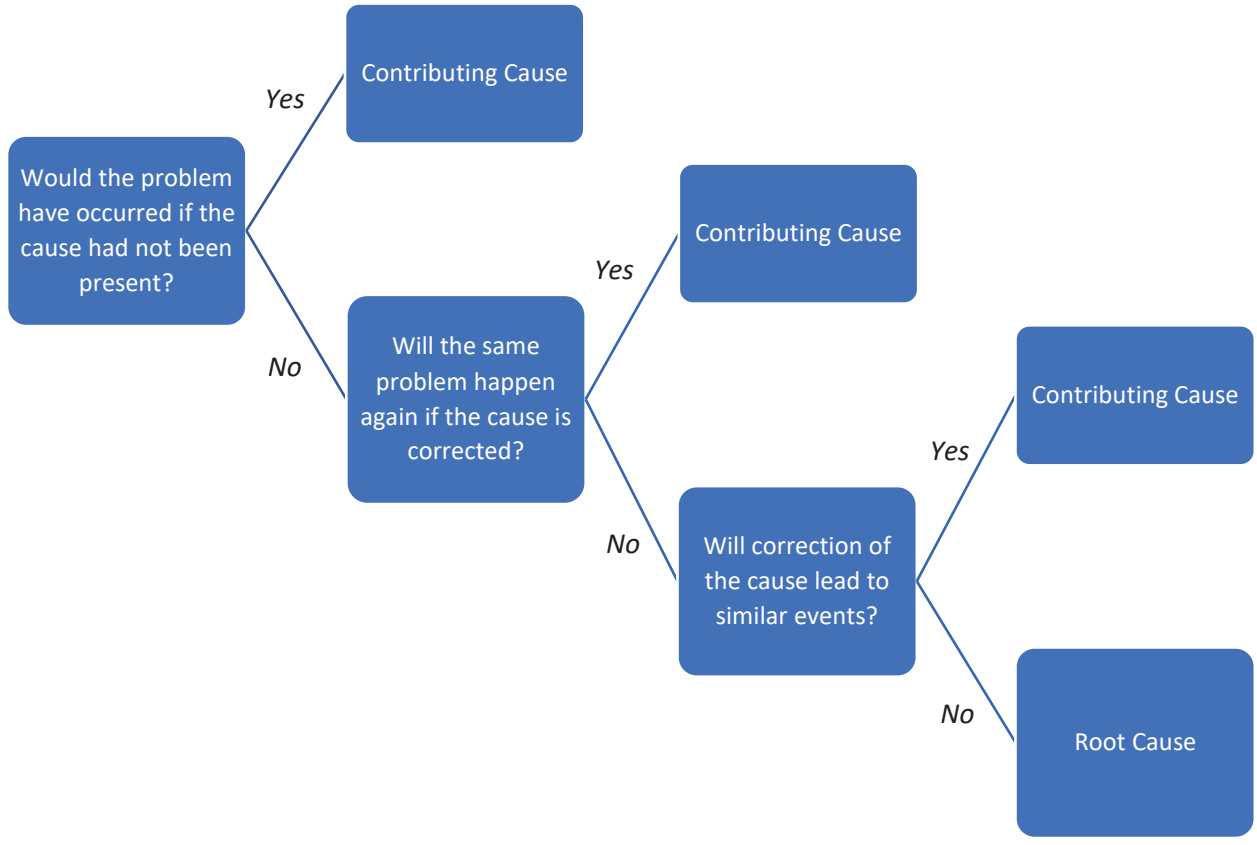
## Analyze Underlying Causes to Identify Root Causes

Analyze the causal factor statements to determine underlying causes of the problem statement. Identifying the underlying causes ensures that issues have moved past surface “symptoms” to deeper “causes.” This step is repeated for each (or as many as possible) of the causal factor statements.

<p><b>Causal Factor Statement:</b> High rates of absence during the testing window in grades 3-5 impact student preparation for state testing.</p>	
GUIDING QUESTION	POSSIBLE EXPLANATIONS
<p><b>Why do we have this challenge?</b></p> <p><i>Note: During this phase of the process, ask the question “why” until arriving at the underlying cause.</i></p>	First Response:
	Why is that the case?
	Why is that the case?
	Why is that the case?
	Why is that the case?
	Why is that the case?
<p><b>Underlying Cause:</b> <i>The school does not publicize the importance of testing and prepare families for it.</i></p>	



The underlying causes may or may not be the root cause that is driving the conditions and factors leading to the existence and persistence of the problem statement. Use the questions within the decision tree flow chart to determine whether each underlying cause statement is a root or contributing cause and capture the results in the root cause list.



Underlying Cause Statement	Is this a root (R) or contributing (C) cause?	What data should we review or analyze related to this cause?	How will we obtain and review the data?
<i>The school does not publicize the importance of testing and prepare families for it.</i>	C	<i>School assembly plans Parent communications</i>	<i>By asking parents in survey By asking students in survey</i>

## Prioritize Root Causes for Intervention

Prioritize the root causes for intervention to ensure that these root causes that become recommendations for intervention are important and feasible. The prioritized root causes lead to discussion of the school's recommendations for the root cause analysis report. Prioritization is determined based on individual participant voting.

Criteria for prioritizing root causes:

- How important is the problem to addressing our needs?
  - Student outcomes will be improved.
  - Teacher efficacy will be increased.
  - Organizational systems will be improved.
- How feasible is it to address this problem?
  - Available resources are adequate.
  - Available staff and capacity are adequate (or can be developed through training and recruitment).
  - Support and buy-in are sufficient.
- How aligned is the root cause to our need?
  - Root cause is related to the reason the school is identified as a CSI school.
  - Root cause can be addressed by effective selection and implementation of evidence-based practices.

Final Output. Prioritized Root Causes (Recommended Areas for Improvement):	
1	
2	
3	

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This Root Cause Analysis Facilitator Guide was developed by the College of Education's Center for Educational Innovation and Improvement at the University of Maryland, College Park. The guide was developed under contract with the Maryland State Department of Education to support the state's implementation of its *Every Student Succeeds Act* state plan and school improvement across the state.

Specifically, partners in the Office of Leadership Development and School Improvement and the Division of Curriculum, Instructional Improvement and Professional Learning - Title I Program Improvement and Family Support Branch.

Maryland State Department of Education  
Office of Leadership Development and School Improvement  
Division of Curriculum, Instructional Improvement and Professional Learning - Title I Program Improvement and Family Support Branch.

This report is available on the Center for Educational Innovation and Improvement website at: [www.education.umd.edu/research/centers/ceii](http://www.education.umd.edu/research/centers/ceii)

The Center for Educational Innovation and Improvement at the University of Maryland, College Park supports faculty in the College of Education as well as across campus in developing new and innovative approaches that advance public education and enhance educational opportunities for children and young adults in Maryland and the region. The Center serves as an incubator for infusing improvement science into schools and school systems and for bringing together researchers and Pre-K-12 educators to focus on creating innovative initiatives that advance teaching, leadership and learning.

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