Change and Implementation in Practice

Capacity Building
CENTER FOR STATES

Problem Exploration

Change and Implementation in Practice Series

Child welfare agencies continually undertake efforts to implement new programs and practices to produce better outcomes for children, youth, and families. Effectively implementing new approaches and achieving sustainable change can be challenging. The Capacity Building Center for States (the Center) has developed the Change and Implementation in Practice series to support agencies in applying a structured approach to implementation and overcoming common challenges.

Briefs in this series provide user-friendly guidance on implementation concepts to strengthen child welfare systems' ability to implement change. These "how-to" guides explain key steps in the Child Welfare Capacity Building Collaborative's (the Collaborative's) Change and Implementation Process, a synthesis of several implementation and continuous quality improvement (CQI) frameworks and tools (Collaborative, 2015). The Change and Implementation Process describes 5 overlapping phases and 12 steps that guide organizations from problem exploration through sustainable implementation. While the briefs align with the Collaborative's process, they can be used with similar implementation frameworks.

This brief addresses both "identifying a problem" and "gathering data and exploring the problem indepth" in the first phase of the Change and Implementation Process. Following this phase, an agency or team will use the data and analyses to build a theory of change.

Another important step during this phase is forming a team to guide the change process. The team typically comes together after the agency identifies the initial problem, and should be in place before the deeper problem exploration.

For additional briefs on forming teams, developing a theory of change, and other change and implementation topics, visit https://capacity.childwelfare.gov/states/focus-areas/cqi/change-implementation

To improve outcomes, child welfare agencies develop, implement, and adjust systems, programs, policies, and practices aimed at addressing identified problems.[1] For these interventions to be effective, they must address the true cause(s) of the problem or need. Through deeper problem exploration, agencies can gain a clear understanding of what their problems are and why they are occurring.

This brief can help child welfare agency leaders, managers, teams, and stakeholders use data to "dig deeper" into problem areas. The brief begins with background and contextual information for understanding deeper problem exploration and then provides step-by-step guidance.

Why Explore the Problem and Dig Deeper?

Implementation science frameworks typically highlight the importance of an early period of problem exploration in which an agency decides what needs to be changed and why (see, for example, Aarons, Hurlburt, & Horwitz, 2011; Barbee, Christensen, Antle, Wandersman, & Cahn, 2011; Permanency Innovations Initiative Training and Technical Assistance Project [PII-TTAP], 2016). If an agency does not fully understand the nature and underlying causes of the problem, it may risk implementing the wrong solution, and the

[1] This series uses the word "problem" to refer to what needs to change to meet agency priorities. Problems may reflect identified needs or opportunities to improve agency or system functioning and outcomes.

problem could remain or become worse. Digging deeper is critical to setting a firm foundation for the change and implementation process.

This first section introduces key concepts and explains how using data and deeper problem exploration contributes to the change and implementation process. It emphasizes the importance of internal and external stakeholder involvement across the child welfare system. The following section will provide more detailed "how-to" guidance.

How Data Help

Using data to better understand complex situations and make key decisions is essential to effective change and implementation (Metz, Naoom, Halle, & Bartley, 2015). Data help child welfare professionals:

- Demonstrate there is a problem
- Understand the nature of the problem
- Explore the underlying root cause(s) of the problem and contributing factors
- Determine who is most affected by the problem
- Examine areas of strong practice
- Identify an appropriate response

Gathering and exploring data begin during problem exploration and continue over the course of implementing and sustaining change. Over time, teams will look at new and updated data to strengthen their understanding of the problem and assess changes resulting from interventions.

The Essential Role of Stakeholder Input in Problem Exploration

Engaging stakeholders throughout a change process is critical to its success and is particularly important to defining the problem and collecting and interpreting data and information (World Vision International, 2011). While a core team with diverse representation should guide the problem exploration process, it will need participation from additional stakeholders across the child welfare system to gain broader perspectives.

Stakeholder groups may include:

- Child welfare staff at different levels (e.g., caseworkers, supervisors, managers, and administrators) and from different program and operational areas
- Family members (e.g., birth parents, youth, kinship caregivers, foster and adoptive parents)
- Court and legal representatives
- Universities and researchers
- Partners and service providers (e.g., private child welfare agencies, tribal representatives, law enforcement, schools, health/mental health/behavioral health service providers, domestic violence centers, housing, and other community service providers)
- Advocacy and advisory groups (e.g., state associations, review board members)
- Local community leaders
- Funding agencies and policymakers

Definitions of Key Terms

- **Problem** – what needs to change to meet agency priorities. Problems may reflect identified needs or opportunities for building on successes to improve agency or system functioning and outcomes.
- **Root cause analysis (RCA)** – structured process for identifying why a problem occurs and what to address so that the problem does not continue or happen again.
- **Root cause** – the origin or source underlying a problem and its symptoms. If the root causes are addressed, then the problem is less likely to continue or happen again.
- **Contributing factors** – elements that affect the problem or outcome but are not the root cause. (Some literature refers to these as "causal factors.")
- **Stakeholders** – individuals who have an interest in the outcome of the change initiative but may or may not have a direct role in the change and implementation process.
- **Team –** group reflecting diverse expertise and perspectives that guides the change and implementation process.
- **Research question** – key questions that, when answered, will help the team understand and address the problem.
- **Disaggregation** – the process of breaking data into parts to examine by subgroup or components.
- **Quantitative data** – numerical data. These data often measure processes, outputs, and outcomes.
- **Qualitative data** – narrative or nonnumerical data or information. These data often explore quality or how and why something is occurring.
- **Intervention** – any specific practice, service, policy, strategy, program, practice model, or combination of these that is clearly defined, operationalized, and distinguishable from one or more alternatives.

Teams should engage stakeholders in the problem exploration process by:

- Asking stakeholders for data and information they may already have related to the problem, including administrative data like service records or court information (Note: If data sharing agreements are not in place with external partners, this may be a necessary first step.)
- Collecting data from selected stakeholder groups, as needed, through surveys, interviews, or focus groups
- Discussing data findings and their implications with stakeholders to get their perspectives
- Including stakeholders in conversations about contributing factors, underlying causes, and possible solutions

Meaningful stakeholder engagement helps build a more comprehensive understanding of the identified problem and creates buy-in for later steps in a change and implementation process.

Importance of Uncovering the Root Cause

Root cause analysis (RCA) is a "rigorous, structured approach for identifying why a problem occurred in the first place and what to do so it does not recur" (Quinn, 2016, p.1). RCA does not refer to a single methodology; rather, it encompasses multiple techniques and tools used to "drill down" a causal chain to get to the origin of a problem and identify corrective actions. In the simplest terms, think of a tomato garden with rotting tomatoes. The obvious problem is that there are no healthy tomatoes to eat. RCA can help uncover the underlying root cause—for example, a soil disease brought on by overwatering. As a result, it becomes clear that the solution is to make changes in watering habits rather than to buy expensive fertilizer.

Social service agencies are paying greater attention to RCA techniques, which corporations have used for decades to explore high-risk errors like industrial accidents. An early application of RCA in child protection explored factors that contributed to child fatalities (Rzepnicki & Johnson, 2005). RCA helped redirect attention from blame on individual caseworker decision-making to underlying issues with system policies and procedures. Today, experts in CQI and implementation science encourage agencies to use RCA as a tool for understanding complex problems within child welfare systems and identifying solutions that can contribute to better outcomes.

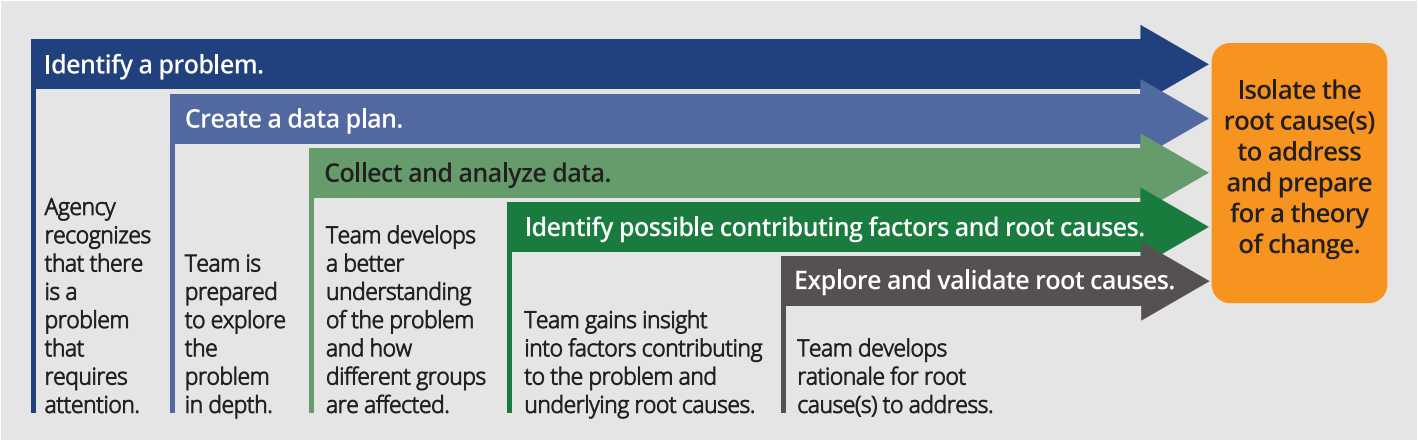
How to Gather Data and Explore the Problem Indepth

The following six essential functions (tasks) are necessary for deeper problem exploration:[2]

1. Identify a problem
2. Create a data plan to explore the problem
3. Collect and analyze data
4. Identify possible contributing factors and possible root causes
5. Explore and validate possible root causes
6. Isolate the root cause(s) to address

Though these functions are presented in a linear fashion (see exhibit 1), in practice, teams may need to loop back and forth between functions as more information leads to more questions and deeper data analysis.

Exhibit 1. Essential Functions to Gathering Data and Exploring the Problem Indepth.



[2] Essential functions are tasks that lead to achieving key milestones in a change process.

The following sections present guidance and considerations for each essential function.

1. Identify a Problem

A change and implementation process begins when an agency determines that it needs to address an identified problem, unmet need, or opportunity for improvement. A problem may come to the agency's attention from one or multiple sources, such as:

- Federal and other external monitoring (e.g., Child and Family Services Reviews [CFSRs], consent decrees)
- Agency data and reports (e.g., data analyses, annual plans, contracted studies)
- Assessment processes (e.g., technical assistance needs assessments)
- CQI or quality assurance processes
- Accreditation processes
- Internal or external stakeholder group input
- News media and investigative reports, often of high-profile events (e.g., child fatality, lawsuit, worker death)

Questions to Consider

- What is the problem?
- What does the agency know about it?
- Who identified this as a problem?
- Is there urgency for change?
- What would look different if the problem did not exist?
- What is the desired outcome?

At this point, agencies will want to consider the following:

- Existing evidence of the problem and who is affected
- Interest in or urgency for addressing the problem among agency leadership and key stakeholders
- Goal or desired outcome that will result from addressing the problem
- Agency readiness for addressing the problem[3]

While the initial identification of the problem is the catalyst for the change process, the agency's understanding of the problem will evolve over time as the agency forms a team and conducts deeper problem exploration.

Example: Identified Problem

A state's CFSR outcomes on well-being point to a problem with the agency's performance in providing services to children and families that meet their needs. The agency is prepared to investigate this further and has formed a team to do so. Initial team members include the following stakeholders:

- Child welfare agency deputy director
- Program managers (child protection, in-home services, foster care)
- CQI and data leads
- Supervisors and caseworkers (representing different state regions)
- University researcher/partner
- Birth parents, foster parents, and youth
- Community providers (mental health/substance abuse treatment center manager and domestic violence coalition manager)
- Court/legal representatives (judge and parents' attorney)

[3] The Change and Implementation in Practice series addresses initial and ongoing readiness in a separate brief.

2. Create a Data Plan to Explore the Problem

Once a problem is identified and a team is formed, the next step is to create a data plan. The purpose of a data plan is to guide how the team gathers and examines existing and new data and information to better understand the problem and identify possible root cause(s). Creating a well-thought-out data plan will allow the team to explore the identified problem in a comprehensive and efficient way. The team may discover that it needs specialized help to develop and implement the data plan (see "Getting Help" on page 16). Exhibit 2 shows the core components of a data plan.

Exhibit 2. Data Plan Core Components

- Research questions
- Data and information sources
- Proposed data analyses
- Timelines
- Staff responsibility for data collection, data analysis, and overseeing data quality

Research Questions

The data plan should identify key questions that, when answered, will help the team understand and address the problem. These questions may explore:

- The scope of the problem
- Variations by population groups (e.g., by age, race, reason for entry, special needs)
- Variations by child welfare services, placement type, or practice approaches
- Geographic or regional differences
- Relationships between different factors that contribute to the problem

Questions may focus on a point in time (e.g., the most recent data available) or changes over time (e.g., the past 5 years). They also may explore where the problem is less evident (i.e., things are working well), so the team can build on successes.

Questions to Consider

- What are readily available data sources to help confirm, explore, and/or clarify the problem?
- Are there any concerns about data quality (e.g., missing or incorrectly entered data)?
- Are there any concerns about data reliability (i.e., if the research was conducted again would the same results occur)?
- What additional data sources can be used or what additional data need to be collected to learn more about, confirm, and/or clarify the problem?
- Which types of data analyses are most appropriate to answer each research question? What are the strengths and limitations of each analysis?

Example: Research Questions

Continuing the example introduced above, the state may want to explore:

- Does service receipt differ across populations (children, parents, or foster parents)?
- Who is most at risk of having unmet service needs (e.g., individuals with certain needs, mothers and/or fathers)?
- Are certain services needed to address specific unmet needs?
- Does this problem affect all case types or is it more frequent in certain cases?
- How are caseworkers assessing and identifying service needs?
- What are the barriers to best practice (e.g., culture and climate issues, policy limitations, lack of knowledge and skills, other barriers)?
- Is this a statewide issue, or are there variations across counties? Where are particular problem areas and areas successfully meeting service needs?

The Importance of Multiple Data and Information Sources

Data and information help teams answer their questions and gain a better understanding of the story behind the problem. A single source rarely tells the whole story, so teams should examine multiple sources. Teams need both **quantitative data** (numerical data that measure) and **qualitative data** (narrative data that explore and provide

context). Exhibit 3 highlights some sources of quantitative and qualitative child welfare data. Note, however, that some sources may contain both types of data and sometimes qualitative data are later quantified.

Exhibit 3. Types of Data and Data Sources

Type of Data	Sample Sources	Useful for
Quantitative data (numerical)	◆ Administrative data, including: — Management information system (MIS) data — Human resources workforce data ◆ State or federal data sets and measures, including: — National Child Abuse and Neglect Data System (NCANDS) — Adoption and Foster Care Analysis and Reporting System (AFCARS) — National Youth in Transition Database (NYTD) ◆ Data systems from universities and other agency partners (such as court case management systems, healthcare systems, or education systems) ◆ Surveys	◆ Exploring questions that ask "what happened/occurred?" ◆ Measuring outcomes across the entire population (e.g., Statewide Data Indicators) ◆ Reporting on processes (e.g., frequency or timeliness of actions and events) ◆ Describing the population being served ◆ Identifying differences across groups and geographic areas ◆ Exploring case characteristics that may affect outcomes ◆ Uncovering patterns ◆ Looking at trends over time ◆ Identifying outliers (e.g., groups achieving noteworthy success or experiencing particularly poor outcomes)
Qualitative data (narrative)	◆ Case reviews (e.g., CFSRs, quality reviews) ◆ Surveys ◆ Stakeholder interviews ◆ Focus groups ◆ Case studies ◆ Agency reports ◆ Child welfare studies (research articles, evaluation reports) ◆ Process mapping	◆ Exploring questions that ask "Why?" and "How?" ◆ Targeting areas identified by quantitative data where a deeper understanding is needed ◆ Exploring underlying reasons, contributing factors, and connections ◆ Identifying organization and system issues that may affect outcomes ◆ Focusing on quality

Quantitative data often provide a big picture view of a large number of cases that reflect the population that the agency serves. Qualitative data may allow for "digging in" within a smaller sample of cases, which might not be applicable to everyone but can offer valuable insights. As such, it is often helpful to start problem exploration by looking at large-scale quantitative data sets (e.g., AFCARS, NCANDS, or agency MIS data) to explore key trends in what is happening. Afterwards, use qualitative data from a smaller sample (case reviews or focus groups) to gain a deeper understanding of why and how it is happening.

Another frame through which to view sources and types of data is considering the importance of looking at data related to process (often quantitative) and quality (often qualitative). Process refers to the steps someone follows when providing child welfare services, while quality reflects how well something is done (Wulczyn, Orlebeke, & Haight, 2009). For example, when examining caseworker visits, an agency will want to monitor the process (e.g., how often do caseworkers visit a child and family?) and quality indicators (e.g., did the caseworkers actively engage family members in case planning during their visit?). Process, quality, and outcomes are interrelated (Wulczyn et al., 2009)

Example: Data Sources

In the problem introduced above, the team needs to inventory available and needed data and information sources, which might include:

- CFSR and case review data related to item 12—needs and services of child, parents, and foster parents
- Agency MIS data on assessments and services delivered
- Data and information from agency partners and external service providers
- Results from CQI processes
- Other reports, assessments, or evaluations of the agency or its services
- Interviews or focus groups with caseworkers and parents
- Published studies on child welfare services

Data Quality

Teams need to determine not only what data are available but also the quality of those data and their trustworthiness in answering the research questions. Teams should consider:

- Are the data from a credible source?
- Are the data timely?
- Are the data complete (i.e., little missing data)?
- Do they measure what they are intended to measure?
- Do they contain errors? If so, to what extent?
- Do they represent the population served by the agency (or the subpopulation of interest)?

A team interested in improving data quality may need support from data experts (see "Getting Help").

For more information on data quality, see the Focused CQI Services learning experience's "Module 4: Overview Curriculum," units 5–6 in CapLEARN (registration required) at https://learn.childwelfare.gov/content/focused-continuous-quality-improvement-services

Identifying Data Analyses

Analyzing the data involves looking at patterns, trends, and relationships. Asking the right questions and selecting the right analyses and interpretation of the findings are what give data meaning (Wulczyn, Alpert, Orlebeke, & Haight, 2014). Complexity may range from selecting key themes in focus group responses to complicated statistical analyses comparing different variables. The specific types of data analyses that teams use will depend on the research questions the team wants to answer and the level of confidence sought in the results. See appendix A for a table with different types of data analyses, their uses, examples, and the types of questions they might answer. (See also "Getting Help.")

For more information on data analyses, visit the Focused CQI Services Indepth Skill Building learning experience, module 5, handout 2, available in CapLEARN (registration required) at https://learn.childwelfare.gov/content/continuous-quality-improvement

3. Collect and Analyze Data

Once the data plan is completed, teams should begin collecting and analyzing data, drilling down, discussing, and documenting findings.

In some circumstances, given practical limitations and deadlines, child welfare agencies cannot always reach the ideal in terms of the breadth, depth, and rigor of data analysis. Even in these circumstances, however, agencies often can explore problems more deeply by using existing resources and working within existing parameters. Teams should strive to use data to verify their problem, understand under what circumstances the problem occurs, and identify who is affected before moving forward in a change process. Teams are encouraged to partner with data experts, evaluators, or researchers inside or out of the agency who can offer assistance. Forming these partnerships as early as possible in the problem exploration process can strengthen results.

Disaggregating the Data

Disaggregating data—or breaking it down—is a way for teams to look at differences among the experiences of specific groups and better understand different "slices" of the story. For example, teams may disaggregate data by characteristics of children, youth, and families; child welfare services delivered; practice approaches; and/or geographic areas. The purpose behind disaggregating data is to "bring to light critical problems and issues that might otherwise remain invisible" (TERC, n.d., Data Tip #9).

Questions to Consider

- What story does the data and information tell?
- What variations or patterns exist?
- How does performance vary by different factors?
- Where are there differences in outcomes?
- What are the characteristics of those most affected by the problem?
- What are the strengths and limitations of the analysis and its findings?

Example: Disaggregating Data

Continuing the example from above, consider the following:

Statewide findings show that in 75 cases reviewed, CFSR item 12 (needs assessment and services)[4] was a strength in 29 percent of cases (22/75) and an area needing improvement (ANI) in 71 percent of cases (53/75).

Breaking down the data to explore subitems reveals differences by service recipient:

Population	CFSR Item	# Applicable Cases	% Cases Strength	% Cases ANI
Children	12a	75	59%	41%
Parents	12b	68	26%	74%
Foster Parents	12c	31	64%	36%

Digging deeper into the data on parents shows more of the "story:"

Population	CFSR Item	# Applicable Cases	% Cases Strength	% Cases ANI
Mothers	12b	66	59%	41%
Fathers	12b	61	30%	70%

The above data suggest that the agency's service problem is most prevalent among fathers. To fully understand the problem, the team will need to continue exploring the data.

Identifying and Examining Characteristics of Populations Affected by the Problem

To continue drilling down into the problem, data can help teams examine the characteristics of populations affected by the problem. Based on the data analyses, teams should begin to gather evidence about who appears to experience, or be more at risk of experiencing, the identified problem and the conditions that may put them more at risk. Teams should use data to become as specific as possible about the population affected by the problem, its characteristics, and experiences (e.g., children under the age of 3 in out-of-home care or parents in Region 4 with substance use disorders).

During this process, data may generate new questions, and the team may identify additional needed analyses. In particular, teams may learn from analyses with **comparison groups**. For example, if a team is trying to understand high levels of reentry into foster care occurring in one county, the team may be tempted to pull data only on the subgroup of children who reentered care over a specific period. It would be more informative, however, to look at all children who reunified with parents and then analyze that data to identify differences between those children who reentered care and those who did not. In addition, the team may want to look at and compare findings among subpopulations (e.g., different ethnic groups or age groups of youth in care) to observe whether there are different patterns within subpopulations relating to who reenters care and who does not.

[4] This CFSR item reflects the following: Did the agency make concerted efforts to assess the needs of and provide services to children, parents, and foster parents to identify the services necessary to achieve case goals and adequately address the issues relevant to the agency's involvement with the family?

Some outcome areas may lend themselves more easily to quantitative analyses. For many areas of child welfare practice, however, the available data can only tell part of the story. Teams may need additional data collection, such as case reviews, to start to understand why outcomes vary across groups. Many data collection methods require using a sample of the target population instead of the full population. If the sample is not properly selected, or if response rates are low, there is a risk that the findings from the sample may not be generalizable to the entire target population.

It is worth restating the importance of engaging stakeholders in this part of data exploration. Stakeholders—including families who have received services, frontline staff, and service providers—have different perspectives from program leaders and may identify different possible explanations for the data.

For more information on collecting and analyzing data, visit the Focused CQI Services Indepth Skill Building learning experience, module 5, available on CapLEARN (registration required) at https://learn.childwelfare.gov/content/continuous-quality-improvement

Using Visual Data Displays to Help Analyze the Problem and Population

Clear data presentations using program-specific language and well-designed data visualizations (e.g., bar graphs, pie charts, maps) can help a team understand the population's characteristics and see variations in outcomes more easily. Looking at demographic and service characteristics, as well as trends over time, can be easy and very informative. Teams may ask selected individuals or partners to create the data visuals and then bring together a group (including data analysts, program leadership, practitioners, and stakeholders) to interpret the findings. Appendix B illustrates some visual data display examples.

For more information on data presentations, see:

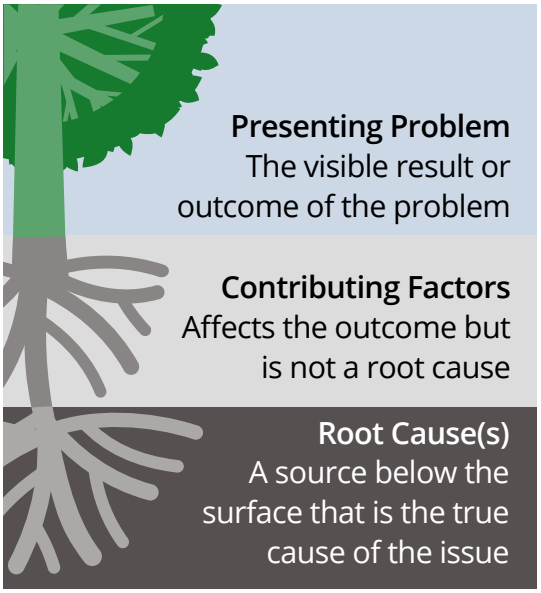
- Focused CQI Services Indepth Skill Building learning experience, module 5, handout 3, available on CapLEARN (registration required) at https://learn.childwelfare.gov/content/continuous-quality-improvement
- Focused CQI Services learning experience, "Module 4: Overview Curriculum," handout 7.3, available on CapLEARN (registration required) at https://learn.childwelfare.gov/content/focused-continuous-quality-improvement-services

4. Identify Possible Contributing Factors and Root Causes

After using the above methods, teams should have evidence about their problem or needs and a better understanding of who is affected. However, before moving on to solutions, the team needs additional information.

As noted earlier, RCA is a data-driven approach to determine why a problem occurs and identify opportunities to prevent or reduce it. Data collection and analysis are critical foundations for RCA (Rooney & Vanden Heuval, 2004). While there are different techniques and methods for determining a root cause, the process typically begins by identifying possible **contributing factors** and then looking at the underlying **root cause(s)**.

Factors are considered root causes when they appear to be the true sources of the problem. By addressing the root cause (or multiple root causes if there are more than one), the undesired problem or outcome is much less likely to occur.



Using a Structured Approach to Identify Contributing Factors

At this point, the team organizes and analyzes the data and information gathered to begin identifying possible contributing factors, their sequence, and level of impact. This sets the stage for determining the root cause(s). Teams should identify as many contributing factors as possible—not just the most obvious ones. Teams may want to consider factors that relate to various dimensions of capacity[5]—i.e., organizational resources (e.g., staff and technology), infrastructure (e.g., policies and processes), knowledge and skills, culture and climate (e.g., beliefs and values), and engagement and partnership.

Questions to Consider

- What events or factors lead to the problem?
- What conditions allow the problem to occur?
- What other problems occur at the same time as the central problem?
- Will the problem still exist if the agency corrects or eliminates the contributing factor?

Example: Possible Contributing Factors

Returning to the earlier example, the state wants to understand and address factors negatively affecting its work with fathers as reflected in its recent CFSR findings. As the team explores its data, members identify the following possible contributing factors:

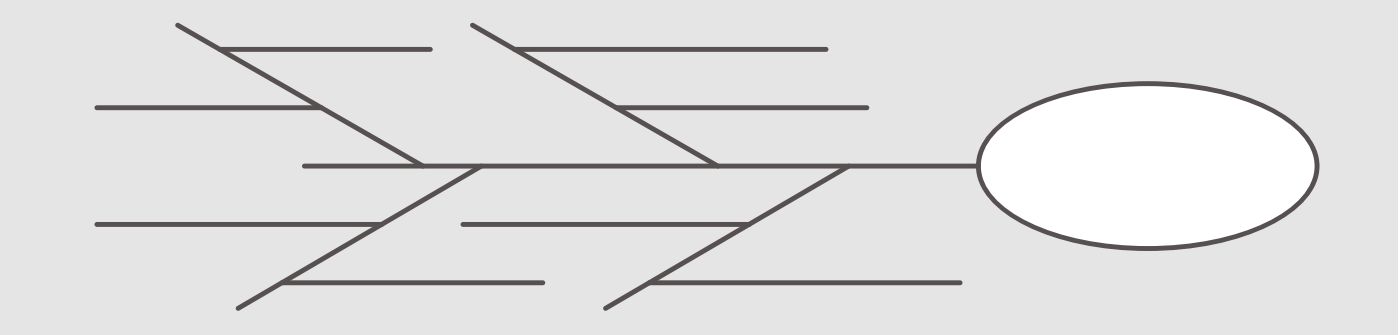
- Lack of available, trauma-informed resources for addressing the identified needs of fathers
- Failure of casework staff to conduct comprehensive and individualized assessments of fathers' needs
- Infrequent and low-quality caseworker visits with fathers who are not living in their children's home
- Lack of engagement with fathers in the development of case plans
- Inadequate availability of substance abuse resources, fatherhood programs, and services for perpetrators of domestic violence in certain areas of the state
- Caseworkers' lack of understanding of the benefits of fathers in children's lives

Fishbone Diagram

Teams may find it helpful to create a visual illustration to document contributing factors and begin to explore relationships among them. Teams can use different techniques, including a **fishbone (Ishikawa) diagram**. The fishbone diagram technique involves brainstorming and mapping possible contributing factors. Such diagrams help teams consider and illustrate many possible causes, which in turn helps them understand the problem and the factors influencing the problem (Luca, Pasare, & Stancioiu, 2017).

The first step to creating a fishbone diagram is writing the problem in the "head" of the fish and then writing possible contributing factors or causes along the fish "bones" (see exhibit 4). The team groups the bones into categories, such as "policies, practices, and people" or other groupings that help sort the factors. Teams may delve into the underlying causes of the contributing factors to create more bones. Appendix C presents a completed fishbone diagram for the problem of fathers not receiving needed services. In this example, the diagram groups contributing factors by the five dimensions of capacity.

Exhibit 4. Fishbone Diagram Structure



[5] For more information on dimensions of capacity, see https://capacity.childwelfare.gov/states/focus-areas/capacity-building/organizational-capacity-guide/

The fishbone diagram can serve as a jumping-off point for identifying possible root causes based on the factors identified. Some groups use the fishbone diagram together with the 5 Whys technique (see below) to keep asking "why" on selected bones to get at additional contributing factors. Others facilitate activities to gain consensus around root causes based on the initial ideas generated. After the diagramming, teams should return to looking at data to verify the contributing factors they identified and focus on root causes.

For more information and a fishbone template, visit https://www.isixsigma.com/tools-templates/cause-effect/cause-and-effect-aka-fishbone-diagram/

Asking "Why" Questions and Creating a Backwards Chain

One popular and simple technique for exploring contributing factors and underlying causes is the **5 Whys method**. This approach involves repeatedly asking "why" to drill down into a problem and the contributing factors. With each response, the group again asks, "Why?" Teams should make every effort to confirm responses with data instead of relying on opinions or anecdotes.

When to stop? Typically, users of this approach will repeat the "why" question five times. Yet, five is just a guideline. With complex problems, it may take more than five questions to get at root causes, and there may be more than one "why" pathway (i.e., there is more than one reason why at a specific point). Keep asking "why" until there seems to be no new information emerging or no potential areas that the agency can address through policy, program, or practice changes. A "Why Tree" can help illustrate the cause and effect branches (see below).

To learn more about the 5 Whys method, visit https://www.mindtools.com/pages/article/newTMC_5W.htm

Example: 5 Whys

In the continuing example, a facilitator brings together the identified team to discuss the low rates of needs assessments and services for fathers as reflected in the CFSR case reviews. The group focuses initially on the receipt of services. The "why" questions and responses help drill down on the reasons.

1. **Why are fathers not receiving needed services?**
   Response: Because we don't have the right types of services for fathers located in the right places around the state. A state survey of service providers points to shortages in critical services for men related to substance abuse treatment, domestic violence, and fatherhood programs.
2. **Why?**
   Response: Because our agency has not developed partnerships with service providers focused on the needs of fathers.
3. **Why?**
   Response: Because our agency doesn't single out fathers' needs in a targeted way, so we don't look for ways to secure services to address their needs.
4. **Why?**
   Response: Because fathers and service providers are not actively engaged in program and policy development, so they don't have a prominent voice in our planning.
5. **Why?**
   Response: Because our agency culture focuses more on mothers and doesn't equally value the potential role of fathers. As a result, our agency policies, caseworker trainings, supervision procedures, and performance measures are not structured or aligned in a way that effectively guides and reinforces best casework practices in assessing and addressing fathers' needs.
   Context: For many of the families we engage with, the mother is more often the primary caretaker for the child when we initiate the assessment process. The father may not live as part of the family household or may be absent at the time the family comes to our attention.

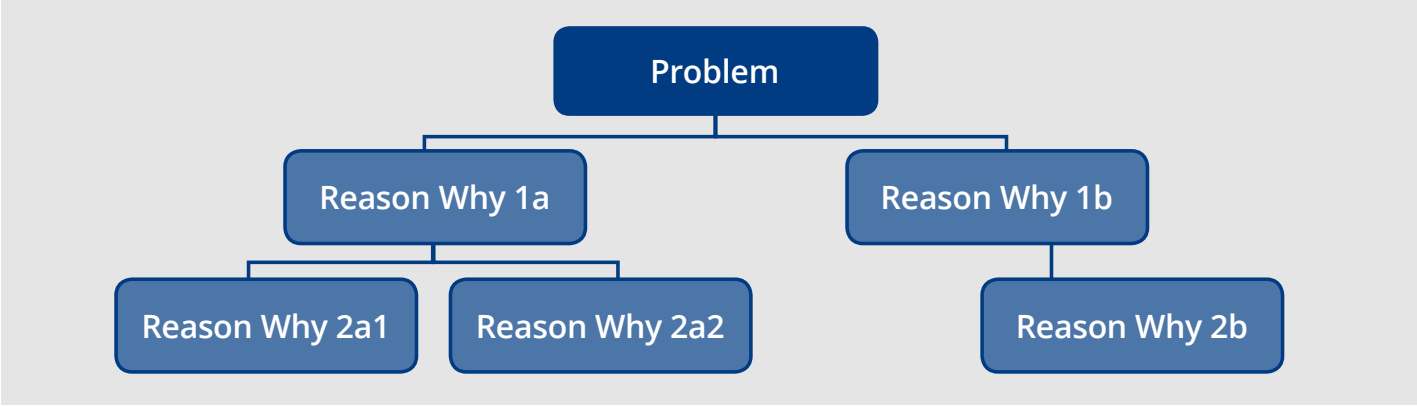
After looking at system-level factors affecting services, the team discusses practice issues that influence assessments of noncustodial fathers.

Why Tree

After asking and documenting the "why" questions and responses, creating a Why Tree can be helpful to illustrate the logical connections between factors and to spot additional factors that may contribute to the problem (Lifetime Reliability Solutions, n.d.). Start by putting the problem or need at the top, and then enter the first level of contributing factors below. There may be one factor (corresponding to one answer why) or more than one (corresponding to several responses why). Continue charting the next level(s) of contributing factors, as shown in exhibit 5. At each level of the Why Tree, the team should try to confirm that data, evidence, or logic supports each response. As the team gets to the bottom of the Why Tree, possible root causes should emerge.

Appendix D presents a completed Why Tree, along with supporting evidence, for the ongoing example. Note that the sample Why Tree has two "trunks" leading to two root causes.

Exhibit 5. Why Tree Framework



5. Explore and Validate Possible Root Causes

After the team has identified possible root causes, it will confirm that there are data or evidence to validate each root cause and consider the agency's organizational capacity to address it successfully. Teams will draw from the data analyses described above in the "Collect and Analyze Data" section, but may also need to analyze additional data at this point. Ideally, data and information clearly confirm the root causes; in reality, teams sometimes have to use the best available data and reasoning to make judgments about which root causes and/or significant contributing factors to address.

Using Data to Validate Root Causes

One potential mistake in RCA is taking initial responses as the "truth" or limiting analysis to a single pathway and not digging deeper. It is important to assess whether evidence supports the possible root causes. Evidence might reflect data and information examined from the agency itself or findings from child welfare studies that are generalizable to the agency's circumstances. If the team relies purely on speculation or opinions, it runs the risk of picking and attempting to fix the wrong thing.

While teams might not have data for every "link" in the chain leading to a root cause, they should strive to provide evidence for as many as possible. Data can be used to support and validate potential root causes and to rule them out.

Questions to Consider

- Are there data or research pointing to the root cause(s)?
- Is there consensus among stakeholders on the root cause(s)?
- Are there external factors that affect the problem and its root cause(s)?
- Are there internal factors that affect the problem and its root cause(s)?
- Is there organizational and community support to address the root cause(s)?

The following tips may help when validating root causes:

- Engage agency CQI specialists and data staff as well as external partners (e.g., courts, community service providers) in conversations about the problem and theories about the root cause, as they may have access to data of which team members are not aware.
- Conduct surveys or focus groups among a sample of the audience affected by the problem or key stakeholders to help confirm or refute theories about possible causes and connections.
- Explore external research to find studies about the same problem in similar child welfare settings.
- Seek out opportunities to partner with agency data specialists or a local university on more rigorous research analyses in selected areas, if possible.

Example: Using Data to Validate the Root Cause

Continuing the example further, the team has identified two possible root causes:

- The agency culture focuses more on mothers and does not equally value the potential role of fathers.
- Caseworkers lack knowledge and skills related to the engagement of noncustodial fathers.

Making meaningful enhancements to the agency's culture, policies, practices, and related training will require an investment of time and resources. The agency will want to validate the root causes with data. The team has already analyzed CFSR data on item 12 and feels confident in its analysis. The team may also review additional sources:

- Surveys or focus groups to explore caseworker and supervisor attitudes and beliefs about father engagement and services to meet fathers' needs
- Case review data related to contacts with and engagement of fathers
- Administrative data to verify that visits with and assessments of noncustodial fathers are not occurring
- Data showing low participation of fathers and service provider partners in system-level agency meetings
- External child welfare research on father engagement and family outcomes

Exploring the Feasibility of Addressing Root Causes

After the team has identified possible root causes, members should think about the feasibility of addressing each one. Explore:

- Stakeholder perspectives on the root cause and the ability to address it
- Factors that may serve as barriers or facilitators for addressing the root cause
  - External factors (e.g., legislation, community conditions)
  - Internal factors (e.g., organizational culture, infrastructure issues, available resources)
- Available timeframes or constraints to address the root cause (e.g., due to court, federal, or state process requirements)
- Organizational support to address the root cause, including leadership support and buy-in
- Risks to addressing the root cause (e.g., diversion of resources and attention from other priorities, cascading effects on other practices, workforce strain)

The team may consider these factors again in more depth when creating a theory of change and planning for an intervention.

Note that just because there may be identified barriers or low initial support for addressing a root cause, that does not necessarily mean the team should not address it; rather, it suggests that additional supports may be needed. See below for more on "Considerations on Organizational Capacity."

Example: Exploring Feasibility

Finally, the agency needs to consider the organizational capacity to deliver on any commitment it makes to address the problem and its root causes. Considerations might include:

- Changes needed to address the agency's current "mother-centric" culture and practices
- Potential changes to the agency's practice model and policies to emphasize the engagement and needs of fathers in a meaningful way
- Implementation team to manage the change process
- Staff and provider training to address attitudes, knowledge, and skills
- Supervisor and management training to support staff and providers in applying the changes
- Enhancements to MIS for monitoring
- Needed internal and external support

6. Isolate the Root Cause(s) to Address

Once the team has identified and validated possible root causes and explored feasibility, it is time for the team to select one (or a few) to address as part of the agency's change initiative. The final selection should reflect:

- Data or research pointing to the root cause(s) as a source of the problem
- Likelihood of being able to address the root cause(s) based on feasibility considerations
- Consensus among the team members

Document the root cause along with a brief justification supported by data. If the team does not have enough data or information to form a sound decision on the root cause, it might need to gather additional data or engage with a research partner to continue the analysis.

Example: Isolating the Root Cause to Be Addressed

Finalizing the example, the team has been able to confirm: Changes are needed to address the agency's current "mother-centric" culture and practices.

- Root causes:
  - The agency culture focuses more on mothers and does not equally value the potential role of fathers.
  - Caseworkers lack knowledge and skills related to engagement of noncustodial fathers.
- The agency has a commitment from leadership and the resources needed to address these root causes

The team can therefore document the root cause, along with supporting data, setting the stage for the next phase in the change and implementation process—developing a theory of change.

Considerations on Organizational Capacity

While conducting deeper problem exploration, it is useful to keep in mind the **five dimensions of organizational capacity:** organizational resources, infrastructure, knowledge and skills, culture and climate, and engagement and partnership.

Some organizational capacity considerations reflect the processes of gathering and analyzing data, exploring the problem indepth, and identifying root causes. For example:

- Does the team have the knowledge and skills to analyze data and root causes?
- Do the infrastructure and information systems enable access to needed data?
- How can partnerships support data gathering and analyses? Are data-sharing agreements in place?

As noted earlier, teams also should consider organizational capacity as it relates to the selected root cause(s), for example:

- How does the organizational culture and climate contribute to the root cause(s)?
- Are there organizational resources and infrastructures in place to address the root cause(s)?
- What changes in organizational capacity will the agency need to address the selected root cause(s)?

For more information on dimensions of organizational capacity, see the Center's online guide at https://capacity.childwelfare.gov/states/focus-areas/cqi/change-implementation

Getting Help

Problem exploration can be a complex process, particularly as related to complex systems and organizations. A team may need specialized knowledge and skills to gather relevant data, conduct thorough data analyses, address data quality issues, and/or identify viable root causes through a data-informed lens. If team members do not have these skills, there are several options:

- Reach out within your child welfare agency to see if data or CQI specialists might be available to support data activities.
- Contact local universities or research centers for potential assistance.
- Explore opportunities for assistance from the Center (find contact information here: https://capacity.childwelfare.gov/map/).

Conclusion

By the end of problem exploration, your team should have sufficient data and information to understand the underlying nature of the problem, its root cause(s), and the affected population. If not, you may need to dig deeper before moving on. This information will be a critical starting point for developing a theory of change and later informing the selection and adaptation/design of an appropriate intervention that addresses the problem.

Milestones for Moving Ahead to Develop a Theory of Change:

- Team formed to guide the change and implementation process
- Problem identified
- Data and information about the problem obtained and analyzed
- Needs and characteristics of affected populations identified
- Root cause(s) identified
- Findings reviewed with stakeholders (including those on and off the team)
- Determination made that data and analyses are sufficient to explain the root cause(s) of the problem

Related Resources and Tools

Training and Facilitation Resources on Problem Exploration

- Center for States. (2017). *Focused CQI services, indepth skill building – Module 5: Data analysis for CQI – Identifying and understanding the problem*. Available from https://learn.childwelfare.gov/
- Children's Bureau. (2014). *A guide for implementing improvement through the CFSP and CFSR* [scroll down to "CFSR and PIP Instruments, Manuals, and Guides," "Program Improvement Planning"]. Available from https://training.cfsrportal.acf.hhs.gov/resources/3105#CFSR
- JBS International. (2015). *CQI training academy, unit 3: Identifying and understanding issues*. Available from https://learn.childwelfare.gov/
- PII-TTAP. (2016). *Development, implementation, and assessment toolkit: Module 1*. Available from https://learn.childwelfare.gov/
- PII-TTAP. (2016). Identifying the problem and understanding the target population [Worksheet]. *Guide to developing, implementing, and assessing an innovation, 2*,14. Retrieved from http://www.acf.hhs.gov/sites/default/files/cb/guide_vol2_exploration.pdf
- World Vision International. (2011). *Analysis, design and planning tool (ADAPT) for child protection*. Retrieved from http://childprotectionforum.org/wp-content/uploads/2016/05/CP-ADAPT_2-May-2012.pdf

Online Articles on Root Cause Analysis

- iSix Sigma. (n.d.). *Determine the root cause: 5 Whys.* Retrieved from http://www.isixsigma.com/tools-templates/cause-effect/determine-root-cause-5-whys/
- Lifetime Reliability Solutions. (n.d.). *Understanding how to use the 5-Whys for root cause analysis*. Retrieved from http://www.lifetime-reliability.com/tutorials/lean-management-methods/How_to_Use_the_5-Whys_for_Root_Cause_Analysis.pdf
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- Rooney, J. J., & Vanden Heuvel, L. N. (2004). *Root cause analysis for beginners*. Retrieved from https://www.env.nm.gov/aqb/Proposed_Regs/Part_7_Excess_Emissions/NMED_Exhibit_18-Root_Cause_Analysis_for_Beginners.pdf

Access other **Change and Implementation in Practice** briefs and related resources at: https://capacity.childwelfare.gov/states/focus-areas/cqi/change-implementation

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Appendix A:
Types of Data Analyses

Type of Analysis	Uses	Examples/Measures	Sample Question Addressed
Descriptive Analyses	◆ Help summarize data in meaningful ways ◆ Describe child welfare system from intake through postpermanency ◆ Examine systemic factors (e.g., caseloads)	◆ Frequencies (counts) ◆ Proportions (percentages) ◆ Comparisons ◆ Rates (often seen as a rate per 1,000 in overall child population)	◆ Describe the population of children entering out-of-home care. What are the trends, and do they vary by age, race, or removal reason?
Performance Indicators	◆ Assess changing performance over time	◆ CFSR 3 statewide data indicators ◆ CFSR case review results ◆ Entry rates into out-of-home care	◆ Has the recurrence of maltreatment declined in the jurisdiction over the last 3 years?
Inferential Analyses	◆ Test relationships between variables among a sample of the population	◆ Correlation analysis (association between variables) ◆ Comparison of means (testing for differences) ◆ Regression analysis (examination of whether change in one variable predicts change in another)	◆ Based on a representative sample, does participation in family team meetings increase the likelihood of achieving timely permanency?

Appendix B:
Displaying Data Visually

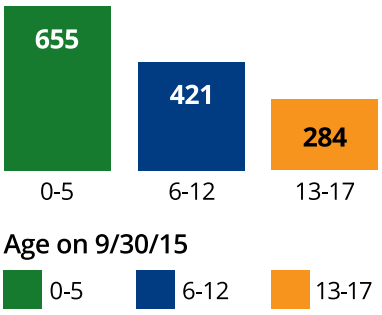
The following exhibits illustrate how the use of visuals might help teams analyze data. For example, to explore challenges with timely permanency, a team may look at its AFCARS data by (1) case characteristics and (2) case plan goals by length of time in care. These point-in-time data provide a quick overview of the children in out-of-home care on a particular day.

1. Case Characteristics

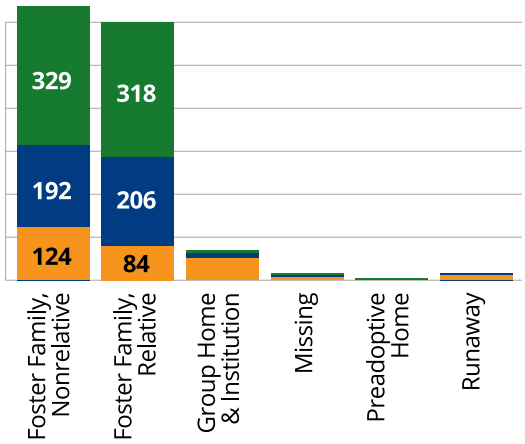
Population: 1,360 children and youth (ages 0–17) in out-of-home care on 9/30/15.

How old are the children in care?

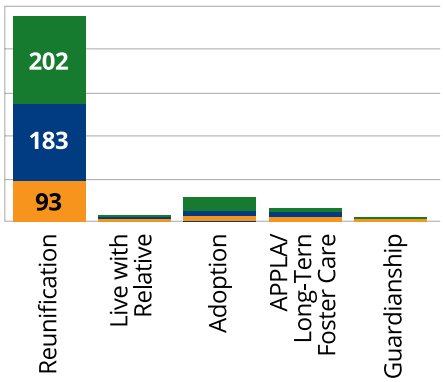
How does the age of a child impact permanency planning and service delivery?



Where are the children and youth living?



What are the children's documented primary case plan goals?



Note: APPLA = Another Planned Permanent Living Arrangement.

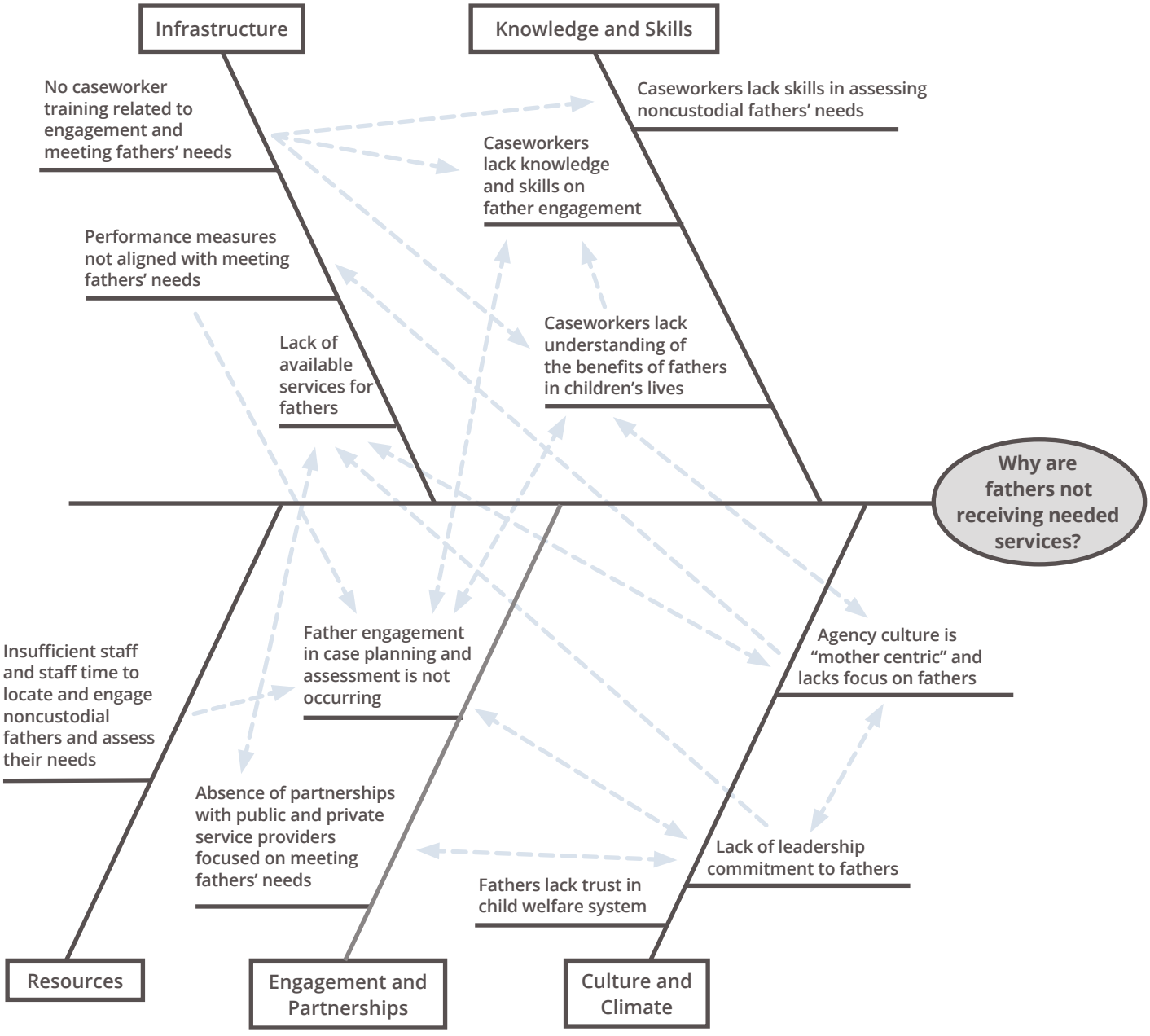
2. Primary Case Plan Goals and Time in Care (this episode)

According to AFCARS data, 50 percent of the children and youth who had been in care 3 years or longer in this state (on 9/30/15) had a documented primary case plan goal of reunification (illustrated below), compared to 14 percent nationally.

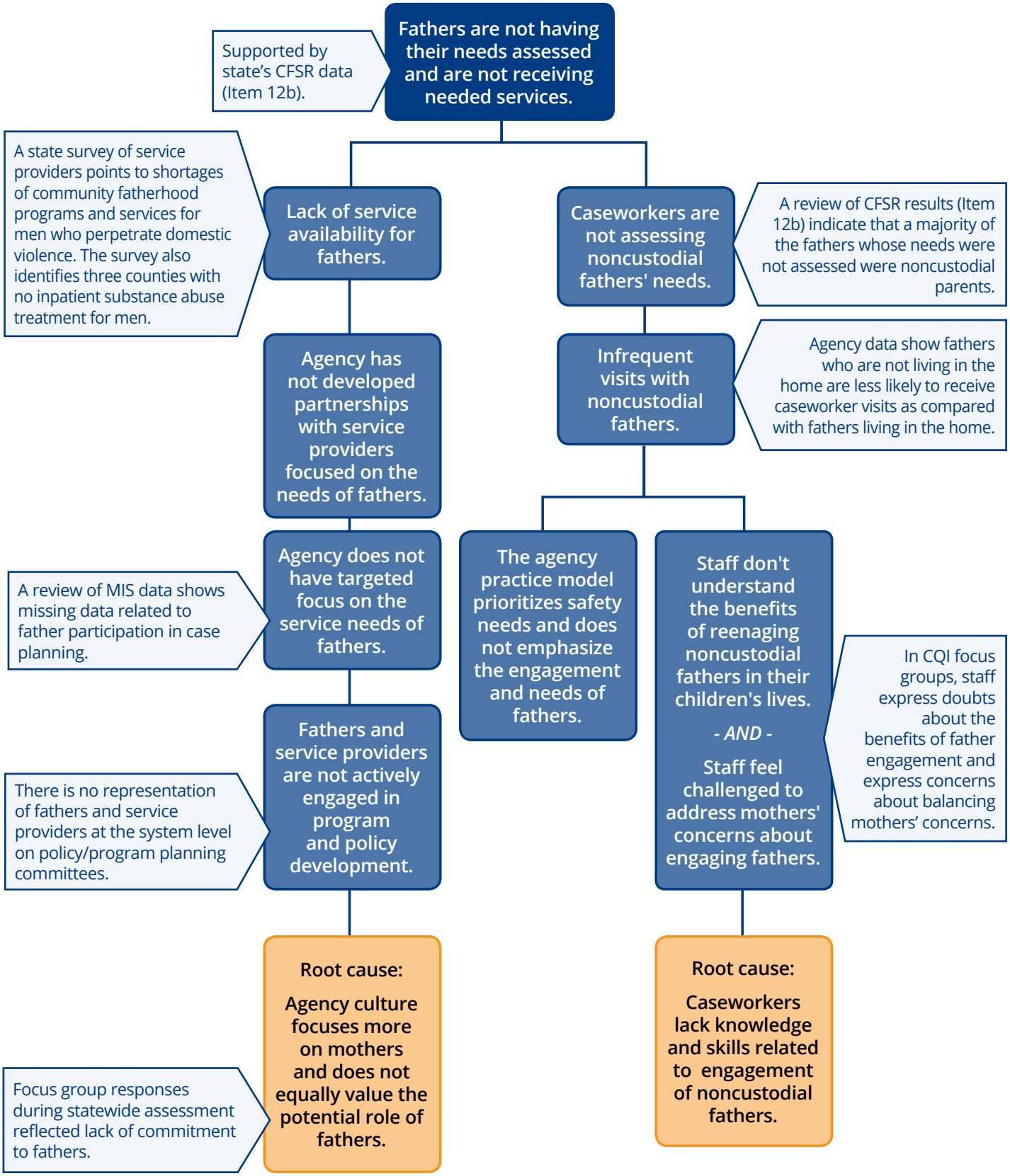
	Reunification	Adoption	Guardianship or Live With Relative	APPLA/Long-Term Foster Care or Emancipation	Goal Missing or Not Yet Established
Up to 6 months	94%				5%
6 to 12 months	96%				
12 to 18 months	91%				
18 to 24 months	92%	8%			
24 to 30 months	76%	19%			
30 to 36 months	71%	9%	5%	14%	
36 months or longer	50%	21%	14%	15%	

Data source: AFCARS fiscal year 2015 annual file, obtained from the National Data Archive on Child Abuse and Neglect.

Appendix C:
Sample Fishbone Diagram Illustrating Contributing Factors That Affect Agency's Performance in Meeting Fathers' Needs



Appendix D:
Sample Why Tree Exhibit and Supporting Evidence



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