NATIONAL CENTER ON
Program Management and Fiscal Operations

Strengthening Data Management

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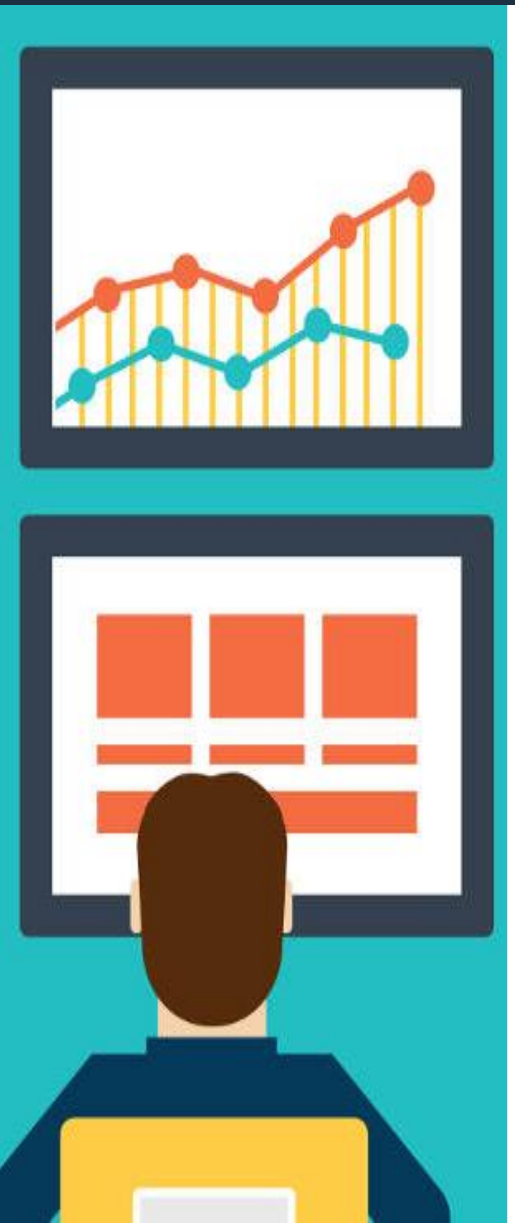
Training Objectives

In this training participants will

- Consider different ways data can be used to measure effectiveness
- Practice and apply four foundational data activities—*prepare, collect, aggregate & analyze,* and *use & share*
- Explore techniques and skills to strengthen data analysis
- Develop a plan to improve data systems

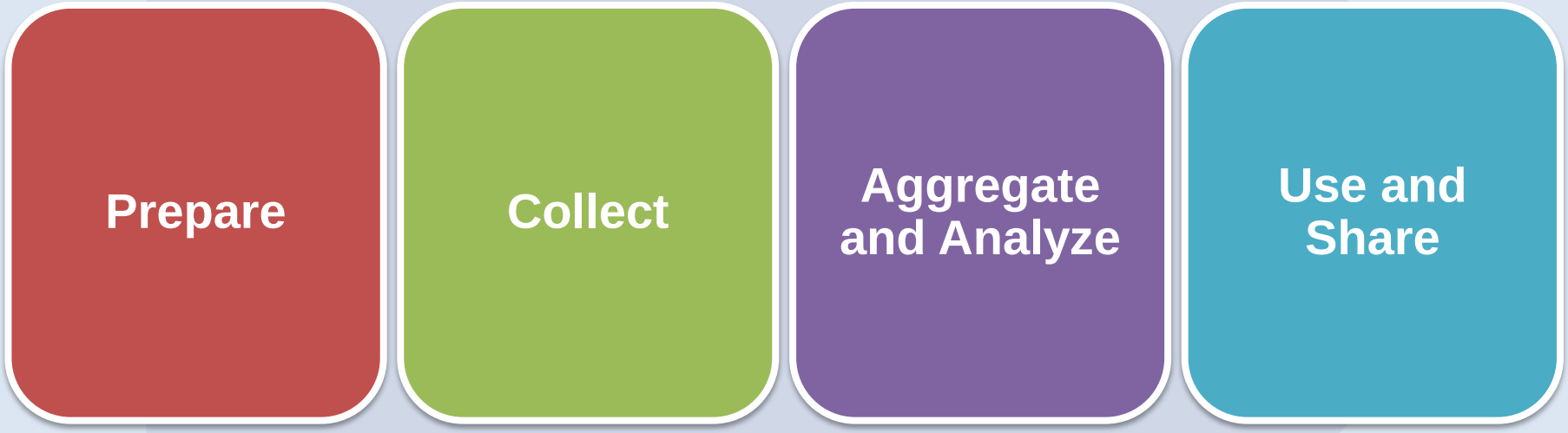
Why Is Data Important?

The Language of Data

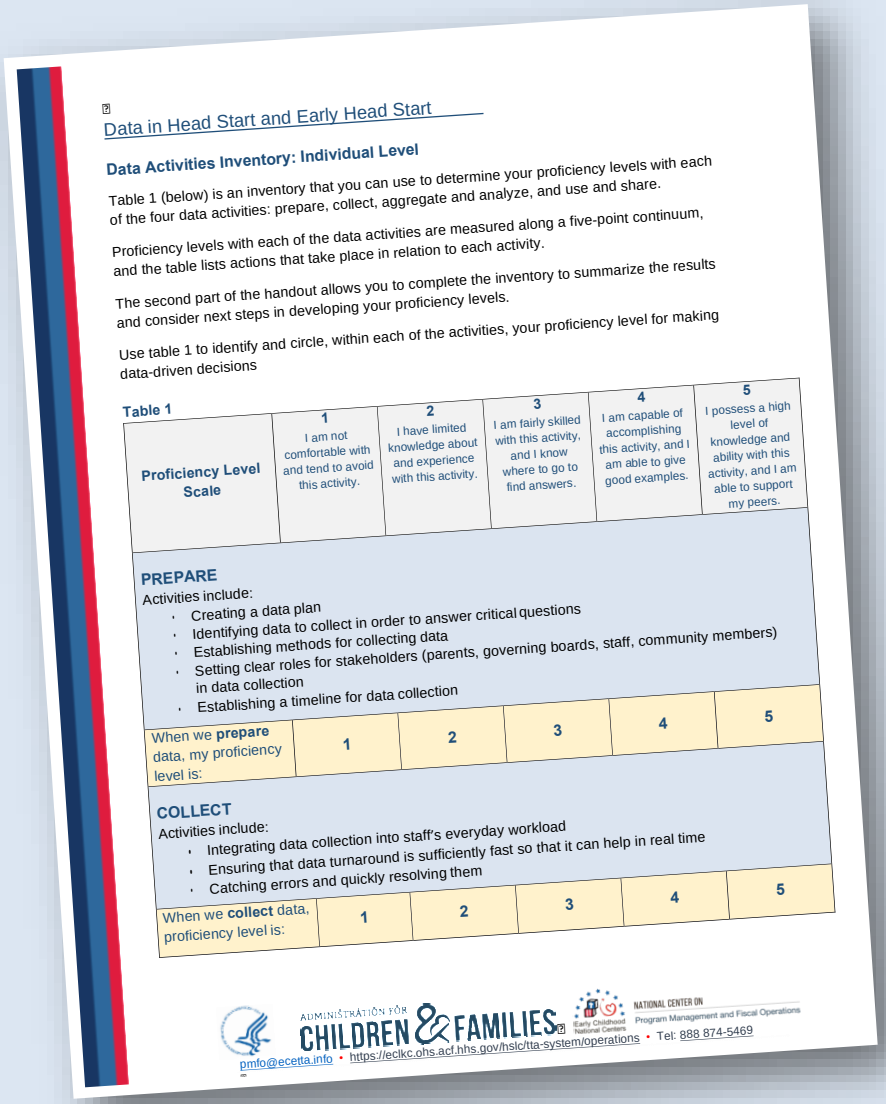


- Data quality
- Data-driven decision-making
- Data management
- Data visualization
- Data privacy
- Data analysis
- Data storytelling

The Four Data Activities



Data Activities Inventory



Data in Head Start and Early Head Start

Data Activities Inventory: Individual Level

Table 1 (below) is an inventory that you can use to determine your proficiency levels with each of the four data activities: prepare, collect, aggregate and analyze, and use and share.

Proficiency levels with each of the data activities are measured along a five-point continuum, and the table lists actions that take place in relation to each activity.

The second part of the handout allows you to complete the inventory to summarize the results and consider next steps in developing your proficiency levels.

Use table 1 to identify and circle, within each of the activities, your proficiency level for making data-driven decisions

Table 1

Proficiency Level Scale	1 I am not comfortable with and tend to avoid this activity.	2 I have limited knowledge about and experience with this activity.	3 I am fairly skilled with this activity, and I know where to go to find answers.	4 I am capable of accomplishing this activity, and I am able to give good examples.	5 I possess a high level of knowledge and ability with this activity, and I am able to support my peers.
PREPARE Activities include: • Creating a data plan • Identifying data to collect in order to answer critical questions • Establishing methods for collecting data • Setting clear roles for stakeholders (parents, governing boards, staff, community members) in data collection • Establishing a timeline for data collection					
When we **prepare** data, my proficiency level is:	1	2	3	4	5
COLLECT Activities include: • Integrating data collection into staff's everyday workload • Ensuring that data turnaround is sufficiently fast so that it can help in real time • Catching errors and quickly resolving them					
When we **collect** data, proficiency level is:	1	2	3	4	5

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1. Reflect on the four data activities and complete the data inventory.
2. Take four colored dots.
3. Place them in the appropriate place on the four charts on the wall according to your answers.

The Four Data Activities

Program Planning & Service System Design

Program Planning & Service System Design

- Guides programs through their five-year journey
- Includes coordinated approaches that ensure inclusion of all children and families
- Focuses on how data informs planning process

1302 Subpart J

CONCEPTUAL ELEMENTS of Continuous Quality Improvement

Leadership in Data Management

- Be Transformational
- Adopt and Lead Change Strategy
- Communicate Clearly
- Motivate for Innovation and Creativity
- Distribute Responsibilities
- Be a Role Model

Organizational Characteristics

- History of improvements
- Program characteristics
  - Size
  - Structure

Commitment of Resources

- Commit, finance, and sustain technology
- Commit leadership time
- Commit staff time

Analytic Capacity

- Assess technological capital
- Assess human capital
- Assess data capital

Culture of Collaborative Inquiry

- Promote systems thinking
- Share learning
- Engage partners
- Create safe space

Management of Program Data

- Security of data
- Usability
- Integrity
- Availability

Professional Development

- Understand data systems
- Develop analytic capacity
- Integrate knowledge and beliefs

Environment

- Nongovernmental funders
- Government mandates
- Accreditation, licensing and professional systems
- Time

Quality Child & Family Outcomes

Early Childhood National Centers

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Source:
Derrick-Mills, Teresa, Heather Sandstrom, Sarah Pettijohn, Saunji Fyffe, and Jeremy Koulish. (2014). Data Use for Continuous Quality Improvement: What the Head Start Field Can Learn From Other Disciplines, A Literature Review and Conceptual Framework. OPRE Report # 2014-77. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families. U.S. Department of Health and Human Services.

Leadership and Data Management

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Conceptual Elements

Activity: Data…Data Lead the Way

From a leadership perspective, why is _____ critical to the use of data for continuous quality improvement?

Program Goals and Objectives

Program goals are….

BROAD Statements (Your Destination)

- **B**old. Beyond Current Expectations
- **R**esponsive
- **O**rganization-wide
- **A**spirational
- **D**ynamic

Carried out through an **Action Plan (Your Road Map)**

Recognized and Accepted as Important by All

Objectives are…

SMART parts of Goals (Your Mile Markers)

- **S**pecific
- **M**easurable
- **A**ttainable
- **R**ealistic
- **T**imely

From TA Planning Paper #1

Activity: BROAD and SMART Exploration

Reflect on Prepare

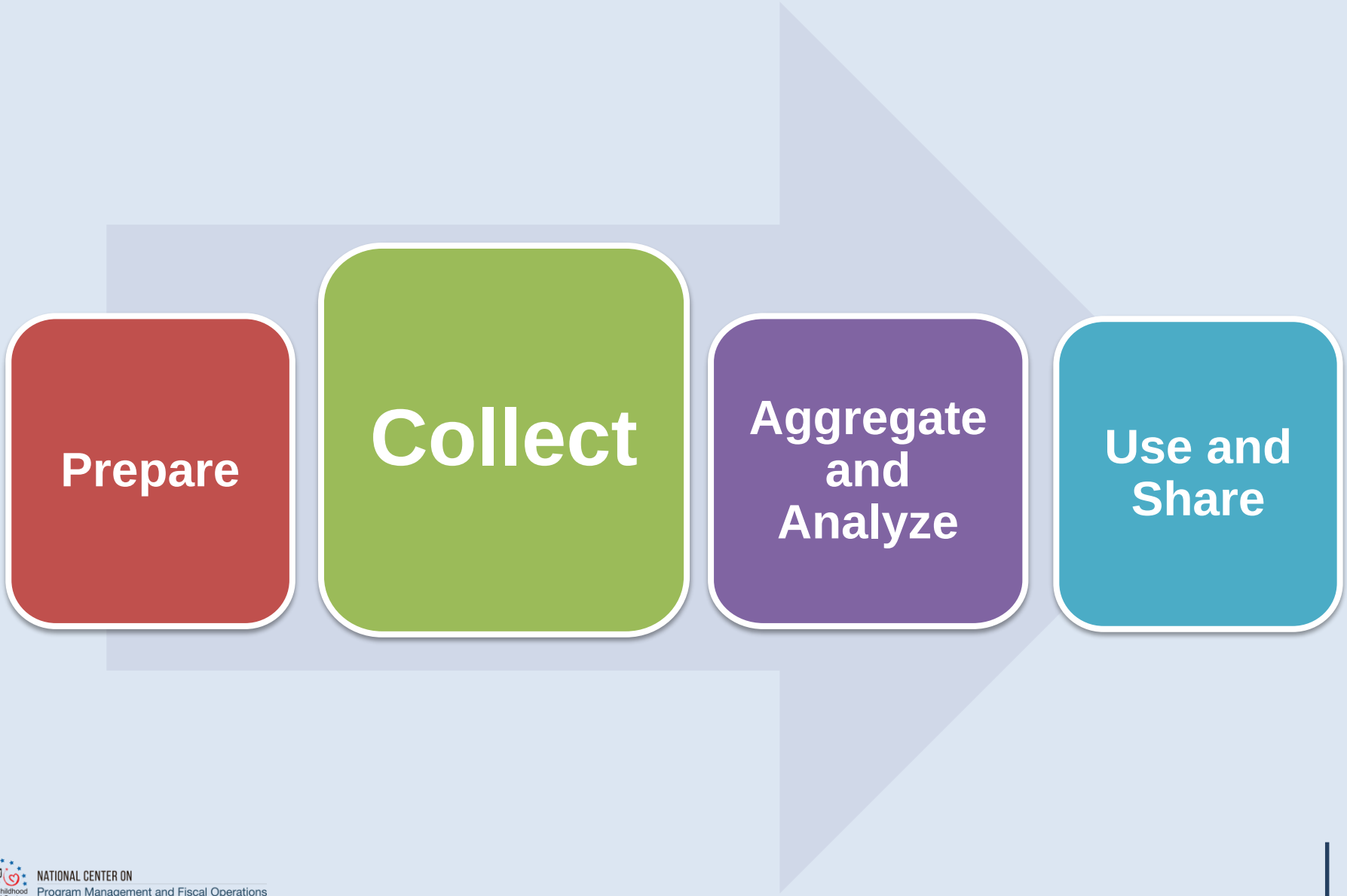
What’s working in your program?

What do you need to strengthen?

How will you improve your abilities in the preparation stage of data collection and use?

Collect

The Four Data Activities



Data Collection Methods

- Interviews
- Focus groups
- Surveys
- Observations
- Secondary data

Beginning to Think about Data Management

The management of program data effectively supports the

- Availability
- Usability
- Integrity
- Security of data

HSPPS 1302.101 Management of Program Data

Digital Data Inventory

Digital Data Inventory

Type of data	Format (digital or other)	Who collects and organizes it?	Who reviews it? (How frequently is it reviewed?)	Who manages it?	Users?	Where is it kept?	Does it contain personal identifiable information? (PII)	Purge Control: How frequently is data erased, removed, or stored?

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CQI Conceptual Elements

Management of Program Data

- Security of data
- Usability
- Integrity
- Availability

Some Guiding Principles

The Four R Approach: Are We Using Data….

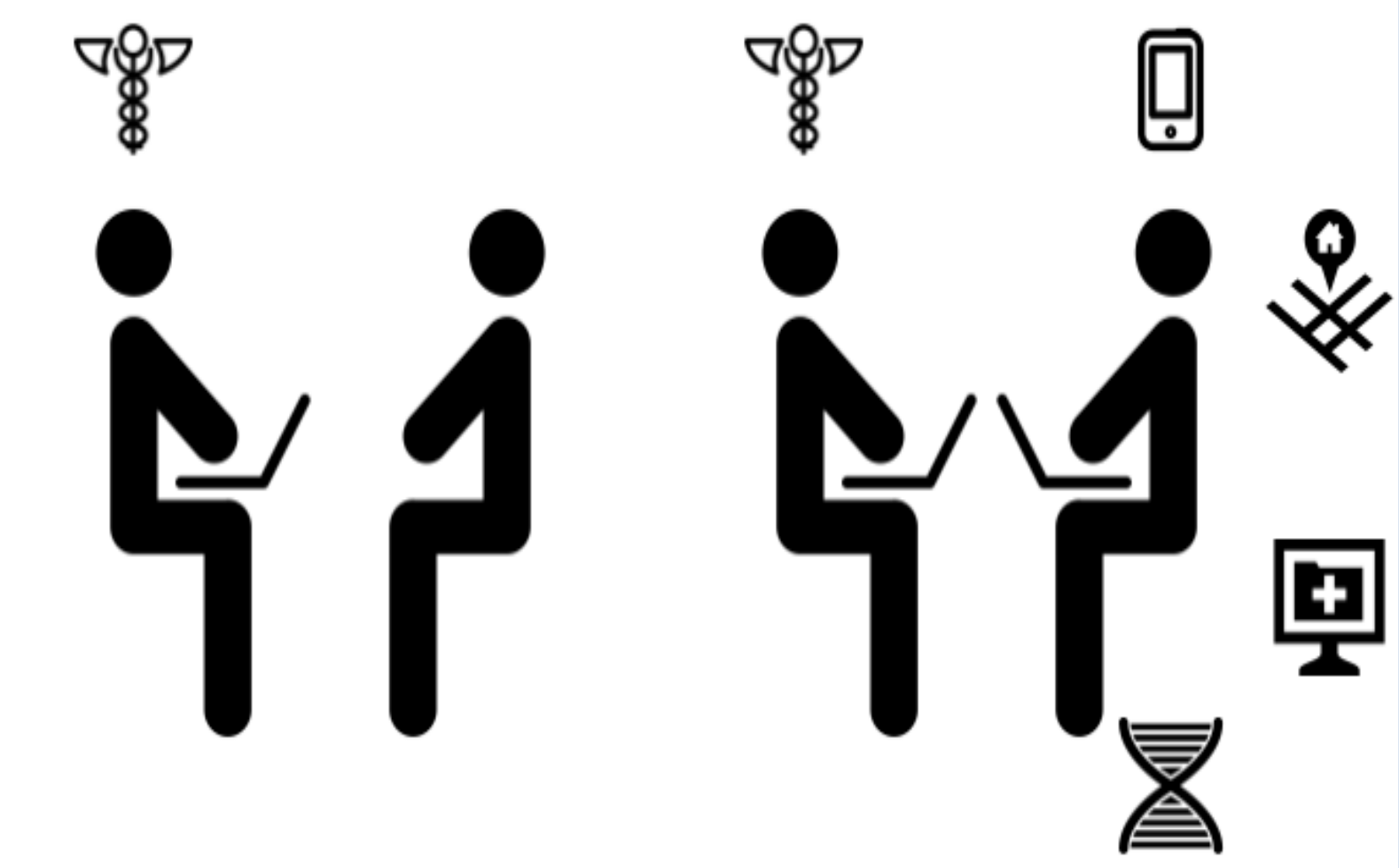
Responsibly

Respectfully

In a **R**elationship-Based Way

That is **R**elevant

Consider the Balance of Power



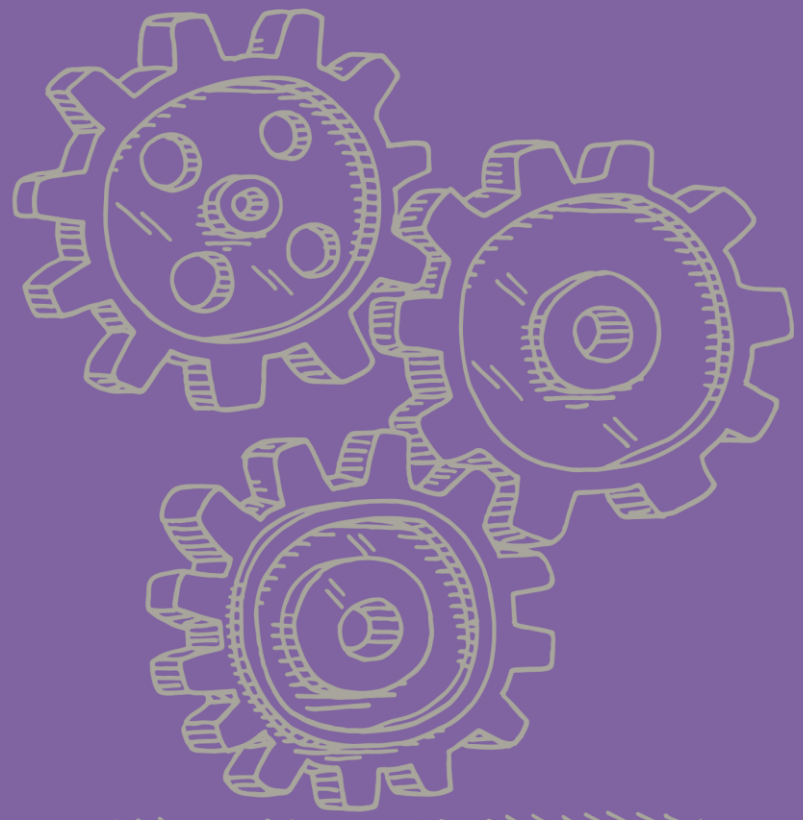
Reflect on Collect

What’s working in your program?

What do you need to strengthen?

How will you strengthen your ability to collect data?

Aggregate and Analyze



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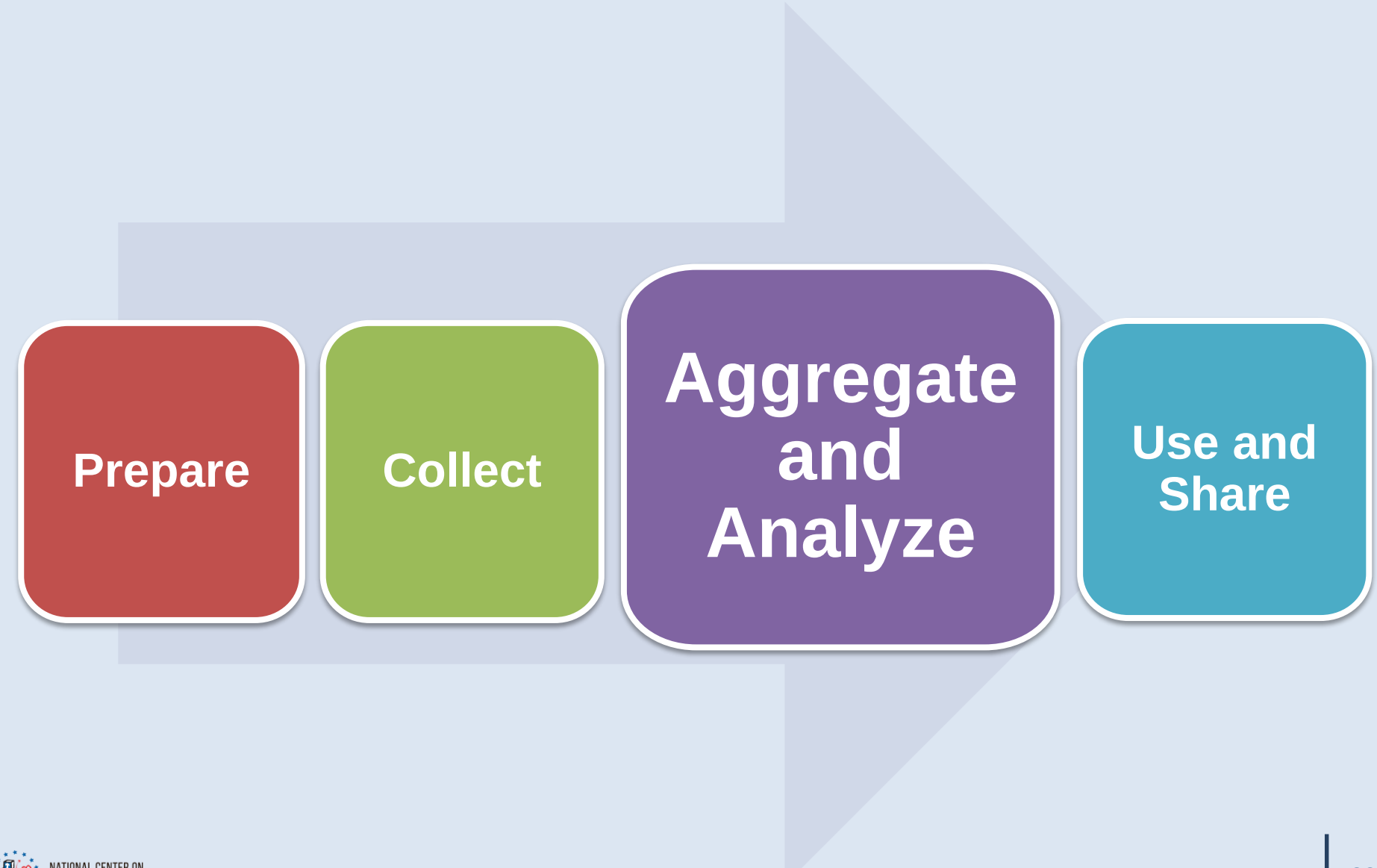

Analyzing Qualitative Data

Analyze the qualitative information by coding it to find useful themes

Examples:

- Transcripts from focus group conversations
- Family case notes
- Child observation notes

Management Meeting

Data Layering – What story does it tell?

Looking at Multiple Data Sources: A Tool to Cross-Reference Your Data

Data Source:

Crossed with	Could tell you…	Why it matters
Child wellness data		
Family engagement data		
Child outcomes data		
Other data		

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Looking at Multiple Sources of Data

Data Source	Child Attendance	
Crossed with…	Could tell you…	Why it matters
Child wellness data	Illness-related absenteeism is caused by: • Insufficient immunizations or preventative care • The need for acute medical or dental care • Insufficient medical treatments or follow-up care • Individual health care needs	Child attendance can be improved with changes in policies and procedures that support children in: • Getting regular checkups and expected immunizations • Accessing medical or dental care • Securing ongoing medical treatments • Addressing special health care needs

Analyzing Data

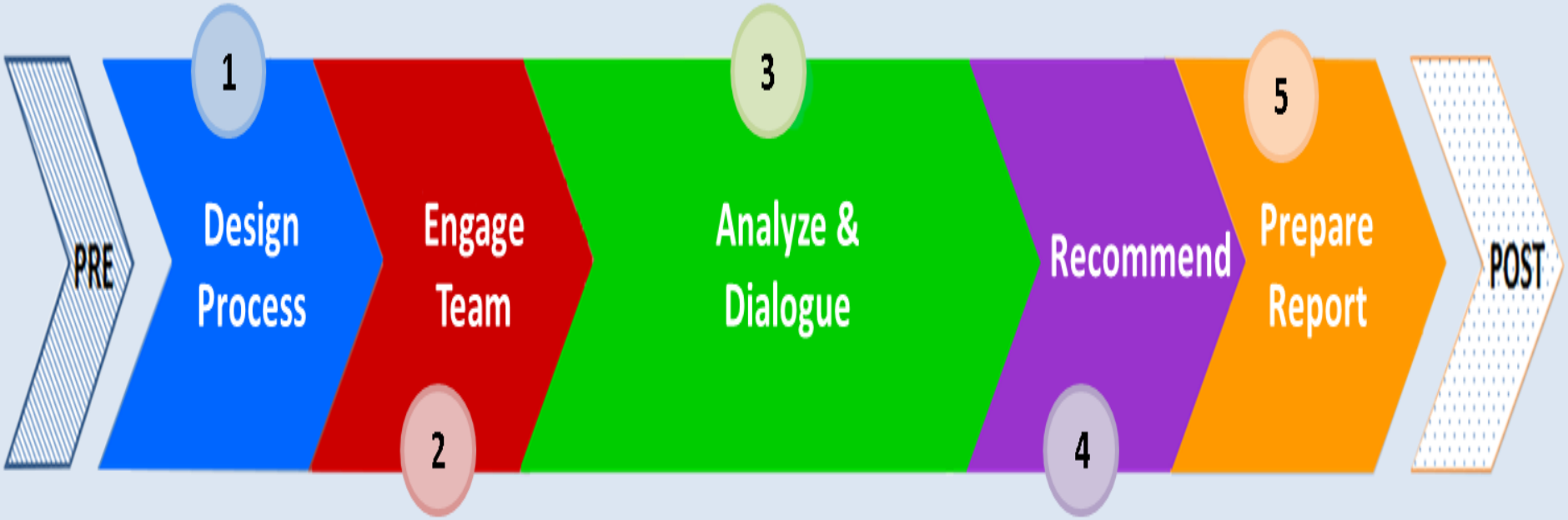
- What we want to achieve with the data is very important.
- Do we recognize the biases built into our analysis?
- How do we allow the data to inform our decision-making?
- What are the questions that the data leads us to?

Community Connections Data Activity

Each small group reviews the data and answer the following questions:

1. What stands out for you?
2. What questions arise for you?
3. What is clear?
4. What is confusing?
5. Does the data identify program strengths?
6. Are there areas that need attention?

Phases of the Annual Self-Assessment



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Analytic Capacity

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Using Your Own Data Activity: Part 1

Each team reviews their own data and answers the following questions:

- What stands out for you?
- What questions arise for you?
- What is clear?
- What is confusing?
- Does the data identify program strengths?
- Are there areas that need attention?

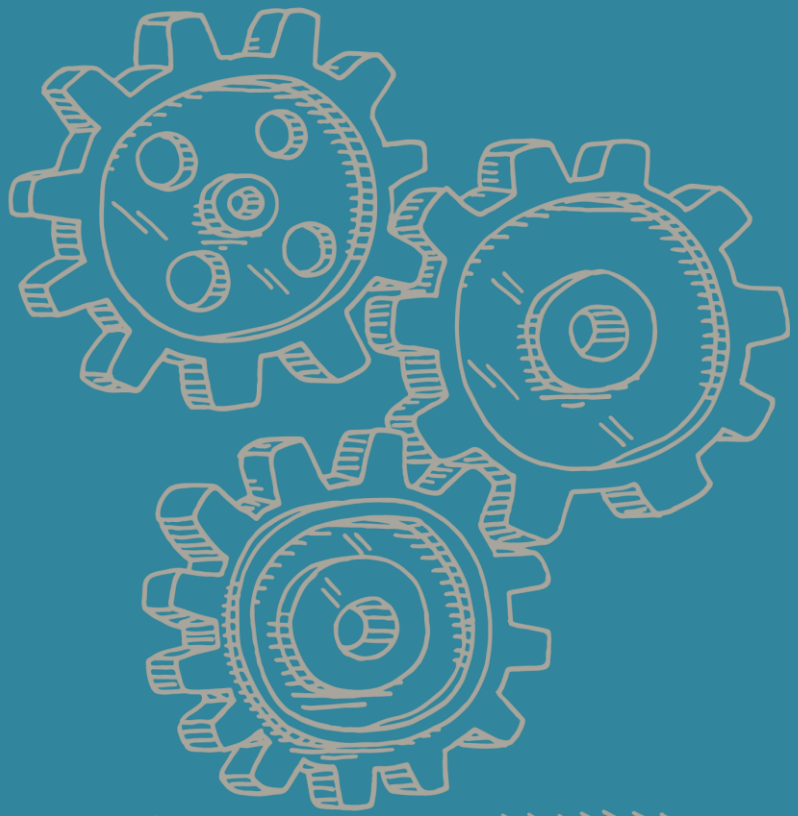
Reflect on Aggregate and Analyze

What's working in your program?

What do you need to strengthen?

How will you improve your ability to aggregate and analyze data?

Use
and Share



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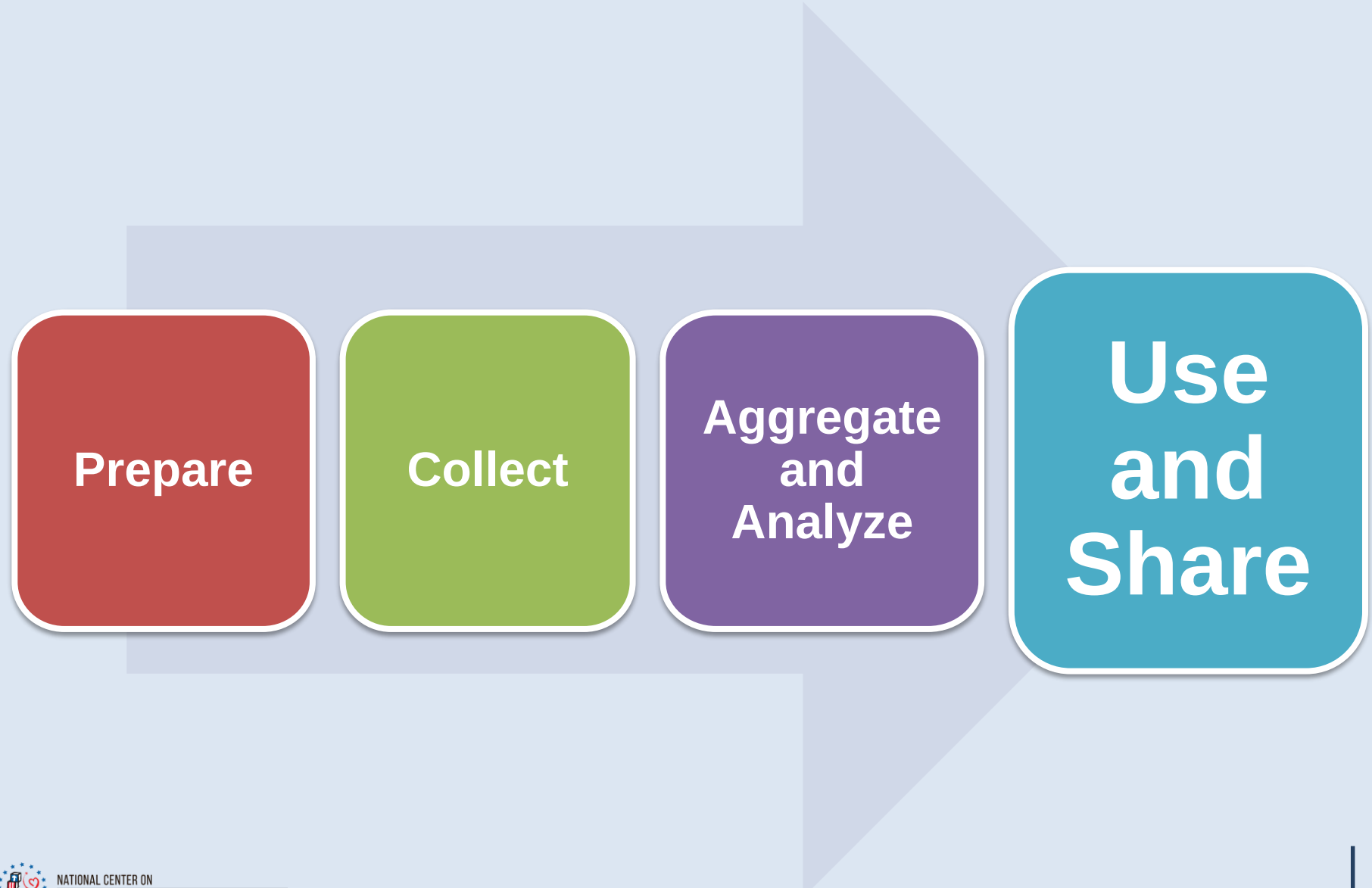


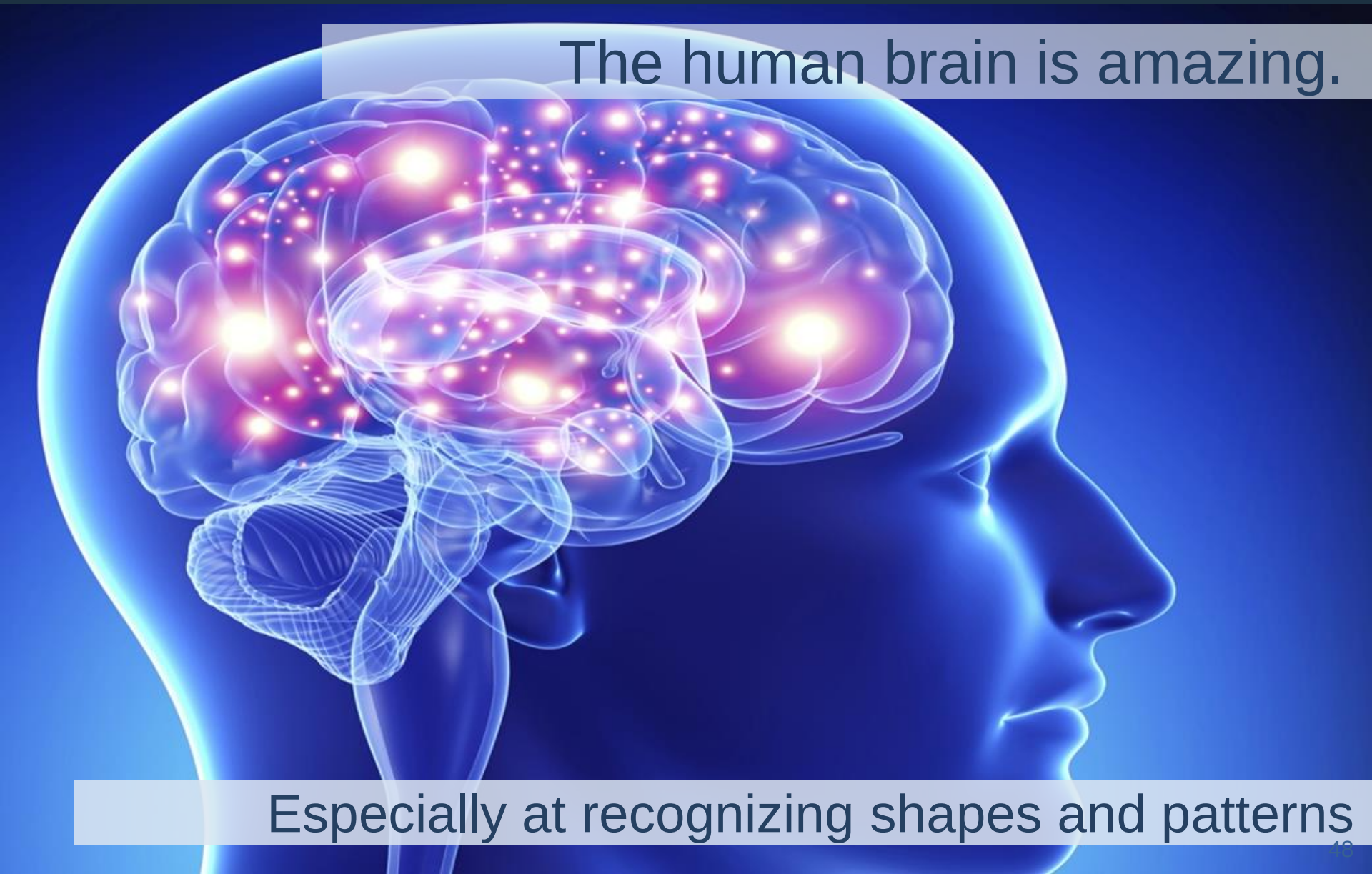
Data visualization can:

- emphasize key points
- provide context
- engage the audience

Ways to use data visualizations effectively:

- Analyze and make decisions
- Discover and identify
- Tell or support a story
- Inform or teach

The Science Factors



The human brain is amazing.

Especially at recognizing shapes and patterns

The Science Factors

The connection between the eye and brain is so fast that the brain receives 8.96 Mb/s (megabits) of data from the eye every second - which is the **speed of sight.**

Koch, K., (2006). How Much the Eye Tells the Brain. *Current Biology*, 16(14), 1428-1434 Retrieved from http://www.sciencedirect.com/science/article/pii/S0960982206016393

The Science Factors

The average person comprehends

120 words per minute reading

that is equivalent to

81.6 bits (b/s)

of data per second.

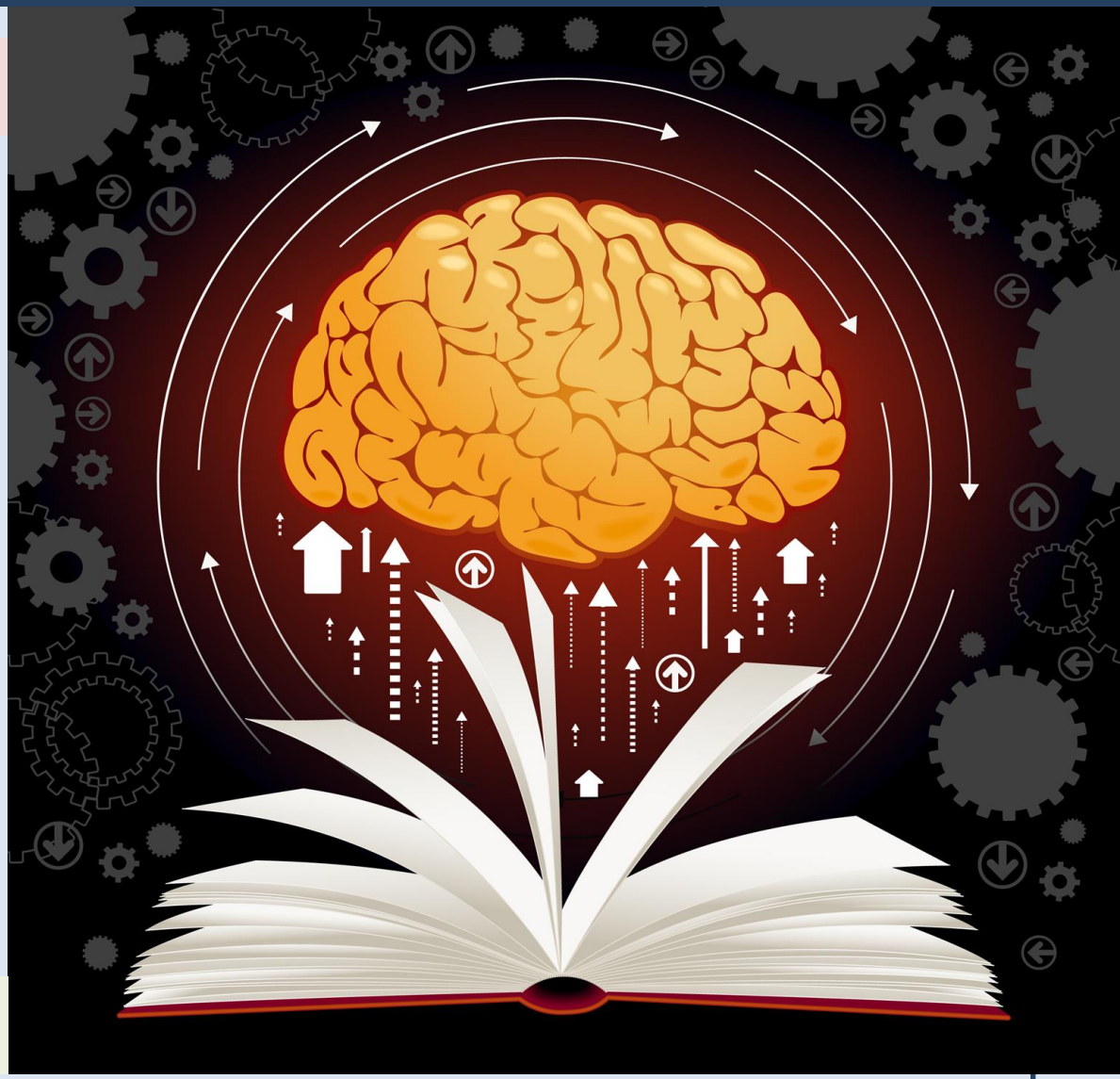
The Science Factors

Visual comprehension speed*

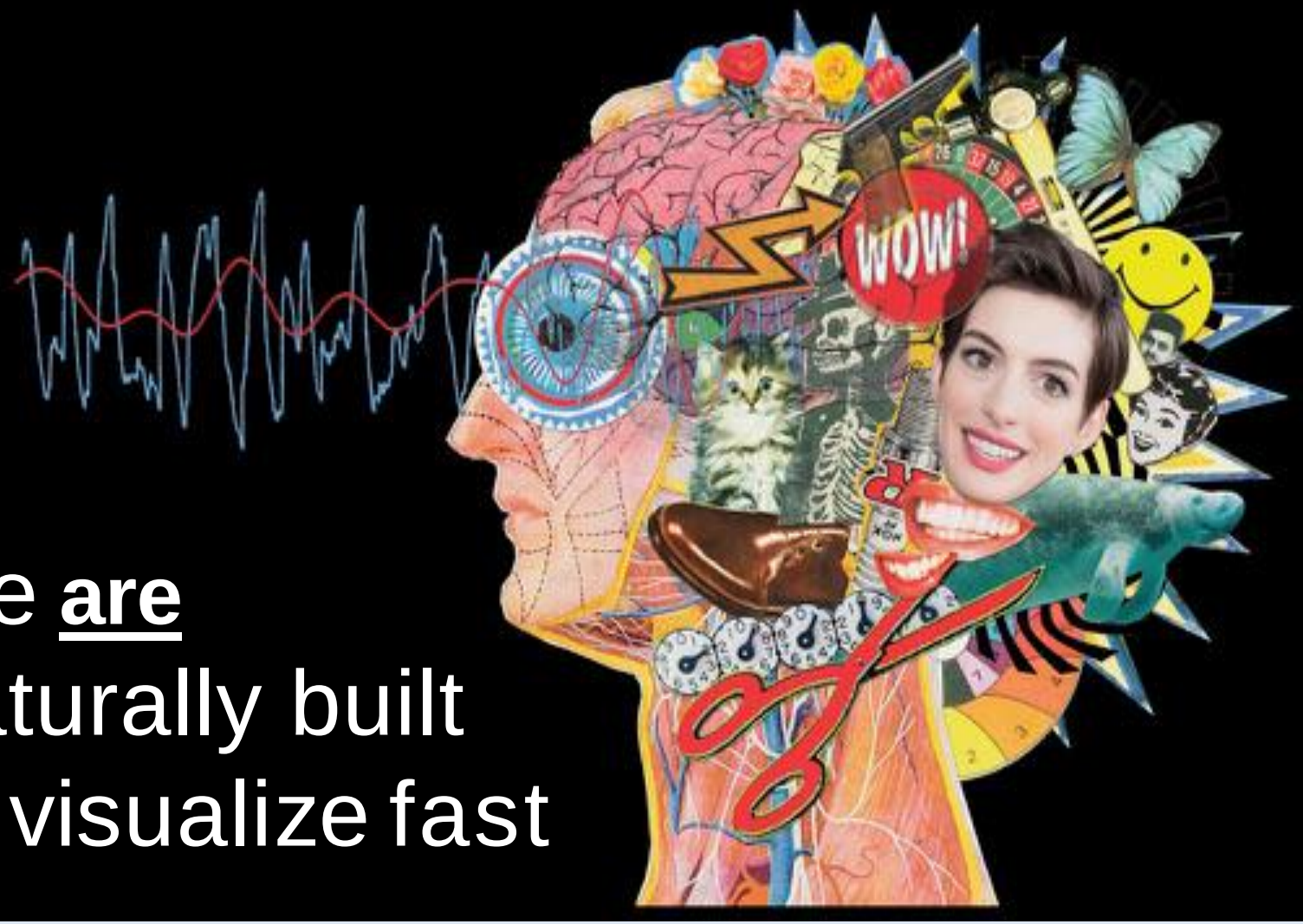
*not close to fitting on this chart

In comparison

Reading comprehension speed



One can conclude…



We **<u>are</u>** naturally built to visualize fast

Data visualizations…

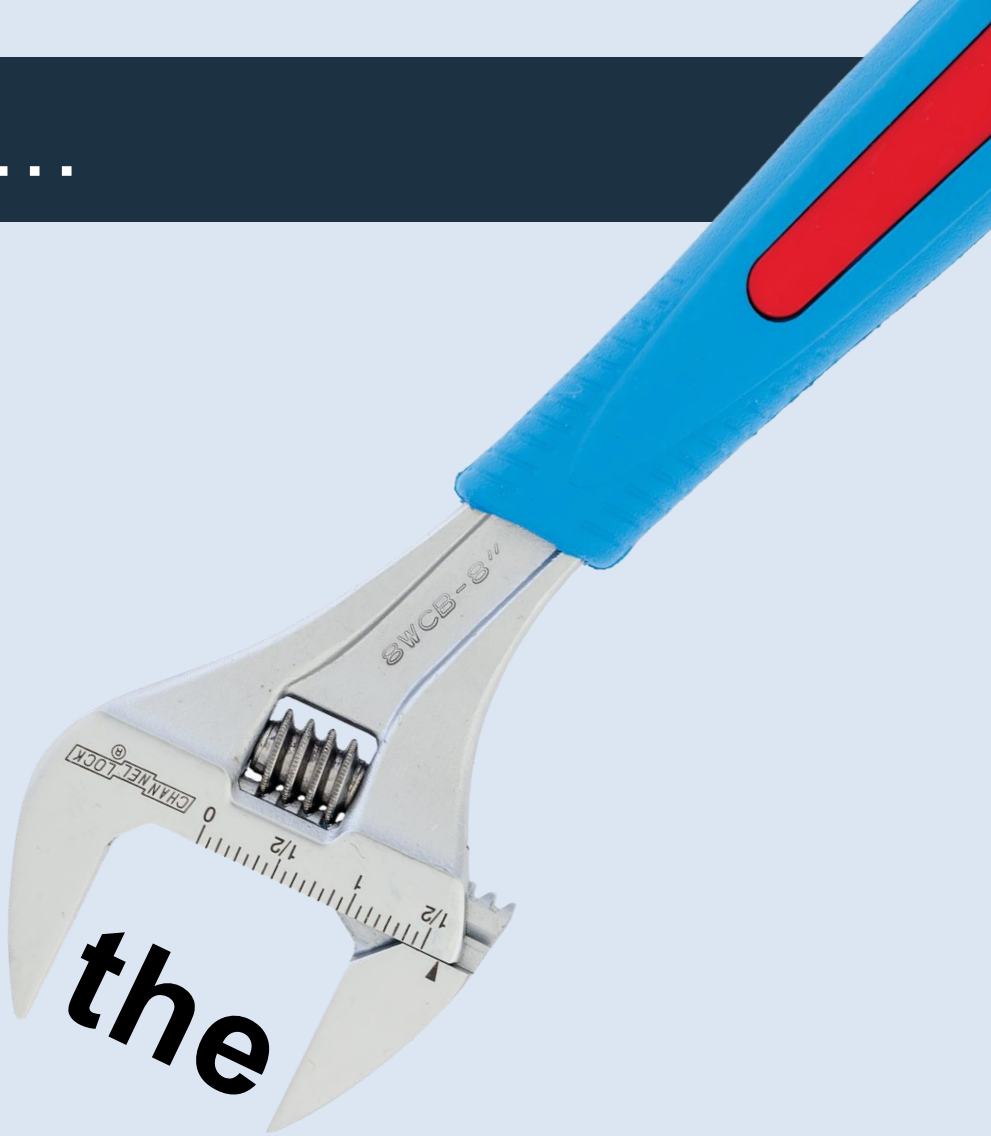
can be

awesome

tools

when used

right way



the

A Toolbelt of Techniques

Dashboards

Creative maps

Personal stories

Charts and graphs

Telling Your Story Well

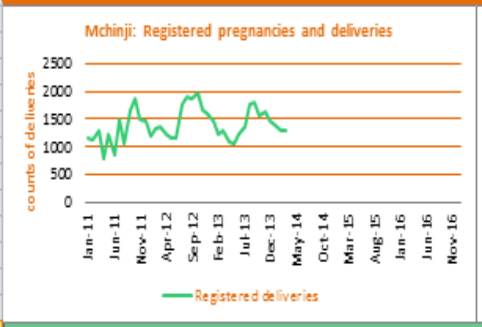
- Stories bring us together and move us to action
- Combining storytelling with data is powerful
- Use data as an asset to support our stories

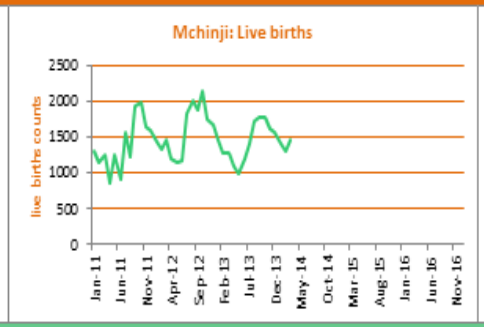
Persuasion and the Power of Story

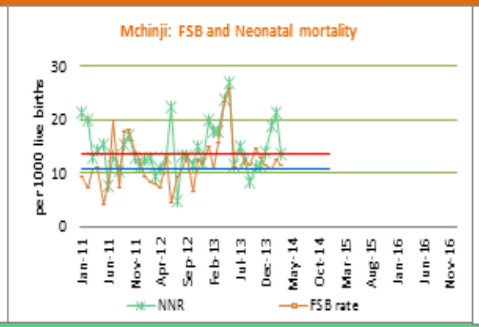
https://www.youtube.com/watch?v=AL-PAzrpqUQ

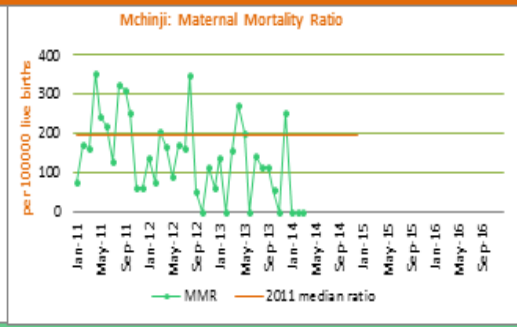
Dashboard Definition

DATA DASHBOARD

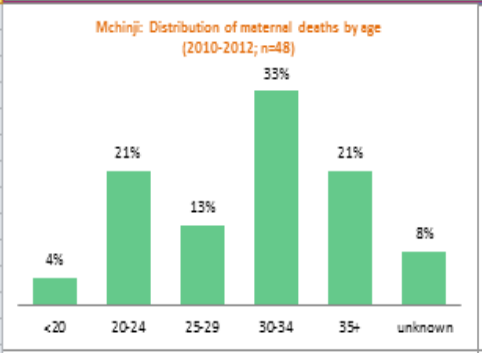


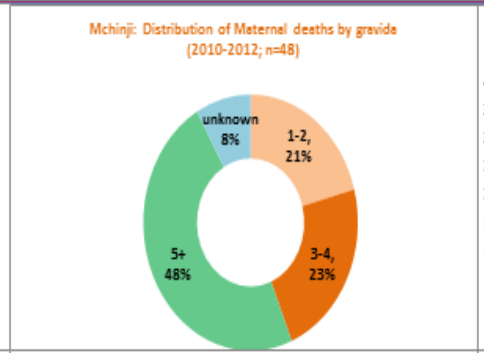


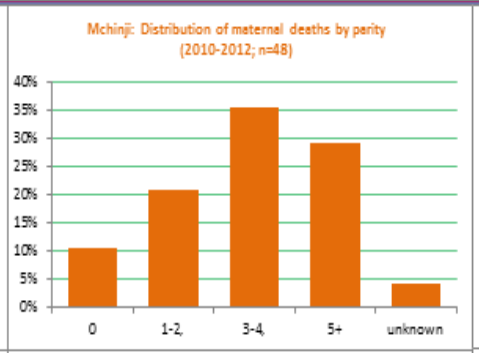


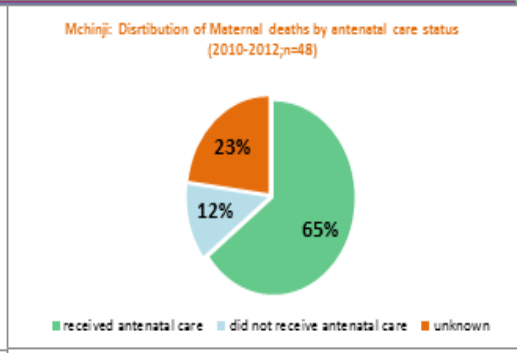


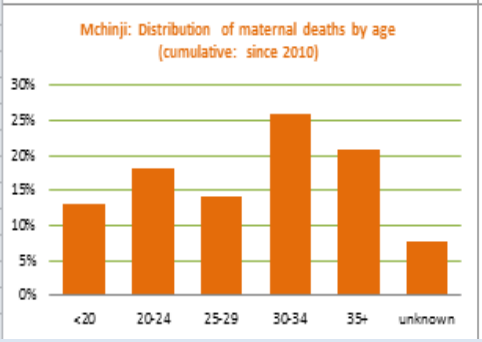
DISTRIBUTION OF MATERNAL DEATHS

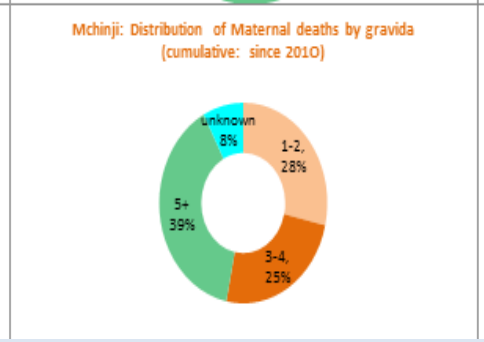


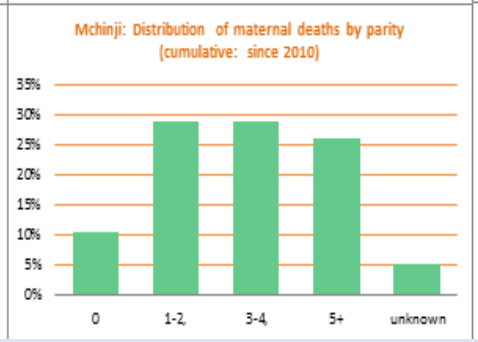


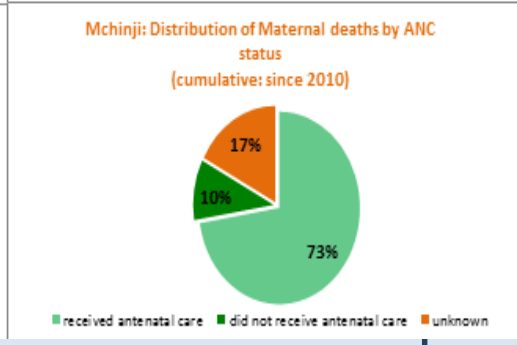




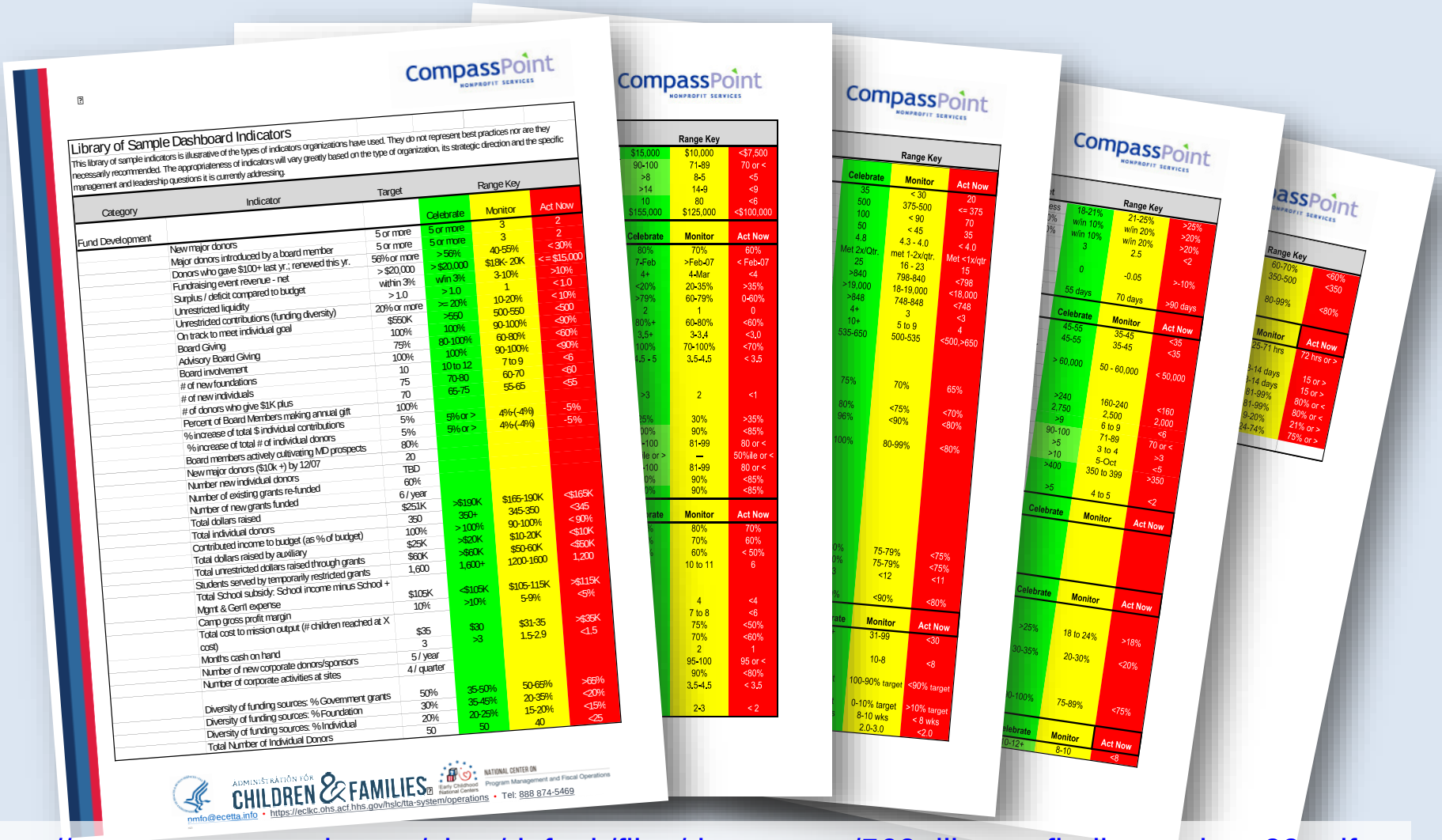








Library of Sample Dashboard Indicators



Library of Sample Dashboard Indicators

This library of sample indicators is illustrative of the types of indicators organizations have used. They do not represent best practices nor are they necessarily recommended. The appropriateness of indicators will vary greatly based on the type of organization, its strategic direction and the specific management and leadership questions it is currently addressing.

Category	Indicator	Target	Range Key: Celebrate	Range Key: Monitor	Range Key: Act Now
Fund Development	New major donors	5 or more	5 or more	3	2
	Major donors introduced by a board member	5 or more	5 or more	3	2
	Donors who gave $100+ last yr.; renewed this yr.	56% or more	> 56%	40-55%	< 30%
	Fundraising event revenue - net	> $20,000	> $20,000	$18K- 20K	<= $15,000
	Surplus / deficit compared to budget	> 1.0	w/in 3%	3-10%	>10%
	Unrestricted liquidity	within 3%	> 1.0	1	< 1.0
	Unrestricted contributions (funding diversity)	> 1.0	>= 20%	10-20%	< 10%
	On track to meet individual goal	20% or more	>550	500-550	<500
	Board Giving	$550K	100%	90-100%	<90%
	Advisory Board Giving	100%	100%	60-80%	<60%
	Board involvement	75%	80-100%	90-100%	<90%
	# of new foundations	100%	100%	7 to 9	<6
	# of new individuals	10	10 to 12	60-70	<60
	# of donors who give $1K plus	75	70-80	55-65	<55
	Percent of Board Members making annual gift	70	65-75		
	% increase of total $ individual contributions	100%			
	% increase of total # of individual donors	5%	5% or >	4%-(-4%)	-5%
	Board members actively cultivating MD prospects	5%	5% or >	4%-(-4%)	-5%
	New major donors ($10k +) by 12/07	80%			
	Number new individual donors	20			
	Number of existing grants re-funded	TBD			
	Number of new grants funded	60%			
	Total dollars raised	6 / year	>$190K	$165-190K	<$165K
	Total individual donors	$251K	350+	345-350	<345
	Contributed income to budget (as % of budget)	350	> 100%	90-100%	< 90%
	Total dollars raised by auxiliary	100%	>$20K	$10-20K	<$10K
	Total unrestricted dollars raised through grants	$25K	>$60K	$50-60K	<$50K
	Students served by temporarily restricted grants	$60K	1,600+	1200-1600	1,200
	Total School subsidy: School income minus School + Mgmt & Gen'l expense	1,600			
	Camp gross profit margin	$105K	<$105K	$105-115K	>$115K
	Total cost to mission output (# children reached at X cost)	10%	>10%	5-9%	<5%
	Months cash on hand	$35	$30	$31-35	>$35K
	Number of new corporate donors/sponsors	3	>3	1.5-2.9	<1.5
	Number of corporate activities at sites	5 / year			
		4 / quarter			
	Diversity of funding sources: % Government grants	50%	35-50%	50-65%	>65%
	Diversity of funding sources: % Foundation	30%	35-45%	20-35%	<20%
	Diversity of funding sources: % Individual	20%	20-25%	15-20%	<15%
	Total Number of Individual Donors	50	50	40	<25

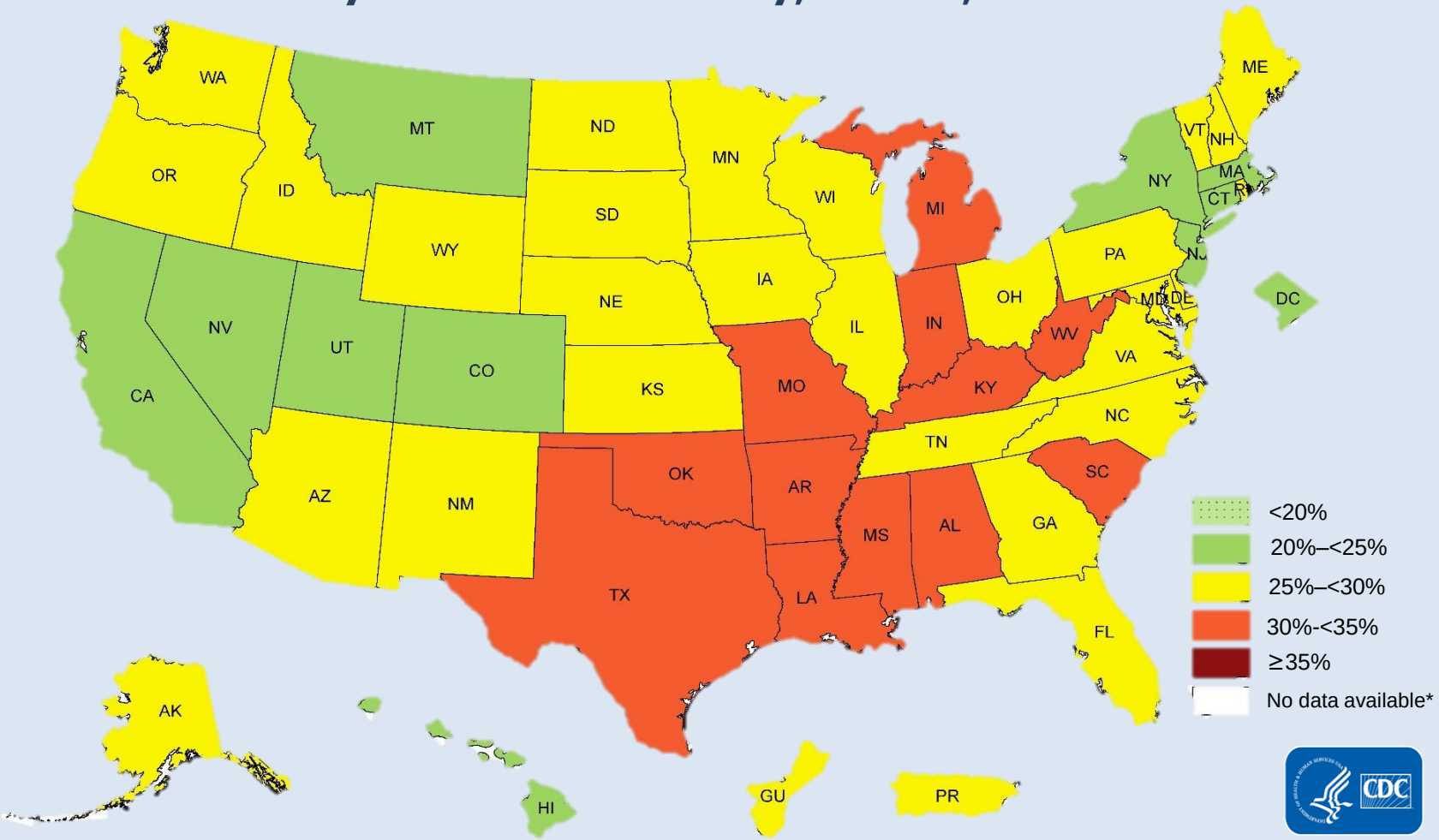
nmfo@ecetta.info • https://eclkc.ohs.acf.hhs.gov/hslc/tta-system/operations • Tel: 888 874-5469

https://www.compasspoint.org/sites/default/files/documents/560_libraryofindicatorsjune09.pdf

Adapted from Compass Point Nonprofit Services Library of Sample Dashboard Indicators

Maps as a Tool for Telling a Story

Prevalence[1] of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2011



[1] Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.

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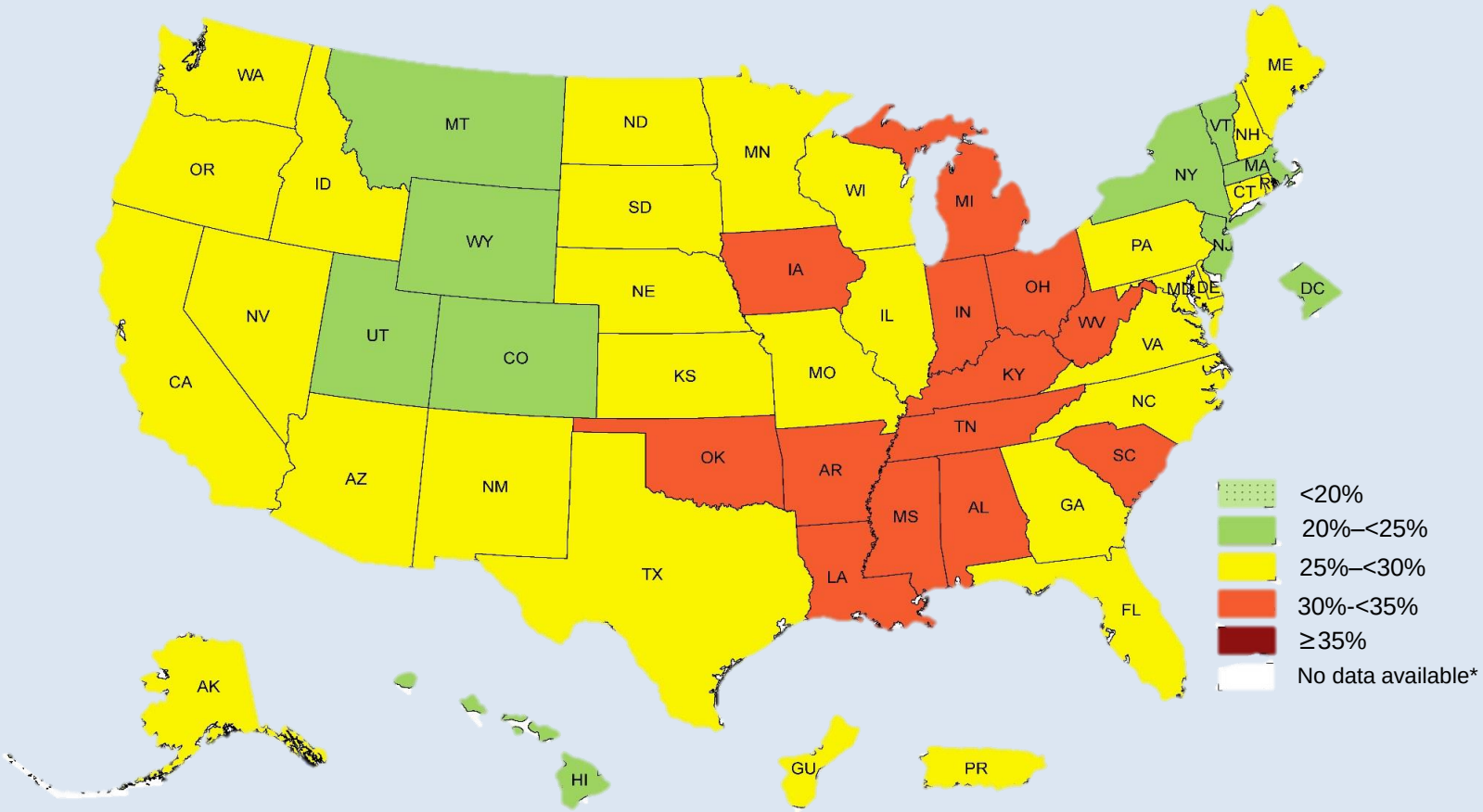

***Sample size <50 or the relative standard error (dividing the standard error by the prevalence) ≥ 30%.**

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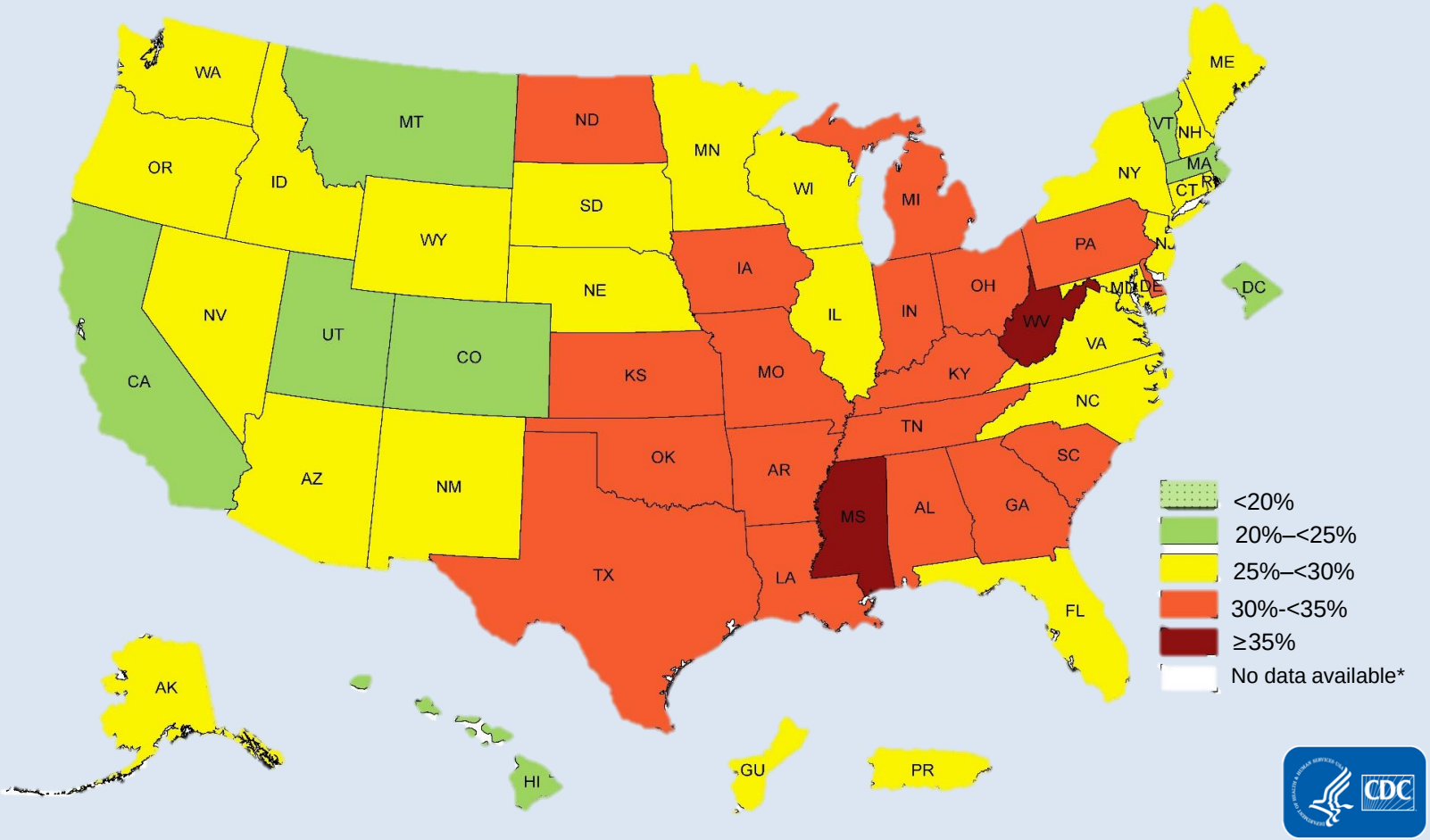

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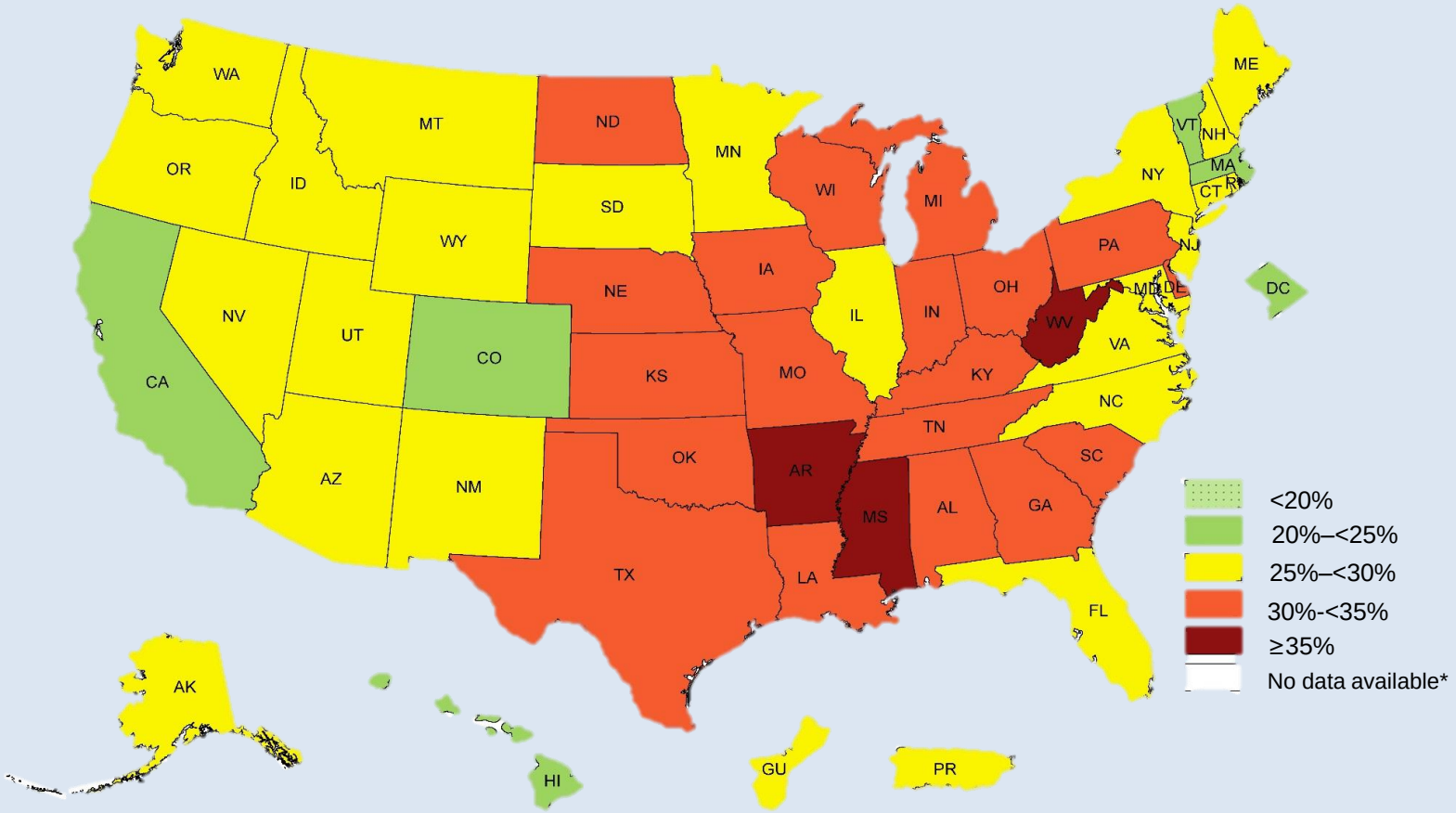
Maps as a Tool for Telling a Story

Prevalence[1] of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2014



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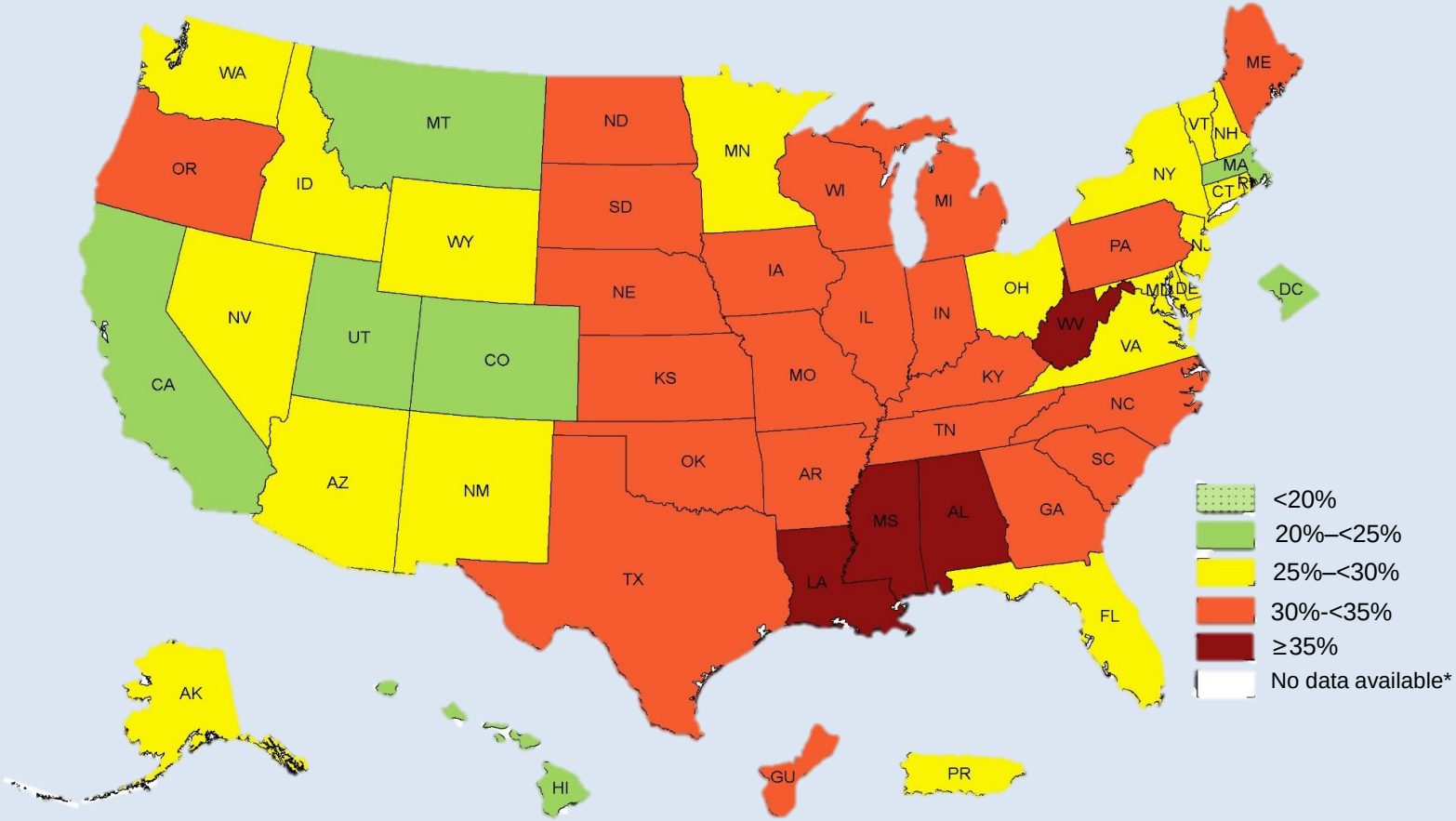
Maps as a Tool for Telling a Story

Prevalence[1] of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2015



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Effective Reports…

Follow the Four A's

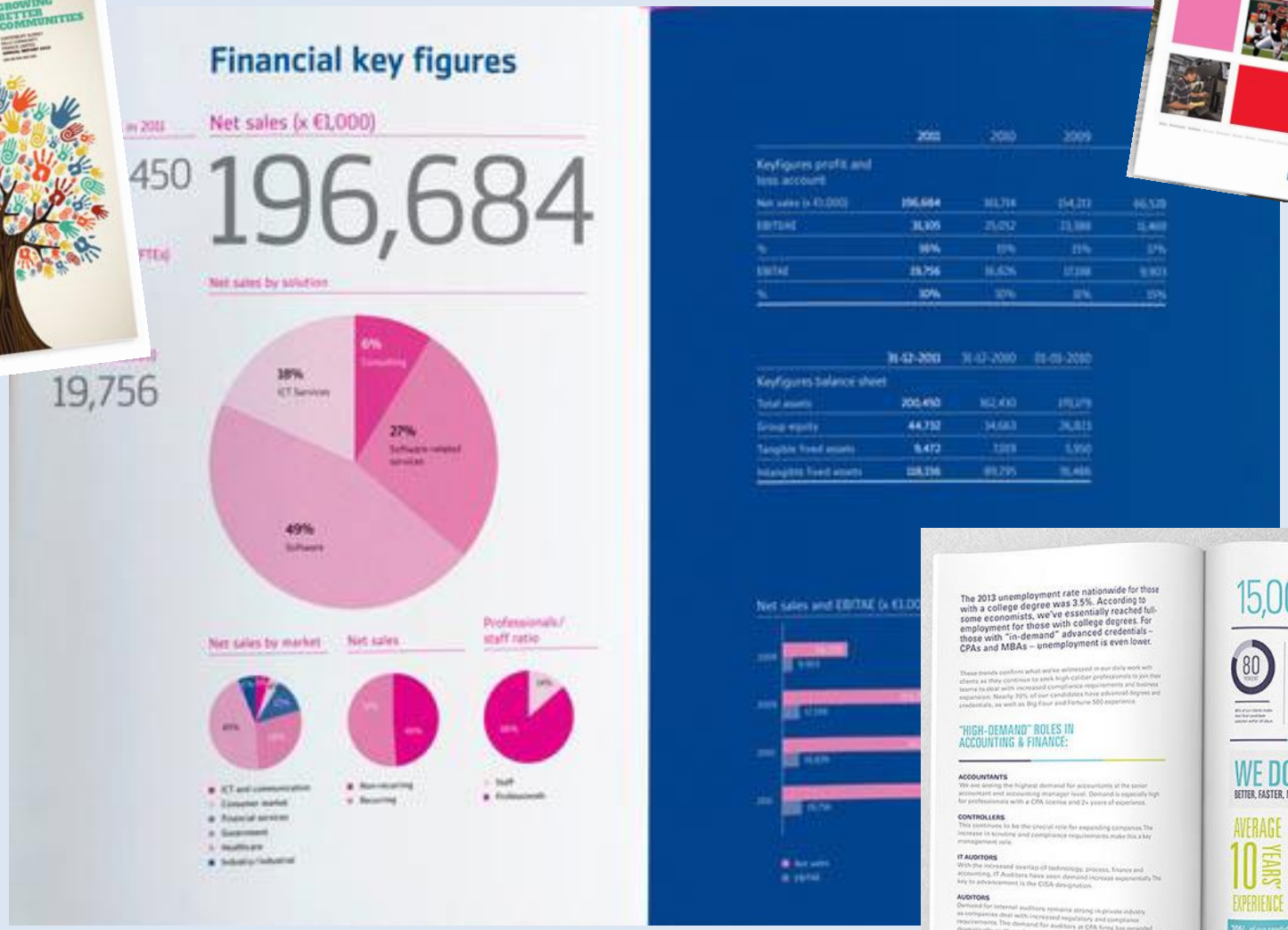
- **A**ccurate
- **A**udience-specific
- **A**ppealing
- **A**ccessible

To Create Graphs and Charts

http://nces.ed.gov/nceskids/createagraph/default.aspx

- Create a Chart and Graph
- Microsoft Excel
- Management Information Systems

Your Annual Report



Using Data to Tell Your Story

Pair & Share

CONCEPTUAL ELEMENTS of Continuous Quality Improvement

Leadership in Data Management

- Be Transformational
- Adopt and Lead Change Strategy
- Communicate Clearly
- Motivate for Innovation and Creativity
- Distribute Responsibilities
- Be a Role Model

Organizational Characteristics

- History of improvements
- Program characteristics
- Size
- Structure

Commitment of Resources

- Commit, finance, and sustain technology
- Commit leadership time
- Commit staff time

Analytic Capacity

- Assess technological capital
- Assess human capital
- Assess data capital

Culture of Collaborative Inquiry

- Promote systems thinking
- Share learning
- Engage partners
- Create safe space

Management of Program Data

- Security of data
- Usability
- Integrity
- Availability

Professional Development

- Understand data systems
- Develop analytic capacity
- Integrate knowledge and beliefs

Environment

- Nongovernmental funders
- Government mandates
- Accreditation, licensing and professional systems
- Time

Quality Child & Family Outcomes

Early Childhood National Centers

NATIONAL CENTER ON
Program Management and Fiscal Operations

Source:
Derrick-Mills, Teresa, Heather Sandstrom, Sarah Pettijohn, Saunji Fyffe, and Jeremy Koulish. (2014). Data Use for Continuous Quality Improvement: What the Head Start Field Can Learn From Other Disciplines, A Literature Review and Conceptual Framework. OPRE Report # 2014-77. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families. U.S. Department of Health and Human Services.

Conceptual Elements

Using Your Own Data Activity: Part 2

Each team reviews the results of their answer to the question:

- Are there areas that need attention?

Step 1	Sort the results by similar themes and/or underlying connections.
Step 2	Once sorted, have each group create a short action-oriented statement that describes what needs to be done.

Reflect on Use and Share

What’s working in your program?

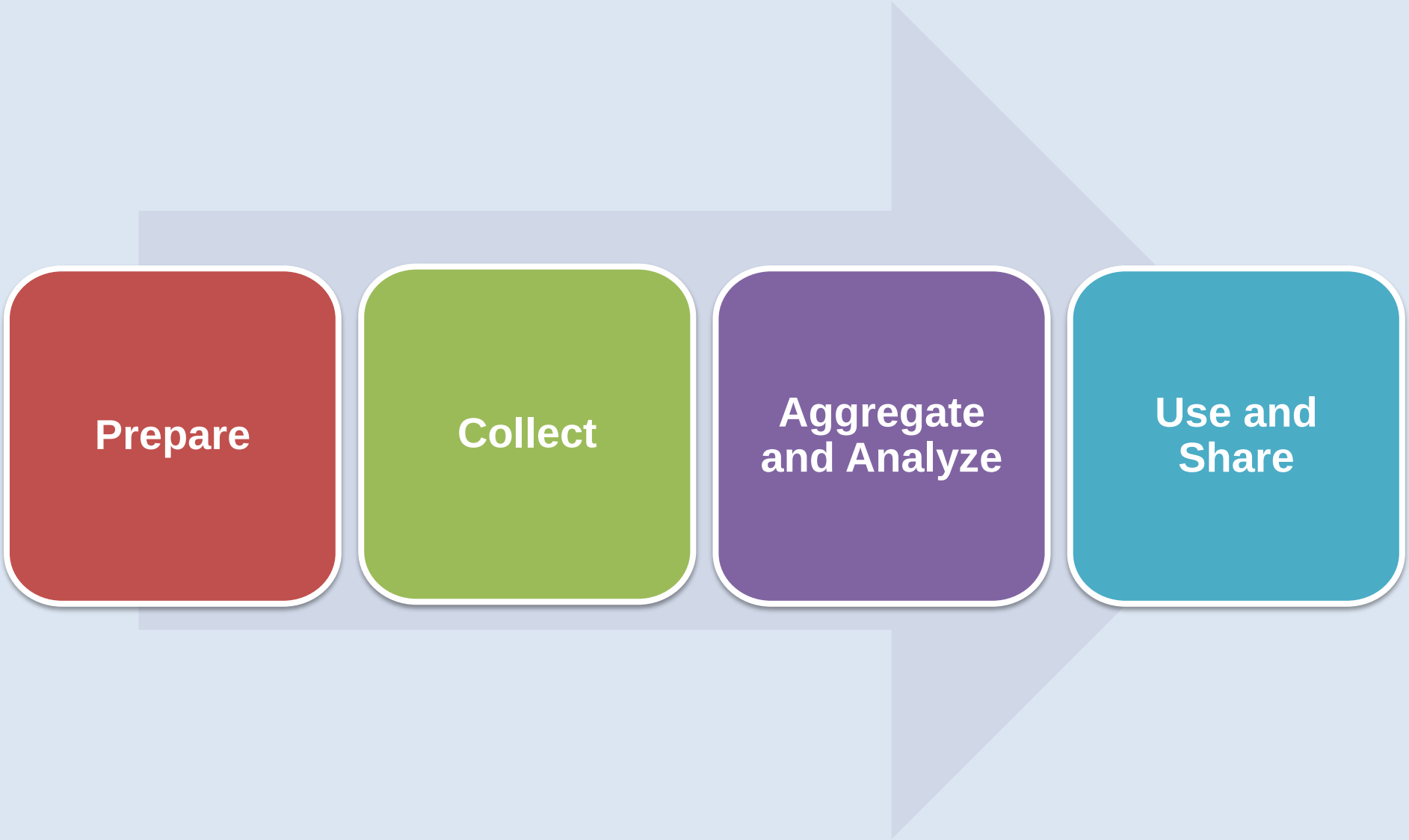
What do you need to strengthen?

How will you strengthen your ability to use and share data?

Bringing It All Together

- What will your program to be able to do?
- How will this ability help children and families?
- When do you expect this to happen?
- How will you know when it happens?

The Four Data Activities



Taking Stock: Data Inventory Revisited

A. PREPARE	B. COLLECT	C. AGGREGATE AND ANALYZE	D. USE AND SHARE
Activities include: • Creating a data plan • Identifying data to collect • Establishing methods to collect data • Setting clear roles for stakeholders (parents, governing boards, staff, community members) • Establishing a timeline for data collection	Activities include: • Integrating data collection into staff's everyday workload • Ensuring data turnaround is fast • Catching errors and quickly resolving them	Activities include: • Examining data to identify what is working and what is not working • Identifying trends • Connecting different data types and sources to get a "bigger picture" • Comparing data	Activities include: • Presenting data graphically • Establishing systematic solutions to identified problems • Identifying new goals and new critical questions based on the results of data analysis • Sharing results with stakeholders

Rethinking Data Use – Action Plan

Goal Statement:

Strategy	Action Steps	Person(s) Responsible	Resources Needed	**Timeline**

Final Thoughts

Contact

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