DataCenter's Research Justice Institute
Training Series #3

Our Data,

Our Analysis

Facilitator's guide

Training on the basics of participatory data analysis

Prepared by the DataCenter

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Our Data, Our Analysis

This manual includes step-by-step facilitation instructions to conduct a data analysis workshop for survey or other quantitative analysis results. It includes four workshops created to move from getting comfortable with data to analyzing and making statements with data and developing a policy strategy to share the data. Participants will spend time thinking about audiences and key strategies for communicating the results as well as how their research will feed into their organizing agenda.

To complete all parts of training, allow for 6 hours.

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Assumptions: These series of workshops are intended for participants who have gone through a survey process and have identified an organizing goal that their research is supporting. The workshops also assume that data has already been compiled and tabulated. For further training how to compile data, please contact DataCenter. The workshops also introduce very basic mathematical concepts for data since participants may have varied knowledge around number crunching.

This workshop will provide a basic introduction of data to the participants and allow for reflection and group analysis. Participants will also be introduced to a number of key concepts used to talk about data, including percentages, medians, means, cross tabs and outliers. Workshop I will culminate in an interactive online tool called "Data Feud" developed by the Datacenter. The game follows the same format as "Family Feud" in which two teams compete to guess the survey responses to a series of prepared questions. Participants will be presented with compiled data in question format.

Note: Facilitator should be familiar with Data Feud toolkit and have it set up ahead of time with a variety of data (percentages and means). You can access game at www.datafeud.org. Use Mozilla Firefox as your browser. For more information on setting up Data Feud, refer to Data Feud Toolkit.

Goals & Objectives

- Introduce participants to the data results for the first time
- Introduce numerical concepts often used in describing data
- Familiarize participants with key findings from the data

Materials

- ✓ Laptop, Internet
- ✓ Screen, Projector, Speakers
- ✓ Calculators
- ✓ Pens/ pencils and paper
- ✓ Butcher paper and markers
- ✓ Chocolates or other edible treats
- ✓ Buzzers/bells (optional for Data Feud)

Agenda

1. Introduction	10 min
2. Numerical Concepts	30 min
a. Percentages (10 min)	
b. Median (5 min)	
c. Averages (10 min)	
d. Outliers/Cross Tabs (5 min)	
3. Data Feud	40 min

Set Up:

- ✓ Review the Data Feud toolkit
- ✓ Pick 3-5 survey results and input them as questions into Data Feud.
- ✓ Pre-butcher definitions included in Appendix 1: Glossary of Terms
- ✓ Set up projector and laptop for Data Feud. Room must have internet connection.

FACILITATOR INSTRUCTIONS

Introduction

- ✍ Ask participants to do a pair share of their experience conducting the survey with the following guiding questions. If there is time, ask participants if they want to share highlights from their conversations to the larger group.

  Questions:
    - o How was your overall experience conducting the survey?
    - o Which responses did they notice come up more frequently?
    - o What information are they most curious to learn about?

🗨 We may have had some clues already as to what our survey will reveal just by conducting the survey. Today we'll get to see it in actuality. Working with a lot of data can be daunting but together we will tackle it piece by piece.

Numerical Concepts

Review any of the below concepts that are relevant to your data (i.e. your data only includes percentages and averages).

Percentages

✋ Ask if anyone can describe what a percent is. Reveal a definition on butcher paper: "A percentage is a way of expressing a number as a fraction of 100. For example, 45% is equal to 45/100, or 0.45." Explain that to find a percent you have to do division. Draw a pie with five slices, two cut out. Create a fraction 2/5. Then divide the cut out part (2) by the total (5) = .4 = 40%. Demonstrate the division on a calculator if needed.

🗨 If the pie equals 100%, each slice equally cut is the equivalent of 100/5, which equals 20%. So 2 slices of the pie equals 20% * 2= 40%. This tells us that someone ate 40% of the pie OR someone didn't eat 60% of the pie, which is 3* 20%.

✋ Ask everyone that falls into a certain category to stand up (can be descriptive such as hair length, clothing item, occupation, etc.) Ask participants to identify what percentage of the room they are and to explain how they got the number. Repeat this until room comfortable with concept. Allow participants to use calculators/phones if they need to.

🗨 Percentages are a way of understanding the significance of numbers within the total. They are calculated by using fractions and division and can be a powerful way of presenting data.

Median

✋ On flipchart have these numbers written out: 5,4,9,8,7. Introduce participants to the concept of a median, which refers to "the middle value in a set of numbers."

🗨 To find it the numbers have to be lined up in numerical order. We place them in numerical order: 4,5,7,8,9. The middle number in the set, or the median is 7.

✋ Ask all participants who are able to stand and form a line based on their height. Ask tallest and shortest to identify their height. Ask participants to identify who in the line is the median.

🗨 Median are ways of describing the middle number in the data set.

Average/Mean

🗨 We spend most of the time talking about percentages but we want to also to introduce another powerful way to describe data. Does anyone know what a mean is?

✋ Take a few responses until you get a close enough definition: "The mean is the average of the numbers: a calculated "central" value of a set of numbers." IF participants haven't already explained the simplest way to get an average, describe the process: add up all the numbers, then divide by how many numbers there are. Example: what is the mean of 4,5,7,8,9?

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4+5+7+8+9= 33. Divide by how many numbers (i.e. we added 5 numbers): 33/ 5 = 6.6. So the Mean is 7

🗨 This is the easiest way to calculate but its important to visualize how this works in actuality.

✋ Pick three volunteers and give each 1, 2 and 3 chocolates respectively. Ask participants to count their chocolates. Ask participants to identify the mean by just looking at it and to understand that 2 is in the middle of 1 and 3. Redistribute the chocolate by giving a 4th person 6 chocolate. Ask participants to identify the new average. By adding up all the chocolates (1+2+3+6) and dividing it by 4=3. Have them see the average absorbs highs and lows and understand that the average will be higher by adding a higher number to the set.

🗨 Mean/ Average is the total number of objects divided by how many shares there are. It is an easy way to look at how something is distributed.

Outliers and Crosstabs

🗨 Though percentages and means are powerful ways of showing how significant a finding is, they are not full proof. Often times they can be skewed and inaccurate. Let's say somebody is having a bad day and wants 10 chocolates while the others only have 2. What will the average be now? Take out that person, and the average will now more reflect the reality. The average is actually closer to 2. We call these abnormally different numbers "outliers". We get them for a number of reasons. But we need to be aware of how they can change our numbers and not reflect the reality of the condition we are trying to capture. What is a way to deal with outliers?

✋ Allow participants to brainstorm. Example responses: put a disclaimer, go back to the data and see if outliers fell under a certain group of people, look at the mean instead of the average.

🗨 You may have outliers because certain conditions are unique to certain groups of people.

✋ Illustrate in chocolate example by giving more chocolate to the men in the group and 1 chocolate to the women in the group. Calculate both averages and the total average combined, compare, and discuss what tells a more accurate story.

Summary

🗨 When we're looking at data we want to analyze the data as is but we also want to look out for things that that may be affecting the data such as outliers or grouping of people based on race gender, sector, or geography. So when you see that doesn't feel right could it be based on any of these things? We're also looking at how to tell the most accurate story. Sometimes surprising data may prompt us to look at the data and see if there are correlations with a subset of people and break down data further or we may decide that the questions wasn't effective and that we need to do further research on a particular issue.

✋ Pass out the rest of the chocolates and transition into Data Feud!

Data Feud

✋ Review the Data Feud toolkit on how to use and set up game found on the datacenter website (www.datacenter.org under "tools").

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✋ Data Feud is a Family Feud inspired game that is a great way to share our own survey results. Set up the game with 3-4 survey questions as a way to warm up the particpants to survey results and data.

✋ After game has finished, lead participants in a final discussion using the following guiding questions:
- o Are the answers what you expected?
- o Is there something in the data that surprised you?
- o How can this data apply to your work?

Summary

🗨 You have glimpsed at a sample of our survey data. Already based on our discussion you see the different reactions one set of numbers can have. In the next workshop we'll work on making more sense of these numbers and ay turning them into statements.

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This workshop will move participants towards thinking about their audiences and translating data into powerful stories. Through a series of interactive discussion and activity, participants will begin reviewing their data and creating data statements. This workshop will require some preparation of compiled data, including data statement worksheets (see Appendix II for template) and data statements with visuals for the Gallery Walk exercise (see Appendix III for example). Participants will begin by practicing turning data into statements. They will then participate in a "gallery walk" in which small groups will rotate and look at each category of data and prioritize the most powerful data using color coded stickers. Lastly, they will try to illustrate the problem pointed out by the data in the form of a skit and start to talk about solutions.

Goals & Objectives
- Explore the data from survey
- Identify key issues the data is presenting (problems/solutions)
- Think strategically about which data to highlight when creating statements

Materials
- ✓ Butcher paper and markers
- ✓ Laptop
- ✓ Speakers
- ✓ Screen (or wall) and projector
- ✓ Key survey responses transferred to a worksheet (4 different sets of data for each group)
- ✓ Enlarged Data w/ Visuals
- ✓ Stickers (2 colors)
- ✓

Agenda
1. Turning Data into Statements   30 min
   a. Instruction (5 min)
   b. Breakouts(15 min)
   c. Report back (10 min)
2. Our Data Gallery Walk   45 min
   a. Instruction (5 min)
   b. Breakouts (30 min)
   c. Report back (10min)
3. Embodied Data   45 min
   a. Instruction (5 min)
   b. Skit Prep (10 min)
   c. Skit Presentation & Discussion 30 min (3 min + 7 min discussion per skit)

Set Up
- ✓ Data Statement Worksheets: Divide data into 4 sets and insert into Appendix II handout (approx. 3 questions per handout).
- ✓ Gallery Walk: Print out enlarged, printed data and visual on walls and tape them up around the room based on category.
- ✓ Place a butcher paper for notes at each station for gallery walk
- ✓ Scribe guiding questions for gallery walk

FACILITATOR INSTRUCTIONS

Turning Data into Statements

🗩 Today we'll explore the data more intimately and identify best ways to tell the most powerful story. We'll also think strategically about which data statements are most useful for our goals. You will now break up into groups and analyze the different survey results.

✋ Pass out survey data and have participants count off by 4 and break out into groups. Ask each group to do the following in their small group:

  o **Discuss:** For each question, look for the response that has the highest number. Is it what you expected? If yes, what does it confirm? If no, what may be reasons it is different from what you expected? Keep in mind outliers and crosstabs. Think about ways that the data does or doesn't reflect your experiences.

  o **Turn the Data Into Statements:** Turn each question into a statement. Think of the most powerful way to express what the data shows.

---Breakouts---

✋ Bring groups back to larger group and ask each group to report back their original questions and the statements they chose to turn the data into. Allow for observers to reflect on which data sticks in their mind and to ask any clarifyin questions when the statements are unclear. Scribe the statements on butcher for documentation.

Summary
💬 Data becomes our stories. We take the numbers and turn them into affirmative statements. But we may want to highlights different parts of the data depending on what we want to show. Data is powerful when it tells a story. We were able to turn data into statements and start to identify what's most important.

Gallery Walk

💬 We are now going to prioritize which data personally speaks to us and serves our organizing goals— in other words—which data tells the most powerful story and will have an impact on our audience.

✋ Divide participants into 3-5 groups, depending on how many categories of data you have. Explain to participants that they will have 5-10 minutes to have small group discussions about the data at each station. Ask each group to assign a note taker to capture people's responses. Explain that participants that they will use red stickers to mark the most powerful and black stickers to mark the least powerful. In each station use the following guiding questions:

  o Is the data pointing out the problem we are trying to reveal? If yes, which ones?

  o Which data reflects what you know the most? Why?

  o Which data isn't as powerful? Why?

💬 After 30 minutes, we'll come back and have a larger group discussion about our assessments.

---- Breakouts---

✋ Bring people back and walk around to each station. Point out where there are the most stickers and ask group why they chose those statements. If there is time, ask the group what were the major problems revealed through the data and if this was the outcome they intended. Wrap up the conversation.

Summary
🗨 When we release our findings we want to bring the most powerful statements. This means we need to always thinking about which data most effectively points reveals the problem. We also have to think about our different audiences and what will speak to them. In the next exercise we'll try to demonstrate how the data speaks to the problem we want to address.

Embodied Data and Developing Solutions

🗨 Now it's time to practice prioritizing and framing data for an audience. Though the data speaks to us, we need to demonstrate how the data illustrates the problem to an outside audience.

✋ Tell participants they will be breaking up into their original small groups and assign a different category of data to each group. The groups will have 10 minutes to develop a 3-minute skit that incorporates the 3 data pieces they identified as most important. Tell participants that after viewing all skits we will have a discussion about the issues they brought up.

<p align="center">**---Breakouts---**</p>

✋ Have each group present their 3-minute skits for the group. After each skit, ask observers to point out what problem was being illustrated and possible solutions to address the problem. After everyone has gone, ask participants how it felt to do the skits.

Summary
🗨 Driving home the problem for our audiences is only half the battle. As organizers, identifying solutions is equally as important. It is a process in which we inspire and engage our community in envisioning a better world as well as motivate decision-makers to take action to address the problem. In the next workshop we'll identify how to move our words into action.

Turning Analysis into Action: Developing a Policy Platform

1 hour, 20 min

This workshop will help participants move from making statements out of the data towards strategic action. Participants will discuss solutions for the problems presented and an organizing agenda based on those solutions, which could include potential policies to work for and/or a potential platform to galvanize community members around.

Goals & Objectives
- Identify possible solutions to issues facing the community
- Prioritize solutions and brainstorm policies that could address the issues
- Develop a platform and agenda for policies we would like to fight for

Materials
- ✓ Butcher pad, easel & markers
- ✓ Dot Stickers

Set Up
- ✓ Bring back solution brainstorm from skits in last workshop
- ✓ Brainstorm examples of policy recommendations to help participants in their brainstorm session

Agenda	
1. Introduction	10 min
a. Review solutions	
b. Define policy	
2. DotMocracy: Prioritizing Solutions	45 min
a. Turning Solutions into Policy (10 min)	
b. Dot Exercise (25 min)	
3. Summary & Next Steps	5 min

FACILITATOR INSTRUCTIONS

Introduction

🗨 In the last workshop we identified possible solutions based on the skits presented. What were some of the solutions we identified?

✋ Take responses from participants and scribe solutions on a butcher paper. If you have scribed notes from workshop 2, bring them and ask participants to note anything that is missing. Summarize the solutions.

🗨 There are different types of solutions for our problems. Sometimes there are things our organizations or communities can do and sometimes there are things that can be institutionalized in our government. Policy solutions are steps we want the government to take to address our problems. Can anyone think of examples of policies?

✋ Take some responses. Examples: increasing minimum wage, increasing taxes for programs, getting right to vote, etc.

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DotMocracy: Prioritizing Solutions

🗨 In our skits we identifies some possible solutions to the problems. Our goal is to turn those solutions into actual policy recommendations.

✋ Go through each solution brainstormed. Ask participants to identify possible action steps the government can do to provide this solution. Limit 2-3 recommendations per solution. Identify any policy recommendations that are missing. Ask for any clarifying questions.

✋ Pass out 3 dot stickers to each participant. Explain that we are going to prioritize the policy recommendations you just came up with. When making their decision, ask them to consider a few variables including: capacity, feasibility, and what would excite community members.

🗨 Based on all these variables, which of these are priority policies that you think your group should work on?

✋ Tell participants to place the 3 stickers on 3 separate policies they would like to see the group work on. Once everyone is done placing the dots, evaluate and point out where most of the energy seems to be.

Summary

🗨 Today we ere able to look at the data and identify the larger issues facing our communities. From there we were able to identify possible solutions to address those issues because we are the experts! Now we are one step closer to change by identifying concrete policies we'll work on.

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This workshop will help participants develop and deepen the data story, identify their target audiences, particularly those who have power to address the identified problems, and craft their messages accordingly. Participants will also get a chance to reflect and connect their own experiences to the data and get comfortable sharing their own experiences.

Goals & Objectives

- Create and reinforce the shared vision of the messages we want to be heard
- Identify key audiences we want to impact and effective approaches to reach them
- Build comfort in talking about the data and data analysis with diverse audiences
- Build comfort in telling our own story in a compelling way, connecting our story to the data and our shared agenda

Agenda

1. Knowing our Audience(s)   40 min

Telling our Stories   40 min
  Story Building Worksheet
  Story Sharing
  Role Play

Materials

- ✓ Butcher paper
- ✓ Tape
- ✓ Markers
- ✓ Pads of paper and Pens
- ✓ Post-its
- ✓ Head, Heart, Hand Handout
- ✓ Story Building

Set Up

- ✓ Draw head, heart hand diagrams (see appendix IV) on butcher
- ✓ Print out Story Building Worksheets (see appendix V)
- ✓

FACILITATOR INSTRUCTIONS

Knowing our Audience(s)

🗩 There are many people who need to hear our stories and many who may be in a position to effect change. We all know the policies that we have identified as strategies for improving or fixing the challenges we all face. Now we're going to identify whom to bring on as allies in our work, whom we should hold responsible for voting on and implementing those policies, and whoever else needs to hear our story. We'll think about what message we want them to hear and what action we want them to take.

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✋ Ask participants to think about their survey results and brainstorm on a large butcher paper, who they would want to see the results and why. After brainstorming audiences, tell the group that now we want to prioritize these audiences. Think about whom, of all these groups, we think we need to reach most. Tell members they can vote for up to three audience members they think are most important to reach. Go through each brainstormed audience in the list and get a show of hands. The audiences with the most votes will be your prioritized audiences.

🗨 We are now going to develop our messages based on our particular audiences. You will be divided into groups. You will be given a diagram with a head, heart, and mind. These represent the different aspects of our audiences. Some of our data may speak to the mind and get our audience to critically think about the issue. Other data may pull on our audience's heartstrings and get them to feel something about it. And some data will compel people to act on the issue. Each of you will go through all your data and proposed solutions. Stop when you find something you want to tell your audience. When you do, write it down on post its and place it by their ears/head, heart or hands. Think about what would speak to your particular audience and what they would care about.

✋ Check for understanding. Participants should look back to all the data that has been presented and the policy solutions that have been brainstormed. Each group should have post its. Give each group a piece of butcher paper with a body drawn on each piece of butcher paper with the name of the audience on the paper too. One piece of butcher paper and body should be used per audience. Demonstrate the activity if needed.

-- Breakouts--

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✋ Have each group report back what data statements or strategies they felt were important for their assigned audience. How would they tell their story? What they want them to do and how they appeal to them? After everyone has reported back, capture any further highlights and summarize.

Summary

🗨 We used the data as a way to impact our audience. We considered how one set of data can be powerful for one audience but maybe not for another. Different data, strategies, and stories can be used differently depending on who your audience is, the type of impact you want it to have on that person, and the impact you want them to have. This is the first step to thinking about how we might approach our different audiences with our message.

Telling Our Stories

🗨 Storytelling is a powerful tool for organizers and movement builders to name problems, unite constituencies, and mobilize people towards solutions. Today we're going to work on building and sharing our own powerful stories framed by our experience and knowledge, backed by our data and research, and with a clear goal for action!

✋ Ask participants what they think makes a powerful story. Write responses on butcher paper. Recap and add any items from below that weren't shared already:

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- It Starts With You – Draw from your own deep experience and knowledge!
- Your Voice – Tell your story using your own words, your own style. Be authentic!
- Frame the Problem and Solutions – What is the problem we're addressing? Who does it impact? What needs to happen to fix this?
- Back it Up! – How did we document the problem? Connect your experience to larger experiences of the community you represent by using examples and data.
- Have a Clear Goal – What do you want this person to do? Support a policy goal? Join the movement? Contribute funds? Change their practices?
- Be Concrete – Be specific!
- Simplicity – Basic is best!
- Flow – Does my story flow well and lead my audience from beginning to end?
- Audience – Know who you are talking to and what will move them to action!
- Practice! – It takes time to get comfortable sharing personal stories. With practice you'll see what works best for you and what has the highest impact on your audience. Practice, practice, practice!

✥ Ask participants to reflect 10 minutes on their own stories for a moment. What problems have they faced that relate to the survey results? Which data statements most powerfully connect to their experiences? What would they like the listener to do? Give each person a copy of the story-building worksheet for notes.

✥ After they have completed their worksheets, ask participants to work in groups of 3-4 people, sharing stories with each other. Keep it really short, no more than 3 minutes each! Each story should include:
- A clear statement of the problem their community faces
- Participant's own experience with the problem
- Data to support participant's story
- What they want the listener to do about the problem

Role Play

✥ Ask 1 of the small groups to decide on a volunteer to tell their story. The volunteer will share for *3 minutes,* targeting her story to a particular audience, which the group will chose The rest of the group will be that audience. They can ask questions, push back, be moved, etc. After each role-play participants will discuss:
- Did the story include all the key elements?
- Did it appeal to head, heart or hands?
- Was this the right approach for the audience?
- Any suggestions for future practice?

Summary
🗨 Our stories are powerful! They can move mountains. Developing and deepening our stories takes work. We need to practice in order to refine our message and adjust it to various audiences. The more we practice, the more we'll be comfortable with going public with our data and pushing for real change

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Appendix I: Glossary of Terms

A **percentage** is a way of expressing a number as a fraction of 100.

A **median** is the middle value in a set of numbers.

A **mean** is the average of the numbers: a calculated "central" value of a set of numbers.

An **outlier** is a number that is abnormally high or low compared to the rest of the data.

A **cross tab** is a process that compares two or more data sets based on different variables.

Data Statements - Worksheet 1

Take each of the following questions and turn them into Data Statements. If you have time, come up with more than one statement to capture the data.

EXAMPLE:

Data	Yes	No
Do you have health insurance?	5%	95%
Since you have been at your current job, have you experienced any of the following health problems?		
Allergies		
Rashes		
Backaches		

Data Statement
39% of workers said that they have provided medication to someone while working as a domestic worker. However, only 20% have received the training to do so.

YOUR TURN:

The Data		

Data Statement

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Data Statements - Worksheet 2

Data	Yes	No
Have you ever provided medication as a domestic worker?	39%	61%
Have you received formal training in the U.S. to provide medication?	22%	78%

Data Statement
39% of workers said that they have provided medication to someone while working as a domestic worker. However, only 20% have received the training to do so.

YOUR TURN:

The Data		

Data Statement

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Data Statements - Worksheet 3

Data	Yes	No
Have you ever provided medication as a domestic worker?	39%	61%
Have you received formal training in the U.S. to provide medication?	22%	78%

Data Statement
39% of workers said that they have provided medication to someone while working as a domestic worker. However, only 20% have received the training to do so.

YOUR TURN:

The Data	Yes	No

Data Statement

Data Statements - Worksheet 4

EXAMPLE:

| Data	Yes	No
Have you ever provided medication as a domestic worker?	39%	61%
Have you received formal training in the U.S. to provide medication?	22%	78%

Data Statement
39% of workers said that they have provided medication to someone while working as a domestic worker. However, only 20% have received the training to do so.

YOUR TURN:

The Data	Yes	No

Data Statement

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Appendix IV: Head, Heart, Hand
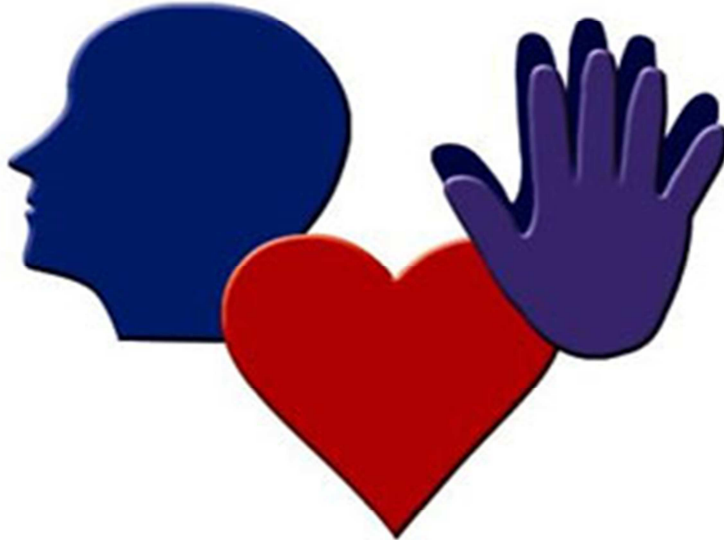
Head (hear/think) – Identify something you want your audience to know about. Perhaps it challenges them, something they should think about. It may be shocking, new, make them think, wow, I didn't know that.

Heart (feel)- Identify data that will pull at your audience' heart strings. It is emotional, may touch or move them.

Hand (do something) – Identify data that you want your audience to act on. So when they are back home or at a decision-making meeting, they are taking this information with them and will do something with it.

Appendix V: Story Building Worksheet

Guiding questions	Brainstorm your story elements here!
1. You. Introduce yourself, what you do, why you're here.	
2. The hook! Set the stage – share your story and experiences.	
2. The problem. State the problem your community is facing and why you think this is happening.	
3. Data. Back this up with facts and statistics.	
4. Solutions. Follow the problem with the solution! What institution or policy needs to change? What help would be required to make change?	
5. What you should do! What action step would you like your audience to take?	

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