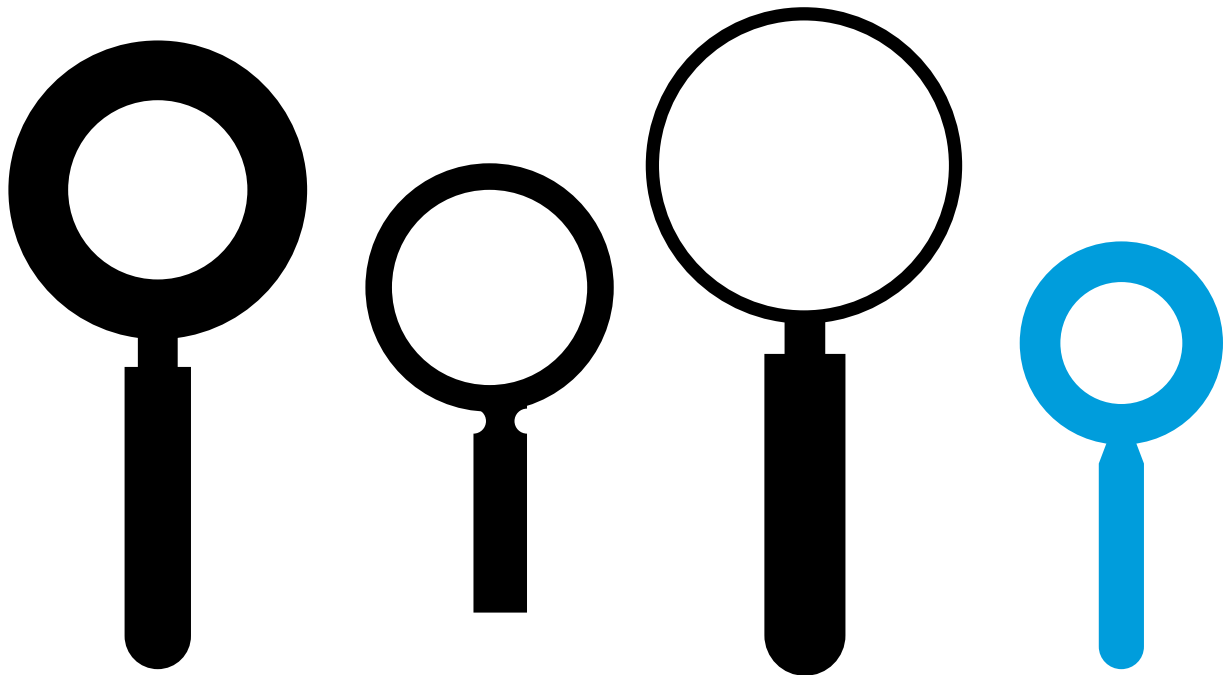


# Community Research



A  
**COMMUNITY  
RESEARCH  
LAB**  
TOOLKIT

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## About Us

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### ADVANCEMENT PROJECT

Advancement Project ([www.advancementprojectca.org](http://www.advancementprojectca.org)) is a public policy change organization rooted in the civil rights movement. We engineer large-scale systems change to remedy inequality, expand opportunity and open paths to upward mobility. Our goal is that members of all communities have the safety, opportunity and health they need to thrive. Advancement Project's Programs include: Educational Equity, Equity in Public Funds, Healthy City, and Urban Peace Institute.

### HEALTHY CITY

Healthy City ([www.healthycity.org](http://www.healthycity.org)) is an information + action resource that unites community voices, rigorous research and innovative technologies to solve the root causes of social inequity. We transform how people access and use information about their communities. As a program of Healthy City, the Community Research Lab partners with community-based organizations to develop, implement, and disseminate data/ mapping projects, tools, and workshops that promote community knowledge and Community Based Participatory Action Research.



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## Acknowledgments

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### ACKNOWLEDGMENTS

This toolkit was made possible through our work with such organizations as Strategic Actions for a Just Economy and the Violence Prevention Coalition. Healthy City, through the Community Research Lab, developed this toolkit with funding from First 5 Los Angeles. This and other toolkits can be accessed through the Healthy City website at [www.healthycity.org/toolbox](http://www.healthycity.org/toolbox).

### CONTENT

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## About the Toolbox

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Healthy City supports communities in identifying, organizing, and sharing its collective voice with decision makers at the local and state levels. Through the Community Research Lab, we share best practices and methods for Community-Based Organizations (CBOs) interested in supporting their strategies with research that combines community knowledge with Healthy City technology. Toward this aim, we have developed the Community Research Lab Toolbox. The toolbox is based on best practices from our work with CBOs and a unique approach to the Community Based Participatory Action Research (CBPAR) framework, which promotes research that:

1. **Starts with issues and strategies then produces analysis that informs action**
2. **Uses mapping technology to engage organizations in the research process**
3. **Is both community-based and place-based, often focusing on a geographic place such as a neighborhood**

The toolbox presents research concepts, methods, and tools through topical guides and toolkits such as Community Research, Participatory Asset Mapping, and a Short Guide to CBPAR (all of which can be accessed at [www.healthycity.org/toolbox](http://www.healthycity.org/toolbox)).

### Who will benefit from this toolbox?

This toolbox's CBPAR framework explicitly focuses on community-based organizations that bring together community members to visualize and actualize research and its outcomes. This includes non-profit organizations that operate in specific, local communities and are staffed by, work with, represent, assist, and/or advocate on behalf of residents of those communities on issues that affect their quality of life. These organizations have worked to gain trust among community members and have brought together a spectrum of people with varying ideas and perspectives that unite around a particular set of concerns relevant to a large portion of the community. Though it may have utility for other groups, this guide supports these organizations whose work directly engages community members in creating change.

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## About this Toolkit

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### How can this toolkit be used?

- + **As an instructional toolkit to understand and implement community research**, including how to create research questions and conceptualize, gather, and use data, with tips for analysis, visualization, and methods.
- + **As a workbook for workshops on community research**, particularly on combining traditional research methods with community knowledge to best fit the needs of CBOs using this research.
- + **As a resource and information guide for conducting research within the CBPAR framework**, recognizing that the knowledge and expertise that CBOs and community members have are key to developing an impactful community research project.

### What will you find in this toolkit?

- + **Key research concepts and methods**
- + **Additional Tools You Can Use, with in-depth guides for applying the concepts and methods**
- + **Glossary terms in BOLD**
- + **Notes like the one below to write down any thoughts or ideas you have as you read**

#### HOW CAN THIS TOOLKIT BE USEFUL IN YOUR SPECIFIC WORK OR PROJECTS?

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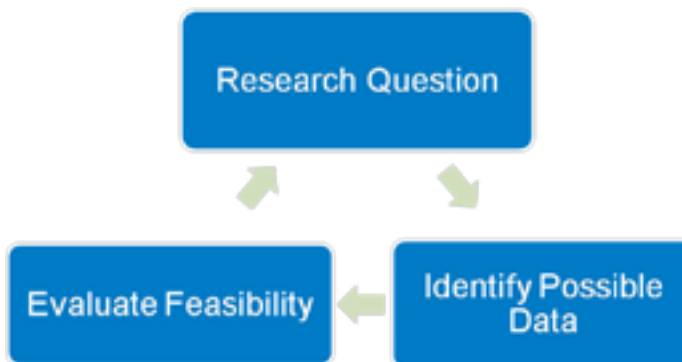
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# Research Basics

Community Research combines community-based research with traditional research methodology to help Community-Based Organizations (CBOs) advocate for a cause or support community action. It recognizes the value and legitimacy of community members' knowledge and emphasizes how that knowledge can be used with traditional research methods, data, and analysis to present a clear and reliable community story or case. This Research Basics section, along with Introduction to Data, Primary Data Collection, Data Analysis, and Data Presentation highlights various community research methods, as well as data collection, and analysis concepts, drawing particular attention to mapping. Step-by-step instructions for several of these methods, as well as resources for those not explained in this toolkit can be found in the Additional Tools You Can Use section; words typed in bold in each section are defined in the Glossary.

## How should you begin your research?

The diagram below highlights steps to beginning your research:



1. **Create a RESEARCH QUESTION**
2. **CONCEPTUALIZE the Research Question & Identify Data**
3. **Evaluate FEASIBILITY**

## Research Question

### What is a research question?

*A question you create to find an answer you are looking for or to test your assumptions or theory about an issue*

A research question:

- + Helps you find out what you don't already know or test your assumptions.
- + Helps to focus how and why you collect data.
- + Defines the investigation, sets boundaries, and provides direction.

To create several solid research questions that will help start your research, think about and write down your particular issue or project. The more details you can provide about your issue, the better the research questions you create. Use this description of your issue to answer any or all of the following probing questions, phrasing your answers to the questions as questions:

- + What is the issue/project that you're working on?
- + Can you rephrase your issue as a question?
- + What other questions can be created from this initial question?
- + Is there anything about this issue that you do not know about and would like to find out?

+ Is there anything about this issue that you think you know but need to confirm with more information?

Let's try an example:

**EXAMPLE**

*My organization works on various community health issues in a neighborhood in Los Angeles. One project that I am working on is the access and availability of healthy food options in our community. Many of the community residents that we work with would like more quality grocery stores in their communities. They feel that there are not enough. The stores that are there are poor quality; residents often travel outside of the community for better quality and specialty items that are just not available in our community. There are also a lot of fast food restaurants and our parents are particularly concerned about the number of these types of places around the schools their children attend. Right now, we are focusing on finding ways to advocate for better, quality food at the existing stores and work to advocate around more healthy options.*

+ Can you rephrase your issue as a question?

- *What are the community health issues in my neighborhood?*
- *How can we increase access to and availability of healthy food options in our community?*

+ What other questions can be created from these initial questions?

- *What is community health?*
- *What is the exact community that I am focusing on? Is it particular neighborhoods and if so, which neighborhoods?*
- *What defines a community as "healthy"?*
- *Where do people go for healthy food in the community? Which restaurants? Which grocery stores?*
- *Are there particular grocery stores or other food outlets that residents avoid? If so, why?*

+ Is there anything about this issue that you do not know about and would like to find out?

- *We would like to know if there are places in the community that do offer healthy food options. If so, we need to know which ones they are.*

**Remember answer the probing questions with questions. Can you restate the statement above as a question?**

- *Which places in the community offer healthy food options? Where are they located?*

+ Is there anything about this issue that you think you know but need to confirm with more information?

- *We know that there are a lot of fast food restaurants around schools but we do not know exactly how many and around which schools.*
- *Are there some schools in our neighborhood that actually have more fast food restaurants near them than others?*
- *How many fast food restaurants are there in total in our neighborhood?*

Once you have decided on a research question, you can turn to the **conceptualization** process to decide which data is most appropriate to answer your research question.

**WHAT RESEARCH QUESTION(S) ARE YOU LOOKING TO ANSWER OR CONFIRM ABOUT AN ISSUE THAT YOU ARE WORKING ON?**

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# Conceptualization

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The conceptualization process plays a key part in determining the measurements to include in your research and the data your research will use. **Conceptualization** is the process where we select **indicators** that properly reflect our research question and/or topic. Going through a solid conceptualization process ensures that your research is using the right type of data. Although it may seem cumbersome at first, it is an essential step, one that we often do without even knowing it!

In social science research, conceptualization consists of four steps:

1. Developing a research question, often based on a topic of interest or community issue.
2. Developing a **conceptual/working definition**, which is a general idea, a translation of your research question into a more data focused idea. For example, your research question could be about health, but your working definition of health may focus on diabetes, smoking, and/or obesity.
3. Developing an **operational definition**, which moves you from the general to the specific, allows you to focus on looking for a concept that directly represents your general idea. For example, your question may be about health, your general concept may be smoking, and your operational definition could more specifically focus on lung cancer death rates or self-reported smoking habits.
4. Choosing measurements, or data your research will use, often determined based on availability.

There are many issues that may influence your conceptualization process, and it is important to note all of them. By recording your entire conceptualization process, you clearly explain to other researchers how you arrived at your final measurements. You may encounter other researchers or analysts who may disagree with your conceptualization outcomes, but as long as you have all of your specific steps defined and identified, you can easily back up the decisions you made. To help you determine which data you need, try answering these questions:<sup>1</sup>

- + What do I need the data to do?

- + What message does the data have to deliver?

- + Who are the audiences for the data and what data does each audience need?

Let's try an example:

## EXAMPLE

**RESEARCH QUESTION:** How safe is the area around school?

This question shows that conceptualization can be a very fluid process but that some data issues may challenge it:



Above, we encounter the problem of not being able to access crime data at a **geography** that is sufficient for our research purposes (see further discussion about *Geographies* in the Introduction to Data section). Therefore, using this data may not be feasible for your research. The Feasibility section briefly talks about this issue and how to proceed in the above example.

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## Feasibility

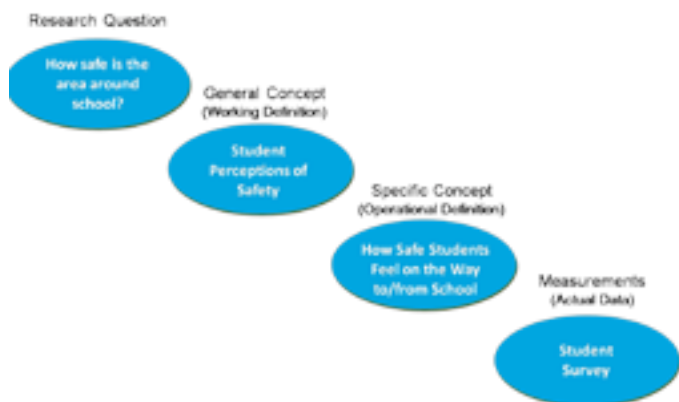
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Evaluating feasibility reveals whether or not the research is doable and how you will do it, including: time, data availability/access, and cost. This informs the scope and depth of your research. Consider: How much time and staff capacity do you have available to complete the research, including data collection, analysis and presentation? The conceptualization process described above is flexible and allows you to change your research question based on your feasibility evaluation.

Here we can rely on previous research and find that, in addition to looking at levels of crime, studying perception of safety may be a better measure of how safety impacts students. Our revised process would look like this:

We may come to find out that by doing a student survey we may also be able to collect other information that may help us analyze their total well-being. See the Primary Data Collection section for information about surveys and other similar methods.

Next, you can begin conducting different types of research to answer your research question, which is described in the section that follows.



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## Types of Research

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You may want to use **quantitative research** when you want to know “how many?,” “how much?” or “what (if any) relationship is there between two **characteristics?**” Quantitative research entails gathering information that can be measured with numbers. For example, population size, number of non-profits in a community, percent of renters, etc. Researchers use this method to present raw data and conduct statistical analysis. Often quantitative methods provide researchers with “Representative sample sizes [which] ensure that findings are generalizable among a wider population.”<sup>ii</sup>

You may want to use **qualitative research** when you want to know “why?” or “what are the key issues?” Qualitative research involves gathering descriptive information that cannot be measured. For example, anecdotes and stories of a community member’s perception, feeling, or opinion of crime or safety is **qualitative data**. Researchers often use qualitative research to support or compare to quantitative research. In addition, gathering qualitative data first can help researchers develop quantitative research questions. Qualitative methods explain process and tell us about the social and political relationships at work. They also inform us about formal and informal practice because policies may be implemented differently in various locations or at different times.<sup>iii</sup>

The best research often includes both methods as they are complementary. While quantitative research may provide generalizable findings, qualitative methods are better able to identify the underlying explanations for these findings. Qualitative methods also inform research design, identify social and institutional drivers and impacts that are hard to quantify, uncover unanticipated issues, and trace **causal pathways**. In using both methods, it is important to remember the feasibility and availability of resources to conduct both types of research; frequently, only one type of research is completed due to time and resource constraints. When used together, quantitative and qualitative approaches provide more coherent, reliable, and useful conclusions than do each on their own and are ideal for research that draws upon the CBPAR framework.

## EXAMPLE

Let's try an example that explores all of these steps of beginning your research:

*Your organization is doing work around student well-being in the Los Angeles Unified School District (LAUSD), focusing on student academic performance and physical fitness. How can you begin your research process?*

### + Create research questions:

- Is academic performance related to physical fitness in LAUSD? Do healthier students do better in school than less healthy students?

### + Conceptualize your question & identify data:

- Is academic performance related to physical fitness for LAUSD students? → Gather LAUSD student achievement and health data.
- Data on health status → Physical fitness test results across LAUSD.
- Data on academic achievement → Academic Performance Index (API) scores across LAUSD

- Combination → API scores in schools with high percentage of students not testing within the healthy limits of physical fitness tests, API scores in schools with low percentage of students not testing within the healthy limits of physical fitness tests. Consider comparing between select schools and district or county values.

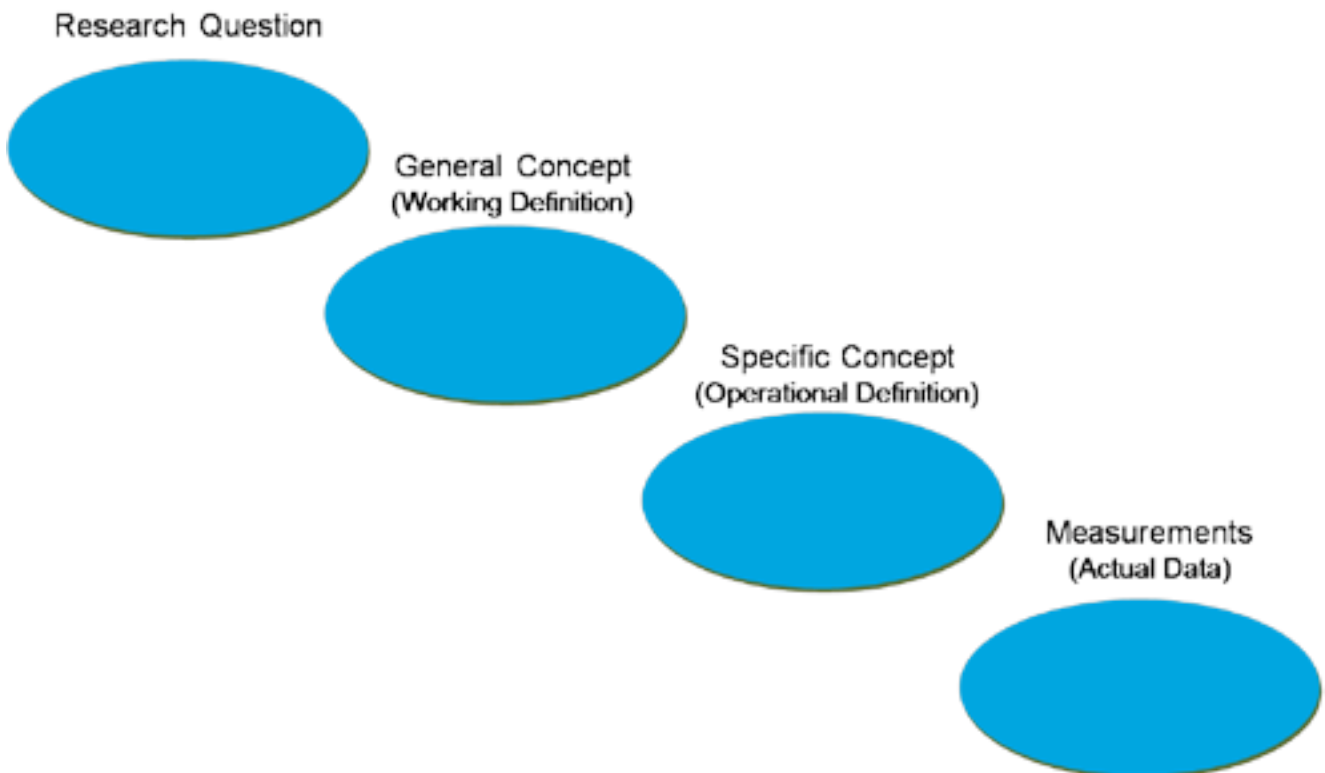
### + Evaluate Feasibility:

- What sources of API scores and health/fitness **indicators** are available to you? At what cost? In what format is it available?
- What resources or software do you have to handle the data, i.e.: Excel, STATA, SPSS?

### + Type of Research:

- From the steps that you have followed above, the type of research that suits your research questions and goal is quantitative research.

## CAN YOU USE THIS PROCESS TO IDENTIFY DATA FOR YOUR RESEARCH QUESTION?



# Introduction to Data

**Data** consist of measurements of any characteristic of interest. Basically, anything about everything around you! We encounter data everyday, such as the age of your co-workers or the number of schools in your neighborhood. Think about all the data you find or use on a regular basis.

As you do research, you will also see data presented as **statistics**. Different types of data produce different types of statistics. The difference between data and statistics is:

- + **data are raw numbers, such as the number of people or children ages 0-5 in your community**
- + **statistics are numerical summaries of data, such as the median household income or the percent of overweight teens in a local high school**

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## Types of Data

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While conducting a comprehensive research project, different types of data are often used together to convey a greater richness of meaning than using only one type of data. These different types often complement each other and provide a wider depth of understanding of a certain issue. Most common types of data are outlined here -- keep in mind that data may fall into more than one category, as you will see below.

### **Primary vs. Secondary Data**

**Primary Data**—Information that you collect. Examples of primary data include information collected from surveys, interviews, or focus groups. For more information on collecting primary data, see the Primary Data Collection section of this toolkit.

## **Benefits of Using Data**

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### **Using data can help you:**

- + **Understand problem in detail**—you may want to gain a further understanding of an issue in your neighborhood by looking at raw data and community statistics that may help you compare your area to others.
- + **Plan for service areas or communities**—in determining which area of a community your organization should focus its efforts, you may want to gather data to inform your decision
- + **Support advocacy**— use data to advocate data-driven decision making with decision makers in your area when addressing issues important to you and your organization.

**Secondary Data**—Information that another entity collects and others can use, such as the U.S. Census Bureau, Department of Health, or another researcher.

### **Examples of secondary data:**

- + **Demographic/Housing Data from:** [U.S. Census](#), [American Community Survey](#), Economic Surveys, Population Estimates
- + **Birth, Death, & Health Data from:** State/federal agencies, such as the [California Department of Public Health](#) or [California Health Interview Survey](#) and county agencies such as the [Los Angeles County Dept. of Public Health](#).
- + **School/Student Data from:** State/federal agencies, such as the [California Department of Education's databases](#) and local agencies, such as [Los Angeles Unified School District's "School Profiles."](#)

Our free online mapping website, [WWW.HEALTHYCITY.ORG](http://WWW.HEALTHYCITY.ORG), can serve as a one-stop-shop for secondary data specific to California. A significant portion of the data that is displayed on the site comes from free and public sources. For a full list, refer to our exhaustive [ONLINE DATA DIRECTORY](#).

### Quantitative vs. Qualitative Data

**Quantitative Data**—Data that can be expressed numerically, usually subject to statistical analysis. In general, quantitative data “measures.” Data such as the number of people in poverty in Los Angeles County or the percent of people without insurance in your community (most of the data that is displayed on [www.healthycity.org](http://www.healthycity.org) falls into this category).

Types of Quantitative Data		
Types of measures	Description	Example
Nominal or category	List of values, with no inherent order	male, female or district A, district B
Ordinal	List of values, ranked in an order	1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup>
Interval	List of values, ranked in an order with equally spaced data points	1, 10, 6 (on a scale from 1-10) or disagree, agree, strongly agree

**Qualitative Data**—Data that consist of non-numerical observations, primarily focus on describing attributes, properties or some other kind of meaning. In general, qualitative data “describes.” For example, an interview of community residents’ attitudes on police presence in their neighborhood or notes from participant observation of gang dynamics.

Types of Qualitative Data	
Types of measures	Description
Interviews or focus groups	in-depth and unstructured/semi-structured
Personal documents	letters, personal diaries, correspondence
Fieldwork	observation field notes, technical fieldwork notes
Other	minutes of meetings, case study notes, photographs, press clippings, and more

It is important to distinguish between quantitative or qualitative data and quantitative or qualitative research. The research method concerns the analysis conducted using the data. The data, whether qualitative or quantitative, can be analyzed using either method. Take for example notes from an interview. You could count the number of times certain words were said by each interviewee. Using that information, you could then calculate the mean number of times each word was said to find which words were most widely used.

## Geographies

When doing research about a specific community or **place**, it is useful to think about your community based on the geographies that the majority of the data will be available for or apply to. Although your community or place may be identified by specific street **boundaries**, **geographies** are **spatial** (non-physical) boundaries, such as census tracts or ZIP codes. **Administrative data**, or data collected by persons, organizations or departments of government for their own purposes but often made available for public use, is usually collected for these geographies. To use this type of data in your research, particularly for making comparisons over time using multiple years of data, you will need to determine which geographies represent your community or place.

For instance, **demographic data** collected by the U.S. Census Bureau is generally provided for geographies such as **census block groups, tracts, ZIP codes**, etc. Therefore, to use this data, you will need to know which census block group(s), tract(s), or ZIP code(s) make-up your community. You should consider collecting primary data by the same geographies (which you may have to approximate) so that your primary data relates easily to your secondary data. This will also allow you to compare secondary and primary data to track changes over time, using multiple years of data, according to the same geographies.

### WHAT TYPES OF DATA WOULD BE MOST USEFUL TO YOUR ISSUE/RESEARCH QUESTION?

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# Primary Data Collection

Collecting data may seem like a daunting task, but with the right tools data collection can turn from an overwhelming assignment into an engaging activity in no time! More than likely, you have already collected data. Think about surveys you have done with community members, records of financial contributions to your organization or how many people your organization serves.

**Primary data**, or data that you collect first hand from interviews or observations, is particularly useful and necessary in **place-based**, community research because it provides neighborhood knowledge and expertise to support the work being done in a particular place. To affect change on a neighborhood level, the data and solutions should come from the members of the neighborhood or place. Some methods for primary data collection include focus groups, community-engaged mapping, interviews, participant observation, and surveys, which are discussed in this section. You may choose one or all of these data collection methods in your research depending on the needs of the community, your research and advocacy goals, and the audience for your findings.

## Ethics

**Research Ethics** are the principles and rules that guide how people should be treated, when they are participants in a research process or project. When gathering primary data for community research, it is important to remember these ethics, which include setting privacy guidelines and being clear about the purpose of the data and how it will be shared. It is important that you have diversity of input from different members of the community so that the information is representative of as many people as possible and individual concerns or solutions are not falsely generalized. Keep in mind the importance of ensuring that community members are treated and engaged as research partners, collaborators, and participants.<sup>iv</sup> You can refer to Appendix E: Ethics in Community Based Participatory Action Research for further description of research ethics.



## Focus Groups

**Focus Groups** involve interviewing participants in a group generally composed of no more than 10 people who are selected because they share certain characteristics relevant to the purpose of the research.<sup>v</sup> For example, if your research question focuses on teen attitudes on crime presence in and around schools, your focus group may include high school and middle school students from several different schools in your community. Often questions asked in a focus group setting are simple and promote participants' expression of their views through the creation of a supportive environment.<sup>vi</sup> Some advantages of a focus group include: creating a natural relaxed environment which may spur open engagement, an opportunity to focus on details, and participants do not have to read or write their responses. But, this data collection method is not without its disadvantages. Focus groups can pick up on power dynamics, they require significant staff time, including providing a highly skilled facilitator for each group, and there is less control of the interview than in a one-on-one setting.<sup>vii</sup>

## Community-Engaged Mapping

**Community-Engaged Mapping** is a group mapping exercise designed to answer specific research questions and gather neighborhood-level primary data from community members (who live, work or attend school in the area).<sup>viii</sup> It is basically a focus group around a map of a particular geographic area (such as a neighborhood) about community strengths and issues as they relate to place, location, and the environmental and physical design of communities. It serves as a place-based data collection method that can precipitate place-based intervention and neighborhood-level strategies.

Community-Engaged maps may display information about specific community issues and resources, such as concerns about crime, health patterns, or community resource strengths. For example, organizations can use Community-Engaged Mapping to collect information about **community assets**. The exercise can help participants identify different categories of places that they frequent, the quality and accessibility of these places, and whether or not they consider these places assets to the community. For more information on using Community-Engaged Mapping to collect data on assets, see the Participatory Asset Mapping toolkit.<sup>ix</sup>

## Interviews

This data collection method involves the use of open-ended questions aimed at obtaining information specific to research needs in a one-on-one setting between a researcher and a participant. Interviews involve two distinct but complementary processes: developing a rapport with those you are interviewing and attaining meaningful information.<sup>x</sup> Establishing a rapport refers to developing a harmonious relationship between the researcher and the participant, thus building trust and allowing for the free flow of information. The most important aspect of the interviewer's approach is recognizing that the participant's views are valuable and useful.<sup>xi</sup> The researcher may use different types of open-ended questions to gather the data, including: descriptive questions, which aim to encourage the respondent to talk about a particular cultural scene/phenomenon; example questions, which can be woven into any interview, asks for specifics on a certain single act or event; and experience questions, which ask the participant for any experiences they have had in some particular setting and tend to elicit atypical events instead of routine happenings.<sup>xii</sup>

Using interviewing as a data collection method allows for rich data to be collected relatively quickly, detailed follow-up questions, and does not force the participant to read or write anything. However, interviews also have limitations, such as requiring staff time from skilled interviewers for each interview. In addition, interviews gather subjective view on issues, hence when used as a singular data collection technique interviews may not present the researcher with a fully objective view of an issue.<sup>xiii</sup>

## Participant Observation

This data collection method is basic to all qualitative studies and places the responsibility on the role of the researcher as a participant observer. Participant observation is most appropriate when little is known about the issue; when there are important differences between the views of insiders and outsiders (example, labor unions, etc.); when the issue is obscured from the view of outsiders (example, family life); or when the issue is hidden from public view (example, criminal life).<sup>xiv</sup> Participant observation is not necessarily appropriate for all types of research. For example, when one wants to draw clear causal relationships among a set of variables, surveys and experiments may be a better approach. This method is most appropriate when:

- + the research is focused on doing an in-depth case study approach and design;
- + the research problem is concerned with human meanings and interactions viewed from an insider's perspective;
- + the researcher has access to this setting;
- + a certain event is sufficiently limited in size and location to be studied as a case and questions are appropriate for case study

This methodology aims to generate practical and theoretical truths about from and about daily life.<sup>xv</sup>

## Surveys

This data collection method can range from the traditional written survey to using an electronic survey system. Survey design is key to an effective survey. Survey design should always be optimized for your audience and should focus on the defined purpose of your research.<sup>xvi</sup> Surveys are best to use when you are gathering brief written responses on a range of topics that the participants are familiar with. There are many benefits to using surveys as a data collection method. Surveys can be widely distributed to a large number of participants at a relatively low cost (depending on distribution type), they can include questions that are both quantitative and qualitative in nature, and results from surveys can be used for quantitative statistical analysis. Although surveys come with many benefits, there are also limitations to using this data collection method. Surveys are only useful when properly constructed, and sometimes that may require input from an expert in your field of research as well as one that is experienced in using surveys as a data collection tool. Also, since you are relying on the participant's willingness, ability, and time commitment to complete the survey, this may sometimes result in a low response rate. Refer to Appendix D for links to survey examples and additional resources on survey design.

To get the most **reliable** and **valid** data, it is important to avoid bias in the data collection process regardless of the type of tool you use. When a response (to a survey or interview question) is affected by factors other than the concept that the question is designed to measure, then the response is biased, and therefore provides inaccurate information.<sup>xvii</sup> A biased question includes wording that leads the respondent to a particular conclusion, such as the following question: "Given the failure of school lunch programs in public schools, do you feel these programs should be eliminated?" This question will most certainly result in agreement. After all, who would want to keep a program that has already failed? By leading the question with the phrase "Given the failure of..." you will influence results. An improved way to phrase the question would be "Do you feel school lunch programs should be eliminated?"<sup>xviii</sup> In addition to bias within the data collection instruments, researchers also have to look out for bias when using qualitative research methods, such as interviews or focus groups to make sure that their personal bias does not affect the way they interpret participant responses. Once you have all the data, your next step will be to analyze it, which the following section discusses.

**WHICH OF THE DATA COLLECTION METHODS WOULD BE USEFUL TO YOUR PROJECT?**

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# Data Analysis

You created a research question, conceptualized it, and perhaps gathered secondary and/or primary data. At this point you may have some quantitative data which just looks like a bunch of numbers. Or you may have gathered qualitative data from interviews, for example, which looks like a pile of notes to sift through. Now what?



You may have already noticed some patterns during data collection. In this next step of the research process you will build upon this understanding and hopefully find some answers to your research questions. Researchers can choose from many types of analysis to assist them in their efforts. Choosing one may depend on the type of data collected, software/technology availability, researcher's knowledge and the desired final product of the project. Using the CBPAR framework to community research may mean that members of your collaborative will come to the table with varying knowledge about data analysis. At this stage, it is suggested to take the time to discuss how to analyze data and interpret the results. It is important to bring everyone up to speed on analysis so that they can fully contribute to this stage of the project. The Center for Excellence in Assisted Living (CEAL) and the University of North Carolina (UNC)'s *A Manual for Community-Based Participatory Research* provides more in-depth information about this group learning process.<sup>xix</sup>

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## How to Analyze Qualitative Data

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To recap, qualitative data consists of non-numerical observations and primarily focuses on describing attributes, properties or some other kind of meaning. You can highlight the common themes (for example, specific issues, concerns, occurrences, behaviors) from your notes. Specific stories, events, examples, experiences, and observations provided by community members should also be noted, especially as they relate to common themes. Other issues that arise, that were outside the scope of the activity, should also be noted.

### *Qualitative Analysis: Looking for themes in the data.<sup>xx</sup>*

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1. **Read the data and note any common ideas or themes.**
2. **Create categories or major topic areas and reorganize the data into these categories.**
3. **List emerging themes after reading again, to identify sub-categories for categories from step 2.**
4. **Rank each theme in order by how frequently they appear.**
5. **Summarize the themes that emerge.**
6. **Determine your findings by highlighting key patterns or results.**

Your analysis should look to establish context, find patterns, identify explanations and look for new topics you had not thought of before. The basic steps of analysis involve taking down notes of key ideas, then **coding**,

sorting and writing. Researchers code qualitative data to identify key topics, which means they categorize information gathered under overarching themes. For qualitative data, you may also want to check for spelling errors as this could hinder the coding process (if you are using coding software, see Appendix D for more information). The identified themes and range of responses will inform and enrich your analysis whether or not they are coupled with quantitative research. Small sample sizes and results that are not usually generalizable are two main limitations of qualitative data. The strengths of qualitative research include depth and detail along with an openness to uncovering new topic areas. We will discuss two examples below, one for visual data and one for written data.

+ Remember: qualitative analysis is cyclical - the more you review and reflect upon the data, the more new observations you can make.

### Sample Analysis Questions for Photos<sup>xxii</sup>

- + Where was this photograph taken? Which city or neighborhood? In a home or public place?
- + When was this photograph taken? Year? Time of day? Close to a holiday or other notable date?
- + What is this picture capturing? What is the subject, a person, building, animal...?
- + Are there people in the frame? If so, what are they doing?
- + Are there similarities between the photographs or a theme(s) running through the set of photographs?

### Sample Analysis Process for Surveys, Interviews or Observations<sup>xxiii</sup>

1. Transcription of notes - This is usually the first action after you have collected your data from questionnaires, interviews, or observations.
2. Initial processing - This is usually done once you transcribed your notes, it usually involved reading and re-reading your notes looking for categories and themes.
3. Return to observe or ask further questions - This is usually done after you have done some initial processing, and can be done at any time during your study.

4. Summary sheets for each response - This is usually done after you have transcribed your notes, summaries can then be used as a memory jogger when you are looking for categories and themes, or if you need to return to observe or ask further questions.

5. Identify categories relating to patterns or themes identified - This is usually done after you have identified the core categories of your study, which are found in your transcribed notes.

6. Coding - This is usually done after you have identified categories relating to the patterns or themes identified.

7. Discussion - This usually takes place after you have done some analysis of your data, when you have found out if any interesting patterns or themes have emerged.

8. Conclusions - This sums up the analysis you have done of your data and any interesting discussions.

9. Recommendations - This tends to come at the end of your study; they may include specific recommendations relating to the findings or may suggest where extra data collection and analysis activities are required.

As organizing and coding this type of data is very labor intensive, computer programs have been developed to assist researchers. While this software, such as Atlas.ti can be expensive, the University of Pittsburgh has developed a free site called the Coding Analysis Toolkit (refer to Appendix D for more about coding software). Keep in mind however that you will still need to do the analysis as no program can do your thinking for you! For further guidance, "Our Common Ground: Cultivating Women's Health through Community Based Research" (see Appendix D) provides an excellent guide to the qualitative data gathering and analysis process. Coded data can also be analyzed using quantitative analysis methods by converting each theme into a numeric value. The result will be a **nominal dataset** with which you can perform statistical analysis.

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## How to Analyze Quantitative Data

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As discussed earlier, quantitative data consists of information that can be expressed numerically. Quantitative data allows for greater objectivity and accuracy of results. At the same time results may be limited and lacking in explanatory power. You can analyze this data in two ways: using **descriptive statistics** and using **inferential statistics**. Descriptive statistics give us an overview of our findings and include the **mean**, the **mode** and the **median**. These numbers are also referred to as **Measures of Central Tendency**. Inferential statistics attempt to draw relationships between variables and make generalizations to the larger population. In this toolkit, we will focus on using descriptive statistics. For more information on both types of statistics, please see Appendix A.

The basic steps of quantitative analysis include:

- + **Cleaning and organizing your data**
- + **Interpreting data and drawing conclusions**
- + **Writing your analysis and making visual displays of data, such as charts/graphs/maps**

### **Cleaning and Organizing Your Data**

Data, especially secondary data, may come in a format that is not ideal for your analysis. You will probably need to work with data in a program, such as Excel, in order to clean it up and organize it. This can be a quick and easy process or a more complicated process depending on the original form of the data.

Here are a few things to keep in mind:

- + **Keep a back up copy of original data separate from the data you will work on.**
- + **Be sure to record **metadata**, i.e.: original source, date when data was collected/released, definitions of variables, etc.**
- + **Check dataset for missing data, some datasets will leave those entries blank while others will use special code such as “99” for those entries.**

You will need to determine what applies to your dataset so that you don't include those entries in your analysis, i.e.: if you are calculating the mean that “99” would make your calculations incorrect.

- + **Look for any **outliers** or entries that otherwise do not seem logical/possible. Suppose you are looking at a population age dataset and you see an entry indicating someone's age as 250 years old. Since no one in recorded history has ever lived to the age of 250, we would consider this to be an error. It is tempting to think that the intended value is 25 years old. However, we cannot verify that so you should not attempt to make corrections to the dataset. Instead you may want to consider removing that entry from your dataset (and making a note of it) so that it does not **skew** your analysis.**

### **Interpreting Data and Making Conclusions**

During this stage of analysis, you will draw conclusions for your audience based on your goals and the supporting data. You can use descriptive statistics to paint a picture of your entire dataset which may reflect your community, a particular population group, etc. You can use inferential statistics to point out significant differences between groups and to find significant relationships between variables.

Researchers usually begin by calculating descriptive statistics using the data collected. This descriptive statistical analysis can then be used to describe the characteristics of groups, geographic areas and more.

Commonly used descriptive statistics:

- + **Frequency Counts: number of times a value appears in the dataset**
- + **Range: highest and lowest values in the dataset**
- + **Mean: the total sum of all the values in a dataset, divided by the total number of data points**
- + **Mode: the most commonly occurring number in the dataset**
- + **Median: the middle value of a dataset**

For more information on how to identify and calculate these statistics, see Appendix A. The Children’s Defense Fund also offers a helpful resource for quick calculations with quantitative data called “A Brief Guide to Arithmetic for Advocacy” (see Appendix D) .

## **Key Point**

- + Be careful not to draw false conclusions. For example, let’s say thirty percent (30%) of residents in ZIP Code “x” have less than a 9th grade education and 40% of residents do not have a high school diploma. The 30% with less than a 9th grade education is included in the 40% without a high school diploma. It is NOT true that 70% of residents do not have a high school diploma.

The second type of analysis involves inferential statistics which requires a more advanced understanding of statistics. For that reason, this toolkit focuses primarily on descriptive statistics. However, you can refer to Appendices A and D if you are interested in learning more about inferential statistical analysis. Researchers frequently use specialized software for this more complex analysis such as SAS, STATA or SPSS. However, programs such as Excel can also calculate basic inferential statistics. More about statistical software and tips on writing with numbers can be found in Appendices D and A, respectively.

# Data Presentation

## Visualizations

Using visuals to present your research findings can prove to be a quick and powerful tool to reach a variety of audiences. Be sure to frame your information and make conclusions about data based on your research goal and create visuals that support your data conclusions. The [HealthyCity.org](http://HealthyCity.org) website offers free mapping and charting tools to visualize information. With a free user account, you can upload your own datasets to create maps and charts of your information, along with any other public data available on the website. Other websites, such as [Google's "My Maps"](http://Google.com) feature, [Many Eyes](http://ManyEyes.com) and [Tableau Public](http://TableauPublic.com), can also help you create powerful presentation tools to support your work.

The following examples were created using [HealthyCity.org](http://HealthyCity.org). You can also use programs such as Excel, PowerPoint or Adobe Illustrator to create your own charts.

## Line Graphs

Line graphs are useful for showing changes over time. Ex.: Change in Births by Mother's Age.

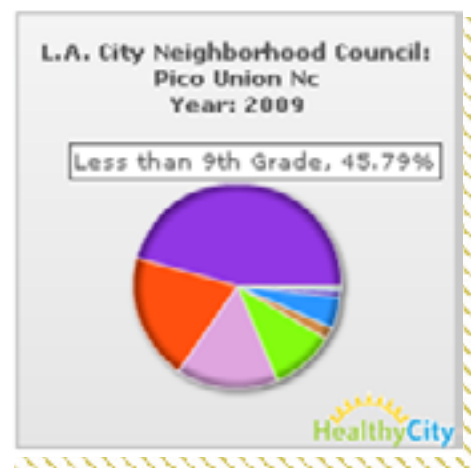


## Pie Charts

Pie charts are useful for showing significant differences in percentages as parts of a whole. Ex.: Breakdown of educational attainment for adult population in Pico Union.

\*Remember—values need to add up to 100%

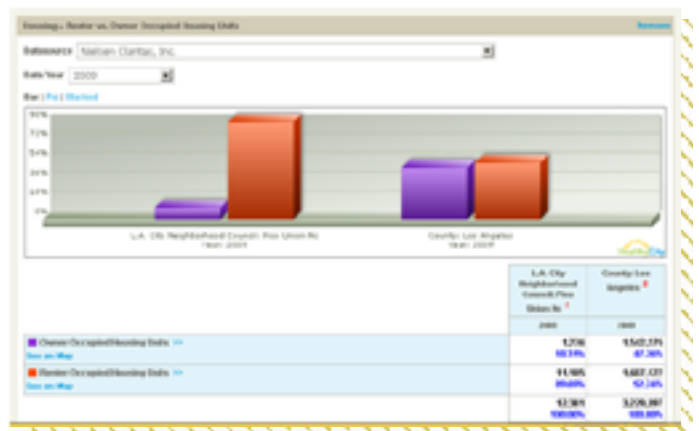
Ex.: Educational Attainment: Less than 9th Grade in the Pico Union Neighborhood Council area of Los Angeles.



## Bar Graphs

Bar graphs are useful for comparing data between different groups or showing changes over time.

Ex.: Comparing renters in Pico Union to L.A. County.



## Maps

As a visualization that displays data by geography, maps can serve as a powerful tool in place-based research and data. It can help communities explore how environmental and community risk factors that contribute to community issues may be associated with geographies and locations.

Maps are beneficial to community work because they:

- + Can create a picture that supplements other quantitative data such as charts, tables, and basic statistics, as well as qualitative data such as information gleaned from focus groups.
- + Help reveal larger place-based dynamics (that numbers themselves cannot), allowing spatial patterns to be clearly seen
- + Display whether or not specific demographics are evenly distributed across a geographic area or are concentrated in one or more specific areas.
- + Provide an instant visual; neighborhood population patterns and occurrences are easily and clearly seen when displayed visually.
- + Can connect on-the-ground data collected through focus groups and interviews to location. Often, data displayed via maps help to confirm qualitative data and vice-versa.

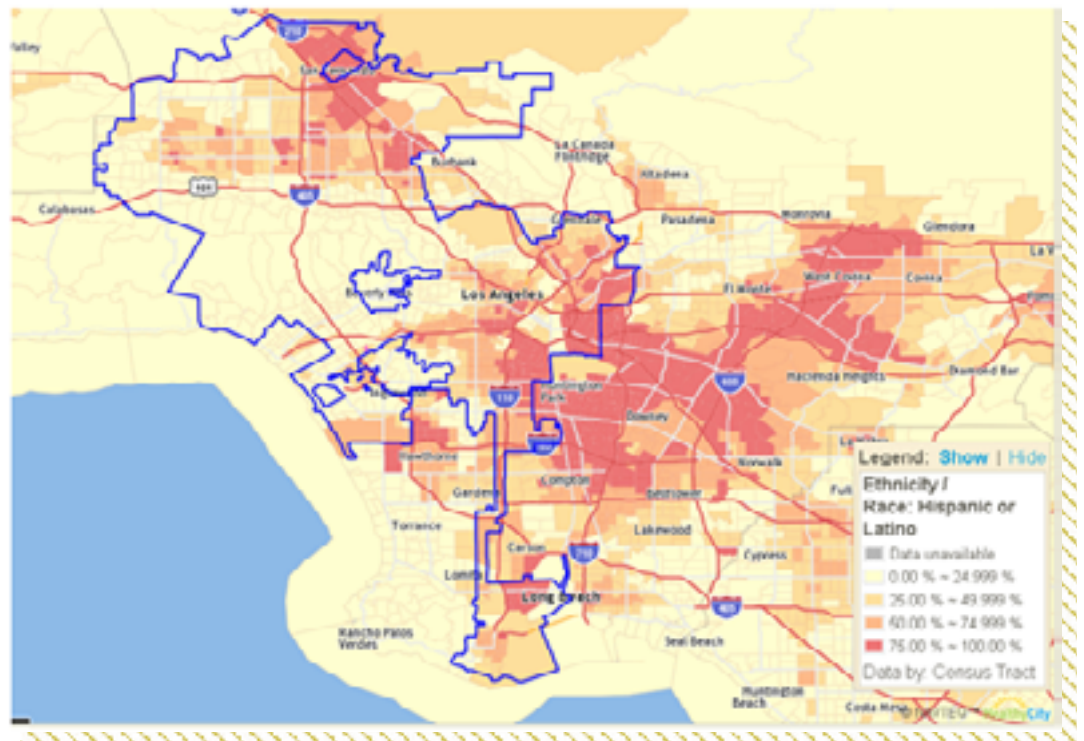
A **Geographic Information System (GIS)** is computer software used to create maps because it analyzes spatially-referenced data, connecting data and geography to inform place-based strategies. Free online mapping/GIS websites, such as [HealthyCity.org](https://www.healthycity.org) and [ESRI online](https://www.esri.com), which allow you to make the types of maps most often used to display data by geography:

## Point Maps

**Point Maps** are maps that display point data, or data that has specific addresses or xy coordinates. Examples of point data include schools, grocery stores, and parks. Point maps are useful for identifying and providing information about community resources. For more information, see Appendix C.

## Thematic/Demographic Maps

**Thematic, or demographic maps**, are maps that display demographic data, or information related to people and populations (e.g. age, educational attainment levels, race/ethnicity, etc.).<sup>xxiv</sup> This data is often collected from individuals or households and aggregated by areas such as ZIP Code, census tract or state, often for data analysis and to show patterns within a place.<sup>xxv</sup> In creating a demographic map, researchers link the demographic data to the shape/place on a map that the data represents. The map displayed below is an example of a demographic map. It shows the percentage of the Hispanic or Latino population in census tracts in the city of Los Angeles:<sup>xxvi</sup>



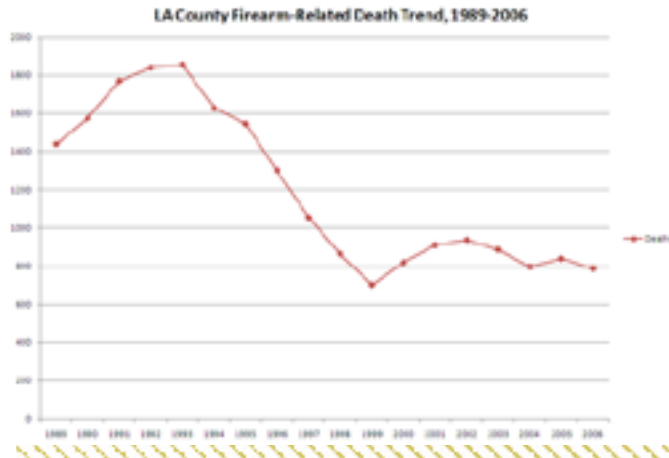
## Using Different Visualizations

The following is an example of how using different visualizations can benefit your research:

**RESEARCH QUESTION:** Has gun violence decreased across Los Angeles County since the 1980s?

**DATA NEEDED:** Gun related injuries, homicides, or hospitalizations, etc. over multiple years

**FEASIBILITY:** Data available free on [HealthyCity.org](http://HealthyCity.org), quantitative data analysis skills needed



The answer appears to be yes from the graph above. However, if you map the data over time, you may see a different story.



Los Angeles County Firearm deaths, 1989

In the map above, South Los Angeles and the San Fernando Valley have high concentrations of firearm deaths.

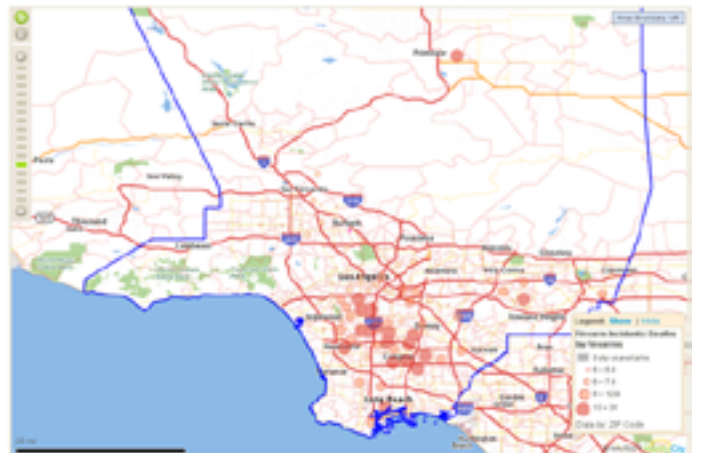


Los Angeles County Firearm deaths, 2006

In the map above, the **concentrations** in South Los Angeles remain, however those in the San Fernando Valley do not. Additionally, Palmdale experienced a high number of firearm deaths.

With the benefit of maps and datasets over time, you can clearly see where concentrations of firearm deaths remain, appear and disappear. While Los Angeles County overall has seen a decrease in total firearm deaths, some communities have actually seen an increase.

It is important to note that sometimes raw numbers alone, such as the number of firearm deaths, cannot tell the whole story. The final map below shows firearm incidents per 100,000 people. By mapping the rate, rather than the raw numbers, we have shown that the impact is greater in certain communities due to the size of the community's population. Looking at this map, we can see that the firearm issue is even more widespread than it seemed based on raw numbers alone.

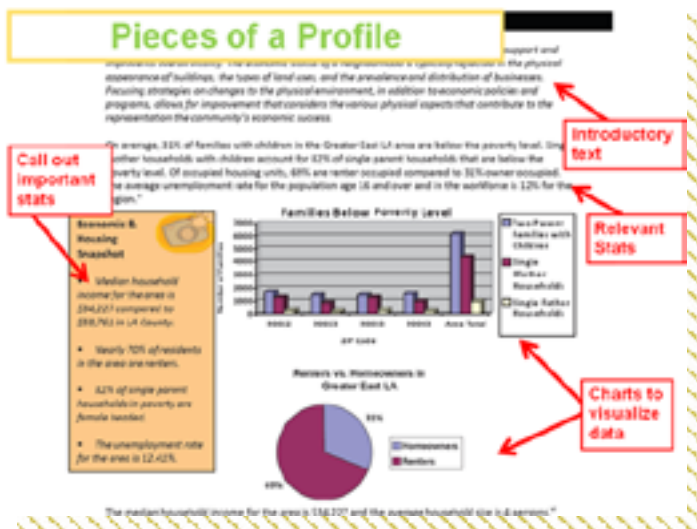


Average firearm-related incidents per 100,000 people

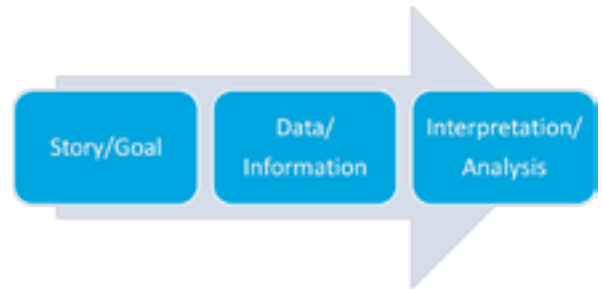
# Community Profiles

A community profile is a useful way to organize and present your visualizations and findings into one document or product. It can be a quick snapshot of the demographic, economic, social, health, and physical environments of a defined neighborhood, or a longer analysis that examines the history of a place, current conditions, and potential improvements. CBOs can use it to inform their work around a particular issue or to tell a story about their community. A profile can be useful in not only summarizing research, but also in providing background information and informing next steps.

In doing Community Based Participatory Action Research, a community profile should include the words and vision of the actual community. A good profile will be balanced with secondary data and information collected directly with the community. It should also have a good balance of visuals and text when describing an area. The following image is a snapshot from a sample community profile. It illustrates how you might frame a section of your profile, including key components such as introductory text, visualizations, and highlighting important information.



Data and information included in a profile should be framed by the story it is meant to tell about the community. Use the following flow chart, steps, and the Community Profile Template in Appendix B, to create this type of profile.



## 1. Story (Research Question/s)

Start by identifying the story you want to convey about a community. The story you tell should be driven by your research question. If your research question looks at ways to strengthen the economy in your community, you might want to start by describing the existing economy.

*EXAMPLE: "X Community is a unique town due to its history of agriculture and farming combined with population density, multi-family housing, etc. It has the largest agriculture industry in X region."*

## 2. Data/Information

Once your story idea is set, consider the supporting information and data you need to paint a detailed picture.

*EXAMPLE: If you are describing a community as uniquely agricultural and in need of economic development support, you may include data to show the impact of the agricultural industry compared to other industry in the area, and use testimonials from agricultural employees or land owners about their needs and how they're impacted.*

## 3. Interpretation/Analysis

Once you have data to support your story, you should provide clear interpretation of the data for your audience. Rather than simply providing numbers and statistics, summarize and explain what the numbers mean for the community and the overall story (see Appendix A: Guide to Writing with Statistics). Focus on what is important for people to take away and what they can do with it. Think about specific actions or next steps that might be taken.



This process of identifying your story and goal should lead to a basic outline with necessary sections and supporting information. Each section should then have a summary of what's included in it and how it relates to the overall story, the key data and information that support the section, and some basic interpretation of the data. A helpful way to interpret data is to come up with some guiding questions that you want to answer with the data you find. The following diagram shows how you might lay out an Economic Section of a community profile:

## Community Profile: Economic Section

### OVERVIEW

- How does this section relate to the overall story?

### KEY INDICATORS

- Industry
- Housing
- Survey of agricultural land
- Survey with agricultural business owners

### GUIDING QUESTIONS

- What is the main industry of the area?
- How does the industry compare to surrounding areas?
- How does the industry affect the local economy/regional economy?

## Writing About Your Analysis

When creating a presentation, report, or community profile, as discussed, be sure to consider your audience. What do you want people to see in this profile? Writing style, balance of visuals and type of information all depend on the audience to which you are presenting.

For community members you may...

- Include a lot of visuals and quick facts that are informative and easy to understand.
- Avoid making assumptions that have not been verified with community.
- Avoid using jargon or terms that are not defined.

For policy makers and elected officials you may...

- Include more statistical analysis.
- Write a more targeted and formal narrative.
- Include community quotes and input to support your case.

You may also want to review our suggestions for writing about statistics to build the most effective argument. Please refer to Appendix A for details. Finally, always remember to include data sources and citations.

### Key Points to Consider

Guiding Questions

- + What does the chart, graph, or image tell us?
- + How does this relate to our goal/advocacy?
- + What does it not tell us?

Balance visuals and narrative

- + Include appropriate number of visuals to balance text.
- + Use visuals to highlight key points from text.

- + Understand usefulness of different types of graphs, charts, and maps.

Highlight data that supports your argument

- + Each section should support your main argument or purpose.
- + Order data by importance.
- + Call out important data so that it brings attention to it.

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## Quality Assurance

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We strongly encourage you to perform **quality assurance** on your research before using it to make decisions or sharing it with your audience. If you do, your audience will have as much confidence as you do in your conclusions.

### *Key Points to Keep in Mind:*

#### + SOURCE

- What is the original source and how reliable is it?
- What are the pros and cons for a specific dataset?
- How old is the data?

#### + METHODOLOGY

- How was the data gathered and analyzed?
- How complete is the data?
- How representative is the data?

All of the data sets that are posted on [www.healthycity.org](http://www.healthycity.org) go through a rigorous quality assurance process where we verify that our data values match the original source. In order to know which data sets to make **trendable** across data years, or how to properly define a certain variable, we check the original data's metadata. This metadata documentation will usually contain information on how the data was collected, measured, analyzed, and defined by the source who was the original data collector. This information is very useful in knowing how to properly interpret and analyze data. By checking the metadata documentation we ensure that we are properly displaying the data on our site as it was meant to be according to the original source. Sometimes metadata is clearly outlined and available for download. Other times it may require a bit of digging around to find out what the numbers in the tables really mean, but this step is crucial to ensure that you are interpreting the values correctly and that you are taking into consideration any special attributes that the

data may contain which may not be visible by only looking at the numbers. You have spent the time to gather quality data from quality sources, so make sure you compile solid metadata information.

A good example of detailed metadata information is for the American Community Survey, where they explain their data's caveats and how to use the data in combination with other data sets: <http://www.census.gov/acs/www/UseData>.

Two other important pieces of information that you can find by reading metadata documentation is whether the data you are working with is valid and reliable. These two concepts are key standards for measurement quality.

**Reliability** is a matter of whether a particular measurement technique, applied repeatedly to the same thing, will yield the same result each time. This concept is similar to one of consistency or stability.

For example, the Census asks each person the same question in the same way, versus an untrained interviewer who may alter their way of asking people their opinions or may allow their own biases influence the subject's response. Additionally, crime data often suffers from reliability problems, such as when departments change the way in which they collect data over time, change reporting procedures for certain crimes, etc.

**Validity** is a matter of ensuring that you are really measuring what you say you are measuring. This can again be the type of information that is found by looking at survey **methodology** and seeing what type of questions are being asked or what type of collection methods are being used, etc. Validity looks specifically at whether you conceptualized your research question or topic into data measurements correctly.

For example, you are looking for data showing residents with access to health care in your city. During your research you find a dataset that appears to show the percentage of residents with and without access to health care. At first glance it seems to be what you are looking for, however a closer look reveals something else. The accompanying metadata explains that this dataset shows the percentage of residents who live within 1 mile of a health care provider and the percentage that do not. Since access to health care encompasses much more than just geographic proximity to a provider, we would not consider this a valid dataset for access to health care.

## Conclusion and Next Steps

Now that you have an actionable understanding of community research, data, and analysis tools, it is time to start your research! Research, data, and maps can be powerful instruments for communities in making your case for change. When sharing research with your audience, it is key to determine how to best present the information so it speaks to others and tells the story you want to convey. By using the resources and methods outlined in this toolkit, you can enhance your research by making it as inclusive as possible, combining opportunities and capacity to include community voices with practical research, data, and analysis skills. You can use your research findings to strengthen advocacy efforts, disseminating results to a variety of audiences and promoting the benefits of combining community knowledge and traditional research methods.

For further step by step instructions for using and applying many of the methods described in the previous sections, see the tools and references included in the Additional Tools You Can Use Section (Appendices A-E).

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# Glossary

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## **Administrative Data**

Data collected by persons, organizations or departments of government for their own purposes but often made available for public use and research.

## **Asset**

The status, condition, behavior, knowledge, or skill that a person, group, or an entity possesses and which serves as a support, resource, or source of strength to one's self and others in the community.

**Individual Assets** – Assets which can also be referred to as gifts of individuals, such as skills, training, education, specific talents, networks, and monetary resources.

**Community Assets** – Citizen Associations, which can include informal and formal institutions found within a community, such as social groups, recreation programs, churches, and block clubs. Local Institutions, which include institutions that reach into the community, such as businesses that create local job opportunities, social service agencies, health services (hospitals and clinics), libraries, schools (children and adult schools), colleges or universities.

## **Boundary**

The geographic limits of a region of interest, which may include an entire study region or smaller areas representing units of analysis.

## **Causal Pathway**

A depiction of direct and indirect linkages between interventions and outcomes (also known as an “analytical framework”).

## **Census Block Group**

See *Geographies*.

## **Census Tract**

See *Geographies*.

## **Characteristic**

On [www.healthycity.org](http://www.healthycity.org) we refer to variables as “specific characteristics” when users are asked to select a variable to map. Specific characteristics include Race: White, Age: 0-4, or Income: Less than \$15,000, etc. See also, Variable.

## **Coding**

A systematic way in which to condense extensive data sets into smaller units that can be analyzed through the creation of categories and concepts derived from the data.<sup>xxvii</sup>

## **Community**

A group of people living in the same locality, a group of people sharing common interests or similar identity, or the district or locality in which such groups live.

## **Community Based Participatory Action Research (CBPAR)**

CBPAR aims to address the practical concerns of people in a community. CBPAR is a collaborative approach to research that involves all stakeholders throughout the research process, from establishing the research question, to developing data collection tools, to analysis and dissemination of findings.

## **Community-Engaged Mapping (CEM)**

A group mapping exercise designed to answer specific research questions and gather neighborhood-level primary data from community members (who live, work or attend school in the area), for the purpose of developing place-based planning, policy, and interventions.

## **Concentration**

Measures how much of an indicator value or subdivision there is the whole indicator dataset. Often used in describing clusters, ex. “there appear to be high concentrations of persons without high school diplomas (compared to all people 25 years old and older) in these ZIP Codes.”

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# Glossary

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## **Conceptualization**

The mental process whereby imprecise notions (concepts) are made more specific and precise. Researching “health disparities” will involve figuring out what you mean by health, what type of disparities you are looking at, what are they, and how will they be measured.

**Conceptual Definition** – Uses words and symbols to define concepts, in practice this definition represents explicit statements of what a research means by a concept. For example, a conceptual definition of “diabetes prevalence” may be “proof of medical record of being diagnosed with type one or type two diabetes.”

**Operational Definition** – Specifying what operations should be performed to measure a concept. For example, the operational definition of “diabetes prevalence” would be “getting patient discharge data to count the number of people hospitalized due to diabetes complications.”

## **Data**

Measurements of any characteristics of interest. Ex.: How many children live here? How do teenagers feel about homework? What type of detergent is most popular among grocery store shoppers? How many liquor stores are there in my neighborhood?

## **Dataset**

A collection of data.

## **Data Classification and Map Customization on [www.healthycity.org](http://www.healthycity.org)**

The following are key terms and concepts for data classification and map customization on [www.healthycity.org](http://www.healthycity.org):

**Classification (or Classes)**—A way of placing data values from a dataset into different types and numbers of groups, based on characteristic values, to be able to analyze and draw conclusions about the data. On [www.healthycity.org](http://www.healthycity.org), each class is represented by a unique color on the map. In a four-class classification, there are four colors on the map (excluding data not available). You can classify data by Equal Interval, Quantile, or Custom Range.

**Custom Range**—A classification method where you can set your own breaks or value groupings. Creating maps

using Custom Range is helpful for seeing data according to your own specific ranges, requirements, or thresholds.

**Equal Interval**— A classification method that divides data values into equally sized groups according to the data range (groups data into ranges that are equal in size). For example, on the Healthy City website, if you map the percent of families in poverty, using Equal Interval, and four classes, the data values will be placed into four groupings that divide the data range by four. So, if the data range is 0-100%, the data groupings will be 0-25%, 26-50%, 51-75%, and 75-100%. Creating maps using Equal Interval is helpful for seeing a general picture of the data or for seeing where the highest concentrations of overall large populations are located.

**Quantile**— A classification method that divides ordered data into equally sized groups according to the number of individual values; groups data by first ordering data values from lowest to highest, then placing an equal number of values into each range. This is the default classification method on [www.healthycity.org](http://www.healthycity.org). For example, if you map population by counties in California, using Quantile and four classes, the data values will be placed in order from lowest to highest individual value, into four groupings with the same number of values in each grouping. The data is cut so that each color category contains an equal amount of counties in it. Therefore, in this example, each class would represent one-fourth of all California counties. Creating maps using Quantile is helpful for seeing and making comparisons across multiple values and geographies in the data set or for seeing where the highest concentrations of overall small populations are located.

## **Demographic Data**

Information related to populations, especially in statistical terms (e.g., birth rate, death rate, fertility rate).

## **Descriptive Statistics**

Statistics used to describe the basic features of the data.

## **Focus Groups**

A primary data collection method that involves interviewing participants in a group generally composed of no more than 10 people who were selected because they share certain characteristics relevant to the purpose of the research. For example, if your research question focuses

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on the quality of food in the community, your focus group may include residents (parents, children, business owners) who live locally and regularly depend on the food outlets in your community of interest.

## **Geographic Information System (GIS)**

Geographic Information System (GIS) is a computer application used to store, view, and analyze geographical information, or information associated with a location. Typically, a GIS is used for creating and handling maps. GIS allows researchers to identify spatial (see term) patterns among problems and resources.

## **Geographies**

Spatial (non-physical) boundaries (also, units) for which data is collected. On the HealthyCity.org site, these are shapes that represent boundaries, usually established by socio-political decisions, for which secondary or administrative data is collected. Here are just a few common geographies.

**Census tract** – A census tract is a small, relatively permanent statistical subdivision of a county delineated by a local committee of census data users for the purpose of presenting data. Census tract boundaries normally follow visible features, but may follow governmental unit boundaries and other non-visible features in some instances; they always nest within counties. Designed to be relatively homogeneous units with respect to population characteristics, economic status, and living conditions at the time of establishment, census tracts average about 4,000 inhabitants. They may be split by any sub-county geographic entity.

**Block group** – A block group is a subdivision of a census tract (or, prior to 2000, a block numbering area). It is the smallest geographic unit for which the Census Bureau tabulates data. A block group consists of all the blocks within a census tract, beginning with the same number. Block groups generally contain 600 - 3,000 people.

**ZIP Code** – A ZIP (Zone Improvement Plan) Code is a five-, seven-, nine-, or eleven-digit code assigned by the U.S. Postal Service to a section of a street, a collection of streets, an establishment, structure, or group of post office boxes, for the delivery of mail. The Census uses the ZIP Code Tabulation Area (ZCTA) instead of the ZIP Code for data. A ZIP Code Tabulation Area is a geographic area that

approximates the delivery area for a 5-digit or a 3-digit ZIP Code. ZCTAs do not precisely depict the area within which mail deliveries associated with that ZIP Code occur.

## **Indicator**

A conceptualized measure that aims to reflect topics such as health disparities, unprepared workforce, dangerous neighborhood. Indicators are logical groupings of variables. On [www.healthycity.org](http://www.healthycity.org) you will find indicators such as “Age,” “Race,” “Families in Poverty,” “Household Size,” etc.

## **Inferential Statistics**

Statistics used to make generalizations from a sample to a population and to reveal relationships between variables.

## **Interviews**

A primary data collection method which involves the use of open-ended questions aimed to obtain information specific to research needs in a one-on-one setting between a researcher and a participant.

## **Map-Based Research**

Research based on maps, which visually represent location-based data.

## **Mean**

The total sum of all the values in a dataset, divided by the total number of data points.

## **Measure of Central Tendency**

A value used to represent and generalize a dataset by identifying the central position within that dataset.<sup>xxviii</sup> See mean, median, and mode.

## **Median**

The middle value of a dataset.

## **Metadata**

Information about data, usually describing it in detail. Data files will often come with metadata documentation to fully describe their content, original source, and useful

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information about interpretation of the data. For example, the metadata that is presented on [www.healthycity.org](http://www.healthycity.org) includes descriptions of the variables, universes, data sources, etc.

## **Methodology**

The ideas, rules and procedures that guide research.

## **Mode**

The most commonly occurring number in the dataset.

## **Nominal**

Describes categories where there is no inherent meaning or value.

## **Outlier**

An observation that lies an abnormal distance from other values in a random sample.

## **Participant Observation**

A primary data collection method, which involves a highly skilled researcher becoming a participant observer by viewing interactions of the group of interest from an insider's perspective.

## **Place**

An area with definite or indefinite boundaries; a locality.

## **Place-Based**

Focused on a specific place or locality.

## **Point Maps**

Point maps are maps that use point data, or data that has specific addresses or x/y coordinates. Examples of point data include primary and secondary schools, grocery stores, or parks.

## **Primary Data**

Original data collected by the researcher specifically for the purpose in mind. For example, collecting student perceptions on school safety through a survey or interview with the students.

## **Qualitative Data**

Data that consist of non-numerical observations, primarily focus on describing attributes, properties or some other kind of meaning. For example, notes from a focus group conducted among community members to gauge their perceptions of safety in their community.

## **Qualitative Research**

Research in which the researcher explores relationships using textual, visual or other non-numeric data rather than quantitative data. It gives detailed descriptions and explanations of the phenomenon studied rather than providing and analyzing statistics. Results are not usually considered generalizable, but are often transferable.

## **Quantitative Data**

Data that can be expressed numerically, usually subject to statistical analysis. Includes data such as the number of overweight teenagers in Sacramento County, the percent of people in poverty in your community, etc.

## **Quantitative Research**

Research in which the researcher explores relationships and explains phenomena using numeric data. Results can often be generalized, though this is not always the case.

## **Quality Assurance**

The process of profiling the data to discover inconsistencies, and other anomalies in the data and performing data cleansing activities (e.g. removing outliers, missing data) to improve the data quality.

## **Rate**

A ratio in which two measurements are related to each other. A percentage is a rate (per 100). We display the rates of the data provider or calculate rates to contextualize absolute data for the population. Most of the rates seen on our website are per 1,000, 10,000 or 100,000

persons depending on the population of the geographic area.

### **Reliability**

A quality of measurement standard whereby the same data would have been collected each time in repeated observations of the same phenomenon. For example, we would expect the question “Did you receive a flu shot this year?” to have higher reliability than the question “About how many times in the past ten years did you forget to have an annual flu shot?”

### **Research Ethics**

The principles and rules that guide how people should be treated, when they are participants in a research process or project.

### **Secondary Data**

Data that have been collected for another purpose and are now available for other researchers to use for their purposes. For example, the California Department of Public Health collects data on births and deaths of the California population -- you can use this in your research when doing a community health assessment even though you did not personally conduct the data collection.

### **Skew**

To give a bias to or distort.

### **Spatial**

Associated with a position in space, most often a real location on the ground (ex. a street address). This may also refer to a conceptually defined or hypothetical position in space (ex. the strength of interpersonal relationships).

### **Statistics**

Any numerical summary of data. There are many types of statistics usually seen in reports and studies, [www.healthycity.org](http://www.healthycity.org) currently focuses on basic descriptive statistics such as counts and rates.

### **Surveys**

Tools used for collecting all types of data, which usually involve participants completing a written questionnaire, sometimes administered in-person, over the telephone, or through an electronic survey system.

### **Thematic, or Demographic Maps**

Maps that use thematic or demographic data, or data aggregated to political, jurisdictional, or other geographic boundaries such as cities, counties, or ZIP codes. Examples of thematic data include the number of families in poverty or the number of unemployed civilians in a ZIP code.

### **Trend**

A characteristic of data in which a general direction or tendency is present, often a trend represents the change in a particular dataset or variable over time.

### **Unit of Analysis**

The level of measurement in which one connects data to an entity (e.g. individual, group, community, watershed, state, country). The unit of analysis can be social or geographic. Typically, it is the geography for which one’s data is available.

### **Validity**

A descriptive term used for a measure that accurately reflects what it is intended to measure. Looks at whether you are really measuring what you say you are measuring. For example, police records of automobile theft are more valid measures than police records of shoplifting since a person is more likely to report their car missing than a store is to report missing merchandise, yet it is important to note that ultimate validity of a measure can never be proved.

### **Variable**

Any attribute of an indicator. On [www.healthycity.org](http://www.healthycity.org) we present variables as subgroups of indicators, for example the indicator “Race” consists of variables “White,” “African American,” “Asian,” etc.

### **Visualization**

A means of presenting data in a visual form to provide alternative means of analysis and understanding. Both charts and maps are examples of visualization techniques.



## ADDITIONAL TOOLS YOU CAN USE

*The following tools provide further instructions for conducting Community Research:*

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- APPENDIX A: GUIDE FOR WRITING WITH STATISTICS
- APPENDIX B: COMMUNITY PROFILE TEMPLATE
- APPENDIX C: EXCERPT FROM THE POWER OF MAPS WORKBOOK
- APPENDIX D: ADDITIONAL RESOURCES AND LINKS
- APPENDIX E: ETHICS IN COMMUNITY BASED PARTICIPATORY ACTION RESEARCH

# Guide for Writing with Statistics

## General Tips for Writing with Numbers

- + Spell out single-digit whole numbers. Use numerals for numbers greater than nine.
- + Be consistent within a category. For example, if you choose numerals because one of the numbers is greater than nine, use numerals for all numbers in that category. If you choose to spell out numbers because one of the numbers is a single digit, spell out all numbers in that category.
- + If you have numbers in different categories, use numerals for one category and spell out the other. Example:
  - My 10 cats fought with their 2 cats.
  - My ten cats fought with their two cats.
  - Given the budget constraints, if all 30 history students attend the four plays, then the 7 math students will be able to attend only two plays. (Students are represented with figures; plays are represented with words.)
- + Always give bases of all percentages.
- + Write out a number if it begins a sentence.
- + Always spell out simple fractions and use hyphens with them. Example:
  - One-half of the pies have been eaten.
  - A two-thirds majority is required for that bill to pass in Congress.
- + A mixed fraction can be expressed in figures unless it is the first word of a sentence. Example:
  - We expect a 5 1/2 percent wage increase.
- Five and one-half percent was the maximum allowable interest.
- + The simplest way to express large numbers is best. Round numbers are usually spelled out. Be careful to be consistent within a sentence. Example:
  - You can earn from one million to five million dollars.
- + Write decimals in figures. Put a zero in front of a decimal unless the decimal itself begins with a zero. Example:
  - The plant grew 0.79 of a foot in one year.
  - The plant grew only .07 of a foot this year because of the drought.
- + With numbers that have decimal points, use a comma only when the number has five or more digits before the decimal point. Place the comma in front of the third digit to the left of the decimal point. When writing out such numbers, use the comma where it would appear in the figure format. Use the word and where the decimal point appears in the figure format. Example:
  - \$15,768.13: Fifteen thousand, seven hundred sixty-eight dollars and thirteen cents
  - \$1054.21: One thousand fifty-four dollars and twenty-one cents
  - Note: If the number has no decimal point, authorities disagree on whether to begin using the comma with four-digit numbers or to begin using the comma with five-digit numbers. Use your discretion.

+ Hyphenate all compound numbers from twenty-one through ninety-nine. Example:

- Forty-three persons were injured in the train wreck. Twenty-three of them were hospitalized.

### **Writing with Descriptive Statistics**

+ Statistics can be used to describe the characteristics of groups, geographic areas and more. Data is gathered and recorded about these characteristics which are also known as variables.

+ Descriptive statistics can then be used to paint a picture of those groups, neighborhoods etc. Commonly used descriptive statistics include frequency counts, ranges, means, modes and medians.

- Frequency Counts: number of times a value appears in the dataset
- Range: highest and lowest values in the dataset
- Mean: the total sum of all the values in a dataset, divided by the total number of data points
- Mode: the most commonly occurring number in the dataset
- Median: the middle value of a dataset
- For more information on how to find/calculate these statistics, see the "Sample Statistics."

+ Generally, when writing descriptive statistics, you want to present at least one form of central tendency (or average), for example, the mean, median or mode of your dataset. In addition, you should present one form of variability, usually the standard deviation.

+ The mean, median, and the mode are all measures of central tendency. They attempt to describe what the typical data point might look like. In essence they are all different forms of 'the average.' When writing with statistics, you never want to say 'average' because it is difficult, if not impossible, for your reader to understand if you are referring to the mean, the median, or the mode.

- The mean is the most common form of central tendency, and is what most people usually are referring to when they say average.

- The median is useful when describing datasets that are skewed or have extreme values.

- The mode is best used when you want to indicate the most common response or value in a dataset. For example, looking at an opinion survey with three possible responses (agree, neutral, disagree), the mode would be the most popular or frequently occurring response.

+ The standard deviation is a measure of variability (it is not a measure of central tendency). Conceptually it is best viewed as the 'average distance that individual data points are from the mean.' Datasets that are highly clustered around the mean have lower standard deviations than datasets that are spread out.

+ Oftentimes the best way to write descriptive statistics is to be direct. If you are citing several statistics about the same topic, it may be best to include them all in the same paragraph or section. Example:

- Overall the company had another excellent year. We shipped 14.3 tons of fertilizer for the year and averaged 1.7 tons of fertilizer during the summer months. This is an increase over last year, where we shipped only 13.1 tons of fertilizer, and averaged only 1.4 tons during the summer months. (Standard deviations were as followed: this summer .3 tons, last summer .4 tons).

+ Some fields prefer to put means and standard deviations in parentheses. Example:

- Group A (87.5) scored higher than group B (77.9) while both had similar standard deviations (8.3 and 7.9 respectively).

### **Writing with Inferential Statistics**

+ The goal of inferential statistics is to discover some property or general pattern about a large group by studying a smaller group of people in the hopes that the results will be generalizable to the larger group.

**+ Some common inferential terms:**

- T-test: used to determine if the scores of two groups differ on a single variable. A t-test is designed to test for the differences in mean scores. For instance, you could use a t-test to determine whether writing ability differs among students in two classrooms.
- Correlation: refers to a positive or negative association between variables in a study. Two variables have a positive association when as one value increases, so does the other. The variables have a negative relationship when a decrease in one value corresponds to an increase in the other.
- Independent Variable: changes in this value result in a change in the dependent variable
- Dependent Variable: this variable changes as a result of a change in the independent variable
- Causation/Causality: a relationship where changes in the independent variable have a direct effect on the dependent variable. It is important to note that correlation does not equal causation. A positive or negative correlation alone does not indicate the presence/absence of a causal relationship.

**+ In general, you should always ‘translate’ your statistics into some understandable form for your reader. Example:**

- “A t-test ( $t = 3.59$ ) showed that the two groups were significantly different ( $p < 0.01$ ).”

VERSUS

Women scored higher than men on the aptitude test ( $t = 3.89, p < 0.01$ ).

In the second example, the audience understands the relationship, it’s not filled with jargon, but all of the same information is presented.

**+ When using a complicated inferential procedure that your readers would be unfamiliar with, explain it. It may be necessary to go over it in detail. You may want to cite who used it first, and why they used it, and explain how it is applicable**

to your situation. A footnote or an appendix is a fine place for such an explanation.

- + Remember that inferential statistics can never “prove” anything. You should think of statistics as a body of evidence (much like a fingerprint at a crime scene) that provides support for your argument. Sometimes it can be used as primary evidence or sometimes it is used in a more supporting role.**
- + Knowing how your audience will react to statistics should affect how you use it. If your audience doesn’t use a lot of statistics, you probably shouldn’t make statistics the focal point of your argument, or if you do, you need to be very good about explaining the logic behind your statistics.**

**Other Writing Tips**

- + If you have lots of statistics to report, you should strongly consider presenting them in tables or some other visual form. You would then highlight statistics of interest in your text, but would not report all of the statistics.
- + Be sure to provide your audience with information about where the statistic came from. You should be wary of data and statistics that do not clearly state their origins.
- + Use short sentences that deliver one idea at a time. They make it easier for the reader to understand your point and force the writer to think more carefully about the message of each sentence. When long sentences are necessary, make sure to use simple words that clearly state the message.
- + Consider carefully what you can leave out, put in a table or chart, or move to an appendix. Consider your audience, is everyone reading the profile going to be interested in detailed values of each variable?
- + When in doubt, keep it simple. You never want to present any data analysis or descriptions that you are unsure of or cannot fully and confidently explain.
- + Avoid using “over qualified” sentences by removing extra words. Example:

- The project could potentially be expected to increase the rate and volume of drainage runoff.

VERSUS

The project may increase the rate and volume of runoff.

- + Avoid using jargon. For example, at Healthy City we often use “indicator” to describe a piece of data on our site, and it is clear how this is one piece of jargon that we use often yet may not be meaningful to others.
- + Avoid acronyms. Consider whether you really need to use an acronym or whether you can use the complete term or a shortened version of it instead. If you will be using the term only a few times, write it out each time instead of using an acronym. If you do use an acronym, write out the term in full with the acronym in parentheses the first time you use it then use the acronym consistently throughout the rest of the text.

## Sample Statistics

**SUPPOSE OUR DATASET IS AS FOLLOWS:  
{5,8,3,5,10,8,2,4,5}**

- + **Frequency Count: the number of times a value appears in a dataset**
  - In this case, the frequency count for the value 5 is three because the value 5 appears three times in our dataset.
- + **Range: highest and lowest values in the dataset**
  - The range is 2-10, because the lowest value is 2 and the highest value is 10.
- + **Mean: the total sum of all the values in a dataset, divided by the total number of data points**
  - There are nine values or data points in our dataset. Therefore the mean is  $(5+8+3+5+10+8+2+4+5)/9$ , which is equal to 5.6.
- + **Mode: the most commonly occurring number in the dataset**

- In this example, the mode is 5 because it appears three times. The next most commonly occurring number 8, occurs only two times.

### + Median: the middle value of a dataset

- First we must put the dataset into numerical order: {2,3,4,5,5,5,8,8,10}. Since there are nine values, the fifth value is the “middle” value. In this case, the median is 5. If there is an even number of values in your dataset, the median is usually defined as the mean of the two middle values.

### + Rate: a measure, quantity, or frequency, typically one measured against some other quantity or measure such as a crime rate or high school graduation rate

- Suppose each value in our sample dataset represents the number of people with diabetes in each census tract within City A (population=30,000). To calculate the prevalence of diabetes in City A, we would look at the total number of people with diabetes (50) in relation to population. For this example, we will calculate a rate based on a base of 10,000 people. The base is not always any particular number, in this case, we will use 10,000 because it is in scale to our total population. Our rate calculation is as follows:  $(50/30,000)*10,000 = 16.7$ . Therefore we can say that 16.7 of every 10,000 residents in City A have been diagnosed with diabetes.

Sources:

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The Power of Maps, a Community Research Lab Workbook.

# Community Profile Template

A community profile is a useful way to organize and present visualizations and findings into one document or product. Use the following template to create a quick snapshot of a neighborhood's demographic, economic, social, health, and physical environments or a longer analysis that examines its history, current conditions, and potential improvements.

### Executive summary

[to be included in longer profiles/reports]

### Introduction

Understanding the specific and unique characteristics of a community is the first step toward effectively creating long-term improvement within that community. In that spirit, this profile uses a comprehensive approach that includes maps, charts and narrative aimed at providing important and useful statistical information on the population, demographic, social and economic conditions of XXX Community.

### Components

- + Executive Summary
- + Overview
- + Physical
- + Population Characteristics
- + Education
- + Housing
- + Economic
- + Health
- + Public Safety
- + Community Resources
- + Summary

### Section I: OVERVIEW

[to include jurisdictions, geographical boundaries, brief background about the area, political players where appropriate (i.e. if they are education-friendly, etc.)]

Healthy City is presenting this community profile to XXXX organization as part of XXXX project/program/initiative. This community profile will provide a snapshot of the area as a basis to understanding the general make up of the community and potential needs of residents. Data presented will include existing community resources and population characteristics, as well as education, economic, housing, health, environment and safety statistics. "X organization" will use this profile to...

[Speak briefly about the project/program/initiative here]

This community profile presents extensive data and analysis, and encourages further exploration of the community's rich history and experience. It is our hope that this profile will provide context and understanding of the issues facing the XXX community, and allow XXX to see how XXX impacts YYY.

The XXX community, [geography here], represents the highest/lowest, greatest/worst \_\_\_\_\_ (speak of assets and liabilities/challenges- assets, health conditions, crime, socio-economic, physical environment) within LA County/City/California. The # residents and # area businesses of XXX make important cultural/economic contributions to the city/county/state as a whole.

### Guiding Questions

- + What is the general purpose of this profile?
- + What information does the client/community want to know?
- + What subsequent action will the profile inform?

## Section II: Physical

Physical characteristics represent the built environment and the planned and actual uses of land in a community. Key physical characteristics include land use, zoning, open/park space, major thoroughfares and highways. Analysis of these characteristics reveals how the built environment and land uses impact the economy, housing, and overall health of a community.

### Key Indicators:

- + Land Use
- + Zoning

### Guiding Questions:

- + What are the predominant uses of land in this area (e.g. industrial, commercial, residential, open space, etc.)? What can this predominant use tell us about this community? What does it tell us about this community when compared to the next largest geography (e.g. comparing city to county, etc.).
- + Does this community have much or minimal park space?
- + How does the zoning of the area compare to how the land use?

## Section III: Population Characteristics

Population characteristics are important size and composition measures of the people of an area, that when analyzed together describe a community and inform community decision-making. Size measures, such as the total population, the number of children, and the number of people with disabilities, are used to determine acceptable levels of services in an area; services such as schools, hospitals and child-care facilities. Composition measures, such as race/ethnicity, language spoken at home, and citizenship, are useful in evaluating the cultural competency and effectiveness of local services such as counseling, income security and basic needs services to serve the area population. Assessing the concentration and change of population characteristics in an area, and comparing them to characteristics in other areas are vital in identifying current and planning for future conditions.

## Key Indicators

- + Population
- + Age
- + Race
- + Gender
- + Household and Family Size and Structure
- + Language
- + Place of Birth and Citizenship Status
- + Civic Participation

### Guiding Questions

- + What is the population and age breakdown?
- + What does the age breakdown tell us about services needed in the area?
- + What does the ethnic breakdown tell us about services needed in the area?
- + How does the local population compare to neighboring areas, the city, county, or even state?
- + What makes this particular community unique? For example, rapid changes in the workforce population not only obliges one to review service capacity levels for adult, working-aged people, but also for child populations that may shortly increase or decrease markedly.

## Section IV: Education

Education characteristics are meaningful indicators of workforce readiness, career development and the quality of educational institutions in the area. These characteristics suggest what resources might be needed in terms of educational programs and support services, as well as job training and employment services for area residents. Relevant data include the educational attainment levels of residents, academic performance of students, and presence and quality of schools and educational programs in the area.

## Key Indicators

- + Educational attainment (less than high school, high school diploma, college degree, masters or advanced degree)
- + Average API scores of area schools
- + School enrollment
- + Student teacher ratios
- + Dropouts
- + of classrooms with computers
- + Education programs (after school, tutoring, support)

## Guiding Questions

- + What is the educational attainment of adults over age 25? (high school diploma, college degree, etc.)
- + How do educational attainment and API scores in the area compare to the district, city, county or statewide?
- + What are the general school characteristics (credentialed teachers, student/teacher ratios, enrollment, dropouts, API)

## Section V: Housing

Housing characteristics describe living conditions and quality of housing. These characteristics can be connected to real estate value, affordability, perceptions of safety, and mobility of the community. Housing indicators such as house value, renter occupancy, vacancy and crowding may be linked to other areas of need, such as income and employment assistance. Knowing the physical environment of the neighborhood in addition to the characteristics of its residents can help formulate strategies aimed at comprehensively improving the community's housing situation and the well-being of its residents.

The housing conditions of a community can inform us about areas of need and opportunities to provide a wide-range of services to the residents.

## Key Indicators

- + Gross Rent & Median Gross Rent (ACS - City)
- + Average Household Size
- + Number of Occupants per Room (crowding indicator) (ACS - City)
- + Occupied vs. Vacant Units (Claritas – BG)
- + Renter vs. Owner
- + Year Housing Structure Built (or Median) (Claritas – BG)
- + Year Householder Moved into Unit or Average Length of Residence
- + Owner-Occupied House Value and/or Median (Claritas – BG)
- + foreclosure rates (if available and relevant)

## Guiding Questions

- + Is this a mobile community?
- + How people are living here, are they renting or owning?
- + What is the real estate like, are these units vacant or occupied?
- + For people that own their homes, what is the value of their investment? What percentage of homes are in foreclosure?
- + For people that rent, what is the rent and is it affordable (using the rent as percent of income indicator that may be presented in the economic section)?
- + And are the occupied units in this neighborhood enough for its population, what is the average household size, how many households have crowded rooms?



## Section VI: Economic

Economic characteristics represent the individual and collective financial resources of a community. These characteristics generally reflect a community's production and distribution of wealth, income, and commodities. Key economic characteristics include poverty status, income, employment status, and characteristics related to local industry and commerce. Analysis of these characteristics assess the conditions of the local economy, families, households, and individuals and help identify the community's strengths and challenges in promoting and sustaining overall economic growth.

### Key Indicators

- + Median Income
- + Employment Status for Population 16+
- + Industries
- + Employers (when available)
- + Non-Profit Infrastructure
- + Job Type (Top 3)
- + Living Costs – Median Rent/ Median House Value

### Key Questions

- + What are the top 3 industries in the area?
- + Who are the top 3 employers in the area?
- + How does the unemployment/employment rates compare in this community? How does it compare to the next largest geography from this community?
- + How does the Median Income compare to the next largest geography from this community?

## Section VII: Health

The condition of our physical and social environments, the places where we live, work and play, have a direct and profound impact on our health, determining everything from access to affordable health care, to the presence of healthy food opportunities, to the quality of the air we breathe. As we explore the distribution of social and environmental factors elsewhere in this profile, we may begin to see how closely they follow the patterns of health and disease in our communities. Approaching health and its connection to the physical and social environment can provide powerful insights into the priority health needs in our communities, and the type of policy and other changes we need to reverse health outcomes and inequities and build a healthier community for ourselves and our children.

### Key Indicators

- + Births (also by race)
- + Deaths (also by cause)
- + Low Birth Weight
- + Teen births
- + Percent Diagnosed with Asthma
- + Percent Diagnosed with Diabetes
- + Percent Overweight/Obese
- + Percent Diagnosed with Heart Disease
- + Percent Diagnosed with High Blood Pressure
- + 5-a-day fruit and vegetable consumption
- + Insurance Status
- + Hospitals

### Guiding Questions

- + What are some of the important health concerns in this community? (health/disease outcomes, health insurance coverage, healthy eating, physical activity, etc.)

- + How do they relate to some of the social determinants of health (do you see additional patterns of health outcomes that parallel inequalities in physical, social or other factors? e.g. race/ethnicity, income, gender, etc.)
- + How do the health characteristics in this community compare to the larger geographies of which the community is a part (county, state, national)?

### Section VIII: Public Safety

Public safety characteristics describe the general security of a community. These characteristics can be connected to many other community aspects, such as psychological and physical well-being, desirability of the community, house value, and availability of resources. Public safety data include statistics of arrests, crime reported to the police, and the perception of safety among the residents of the neighborhood. In analyzing public safety data, both absolute values and rates provide a comprehensive measure of a community's safety needs. It is also useful to see how those statistics compare to the larger area surrounding the community, the city and county as a whole.

#### Key Indicators

- + Arrest stats from CJSC from agency serving the community
- + Local rates of total crime (ex. per 1,000 ppl) from local agencies
- + Percentages (and raw if we want) of type of crime out of total, such as violent, property, gang (if that breakdown is available based on local reporting practices)
- + Firearm homicide death rate (ex. per 100,000 ppl)
- + We could present any information that we have on local crime watch and neighborhood watch programs, whether or not they exist in the area, etc. This could compliment the crime stats presented.
- + It would be great to have some of the CHIS neighborhood safety indicators available at ZIP code level (not sure if a request like that would

be possible in the near future). For the time being we can present some comparison stats, stating that in this county as a whole a certain percent of people don't trust their neighbors, don't feel like the parks are safe, etc.

#### Guiding Questions

- + Is there a high rate of crime in this community compared to the county as a whole?
- + What type of crime is most prevalent?
- + What are people being arrested for in this area? Property or violent offenses? Any specific one that jumps out? Is there a specific type of population that seems to be having many interactions with the police?
- + How do people feel about the safety in their community?
- + Is there a crime watch program or another aspect that indicates that people are concerned about each others safety and are invested in keeping the community crime-free?

### Section IX: Community Resources

Community resources describe the strength of local institutions to support vulnerable populations. The resource environment of a community presents the infrastructure of opportunities available to residents for basic human services such as housing, health care, education, employment, and recreation. While the presence of resources does not equal accessibility, a scan of the area informs the potential to leverage resources and may also reveal a need for better outreach and connection to residents.

#### Key Resources

- + Basic Needs (housing, food)
- + Health Care
- + Education
- + Employment
- + Social Support

- + Recreation
- + Transportation

### Guiding Questions

- + What resources exist within the community including basic needs, healthcare, education, employment, recreation, and any other services that might be relevant to the research topic?
- + What types of resources might be useful based on the demographics (i.e. job support if unemployment rate is high, education programs if education attainment is low, etc.)?
- + What appears to be (if any) barriers to residents accessing existing resources?
- + Where are there opportunities to leverage existing resources?

### Section X: Summary

The data and statistics presented paint a story of “x community” in terms of physical health, safety, economic stability, educational attainment, the built environment and overall well being. In addition, the overall characteristics of a community are often shaped by the presence and lack of resources. Further participatory research in the community will allow residents to contextualize the information and their needs based on community knowledge.

- + Summary of population characteristics
- + Summary of the built environment
- + Summary of educational attainment and families living in poverty
- + Summary of health conditions
- + Summary of economic conditions
- + Summary of crime conditions
- + Summary of Need Index Ratings

The data document noticeable disparities in these areas \_\_\_\_\_ in comparison to other areas of the city/

regions of Los Angeles County. In general, the overall population of XXX Community is \_\_\_\_\_ and ranks at the top in LA city/county for \_\_\_\_\_.

### Recommendations

#### Guiding Questions

- + What are some of the key differences between this community and comparable ones?
- + What is unique about the area given the data?
- + How might this profile inform further action?

# Excerpt from The Power of Maps, a Community Research Lab Workbook

## What are the key elements often seen on a map?

**DESCRIPTIVE TEXT** Can include the title or a couple of brief sentences that highlight key information, statistics, and patterns from your map.

**LEGEND** Provides the information needed to read the map. The legend includes the data ranges displayed (Example by quantile or equal interval. Note: Equal Interval divides data into equally sized groups according to the data range. Quantiles divide ordered data into equally sized groups according to the number of instances/ events).

**INSET MAP** Usually a map of the next largest geography from your focus area. Your focus area is usually highlighted here as a part of this larger geography. An inset map allows you to compare the data in your focus area to the data in the larger area.

**MILE BAR AND NORTH ARROW** Provide the scale and orientation of the map, respectively.

**GEOGRAPHIES** Spatial (non-physical) boundaries (also, units) for which data is collected.

**PHYSICAL FEATURES** Elements that define the physical landscape and identify the physical location of the area such streets, highways, natural terrain, etc.

**LABELS** Text that identifies the geography and physical features on your map.

**SOURCE INFORMATION** Who created the map, the origin and year of the data, etc.

**GRAPHICS** Any other images such as logos, pictures, etc. that are relevant to your map.



## “Point” Maps



### Point Maps

Point maps are maps that use point data, or data that has specific addresses or x/y coordinates. Examples of point data include primary and secondary schools, grocery stores, or parks.

## “Thematic” Maps



### Thematic Maps

Thematic maps are maps that use thematic data, or data aggregated to political, jurisdictional, or other geographic boundaries such as cities, counties, ZIP codes, etc. Examples of thematic data include the number of families in poverty or the number of unemployed civilians in a ZIP code.

## Data Display

- Area of Focus: the area your topic, theme, or research question covers (e.g. catchment area service area, organizing cluster, etc.)
- Unit of analysis: the geography that your data is available at
- Area of Focus is usually a larger geography than your unit of analysis (Exam: ZIP Codes in Los Angeles County)
- Symbology: symbols and/or colors used to represent your data. The three common types of symbology found on the website are:

Points/symbols – icons, or markers used to display point data



Graduated colors – light to dark colors, used to display thematic data



Graduated symbols – small to large symbols, used to display thematic data; often, combined with graduated colors to display 2 different thematic datasets



## Creating Effective Maps

**What makes a map most effective? What are the keys to creating an effective map?**

Effective maps provide a visual that is:

1. Clear
2. Quick (Easy to Understand)
3. Dramatic

Therefore, the keys to creating an effective map include:

### + Map Design

- The information and data you place onto your map and how (explained further below)

### + Map Layout and Publishing

- How you arrange the different elements of your map and the way you present it

### + Map Analysis

- How you highlight key information and discuss your map with its intended audience

## Map Design

Map design represents the planning process that precedes the creation of your maps, as well as the map editing and recreation process a first draft of your maps. In designing a map, it is important to start with the end in mind; that is, it is important to think about the key questions that you are hoping your maps will help answer, who will view them, and how you will present them. Below are a few key considerations for designing a map:

### Key Considerations: Starting with the end in mind

#### + What

What is your research question? What is the story that you are trying to tell? What do you want to show or what is the question that you are aiming to answer or approach? This may determine the data you choose to display on your map.

#### + Who

Who is your audience? Who will you show this map to? This may determine the colors that you use on the map, the layout, text font and size, print formats, the language you use to present it, etc.

#### + When

Are you looking at a problem that has been ongoing? Is it a particular point in time? This may determine how many maps you make.

#### + How

How will present this information and research? Report? On your website? At a public hearing? At a community meeting? This may also determine the colors that you use on the map, the layout, text font and size, print formats, the language you use to present it, etc.

#### + Why

Why should the people you present this to care? This may determine the information you chose to highlight from your map and how you will use it.

# Additional Resources and Links

*Note: if hyperlinks don't work, try copying and pasting into browser address bar*

## + Qualitative Research Resources

- Primer on Qualitative Analysis: <http://www.learnhigher.ac.uk/analysethis/main/qualitative.html>
- Qualitative Analysis: <http://qualitativeresearch.ratcliffs.net/15methods.pdf>
- Qualitative Analysis: [http://onlineqda.hud.ac.uk/Intro\\_QDA/what\\_is\\_qda.php](http://onlineqda.hud.ac.uk/Intro_QDA/what_is_qda.php)
- Qualitative Research Process: <http://www.qualisresearch.com/Downloads/qda.pdf>
- Quick Intro to Qualitative Analysis: <http://www.eval.org/SummerInstitute07/Handouts/si07.wongF.pdf>
- Coding Data: [polaris.gseis.ucla.edu/jrichardson/courses/datacoding.ppt](http://polaris.gseis.ucla.edu/jrichardson/courses/datacoding.ppt)

## + Quantitative Research Resources

- Primer on Quantitative Analysis: <http://www.learnhigher.ac.uk/analysethis/main/quantitative.html>
- Quantitative Analysis: <http://tecfa.unige.ch/guides/methodo/edu-tech/slides/analysis-quant.pdf>
- Quantitative Analysis: <http://www.uky.edu/~drlane/cohort/methods/ch11.htm>

- Inferential statistics: <http://www.uky.edu/~drlane/cohort/methods/ch12.htm>
- Quick Calculations with Quantitative Data: <http://www.childrensdefense.org/child-research-data-publications/data/arithmetic-calculate-percentage-change-advocacy-cdf.html>

## + Survey Resources

- RAND Health – Examples of health related surveys and other resources, available at: [http://www.rand.org/health/surveys\\_tools.html#surveys](http://www.rand.org/health/surveys_tools.html#surveys)
- Survey Design Considerations - Recommendations for Writing Effective Questionnaires. Available at: <http://www.socsci.uci.edu/ssarc/sshonors/webdocs/designtips.pdf>
- Minnesota Department of Health – Community Engagement – Brief Overview of Data Collection Methods (including Surveys). Available at: <http://www.health.state.mn.us/communityeng/needs/needs.html#surveys>

## + Qualitative Data Coding Software

- Coding Analysis Toolkit (CAT) is a free online coding tool provided by the University of Pittsburgh – University Center for Social and Urban Research. Available at: <http://cat.ucsur.pitt.edu>
- Atlas.ti is another coding program. Available at: <http://www.atlasti.com>



## + Examples of CBPAR Approach to Community Research

- Power to the People Participatory Research Kit: Conducting Interviews provides an overview of planning and implementing an interview project based using participatory research principles. Available at: <http://www.datacenter.org/research-tools>
- Our Common Ground: Cultivating Women's Health through Community Based Research is a primer that reviews a project using three qualitative methods, one-on-one interviews, group interviews, and observations specifically relating to women's health but is generalizable to many topics. Available at: <http://www.cwhn.ca/en/node/42004>
- Girls Take Charge: A Community-Based Participatory Research Program for Adolescent Girls tells the story of research conducted by a group of adolescent girls around reducing child maltreatment and raising awareness of lead poisoning. Available at: [http://mtw160-150.ippl.jhu.edu/journals/progress\\_in\\_community\\_health\\_partnerships\\_research\\_education\\_and\\_action/v004/4.1.mathews.pdf](http://mtw160-150.ippl.jhu.edu/journals/progress_in_community_health_partnerships_research_education_and_action/v004/4.1.mathews.pdf)
- A Manual for Community Based Participatory Research: Using Research to Improve Practice and Inform Policy in Assisted Living gives thorough guidance on all stages of CBPAR, from developing a collaborative to data collection and analysis to research evaluation and finally to policy development and dissemination. Available at: [http://www.shepscenter.unc.edu/research\\_programs/aging/publications/CEAL-UNC%20Manual%20for%20Community-Based%20Participatory%20Research-1.pdf](http://www.shepscenter.unc.edu/research_programs/aging/publications/CEAL-UNC%20Manual%20for%20Community-Based%20Participatory%20Research-1.pdf)

## + Other General Resources

- Extensive list of online toolkits, guides, and resources for conducting community health-related research: <http://www.healthpolicy.ucla.edu/ProgramDetails.aspx?id=56>
- Online social media advocacy tools
  - Social media: A guide for researchers aims to provide the information needed to make an informed decision about using social media and select from the vast range of tools that are available. Available at: <http://www.rin.ac.uk/our-work/communicating-and-disseminating-research/social-media-guide-researchers>
  - Using Twitter for advocacy: <http://socialmediatoday.com/colindelany/266031/online-advocacy-tools-twitter>

# Ethics in Community Based Participatory Action Research

**Research Ethics** are the principles and rules that guide how people should be treated, when they are participants in a research process or project. It might be difficult to anticipate all of the research ethics that may arise during, but it is important to be sensitive to the people involved in your research. Here are some ethics to consider:

### **Accessibility of findings**

Are the findings presented in an accessible and meaningful way for community members?

### **Benefits to the Participants**

How will you ensure that the participants in the community are not harmed during the research and gain as much benefit as possible through their participation?

### **Community Voice**

Who is the community? Who represents the community? Who speaks for the community? Do participants come from only some of the areas you are working in? Do they represent only some of the social identities in the community overall? Are there institutional, organizational or other social dynamics that privilege some voices over others? Will some portions of the community benefit more than others as a result?

### **Credit**

How are the results represented? Whose voice(s) are heard and represented? Who receives credit for the work conducted?

### **Data ownership**

How will you responsibly make the data available to the different community and other stakeholders?

### **Division of labor**

How does 'equity' in the process translate into divisions of labor on the project/process? Is the work divided equitably among partners?

### **Justice**

Do all members of the community have equal

opportunity to participate in the research? Are there some participants who are unfairly impacted by the research? (Ex. The U.S. Public Health Service Syphilis Study at Tuskegee included only poor African American men, who were not treated for the disease even when a cure was found; the study was also conducted without the benefit of their informed consent. For details about this study, visit <http://www.cdc.gov/tuskegee/index.html>).

### **Privacy**

Will it do any harm to the community or individuals to report the findings? How can you protect privacy in the data collection and sharing process? Did you get adequate permission from participants? Do they understand and agree with the way you plan to use the data?

### **Representation of local communities**

Does the presentation (or presenter) of findings in any way reinforce negative social stereotypes in presenting communities? Be mindful and transparent about how representative the findings may or may not be of the community based on participation.

### **Respect**

How do you maintain respect for a person's ability to engage/not engage in the research without coercion?

### **Rigor of research and fidelity to findings**

Are the findings being presented accurately? Are they presented with any bias or in a way to make people hear what they want to hear?

If you are conducting research involving community members and this research will be published, you may want to consider an ethical review board. For more information on this topic, see the University of Southern California's Office for the Protection of Research Subjects brochure "Is Your Project Human Subjects Research?" at [www.usc.edu/admin/provost/oprs/training/brochures.html](http://www.usc.edu/admin/provost/oprs/training/brochures.html).

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