

Chapter 4

IMPLEMENT THE TRIBAL COMMUNITY HEALTH ASSESSMENT



Implement the Tribal CHA

Overview

- The tribe determines the top health focus areas and selects indicators for monitoring health status in the Tribal CHA.
- Tribal, federal, state organizations and other entities are all potential data sources for the Tribal CHA. Each source should be assessed based upon availability, accessibility, and reliability.
- Data collection refers to process of gathering information, how is it stored, managed and protected.
- Identify staff or collaborators with skills in quantitative and qualitative data analysis.
- Data must be processed and analyzed in order to be translated into meaningful information.
- Use a combination of tables, charts and figures to present the data.

IMPLEMENTATION PHASE

The common elements of a CHA covered in this section are:

- Identify health indicators
- Collect data
- Analyze data

BACKGROUND ON ASSESSING COMMUNITY

HEALTH STATUS

Measuring the Community's Health

Health status is often assessed using objective measures called *health indicators*. A health indicator is measurement of a characteristic of an individual, population or environment that can be used to describe one or more aspects of health. Health indicators are used to define a health concern at a particular point in time, indicate change in the level of health over time and identify differences in the health of communities or populations.

In epidemiology, health statistics are used to describe new cases of disease and death and people living with disease. For example, incidence is a measure of the risk of disease development in the population. An incidence rate is defined as the number of new cases of disease in a population at a specified period of time. Rates improve one's ability to make comparisons and can be used to examine how quickly a disease is spreading or being diagnosed in a community. An example of a health statistic that describes people living with the disease is prevalence. Prevalence represents the proportion of people living with a disease at any given time in the population. Prevalence data are useful for determining the extent of a disease or health condition and therefore often used for public health planning. In general, health indicators are commonly presented as numbers, proportions, or rates. The following examples are provided for the measures and health statistics mentioned above:

NUMBER, COUNT, AND FREQUENCY: The number of individuals, cases, or health events.

Examples:

1,000 Tribal members were enrolled in 2012.

1,500 people lived on the reservation or on Tribal lands 2012.

200 community members died, from all causes, in 2012.

PROPORTION, PERCENTAGE OR PREVALENCE: The number of cases or health events in relation to the whole, or per 100.

Examples:

40.0% of injuries among Tribal community members were due to motor vehicle crashes in 2012.

75.0% of observed Tribal community members wore a seatbelt or child restraint in 2012.

INCIDENCE RATE OR MORTALITY RATE: The number of new cases, health events or deaths divided by the total population at a time point or average population during a specified time period.

Examples:

- If there were 15 new kidney cancer cases in a community of 70,000 in 2012, and 100 previous had kidney cancer, then the incidence rate would be calculated as:

$$15 / (70,000 - 100) \times 100,000 = 22 \text{ cases of kidney cancer per } 100,000 \text{ population in } 2012$$

- If there were 5 infant deaths in a community with 2,000 live births in 2012, then the mortality rate would be calculated as:

$$5 / (2,000) \times 1,000 = 2.5 \text{ deaths per } 1,000 \text{ live births in } 2012$$

What Type of Information is Included in a Tribal CHA?

A Tribal CHA includes a variety of health information, data and characteristics that are of interest to the Tribal community. The data should tell a story about community health status, identify areas of health improvement, describe factors that contribute to health challenges and identify resources that can be mobilized to address them. For public health accreditation, it is required to provide documentation and evidence that comprehensive, broad-based data and information were collected from a variety of sources to create the CHA. Sources may include Tribal, federal, state and local data; data from hospitals and healthcare providers, schools, academic institutions, and other Tribal departments (education, social services, housing). A Tribal CHA may include data and information on the categories described in Table 4.

Table 4: Types of health information included in the Tribal CHA according to the Public Health Accreditation Board.

CATEGORY	EXAMPLES
Demographic Information	Population size, age, gender, languages spoken, race and ethnicity (especially if the tribal health department provides services to non-American Indians)
Socioeconomic Status (SES)	Income and education levels, family size, employment
Quality Of Life (QoL)	Satisfaction with healthcare services, availability of childcare, civic engagement, family relations, elder care
Behavioral Factors	Physical activity, commercial tobacco use, nutrition
Environment (Including the Built Environment)	Outdoor and indoor air quality, land use, radiation, hazardous materials; Built environment can include areas for physical activity, safe roads, sidewalks
Morbidity and Mortality	Rates of illness or injury, rates of death by illness or injury and distribution by age, gender or community
Social Determinants of Health	Impact of socioeconomics on health, access to care, economic and social conditions that influence individual and group differences in health

IDENTIFY HEALTH INDICATORS

The following activities are recommended for identifying and selecting indicators:

- Determine health priorities
- Identify health indicators
- Prioritize health indicators
- Identify and assess data sources

Determine Health Priorities

Each tribe has different areas of interest regarding the health status of its community members. The tribe determines the health focus areas that the Tribal CHA should address. Although the tribe may have several health areas of interest, it is important to select the focus areas that are related to the goals and objectives of the tribal health department and the Tribal CHA project. One strategy for determining health priorities is asking tribal leaders, staff, and community members the following questions:

- What are the top three health-related issues or concerns of your department or the community?
- What health conditions are appropriate for being monitored through the Tribal CHA?

Select Health Indicators

Once the tribal health focus areas are determined, develop a list of health indicators associated with these concerns. A *health indicator* is a measure that reflects one or more aspect of the health of an individual or community, such as mortality rates. Health indicators can be used to define public health concerns at a particular point in time, to monitor change over time, to define differences in the health of populations, and to assess the extent to which the objectives of a program are being reached. The health indicators used in the CHA will provide tribes an overall view of their community's state of health.

A sample table consisting of common health priorities and indicators is located in the appendix_(Tool 6). Since the health priorities will differ for each tribe, a blank worksheet is provided below the sample. This allows each tribe to develop a list of health priorities and indicators that meet the needs of the tribe. There may be additional indicators not presented in this toolkit but that are of interest to the tribe. ITCA provides technical assistance with the identification of additional health indicators to tribes in the Phoenix and Tucson IHS Areas.



TOOLKIT RESOURCE

Tool 6: Common Health Focus Areas and Indicators

Although there are common conditions that affect tribal communities, each tribe has its own unique health concerns. A comprehensive Tribal CHA covers the health focus areas and includes indicators of the select health conditions. This Tool is located on page 91 in the Tools and Resources section.

Prioritize Health Indicators

While there is no set number for how many health indicators should be used in the CHA, it is important to ensure that you have enough data to provide you with an overall snapshot of the communities' health. Data collection is both labor and time intensive so it is also important to prioritize health indicators to ensure that data collection and analysis are manageable. To prioritize health indicators, the CHA Core Work Team needs to identify a set of criteria for determining which indicators to include in the CHA. Examples of criteria include the following:

- Importance (as communicated by tribal leadership and community)
- Scope of the problem (e.g., number of people affected)
- Seriousness (e.g., leading causes of death)
- Trends (e.g., increase in prevalence among specific age groups or gender)
- Equity (e.g., health inequities and disparities)

Identify additional criteria based on each tribe's unique circumstances and existing knowledge about the tribe's health. Whichever criteria are used, it is important that there is a consensus among the group prior to data collection. A prioritization activity is located in the appendix (Tool 7).



TOOLKIT RESOURCE

Tool 7: Sample Prioritization Criteria Matrix

Conducting a Tribal CHA is labor intensive. Therefore, it is essential to select the indicators with the highest priority and to narrow the list of indicators to be collected if there are too many indicators to manage in the given time frame. This Tool is located on page 93 in the Tools and Resources section.

Identify and Assess Data Sources

Once the list of indicators is established, identify which data source, or sources, will be used for each indicator. Data often originate from notifiable disease reporting, vital statistics, special registries, surveys, administrative data, and sentinel site and healthcare providers. Major data sources include tribal, federal, state, and other organizations.

Tribal data sources are useful, but the availability of tribal data differs for each tribe. Examples of tribal data sources include: tribal enrollment office, health department, police department, wellness center, and community surveys. Other potential data sources may include the IHS Resource and Patient Management System (RPMS), state health department reports, state cancer registries, U.S. Census Bureau, Centers for Disease Control and Prevention (CDC) reports, and other public health data reports. These data sources are also valuable, but often tribal-specific data are not readily available (with exception to the IHS and the U.S. Census). See Table 5 for potential data sources for demographic and health related information for tribes.

Implement the Tribal CHA

Table 5: Potential Data Sources.¹

Health Focus Area	Tribal Data Sources	County/State Data Sources	Federal/National Data Sources²
Demographics and Socioeconomic Factors	Enrollment Social Services	Commerce or Economic Security	U.S. Census American Community Survey Bureau of Indian Affairs
Quality of Life	Community Surveys Elder Services Schools	Health Divisions or Departments Safety	Nation Health Interview Survey Centers for Disease Control and Prevention (CDC)
Environment	Environmental Services Housing Health Facilities Transportation	Environmental Health Transportation	Bureau of Indian Affairs CDC
Mortality	Administration Elder Services Health Divisions or Departments	Health Divisions or Departments Vital Records (Death records)	National Center for Health Statistics
Cancer	Health Facilities Health Divisions or Departments	Health Divisions or Departments State or Regional Cancer Registries	Surveillance, Epidemiology and End Results (SEER) Program National Program of Cancer Registries National Cancer Data Base
Diabetes	Health Facilities Diabetes Registries and Audit Tribal Special Diabetes Program for Indians Health Divisions or Departments	State Health Department	Indian Health Service (IHS) Resource and Patient Management System IHS Diabetes Registry and Audit Special Diabetes Program for Indians
Wellness Screenings, Health Risks and Behaviors	Health Promotion Programs Health Divisions or Departments Early & Head Start Maternal and Child Health Programs Tribal community surveys	Wellness and Health Promotion Programs	IHS Resource Government Performance and Results Act (GPRA) CDC
Injuries	Health Facilities Emergency Medical Services Law Enforcement Courts Social Services Prevention Programs Transportation	Health Divisions or Departments Hospitalizations Database Transportation	Fatal Accidents Reporting (FARS) Web-Based Injury Statistic Query and Reporting System (WISQARS)
Mental Health	Behavioral and Mental Health Facilities Health Department	Behavioral and Mental Health Facilities	Substance Abuse and Mental Health Services Administration CDC
Infectious Diseases	Health Facilities Health Department	Health Divisions or Department Communicable Disease Registries	CDC

¹ Data may not be available for all indicators.

² Federal and national data sources may not have tribal specific data. However, there may be comparison information available, or data that describes the extent of the health condition on a national level.

A “Health Indicators and Data Sources” worksheet is located in the Appendix (Tool 8). Use this tool to link the health focus areas to relevant health indicators and potential data sources.



TOOLKIT RESOURCE

Tool 8: Health Indicators and Data Sources Worksheet

Selecting health indicators and determining data sources activities should occur simultaneously. This Tool is located on page 95 in the Tools and Resources section of this toolkit.

Data sources are considered either public or protected (sometimes called private). Each type has advantages and limitations which are described in Table 6 below.

Table 6: Comparison of public and private data.		
	PUBLIC	PROTECTED / PRIVATE
Advantages	<ul style="list-style-type: none"> • Often easy to access and/or already analyzed • Available through published reports, the internet, or by 	<ul style="list-style-type: none"> • May have information specific to a tribe, or sub-group
Limitations	<ul style="list-style-type: none"> • May not have information specific to the tribe • May not be current or complete 	<ul style="list-style-type: none"> • Process to obtain permission to access or the development of data sharing agreements may be lengthy

In addition to identifying the advantages and limitations of the type of data, it is important to assess the availability, credibility and reliability of the potential data sources. A data source assessment questionnaire is located in the Appendix (Tool 9). As mentioned before, data sources for American Indian health are limited and the data may not be available for all indicators. Tribal data sources are valuable, but not always available. The health indicators initially selected may have to be changed based on the data that are available. Using credible and reliable data sources is important because indicators are only as good as the data on which they are based. If the data source does not fit the needs of the tribe, consider using other data sources.



TOOLKIT RESOURCE

Tool 9: Data Source Assessment Questionnaire

Every data source has limitations. Assess the data sources to select the best option for obtaining available and reliable data. This Tool is located on page 97 in the Tools and Resources section.

Collect and Analyze Data

The following activities are recommended for collecting and analyzing data.

- Enter into data sharing agreements
- Design an approach for collecting the data
 - Collect primary data and secondary data
 - Select data collection methods and tools
 - Ensure the collection of reliable and valid information
 - Identify a record-keeping process
 - Recognize data limitations
 - Develop and implement the data collection plan

Enter into Data Sharing Agreements

If utilizing private or protected information from agencies other than the tribe, then tribal leaders will need to consider entering into a data sharing agreement. Special precautions need to be taken when collecting data with protected health information from other organizations. Often, data sharing agreements must be developed between the tribe and the agency in order to ensure the protection of community and its members. A sample data sharing agreement is located in the Appendix (Tool 10). The following topics are common in data sharing agreements:

- Purpose of data request
- Tribal approval and Institutional Review Board
- Uses of the data
- Confidentiality
- Timeline of expected data use
- Transfer of data (e.g., secure email, encrypted memory, or data storage device)
- Storage of the data
- Format of the data (e.g., text file, Microsoft Excel or Access database);
- Destruction or return of data
- Restriction or permission to use data in publications or other communications
- Review and approval of draft documents prior to publication
- Acknowledgement of the data in publications (e.g., usually a note at the end of the paper)



TOOLKIT RESOURCE

Tool 10: Sample Data Sharing Agreement

A data sharing agreement is a formal written document that outlines permissible data uses, confidentiality and security measures. An agreement is often required, especially in the transfer of sensitive health information. This Tool is located on page 98 in the Tools and Resources section.

Design an Approach For Collecting Data

Data collection refers to the process of gathering information, how is it stored, managed and protected. The collection of data is an important step in the Tribal CHA. Guidelines for data collection need to be developed before the data are collected, and should include what types of data will be collected, how the data will be stored and handled, and how the data will be analyzed. Considerations for this activity are described below.

Collect Primary Data and Secondary Data

Two major types of data are primary and secondary, both of which are required if conducting a CHA for purposes of applying for accreditation through PHAB. Primary data refers to information collected by the investigator for a specific project. One advantage of primary data is that it is often the most up-to-date information available. When appropriate secondary data are not available, primary data can be collected by administering surveys, conducting interviews and focus groups, through observation and other methods. Common methods of primary data collection are described in the data collection methods and tools section below.

Secondary data refers to data that already exists for another reason. In other words, secondary data may have initially been collected, but is later re-purposed and used for a different study or assessment. Advantages of utilizing secondary data are saving time and money. Since the data were collected for other reasons, secondary data may not be available for the selected health indicator, or specifically for the tribal community.

Select Data Collection Methods and Tools

The next step is to determine the type of data that needs to be collected and the methods that will be used to gather the information. "*Quantitative*" and "*qualitative*" refer to the two major types of data and the two major categories of data collection methods. Quantitative methods are used to obtain generalizable information that answers the questions regarding who, how much, and how many. Quantitative data are typically numbers usually presented as counts, averages, percentages, prevalence, and possibly rates. Qualitative data are typically from interviews or open-ended questions on surveys. Although more time and effort may be required, qualitative data is advantageous because it may describe perceptions and opinions. Quantitative and qualitative data can be collected in several ways. Common examples of data collection methods are described below.

Surveys. A survey is a common quantitative data collection method. However, some surveys include open-ended questions for qualitative data. For a survey, information is gathered from only a portion of the community. This portion is called a sample and is systematically selected and intended to represent the entire community. A questionnaire is a common instrument used to obtain responses.

Interviews. Key tribal staff and members have a wealth of knowledge about the community, health services, assets, or resources available. Individuals who are well-informed about one or more aspects of tribal health can be considered as “key informants.” The interviewer asks a set of predetermined questions, and at times, will ask follow-up questions to obtain more information. This method generates qualitative data. Develop a protocol that outlines the interview process, especially when there is more than one person conducting the interviews. A great deal of information is shared during an interview and must be recorded by taking detailed notes or by using an audio recorder.

Focus Groups. Like interviews, a focus group is a qualitative data method. Groups of individuals are asked open-ended questions regarding their thoughts, beliefs, opinions, and attitudes to a group of individuals by a trained moderator. The participants interact with each other as they respond to the session guided by the moderator. Unlike a key informant interview, the participants are not necessarily experts on the topic. Similar to interviews, the focus group should be recorded by audiotape or note-taking, if permission is granted by the participants and the tribe.

Observations. During a planned event or activity, healthy behaviors can be observed. For example, staff can conduct a seatbelt usage checkpoint in the community to observe passengers in the vehicles that pass. Trained staff members are not the only persons with the ability to collect data through observation. One observational method of gathering information that does not require an extensive amount of training is called a windshield survey. Community members can participate in windshield surveys by following predetermined criteria to identify meaningful people, places, or objects in the community. The individual can take a picture and explain why it is related to community health.

Community Meetings or Forums. This method encourages community members to share their own thoughts, opinions, experiences, perceptions in an open meeting. Be certain to use a format that allows for the tribal community members to have a collective discussion and share ideas.

Measurements (including biological, physical, or chemical). Trained staff can obtain direct measurement. Examples include body height and weight, hemoglobin A1C (a test for diabetes control), blood samples, or air quality samples.

Record or Chart Review. Existing health records or medical charts can be examined for measurements, disease occurrence, and other health-related information. Establish criteria for determining which records are eligible for review and what information will be collected.

Ensure the collection of reliable and valid collection

Select the most appropriate methods and tools for measurement with careful consideration. Ultimately, the methods and tools need to be able to measure and collect accurate data. Two important concepts to consider are reliability and validity. Reliability relates to consistency. In order to be considered reliable, the method or tool should produce comparable results if used again on the same group. Validity refers to accuracy or the essential truthfulness of data. Accuracy is important because the data should measure or reflect what it was intended to measure, such as health events in the Tribal CHA.

Identify a record-keeping process

Data are usually recorded on paper or electronic documents. Both are appropriate ways to record data, but electronic records allows for easier access, comparison of information and generation of statistics. Like electronic records, paper records should be secured properly. If data are collected from different sources, the data must be kept separate during data collection and analysis.

Recognize data limitations

Often there are limitations to outside data because they are not collected specifically for tribal communities. Data collected specifically by and for the tribal communities can avoid these limitations. The data may not be representative of the entire community, or it may represent a geographical area larger than the tribal community may. Often, the latest available data may not be current and represents the health status from several years in the past. Especially with sensitive health topics such as substance use, information on certain indicators may not be available by the tribe or other data sources. Sometimes only estimates of the health indicator are available.

In the data collection process, use the following guiding questions:

- Is the source credible?
- Are the data complete? Are you getting all of the information or only a portion?
- Are there issues with the data or errors such as duplicates, incorrect values, missing values, or missing variables?
- Do the data make sense?
- What are the limitations to the data?
- Are there any factors or intervening variables that should cause a distrust of the data?

Having limitations are common and expected. Therefore, do not eliminate the possibility of using data or a data source only because a limitation is identified. Some, but not all, limitations can be addressed. Limitations can affect the data analysis and interpretation. Consult with data analyst staff or service organizations (such as a Tribal Epidemiology Center) to identify limitations and to determine how best to address them.

Develop and implement the data collection plan

After deciding on data collection methods, detail your approach in a data collection plan. Implement the plan by following the planned activities and approaches in the specified time frame. At minimum, the plan should address the following elements:

- Data collection methods and tools
- Sources of the data
- Data storage and protection
- Identify persons responsible for each task
- Timelines of each activity
- Known limitations

A data collection checklist and a template for data collection plan are located in the appendix (Tools 11-12).



TOOLKIT RESOURCE

Tool 11: Data Collection Checklist

The collection of data is an essential step for conducting a health assessment of the tribal community. Use the suggestions provided in the checklist to improve the data collection process and related activities. This Tool is located on page 100 in the Tools and Resources section of this toolkit.



TOOLKIT RESOURCE

Tool 12: Data Collection Plan Template

When planned, the data collection process for a Tribal CHA is more efficient. A planning document is especially useful when multiple data methods and sources are involved. Prior to obtaining data for the Tribal CHA, consider using Tool 10 as guidance for preparation of a systematic data collection planning process. This Tool is located on page 101 in the Tools and Resources Section of this toolkit.

Create a database to manage and store data

Once data have been collected and recorded, the next concern is the data entry and storage. Data must be stored and protected in a secure manner. Adequate storage of the data ensures that results can be repeated and reconstructed later, if necessary. In addition to the data, relevant notes and observations should be saved. If biological specimens were collected, proper disposal or return to the participant should be implemented.

Data can be stored as paper files, but storing data on a computer is common and necessary for conducting statistical analysis tests. Data can be entered and stored in a database or through a number of computer software applications. Some examples of data entry and storage software include Microsoft (MS) Excel, MS Access, and Epi Info. Common characteristics of electronic data storage include the following:

- Prompt access to the data
- Low cost (if there is a computer system in place)
- Archive and backup systems are available

The length of time for data storage should be established in data sharing agreements. This may already be defined by existing data tribal policies. The tribe may decide to keep data past the end of the project or indefinitely. Reasons for keeping data may include needing to evaluate the data in the future, using data for other approved and authorized projects, and adding new data to an existing database. On the other hand, keeping data indefinitely increases the risk for possible unauthorized access. When the decision has been made to end data storage, data should be thoroughly and completely destroyed.

Enter the data

Entering the data consistently and accurately is an important step in the conducting the CHA. Depending on the method, staff will need to enter types of information such as numbers, multiple choice responses, check all that apply, or text. When assigning staff to complete data entry tasks, look for staff who are comfortable with the data entry, familiar with the software and database, are able to input accurate information. Considerations for data entry include the following:

- Keep a log of all the entered data including what was entered, when, and by whom
- Develop a protocol for how to enter information that is missing, unclear, or invalid (an example of an invalid response is when a person selects more than one response when only one was requested)
- Consider coding the data prior to data entry. Data coding is a process that assigns a value, usually a number, or a label to observations. This improves the data entry process and prepares the data for analyses that require a numeric value. For example, a “yes” response can be coded as “1” in the database, and a “no” response can be coded as “0”.

Protect the data

Data protection relates to safeguarding the written and electronic data from physical damage and protecting data integrity, including damage from tampering or theft. In order to maintain the integrity of stored data, tribal CHA project data should be protected from physical damage as well as from tampering, loss, or theft. This is best done by limiting access to the data. An appropriate person of authority, such as a tribal leader or the CHA project manager, ought to decide who has authorization to access and manage the stored data. Notebooks and questionnaires should be kept together in a safe, secure location away from public access such as in a locked cabinet. It is important to inform all project members and individuals with access about data protection procedures. Electronic data can be protected by taking the following precautions:

Protect access to data -

- Use unique user identification logins and passwords that cannot be easily guessed
- Change passwords often to ensure that only current project members can access data
- Provide access to data files through a centralized process
- Limit access rights
- Ensure that outside wireless devices cannot access your system's network
- Ask the Information Technology (IT) department about other data safety procedures

Protecting the system -

- Keep updated anti-virus protection on every computer
- Maintain up-to-date versions of all software and media storage devices
- If your system is connected to the Internet, use a firewall
- If your system is connected to the Internet, use intrusion detection software to monitor access

Protecting data integrity -

- Record the original creation date and time for files on your systems
- Record changes made to the data and data files
- Regularly back up electronic files and create both hard and soft copies
- Ensure that data are properly destroyed

ANALYZE THE DATA

Data must be managed and analyzed in an appropriate fashion in order to be translated into meaningful information. There is no single method for analyzing data. If the tribe does not employ staff trained in data analysis, delegate this task to epidemiologic professionals or biostatisticians or a service center such as the Tribal Epidemiology Centers (TEC). TECs are IHS funded organizations that serve AI/AN tribes and urban communities by investigating diseases of concern, and identifying and understanding health problems and disease risks. Consultants and the data analysis support services ought to work directly with tribal programs to determine the best approach to make data the most meaningful for the CHA. Contact a regional TEC for assistance with importing, cleaning, and analyzing data from tribal or external sources. For more information on TECs, visit the IHS website: http://www.ihs.gov/epi/index.cfm?module=epi_tec_main.

Plan for Data Analysis

An analysis plan outlines the steps that the tribe will take to organize the data in a meaningful way, and should clearly align with the purpose or goals of the CHA. Plan the analysis to have a better understanding how the information gathered from the study will be used to avoid wasting time and resources on unnecessary tasks. In addition, it is important to confirm that the type of data that will be collected is suitable for analysis.

The following are common elements included in a data analysis plan:

- Purpose of the CHA and analysis
- Variables for analysis
- Software and computer applications that will be used for the analysis and generation of graphs
- Methods used to analyze the data
- Data presentation such as text, tables, charts, figures, and graphs.
- Persons responsible
- Select who will be responsible for each task related to data analysis.
- Timeline for data analysis

Process the Data and Prepare for Analysis

Before conducting analysis, the collected data must be properly managed and prepared for testing. This often includes data cleaning and coding. Data cleaning involves the identification of data that are inaccurate, incomplete, missing, or unreasonable and the steps taken to fix these errors. Table 7 describes common types of values that may be flagged, corrected, or removed prior to conducting analysis.

Table 7. Data processing and preparation for analysis.		
TYPES OF VALUES	DESCRIPTION	POSSIBLE ACTION TAKEN
MISSING VALUE	Observations that are missing in the dataset	Check records to make sure the data was not mistakenly omitted from being entered into the dataset. Record the observation as missing in the dataset, if appropriate for analysis. The dataset may not be considered complete if there are too many missing values.
OUTLIERS	Unusually large or small values that are separated from the rest of the data	The data analyst determines whether the value is an error, or if it is truly an outlier. The data analyst will review the data records to check for mistake in data entry. Outliers often are excluded from analysis, but some may provide valuable information.
INVALID OR IMPLAUSIBLE VALUES	Values that are considered unreasonable or beyond the range of what is considered possible. Example: A person was born in 2010, but the records showed 2009 for the year of death.	Review data records to check for mistakes in data recording or data entry occurred. The data analyst may eliminate invalid or implausible values from the analysis.

Recall that data coding is a process that assigns a value, usually a number, or a label to observations. When possible, a coding system ought to be developed prior to data entry, but data can be re-coded during the data cleaning process.

Conduct the Data Analysis

The data analyst will use formulas and statistical tests to obtain measures for the health indicators, often presented as a count (frequency), percentage, or a rate. When possible, examine the data by distribution. A distribution is the organization or arrangement all the different values of a variable into groups to show occurrence. Distributions are often examined according to age, gender, or other demographic characteristics. The data analyst should include comparison data, if available.

CONSTRUCT THE COMMUNITY HEALTH PROFILE (CHP)

The following activities are recommended for developing the CHP.

- Display the data by creating tables and charts
- Acknowledge and address limitations
- Construct the report
- Provide an objective interpretation of the results

Display the Data by Creating Tables and Charts

Tables are simple summary of information in specified categories. Charts and graphs are more visual than tables making it easier to see trends over time more clearly and make comparisons between groups. Common types of charts include line graphs, bar charts and pie charts. Line graphs and bar charts are good for data trends overtime and comparisons. Generally, fewer categories are better for bar graphs. Pie charts can be used when presenting percentage data or parts of a whole (100%). Again, fewer categories are better. When developing graphs, be sure to show the complete picture. In the title, define the population and label both the x- and y-axis on the plot, graph, or figure.

Acknowledge and Address Limitations

There is no perfect study or assessment. Limitations are elements of the project design, methodology, or analysis that influence the way the results can be interpreted. Even with careful planning, limitations are common. Examples of limitations include having a small sample size (e.g., a small number of units of analysis), and a lack of available, reliable, or current data. Although limitations affect the way your findings are reported, it is important to identify the limitations to provide a more complete picture of the results. Some limitations can be addressed in order to lessen or eliminate the impact made.

CONSTRUCT THE REPORT, A TRIBAL CHP

The development of the CHA is a Tribally-driven and led process and ought to be described in a report. A “community health profile” (CHP) report is a product of the CHA. The Tribal contact and representatives will determine the elements that ought to be included in the CHP and how best to present the findings in an organized format. Below is an example of a format for a CHP:

Executive Summary
Include the main points of the CHP
Section 1: Background
Tribal history
Tribal background (government, location, economy, culture, etc.)
Community resources
Additional tribal information
Map of tribal lands, or jurisdiction of the tribal health department
Section 2: Methodology
Identification of health priorities
Data collection and data sources
Methods of data analysis
Section 3: Limitations of data and analysis
Address the data limitations
Describe how the findings are affected
Section 4: Summary of Findings
Overview of the key results
Section 5: Data on the health indicators
Key findings
Tables, graphs, and charts
A listing or description of the health assets and resources
Section 6: Discussion
Health indicator findings
Description of contributing causes of health issues
Section 7: Appendix
Additional relevant information

Provide an Objective Interpretation of the Results

Once the data for the CHA have been analyzed, the next step is to make sense of the data. It answers the following questions:

- What story is the data telling?
- Did the data provide more information about the scope of health issues in the community?
- Did the data demonstrate the need for concern in the areas expected by the tribe?

No matter how well the assessment was conducted, data cannot answer or explain everything. However, an objective interpretation of the findings will provide context and explain notable findings, patterns or trends, and identify additional needed data.



Implement the Tribal CHA—Toolkit Resources

- **Tool 6: Common Health Focus Areas and Indicators**
- **Tool 7: Sample Prioritization Criteria Matrix**
- **Tool 8: Health Indicators and Data Sources Worksheet**
- **Tool 9: Data Source Assessment Questionnaire**
- **Tool 10: Sample Data Sharing Agreement**
- **Tool 11: Data Collection Checklist**
- **Tool 12: Data Collection Plan Template**

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