

## INSTRUCTOR'S GUIDE

# Telemedicine & Mental Health

### PLANNING NOTES:

- 1) **Teams:** 4-5 students
- 2) **Length:** Approx. 7 classes (Day 1: Case Intro; Day 2: Identifying Needs; Day 3: Background Research & Survey Design; Day 4-6: Designing, Conducting, & Analyzing Survey; Day 7: Presentations)
- 3) **Resources Needed:** Computers (Days 3-6), copies of student workbook

### OVERVIEW:

*Twenty percent of nonmetropolitan counties lack mental health services versus five percent of metropolitan counties. In 1999, 87 percent of the 1,669 Mental Health Professional Shortage Areas in the United States were in non-metropolitan counties and home to over 30 million people*

*-Rural Healthy People 2010, Office of Rural Health Policy*

Rural communities face disparities in mental health care. Telemedicine is one possible solution to solve the problem of distance and low geographic population density. Yet there are many challenges to overcome in order to implement telemedicine and apply it to mental health care for those in need.

### GOAL:

Identify community needs, perceptions related to telemedicine, and attitude toward using telemental health services, by conducting a survey

### ROLE:

Consider assigning groups (or offering choice) to various mental health issues (depression, anxiety disorders, etc.) This may help narrow the focus & ensure variety and engagement in final presentations.

You are yourselves, working as a team of health technology consultants charged with determining the need for telemedicine in rural communities.

### OBJECTIVE:

**6.12:** Identify health factors in a community by designing and conducting a survey, and analyzing the results

### DELIVERABLES:

- 1) Survey Results Report
- 2) Presentation

### STANDARD:

NGSS (WHST.9-12.7) Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject demonstrating understanding of the subject under investigation. (HSL13)

### ASSESSMENT:

Your report and presentation will be graded on a rubric.

This case study is aimed at students living IN rural communities. Yet it could also benefit urban/suburban students. Focusing on rural health may widen a student's perspective and force them to consider differences & parallels between health disparities in rural vs. urban/suburban areas.

## Case Introduction:

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The local rural health clinic and a regional hospital are partnering to determine whether a telemental health program would benefit the citizens of your county. They have hired your team as consultants to make an assessment about how to move forward. Should the local clinic adopt a telemedicine program for patients? If so, what should the scope and extent of these services look like? Or should the clinic choose not to provide telemedicine for its patients? If not, what alternative plans can be implemented to ensure that access to mental health care improves in this rural community?



*Flickr by IntelFreePress*

## Explore the Problem:

This is a simplified variant of the classic KWL chart. The “Know” column becomes a hybrid of what students already knew (or think they knew) and what they have learned from prior lessons. The “Learned” column is eliminated because students will complete the next step (background research and surveys) later in the case study.

## KNOW-NEED TO KNOW CHART:

Complete the Know-Need to Know chart below based on the following directions:

- **Know:** In this column, write any facts or information you already knew about mental health and telemedicine in rural health.
- **Need to Know:** In this column, write a list of QUESTIONS you have.

Know	Need to Know
<p>If some students seem stuck on what they already Know, remind them to consult their prior lessons on mental health (5.7) and telemedicine (5.8) as well as their knowledge of their own community.</p>	<p>This is a great place to start brainstorming. Let students know that the case study will include requirements to: 1) Interview someone, 2) Find one background article each, 3) Survey people. So any questions they want answered in any of those assignments can go here!</p>
<p>Encourage students to keep their lists neat and organized (numbers or bullet points). They can use additional paper if needed. Highlighting or underlining key phrases or words will help them review their notes quickly later on. Demonstrate an example of this. [For example: #1: Is there a <u>gender difference</u> in mental health outcomes in rural communities?] Later on when they write interview questions, they can quickly look back and decide they should ask about gender differences.</p>	

**Explore the Problem:**

This article can be assigned for homework to free up class time, if needed. It can also be substituted or supplemented with the additional stand-alone PDF articles available in the module.

**NEWS ARTICLE:**

Use Before, During, and After Reading questions to boost comprehension. See examples throughout text.

**Before:** Why might rural living be “bad for your mental health”?  
What types of technology do you think could help improve mental health?

## Rural Living Is Bad For Your Mental Health: Can Technology And Telemedicine Change That?

By Susan Scutti | Feb 6, 2014 | Medical Daily

The most recent data from the Centers for Disease Control and Prevention finds high rates of mental illness throughout the U.S., but rates are generally higher in the Southeastern and more rural states (for example, nearly 14 percent of the populations in both Mississippi and West Virginia suffer from depression). A number of recent studies have focused on mental health care in rural communities with results that suggest those who live beyond the urban reach experience greater difficulty in accessing treatment. Though the news is bleak, there is a possibility of sunshine, and it arrives by way of technology.

**Expense & Stigma**

**During:** Why do you think people living beyond the urban reach have greater difficulty accessing treatment for mental health?

Noting first that Medicaid is the largest payer of mental health care in the U.S., a team of researchers from Emory University and the University of California, San Francisco, examined the availability of outpatient mental health facilities that accept Medicaid across U.S. counties. (Medicaid is a government program that covers upward of 40 million people and provides free or lowcost health insurance coverage, primarily to those with low incomes.) Using both the 2008 National Survey of Mental Health Treatment Facilities and the Area Resource File, the researchers collected and cross referenced the relevant data and came to a disturbing conclusion: More than one third of U.S. counties do not have a single outpatient mental health facility that accepts Medicaid. Next, the researchers looked more closely at the communities in order to understand which ones were more likely to lack this necessary infrastructure. Here, they found that communities with a larger percentage of residents living in a rural area were less likely to have facilities willing to accept Medicaid payment for mental health services. The researchers concluded that, despite the current expansion of Medicaid services under the Affordable

**During:** Why did researchers focus on facilities that were willing to accept Medicaid payments for mental health services?

Care Act, rural communities may continue to inadequately provide treatment to those in need of mental health services.

Another recent study focused specifically on low income rural women by examining the ways in which primary care physicians diagnosed or provided care for such women with mood and anxiety disorders. After interviewing 19 primary care physicians who serve rural communities in central Pennsylvania, the researchers determined that, compared to their urban counterparts, rural women are less likely to receive sufficient mental health care. For instance, only about one third of the doctors interviewed for the study reported that they routinely screened for depression. Worse, most of the physicians said many of their patients were underinsured or did not have any mental health coverage. Along with limited access to services, stigma also factored into the situation.

"Rural women may not want to be seen walking into the office of a mental health care provider due to fear of judgment by family and friends," wrote the researchers, led by Jennifer S. McCall Hosenfeld, assistant professor of medicine and public health sciences at Penn State College of Medicine, in a press release. Although the evidence appears bleak, hope of better mental health care does exist for those who live in rural communities and it may soon arrive in the form of technology.

### eServices

**During:** How big of a factor do you think stigma is? Do you think this is true in your community? What solutions could help reduce stigma?

An article published this month in Military Medicine discusses the possibility of providing video-based care for veterans suffering from posttraumatic stress disorder (PTSD). Noting the gap between need and receipt of care, a team of researchers, including scientists from Northeastern University, developed a "service location systems engineering model based on 2010 to 2020 projected care needs for veterans across New England to help determine where to best locate and use in-person and video-based care." Based on their model, the researchers find that some rural areas might be better served by video-based care as opposed to in-person care. Granted, this study simply demonstrates the feasibility of providing PTSD services via teleconference in New England, yet elsewhere such health services have not only been implemented but they continue to grow in use and availability.

**During:** What are some pros and cons of video-based care compared to in-person care? Do you think video-based care would work well for other mental health issues besides PTSD? If so, which ones? What would influence which types of mental health illnesses work well with video-based care vs. ones that might work better with in-person care?

Military psychologist Dr. Ray Folen, for instance, works at Tripler Army Medical Center in Honolulu, yet he has been providing treatment to patients residing on farflung bases for years via teleconference. Notably, his practice is far from unusual. For almost 20 years, the Department of Veterans Affairs as well as other government organizations have been serving patients who live in rural areas in a similar manner. One such example is Arkansas, which first implemented a telemedicine system in 2003 as a support mechanism for high-risk pregnancy consultations. Since then, the system has evolved to deliver a range of services within various medical specialties, including mental health.

In many cases, no substitute exists for in-person medical services and treatment, but certainly there are some ways in which technology may supplement if not entirely replace direct care. For instance, the Dutch have implemented a TelePsy system to help identify mental health disorders. Referred by their general practitioner, patients complete an online diagnostic and statistical screening questionnaire and then the system “recognizes” whether or not a disorder is present. This, though, is not the final step; next, a psychologist reviews and consults with the patient by phone and then the patient returns to the general practitioner in order to decide what steps need be taken.

“TelePsy is a system to help and to guide, not to replace,” said Marco Essed, CEO of TelePsy. True; nevertheless, it is a gesture toward technology increasingly being used to help mental health care professionals provide better services to all of their patients and more services to those who live in rural or remote locations.

**Sources:**

**After:** Why does the author use the quote by Marco Essed “...a system to help and guide, not to replace,” in the final paragraph? What controversies or concerns do you think exist around the use of telemedicine in mental health? Who might the critics be, if any?

1. ColonGonzalez, MC, McCallHosenfeld JS, Weisman CS, Hillemeier MM, Perry AN, Chuang CH. Someone's got to do it' – Primary care providers (PCPs) describe caring for rural women with mental health problems. *Mental Health in Family Medicine*. 2013.
2. Cummings JR, Wen H, Ko M, Druss BG. Geography and the Medicaid mental health care infrastructure: implications for health care reform. *JAMA Psychiatry*. 2013.
3. Musdal H, Shiner B, Chen T, Ceyhan ME, Watts BV, Bennevan J. In-person and video-based posttraumatic stress disorder treatment for veterans, a location-allocation model. *Mil Med*. 2014.
4. Lowery CL, Bronstein JM, Benton TL, Fletcher DA. Distributing Medical Expertise: The Evolution And Impact Of Telemedicine In Arkansas. *Health Affairs*. 2014.

## Explore the Problem:

**After:** Why does the author use the quote by Marco Essed “...a system to help and guide, not to replace,” in the final paragraph? What controversies or concerns do you think exist around the use of telemedicine in mental health? Who might the critics be, if any?

## DATA & STATISTICS:

**Mental disorders affect approximately one-half of the population over a lifetime and are among the most impairing of chronic diseases.**

**The suicide rate among rural males is higher than among their urban counterparts across all four regions of the nation.** (Eberhardt, M.; Ingram, D.; Makuc, D.; et al. Urban and Rural Health Chartbook. *Health, United States, 2001*. Hyattsville, MD: National Center for Health Statistics, 2001.)

**Nationally, an estimated 20% of children and adolescents, similar to rates among adults, suffer from emotional and behavioral disorders. About 11% of children experience significant functional impairment; 5% of children experience extreme functional impairment, and 10-15% of children and adolescents have symptoms of depression at any one time.** (Gamm, L.; Stone, S., and Pittman, S.; Mental Health and Mental Disorders—A Rural Challenge: A Literature Review.

**A study based on a 1990-92 nationwide survey found that the most youthful age group considered, those age 15-24, are most likely to report not receiving minimally adequate treatment for serious mental illness.** (Wang, P.S.; Demier, O.; and Kessler, R.C. Adequacy of treatment for serious mental illness in the United States. *American Journal of Public Health*. 92(1):92-108, 2002.)

**Access to mental health care and concerns for suicide, depression, and anxiety disorders were identified as major rural health concerns among state offices of rural health.** (National Rural Health Research Center Director's Meeting. *Research Opportunities for Rural Health Research Centers and State Offices of Rural Health*. Washington, DC, March 5, 2001.)

**Among 1,253 smaller rural counties with populations of 2,500 to 20,000 nearly three-fourths of these rural counties lack a psychiatrist, and 95% lack a child psychiatrist.** (Holzer, C.E.; Goldsmith, H.F. and Ciarlo, J.A. Chapter 16: Effects of rural-urban county type on the availability of health and mental health care providers. *Mental Health, United States*. DHHS Pub. No. (SMA)99-3285. Washington, DC: Superintendent of Documents, U.S. Government Printing Office, 1998, 204-213

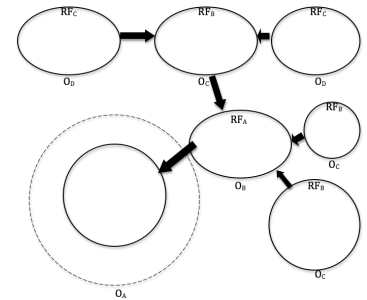
## Explore the Problem:

If students have NOT completed Module 3 (Lesson 3.11), provide a few examples of visual brainstorming tools (also known as concept webs, mind maps, etc.). Emphasize that there is no right or wrong, this is just a way to help brainstorm and think about a problem.

## IDENTIFYING NEEDS:

### Factor Outcome Web:

**Recall:** A Factor-Outcome web is a tool used to show the relationship between risk or protective factors and associated outcomes, made by connecting variables with bubbles and arrows, pointed in the direction of hypothesized influence. (Lesson 3.11)



Create a Factor-Outcome web that connects factors and variables related to mental health, telemedicine, and rural health. You may choose to organize this web in any way that makes the most sense to you; it should be a visual map to track your thinking!

Students might want to do a very brief pencil sketch of a part of their web in the empty space here. Then they could collaborate with team members and create a larger web on poster paper or butcher paper.

## Explore the Problem:

### IDENTIFYING NEEDS:

### Interview:

#### CHALLENGE:

As a team, find a health professional to interview about telemedicine and mental health in rural communities. This may be an agency, organization, clinical setting, etc. focusing on general primary care, mental health, telemedicine, or any other area of healthcare. Try to find someone locally, but if necessary, reach out to expert or health professionals around the state or nation and conduct your interview via Skype/ Facetime, Phone, or Email.

#### GOALS:

1. Engage in critical thinking and dialogue with experts and professionals in healthcare.
2. Determine specific needs related to mental health in rural settings and/or the role of technology in bridging healthcare access for rural communities.

**Recall:** Curiosity, initiative, problem-solving, communication, and resourcefulness are all important when you engage with professionals in the real world. (Case Study 4.11) Be sure to represent yourself well!

### INTERVIEW INFORMATION:

Name of Site: \_\_\_\_\_ Visit Date/Time: \_\_\_\_\_

Address: \_\_\_\_\_

Website (if available): \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Email: \_\_\_\_\_

**Signature (from Site):** \_\_\_\_\_ **Date:** \_\_\_\_\_

Setting up Interviews: The assets of the community and ability of instructor to offer options for interviews will be variable. Do what works! Some options include:

1. Have students use their resourcefulness to find a person to interview as a group. Model professional emails and behavior if this is a concern;
2. Create a bank of possible health professionals for students to choose from. Let these individuals know ahead of time that students will reach out to set up interviews.
3. Find volunteer health professionals to visit each class (if multiple are available, they can each be assigned to a group or sit on a panel. If only one is available, groups can take turns asking questions.
4. This portion of the case study could be skipped altogether or offered as an extra credit component.

**Questions** *(Prepare in advance; write answers on separate sheet of paper)***Questions:****Observations****Problems****Resources****Other Notes & Reflections**

## Explore the Problem:

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### BACKGROUND RESEARCH:

Find a credible source online to gather more information about rural health, mental health, and telemedicine.

Info Type:	Information:
<b>Source</b> <i>(title, author, name of site, date, and URL below)</i>	<p>All sources should be credible, but instructor should specify what type is required. If student have experience accessing and reading peer-reviewed scholarly journal articles, that type of source can be required. Google Scholar can be used and some articles can be found full-text for free, while others will just allow students to see the Abstract, which on it's own can provide some baseline information. Alternatively, students can be required to find any credible sources (news, govt/policy reports, information pages/documents from CDC, NIH, etc.)</p>
<b>Important Evidence #1</b> <i>(statistic, results of research, etc.)</i>	
Based on the evidence above, what solutions for this risk/protective factor might work?	
<b>Important Evidence #2</b> <i>(statistic, results of research, etc.)</i>	
Based on the evidence above, what solutions for this risk/protective factor might work?	
<b>Summary of Article</b>	

## Research:

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### Recall: STEPS TO CONDUCTING A SURVEY (Lesson 5.11)

#### 1. Clarify purpose

Why conduct a Survey? Who are the stakeholders? Who is the population of interest? What issues need to be explored?

#### 2. Assess Resources

What external resources will you need?

Which accessible resources (ex: within our school) can you make use of?

#### 3. Decide on Methods

Select the method that is most appropriate

#### 4. Write Questionnaire

Decide on what questions to ask. Set the types of response formats. Set the layout of the questionnaire.

#### 5. Revise questionnaire

Revise and edit the questionnaire for clarity and grammar/punctuation/spelling. It should be professional.

#### 6. Prepare Survey

Decide on the sample design, format and method.

#### 7. Collect data

Administer your survey to the selected population.

#### 8. Process data

Data entry: automatic and online

#### 9. Analyze the Results

Use statistical formulas to determine different trends.

#### 10. Interpret the Results

What are the trends in the data telling you?

#### 11. Take Action

Respond to the data with an intervention.

## 1. Clarify purpose

Your overall purpose is to survey the general public and/or health professionals in your community to determine community needs, perceptions related to telemedicine, and attitude toward using telemental health services. Think about the variables or factors you will want to ask about in your survey questions. Write your focused research question below, including all important variables.

### Research Question:

Writing a research question may be a difficult step for many groups. Provide examples!

Examples: **"How do patients perceive telemental health services, in terms of relationship with provider, effectiveness, convenience, and comfort level?"** OR **"What attitudes do health care professionals have toward using video-based telemedicine in mental health care, in terms of ease of use, quality of care, and cost-effectiveness?"**

## 2. Assess Resources

What resources will you need to access this survey data? How will you recruit people? Who do you need to ask permission from to access your target population? You will only conduct a “pilot test” of this survey, so you should aim for 20 survey-takers. A larger sample size is probably necessary to obtain statistically significant results, but for this case study we are just going to take a “snapshot” of the population.

### Plan for Recruiting Target Population:

Provide students with examples of populations to access. Easiest may be students in the school (classes could even exchange surveys so that the entire data collection process is internal). If external sources of survey-takers are chosen by you, the instructor, be sure to remind students that their resourcefulness and problem-solving will help. They could stand outside a grovery or convenience store (with store management permission and parental supervision, ask a local health organization or clinic to help administer surveys, collect data online via a link posted on Facebook or other social media, email to family/friends, etc.). All of these methods will have limitations and sampling biases, yet these issues can be recognized and pointed out now, then addressed in more depth in future modules or lessons.

## 3. Decide on Methods

How will you conduct your survey? Will you use paper or will it be online? How many questions do you need? What demographic information do you need to collect (ex: age, gender, distance to healthcare facility, etc.)?

### Notes on Survey Methods:

Using a Google Form survey is the recommended method for online survey creation. (Lesson 5.11 provided a chance for students to test out and practice this tool). However, some groups may need to print out and distribute surveys by hand depending on access to technology and type of population they will seek out. If this is the case, they can still use Google Forms, print the survey directly from there, and go back in to input each set of responses they collect via paper into the Google Form by hand. This should be reasonable with a sample size of only 20 required. Google Forms will provide students the opportunity to use Google’s features to display data statistics and results (In the Google Form menu, direct students to: “Responses” > “Summary of Responses”). Once one or more responses are submitted, they can see totals, percentages, and pie charts or graphs for each question.

## 4. Write Questionnaire

Write your questions. Be sure to ask about only one variable at a time. Remember to make your survey short and your questions clear and concise. Make most or all of your questions closed-ended. Avoid double-barreled, leading, biased, offensive, or sensitive questions.

### First Drafts of Questions:

*Use additional paper to draft questions!*

## 5. Revise Questionnaire

Review your survey, looking for errors, confusing questions, and places where the wording could be more concise. Look for “double-barreled” or “leading” questions. Then, have a few others take your survey for practice and give you feedback.

### Feedback:

## 6. Prepare Survey

Finalize the design, format, and method. Obtain approval of your final survey and your target population and recruitment method from your instructor. Ensure you have a way to maintain confidentiality, anonymity, and voluntary participation by including a consent letter to your survey, similar to the one below.

Dear survey participant:

My name is \_\_\_\_\_. I am a high school student at \_\_\_\_\_ and I am conducting a research project to explore \_\_\_\_\_. Results of this project will help us learn more about the \_\_\_\_\_.

You are invited to participate in this project. Your participation is voluntary; however, your assistance would be greatly appreciated in making this a meaningful survey.

If you decide to complete this survey, it should take about \_\_\_\_ minutes to complete the questionnaire below. Your identity will not be revealed in the project results. Only group comparisons will be made and reported in summary form. This survey will also remain anonymous, as researchers will not be able to trace your responses to your identity.

For more information concerning the research and research-related risks or injuries, or for more information about this research project, please notify my instructor, \_\_\_\_\_, at \_\_\_\_\_@\_\_\_\_\_.com

Thank you for your participation in this survey.

Sincerely,

\_\_\_\_\_

## 7. Collect Data

## 8. Process Data

## 9. Analyze the Results

## 10. Interpret the Results

For each of the steps above, use your problem-solving skills and teamwork to determine the best way to accomplish each step. You may divide the tasks to complete as long as each team member communicates and takes on an appropriate share of the work. In future lessons, we will learn more about processing data, analyzing results, and using statistical calculations to interpret results. For this survey, use your collective team ingenuity and creativity to determine your methods.

## 11. Take Action

What were the major findings from your survey? Respond to the data with recommendations for a possible intervention and/or future research priorities.

### Major Research Findings:

Remind students to be careful in overgeneralizing results here. With a “pilot test” sample, no FIRM or final conclusions can be made, but they can say that “Results suggest that .... may....” More tools for data analysis and statistics will be addressed in later lessons/modules.

Remind students that they should think about the Claim-Evidence-Reasoning framework for their conclusions.

**Claim:** “Results suggest that .... may....”

**Evidence:** The specific data results!

**Reasoning:** The why, or the logic that explains the claim.

(Note: *Reasoning* is also often referred to as the *Warrant* in the classic Claim-Evidence-Warrant framework)

### Recommendations:

This is the fun part! Depending on time, these recommendations could be taken to the next level to have students create a specific plan for telemedicine in their community. Also important is to encourage students to think about future research priorities. Without the data & evidence to support an intervention, progress is not likely. Health professionals have a responsibility to consider where resources should be allocated and determine research priorities to help get those resources where they belong.

## Final Report:

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If students need more structure or guidance, an outline can be created with basic requirements for each section. Or groups could be required to submit their own outline for feedback and/or approval before starting their draft!

Prepare a 2-3 page written research report that includes the following:

- **Introduction to Problem**
- **Survey Purpose and Methods**
- **Results**
- **Recommendations**
- **Works Cited**

Students can be required to submit only ONE paper per group (this will also make grading less cumbersome!) They should be encouraged to be very collaborative. (Many hands make light work!) Beware: Often, collaborative papers take LONGER and lead to unequal distribution of work. One strategy, if technology permits, is to require use of Google Docs. If they share with you, as the instructor you can check to see their progress and even revision history showing changes/additions that each team member made. If they know (or think!) you will be doing this ahead of time, any “slackers” may be more motivated to do their part!

*Each team member should contribute to the report equally. Be sure to cite all your sources appropriately to avoid plagiarism!*

## Final Presentation:

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Prepare a 3-5 minute team oral presentation that includes the following:

- **Introduction to Problem**
- **Description of survey methods**
- **Summary of research findings**
- **Recommendations**

*Each team member should contribute to the presentation equally. Practice as a team to ensure you are professional, clear, concise, and engaging. Be sure to plan your opening and closing as well as transitions between team members.*

To make presentations more authentic, community partners could be brought in to view and/or evaluate them, as well as ask questions of each group. These community partners could be drawn from the folks who helped during the case by being interviewed.

Alternatively, presentations could be recorded and uploaded to youtube (keep privacy settings as “unlisted” in order to protect student privacy). These videos could be shared with local health professionals for feedback. If students know this in advance, they may be more invested (and nervous, in a good way!) to do their best and feel that their research and contributions will actually be received from those who may be able to take action!

**Rubric:**

The rubric can be modified and tailored as needed to individual instructor needs and grading policies/criteria.

Your survey, final report, and final presentation will be evaluated using the criteria below.

**Obj. 5.12:** Identify health factors in a community by designing and conducting a survey, and analyzing the results

	Needs Improvement	Emerging Mastery	Partial Mastery	Mastery
<b>SURVEY</b>	Missing, underprepared, or achieved less than 3 of the 7 factors.	Achieved at least 3 of 7 factors: 1) Clear purpose; 2) Aligned questions; 3) Few or no errors in questions; 4) Professional; 5) Achieved pilot test sample minimum (n = 20); 6) Thorough and logical analysis of results; 7) Clear and accurate conclusions	Achieved at least 4 of 7 factors: 1) Clear purpose; 2) Aligned questions; 3) Few or no errors in questions; 4) Professional; 5) Achieved pilot test sample minimum (n = 20); 6) Thorough and logical analysis of results; 7) Clear and accurate conclusions	Achieved at least 6 of 7 factors: 1) Clear purpose; 2) Aligned questions; 3) Few or no errors in questions; 4) Professional; 5) Achieved pilot test sample minimum (n = 20); 6) Thorough and logical analysis of results; 7) Clear and accurate conclusions
<b>REPORT</b>	Missing or underprepared report; Not concise, clear, & aligned; unprofessional.	Not concise, clear, aligned, or professional; missing some sections; major spelling/grammar issues; unequal contributions	Somewhat Concise, clear, & aligned; mostly professional; comprehensive (includes all sections but some may be weak or short); some spelling/grammar issues; all team members contributed, but some more than others.	Concise, clear, & aligned; professional; comprehensive (includes all sections); few or no spelling/grammar issues; all team members contributed.
<b>PRESENTATION</b>	Missing presentation or underprepared; Not concise, clear, & aligned; unprofessional.	Not concise, clear, & aligned; unprofessional opening, closing, & transitions; one or more team members did not contribute	Concise, clear, & aligned; professional at most points; fairly smooth opening, closing, & transitions; all team members contributed, but some more than others.	Concise, clear, & aligned; professional; smooth opening, closing, & transitions; all team members contributed.

Remind students that they should use the rubric to self-evaluate their work as well. This is a best practice that will help them manage their quality of work and have a clear sense of the expectations and grading criteria.