

**Assurance of Student Learning Report  
2020-2021**

|                               |               |
|-------------------------------|---------------|
| CHHS                          | Public Health |
| Epidemiology Certificate-1751 |               |
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*Use this page to list learning outcomes, measurements, and summarize results for your program. Detailed information must be completed in the subsequent pages.*

**Student Learning Outcome 1: Describe public health problem from epidemiological perspective.**

|                     |   |
|---------------------|---|
| <b>Instrument 1</b> | <b>Direct: Research Project Report (PH 630)</b> |
|---------------------|---|

|                     |                              |
|---------------------|------------------------------|
| <b>Instrument 2</b> | <b>Indirect: Exit survey</b> |
|---------------------|------------------------------|

|   |   |                                  |
|---|---|----------------------------------|
| Based on your results, check whether the program met the goal Student Learning Outcome 1. | <input checked="" type="checkbox"/> Met | <input type="checkbox"/> Not Met |
|---|---|----------------------------------|

**Student Learning Outcome 2: Apply epidemiological methods to assess and analyze impact of public health problems.**

|                     |   |
|---------------------|---|
| <b>Instrument 1</b> | <b>Direct: Research Project Report (PH 630)</b> |
|---------------------|---|

|                     |                              |
|---------------------|------------------------------|
| <b>Instrument 2</b> | <b>Indirect: Exit survey</b> |
|---------------------|------------------------------|

|   |                              |   |
|---|------------------------------|---|
| Based on your results, check whether the program met the goal Student Learning Outcome 2. | <input type="checkbox"/> Met | <input checked="" type="checkbox"/> Not Met |
|---|------------------------------|---|

**Program Summary (Briefly summarize the action and follow up items from your detailed responses on subsequent pages.)**

We will refine measurement, alignment, and instructions for the research project report for PH 630, which serves as the capstone for the epidemiology certificate. We will conduct a content and assessment review of the other required and elective courses in the certificate to ensure there is strong alignment with this SLO objective.

### Student Learning Outcome 1

|  |   |  |   |
|--|---|--|---|
| <b>Student Learning Outcome</b>  | Describe public health problem from epidemiological perspective.  |  |   |
| <b>Measurement Instrument 1</b>  | Part I and IV of Research project Report in PH 630 class: Students are required to write a report on a semester-long that uses an epidemiological perspective to describe a public health problem by examining the existing literature (Part I) and discussion of original analysis (Part IV).  |  |   |
| <b>Criteria for Student Success</b>  | Students earn an aggregate score of 80% or higher on Parts I and IV of report.  |  |   |
| <b>Program Success Target for this Measurement</b>   | 80% of students enrolled in PH630 will meet the criteria for student success.   | <b>Percent of Program Achieving Target</b>     | Overall: 100% (6/6)                     |
| <b>Methods</b>   | The report is graded by the course instructor. Individual grades are computed for Parts I and IV and aggregated for this measurement. The aggregated score is reported for all students in PH630 during the academic year. (N=6)<br>Instructions are attached.  |  |   |
| <b>Measurement Instrument 2</b>  | <u>Exit Survey</u> : Graduating students are required to complete an exit survey, which is administered through Qualtrics. In one section, students who completed the epidemiology certificate self-assess the extent to which the certificate met the objective “Apply epidemiological methods to describe public health problem.”   |  |   |
| <b>Criteria for Student Success</b>  | Students rate objective as 4 or higher on 5 point scale   |  |   |
| <b>Program Success Target for this Measurement</b>   | At least 80% of students completing certificate will meet criteria for success  | <b>Percent of Program Achieving Target</b>     | 100% (2 of 2)<br>Mean: 4.5              |
| <b>Methods</b>   | Census of graduating students in AY 20-21 complete mandatory MPH exit survey through Qualtrics. System identifies who has completed the survey, but responses are not linked to the respondents. On the survey, students are asked to identify if they completed a certificate and, if so, which certificate they completed. Those selecting the epidemiology certificate are asked to rate the extent to which the certificate met its objectives. Results are analyzed descriptively (frequency, central tendency). Frequency data are recoded in and compared to target. |  |   |
| <b>Based on your results, highlight whether the program met the goal Student Learning Outcome 1.</b>   |   | <input checked="" type="checkbox"/> <b>Met</b> | <input type="checkbox"/> <b>Not Met</b> |
| <b>Actions</b> (Describe the decision-making process and actions for program improvement. The actions should include a timeline.)<br>Though met, we will continue to refine measurement for this SLO. PH 630 serves as the capstone for the epidemiology certificate, and we will explore ways to further align instructions with the SLO objective. |   |  |   |
| <b>Follow-Up</b> (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)<br>N/A: First year of certificate  |   |  |   |
| <b>Next Assessment Cycle Plan</b> (Please describe your assessment plan timetable for this outcome)<br>Assessment of this SLO will occur annually. PH 630 is a fall-only class; the MPH exit survey is administered each semester.   |   |  |   |

### Student Learning Outcome 2

|  |   |  |  |
|--|---|--|--|
| <b>Student Learning Outcome</b>  | Apply epidemiological methods to assess and analyze impact of public health problems.   |  |  |
| <b>Measurement Instrument 1</b>  | Part II and III of Research project Report in PH 630 class: Students are required to write a report on a semester-long that applies epidemiological methods to assess (Part II) and analyze (Part III) a secondary data set that examines a public health problem.  |  |  |
| <b>Criteria for Student Success</b>  | Students earn an aggregate score of 80% or higher on Parts II and III of report   |  |  |
| <b>Program Success Target for this Measurement</b>   | 80% of students enrolled in the PH630 will meet the criteria for student success.   | <b>Percent of Program Achieving Target</b> | Overall: 100% (6/6)  |
| <b>Methods</b>   | The report is graded by the course instructor. Individual grades are computed for Parts I and IV and aggregated for this measurement. The aggregated score is reported for all students in PH630 during the academic year. (N=6)<br>Instructions are attached.  |  |  |
| <b>Measurement Instrument 2</b>  | <u>Exit Survey</u> : Graduating students are required to complete an exit survey, which is administered through Qualtrics. In one section, students who completed the epidemiology certificate self-assess the extent to which the certificate met the objective “Apply epidemiological methods to assess and analyze impact of public health problem.”   |  |  |
| <b>Criteria for Student Success</b>  | At least 80% of students completing certificate will meet criteria for success  |  |  |
| <b>Program Success Target for this Measurement</b>   | Students rate objective as 4 or higher on 5 point scale   | <b>Percent of Program Achieving Target</b> | 50% (1 of 2)<br>Mean: 3.5  |
| <b>Methods</b>   | Census of graduating students in AY 20-21 complete mandatory MPH exit survey through Qualtrics. System identifies who has completed the survey, but responses are not linked to the respondents. On the survey, students are asked to identify if they completed a certificate and, if so, which certificate they completed. Those selecting the epidemiology certificate are asked to rate the extent to which the certificate met its objectives. Results are analyzed descriptively (frequency, central tendency). Frequency data are recoded in and compared to target. |  |  |
| <b>Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 2.</b>   |   |  | <input type="checkbox"/> <b>Met</b> <input checked="" type="checkbox"/> <b>Not Met</b> |
| <b>Actions</b> (Describe the decision-making process and actions planned for program improvement. The actions should include a timeline.)  |   |  |  |
| Though the first measurement is met, we will refine measurement, alignment, and instructions for Parts II and III of the research project report for PH 630, which serves as the capstone for the epidemiology certificate. We will conduct a content and assessment review of the other required and elective courses in the certificate to ensure there is strong alignment with this SLO objective. |   |  |  |
| <b>Follow-Up</b> (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)  |   |  |  |
| N/A: First year of certificate   |   |  |  |
| <b>Next Assessment Cycle Plan</b> (Please describe your assessment plan timetable for this outcome)  |   |  |  |
| Assessment of this SLO will occur annually. PH 630 is a fall-only class; the MPH exit survey is administered each semester.  |   |  |  |

**PH630**  
**Advanced Epidemiology**  
**Research Report**

Instruction:

The analysis project for the course requires that you apply analytic methods that we have been learning about to the analyze a real dataset. The primary objective of this assignment is to provide you with experience in describing public health problem after reviewing existing literature, applying appropriate epidemiological methods to analyze data, interpret and present the findings from epidemiologic data. Datasets for the project are available on Blackboard in formats for SAS, SPSS, Excel. The assignment is written in a way that assumes you are using SAS, but you are welcome to use other softwares.

In your final report, the following sections are expected to be in your report: **1) Introduction /literature review** (please mention the purpose of this study or research question at the end of this section); **2) Method** including study population, study design, definitions and measurements of variables, and statistical analysis method used; **3) Result; 4) Discussion, Conclusion, and Recommendation; 5) Reflection of what you learned during the course.** Detailed instructions can be found below:

Your report should be approximately 3-10 pages.

**Part I. Introduction /Literature Review.** You are expected to prepare a brief review of the literature on coronary heart disease and its risk factors including age, hypertension, smoking, family history, and, most importantly, Type A personality. Comment on magnitude of reported risk factor associations and, if possible, population attributable risk. Include no more than 10 references. The review should be 1.5-2.5 pages in length (typed and double-spaced, 11 point Arial or 12 point Times New Roman, 1-inch margins). Correct spelling, grammar, and syntax are expected. Use American Medical Association citation and bibliography format. **PLEASE DO NOT PLAGIARIZE FROM YOUR SOURCES.** If you are unsure what constitutes plagiarism, consult with your instructor before submitting your assignment.

**Part II. Method.**

This dataset contains data from an unmatched case-control study of 160 coronary heart disease (CHD) cases and 302 controls. Participants were queried about their medical status and personal habits one year ago (prior to the onset of heart disease for cases). All participants are male.

What were the variables measured in the dataset, and how were they coded?

What statistical analysis have you conducted? What statistical methods have been applied ? software you used?

Outcome variable:

CHD—heart disease, yes/no (1/0)

Predictor variables:

Typea—score on a test of type A personality (higher score means more Type A)

Age—years

HTN—hypertension: SBP  $\geq$  140 mmHg (1/0)  
 FamHist—family history of heart disease (1/0)  
 Smoker—current smoking status (1/0)

The purpose of the study was to test whether Type A personality is related to heart disease after controlling for potential confounders.

**Part III. Results.**

1. Bivariate analysis: Using SAS PROC FREQ or its equivalent in a different statistical package , generate a chi-square test for family history, TypeA, Htn , smoker and CHD and create the table. At the 0.05 level of significance, summarize the finding in the table 1 and table 2 in details.

| Table 1 | Variables            | Non-CHD<br>N= 302 | CHD<br>N= 160 | P value<br>from chi-s<br>quare test<br>statistic |
|---------|----------------------|-------------------|---------------|--|
|         | Smoker, n(%)         | 210 (69.54)       | 145(90.63)    |  |
|         | Family History, n(%) |                   |               |  |
|         | Hypertension, n(%)   |                   |               |  |
|         | Type A, n(%)         |                   |               |  |

| Table 2 | Variables          | Odds ratio of heart<br>disease |
|---------|--------------------|--------------------------------|
|         | Smoker             |                                |
|         | Family History     | 3.2188                         |
|         | Hypertension       |                                |
|         | Type A personality |                                |

2. Stratification analysis: Using SAS PROC FREQ or its equivalent in a different statistical package, conduct stratification analysis for variable htn, famhist, smoke, and assess these three variables are confounders or effect-modifier for the association between type A and chd. Summarize the fining from the stratification analysis.

| Table 3 | Crude odds<br>ratio of<br>heart<br>disease for<br>type A and<br>heart<br>disease<br>Note: this is<br>column<br>should have | Stratified Odds ratio | P value for<br>Breslow day<br>Test | Mantel-Hanzel Odds<br>ratio |
|---------|--|-----------------------|------------------------------------|-----------------------------|
|         |  |                       |                                    |                             |

|                |                  |             |  |  |  |
|----------------|------------------|-------------|--|--|--|
|                | same odds ratios |             |  |  |  |
| Smoking        |                  | Smoker:     |  |  |  |
|                |                  | No smoker:  |  |  |  |
| Family history |                  | Famhist     |  |  |  |
|                |                  | Non-famhist |  |  |  |
| Hypertension   |                  | Htn         |  |  |  |
|                |                  | Non-htn     |  |  |  |

**Part IV. Discussion, Conclusion, and Recommendation**

In this section, first repeat your finding from your results section, then discuss what are the potential mechanisms to support your finding. You may add more references if needed. Then state your conclusion and recommendations.

**Part V. Reflection what you learned and expected to be added in future**

The reflection is an important part for the students and for the instructor. Please summarize what you have learned and like, and state what are the weakness and you suggest to improve in future classes.