

Program-Level Assessment: Annual Report

Program Name (no acronyms): BS in Public Health

Department: Undergraduate Public Health Programs

Degree or Certificate Level: BS

College/School: CPHSJ

Date (Month/Year): Oct 2021

Assessment Contact: Lauren Arnold

In what year was the data upon which this report is based collected? 2020-2021 Academic Year

In what year was the program's assessment plan most recently reviewed/updated? 2020

1. Student Learning Outcomes

Which of the program's student learning outcomes were assessed in this annual assessment cycle? (Please list the full, complete learning outcome statements and not just numbers, e.g., Outcomes 1 and 2.)

This assessment cycle focused on LOs 1, 3, and 4:

LO1: Demonstrate foundational knowledge of public health in relation to human cultures, history, *science*, and policy.*

LO3: Recognize ways to implement evidence-based approaches to public health issues in communities.

LO4: Communicate public health issues with an emphasis on social justice and the core disciplines of public health.

**Only "science" piece assessed*

Although PLO3 and PLO4 were also assessed in AY2020-2021, the Undergraduate Public Health Steering Committee wanted to focus on these again due to the substantial presence of social justice discussions in the media (i.e., systemic racism, COVID-19 pandemic).

2. Assessment Methods: Artifacts of Student Learning

Which artifacts of student learning were used to determine if students achieved the outcome(s)? Please describe and identify the course(s) in which these artifacts were collected. Clarify if any such courses were offered a) online, b) at the Madrid campus, or c) at any other off-campus location.

- **PLO1:** As PLO1 has multiple parts, the "science" piece was assessed using data from PUBH4100. This part of PLO1 was of interest due to past assessment data that found a weakness in this area. The course content was updated and piloted in Spring 2020 to address this concern.
- **PLO3 & PLO4:** A sample of Public Health Capstone portfolios (PUBH4960) was used to evaluate PLO3 and PLO4. For assessment purposes, 30% (n=10) of portfolios from the Spring 2021 semester were randomly selected for assessment.

Due to COVID-19, PUBH4100 and PUBH4960 were taught using an "in-person flex" model by which class was held in person with students unable to attend in person simultaneously joining class by zoom. Students could have opted for simultaneous Zoom attendance all semester, while in quarantine/isolation, or per individual classes as needed.

3. Assessment Methods: Evaluation Process

What process was used to evaluate the artifacts of student learning, and by whom? Please identify the tools(s) (e.g., a rubric) used in the process and **include them in/with this report document** (do not just refer to the assessment plan).

PLO1 (PUBH4100): Two writing assignments and an IGNITE presentation required students to demonstrate an understanding of biological concepts/processes and relate these to the subfields of public health (e.g. epidemiology, behavioral science, etc.). The instructor included line items in the rubrics (Appendix 1) to map to PLO1. A score was reported for each student; the class average was calculated and the portion of students earning a “2” (solid understanding) was reported. The second writing assignment and IGNITE presentation were used for program assessment data.

PLO3 & PLO4 (PUBH4960): Capstone portfolio artifacts and reflections were used to assess LO3 and LO4 with the following rubric developed by the Program Director in conjunction with faculty who have taught the course; this rubric has been used to assess portfolios in the past:

Reflection on PLO achievement:

- 3=in-depth, insightful reflection addresses all aspects of the PLO and substantially builds on discussion of artifacts with additional examples
- 2=general reflection addresses most aspects of the PLO and moderately builds on artifacts with additional examples
- 1=lacks discussion of relationship to PLO achievement; doesn't build on artifacts with additional examples; and/or comprehensively address the PLO

Evidence of PLO achievement in artifacts selected by the student:

- 2=Artifacts clearly relate to the PLO and include appropriate documentation
- 1=Artifacts do not relate to the PLO and/or lack appropriate documentation

The course instructor reviewed and assessed the portfolios.

4. Data/Results

What were the results of the assessment of the learning outcome(s)? Please be specific. Does achievement differ by teaching modality (e.g., online vs. face-to-face) or on-ground location (e.g., STL campus, Madrid campus, other off-campus site)?

LO1: Results from analysis of PUBH4100 data indicated that overall, students were able to explain biological concepts/processes (2.5 average on a 3.0 scale) and make connections between biology and public health practice (2.6 average on a 3.0 scale). Of all students assessed, 90% were able to correctly explain the biological processes in their second writing assignment, and 85% were able to do so in their final IGNITE presentation. Similarly, 95% of students assessed were able to connect the biology to public health in the writing assignment and 86% were able to do so in the IGNITE presentation.

LO3: Analysis of this sample of Capstone portfolios found consistency in assessment of LO achievement via student reflection and review of artifacts. All students (100%) provided an in-depth, insightful reflection that addressed all LO components and substantially built on discussion of artifacts with additional examples. Similarly, all students (100%) furnished artifacts that connected to the PLO (average score of 2/2).

LO4: Analysis of this sample of Capstone portfolios showed LO achievement as measured by student reflection was consistent with achievement as demonstrated by artifacts. All students (100%) provided an in-depth, insightful reflection that addressed all LO components and substantially built on discussion of artifacts with additional examples. Similarly, all students (100%) furnished artifacts that connected to the LO (average score of 2/2).

5. Findings: Interpretations & Conclusions

What have you learned from these results? What does the data tell you?

LO1: Data from the writing assignment and IGNITE presentation indicated that overall, students demonstrated the ability to explain biology concepts (thus demonstrating their understanding of foundational concepts) and articulate connections between biology and public health practice. While percentages of students at the achievement level were slightly lower than last year, the course format was different (hybrid model) and students moved in and out of in-person vs online learning throughout the semester.

LO3 and LO4: This year, student perception of LO achievement as articulated via reflections matched evidence of LO achievement as evidenced through assessment of artifacts students selected to illustrate that achievement. As in past years, only a sample of portfolios was used in assessment, as student experiences in class (e.g. portfolio discussions and peer review) may varied based on modality of attendance.

6. Closing the Loop: Dissemination and Use of Current Assessment Findings

A. When and how did your program faculty share and discuss these results and findings from this cycle of assessment?

Per assessment protocols, this report is shared with the Undergraduate Public Health Steering Committee at a fall semester meeting. The report is also posted on the Program's googlesite. Lastly, the report is submitted to the University Assessment Office, which posts it on its webpage for access by faculty, staff, and students.

B. How specifically have you decided to use these findings to improve teaching and learning in your program? For example, perhaps you've initiated one or more of the following:

Changes to the Curriculum or Pedagogies

- Course content
- Teaching techniques
- Improvements in technology
- Prerequisites
- Course sequence
- New courses
- Deletion of courses
- Changes in frequency or scheduling of course offerings

Changes to the Assessment Plan

- Student learning outcomes
- Artifacts of student learning
- Evaluation process
- Evaluation tools (e.g., rubrics)
- Data collection methods
- Frequency of data collection

Please describe the actions you are taking as a result of these findings.

No changes are being taken as a result of these findings at this time (see below).

If no changes are being made, please explain why.

Due to the tumultuous academic year with in-person hybrid classes (which required teaching and engaging students simultaneously in-person and by Zoom) and the need for flexibility in modifying class delivery and content as the year progressed in response to student needs (e.g. due to quarantine/isolation), data collected this year are not comparable to prior years. Thus, no curricular changes will be made based on this year's data.

7. Closing the Loop: Review of Previous Assessment Findings and Changes

A. What is at least one change your program has implemented in recent years as a result of assessment data?

One change the program made as a result of assessment in prior years was to revise the Capstone portfolio, PUBH4100 writing assignment, and PUBH Ignite assignment rubrics to reflect LO assessment.

A second change made as a result of prior assessment findings was to strengthen the biology content and connections of biological concepts/principles to public health applications in PUBH4100. Specifically, a new textbook on public health biology that is written for undergraduates was selected for the course. Through readings, lectures, and activities, more emphasis was placed on basic biological foundations and pathogenesis. Additionally, writing assignments and an Ignite presentation were added to assess student understanding of biological content and its application to public health using different modes of communication.

B. How has this change/have these changes been assessed?

These changes were assessed by monitoring LO achievement via the Capstone portfolio and by assessing elements of the writing assignment and Ignite presentation in PUBH4100 that relate to LO1.

C. What were the findings of the assessment?

LO achievement as assessed via the Capstone project has remained high. This was the first year where all students in the sample assessed achieved LO3 and LO4 and exceeded achievement expectations in their reflections. Because these students were only a sample of all students, we are not making the assumption that all students exceeded achievement.

Assessment of the PUBH4100 writing assignment and Ignite presentation found that students are meeting achievement of the “science” section of LO at a level that is stronger than earlier years.

D. How do you plan to (continue to) use this information moving forward?

We will continue to assess LO achievement via the Capstone portfolio, as students create this product at the culmination of their BSPH experience. However, we may discuss revisions of the rubric during AY2021-2022.

We will continue to monitor the “science” piece of LO1 using PUBH4100 data. Additionally, we will begin to look at this using Capstone portfolio data in upcoming years, as students who are taking this “revised” version of PUBH4100 will be taking Capstone this year and beyond. Assessing LO1 in Capstone will allow the Program to see how students continue to build on LO achievement from PUBH4100.

IMPORTANT: Please submit any assessment tools (e.g., rubrics) with this report as separate attachments or copied and pasted into this Word document. Please do not just refer to the assessment plan; the report should serve as a stand-alone document.

Appendix A: PUBH4100 Writing Assignment #2 Rubric

LO1 assessed using data from:

- Understanding of biological concepts (Q1a/Q2a)
- Understanding of biological processes (Q4a/4c)
- Connection (of biology) to PH core disciplines (Q1b/2b)

	3 (Excellent)	2 (Good)	1 (Poor)
Understanding of biological concepts (Q1a/Q2a)	Demonstrates a strong understanding of biological concepts by clearly articulating definitions, comparisons, and explanations in own words and with depth	Demonstrates a general understanding of biological concepts by articulating definitions, comparisons, and explanations generally using own words and with some depth	Demonstrates confusion about biological concepts as evidenced through presentation of definitions, comparisons, and explanations
Connection to PH core disciplines (Course LO2, Q1b/Q2b)	Clearly identifies a core PH discipline and explains the relevance to the paper topic with substantial depth and supporting examples	Core PH discipline is identified and relevance to paper topic is generally explained with some depth and supporting examples	Core PH discipline is not identified and/or lacking an explanation how it is relevant to the paper topic and without supporting examples
Disease burden synthesis with history (Q1c/Q2c)	Superior synthesis between the biological concept of interest (antigenic shift/GWAS) and historical aspects of public health, as demonstrated by explanations and examples	General synthesis of the biological concept of interest and historical aspects of public health as demonstrated through explanations and examples	Substantially lacking in synthesis of the biological concept of interest and historical aspects of public health and/or without supporting examples
Biomarker example (Q1d/Q2d)	2 pts: Provides accurate examples for two categories of biomarkers	1 pt: Provides accurate example for only one category of biomarker	0 pt: Fails to provide accurate examples for two categories of biomarkers
Understanding of biological process (Course LO4, Q1c/Q2c)	Demonstrates a strong understanding of biological process by clearly articulating descriptions and explanations in own words and with depth	Demonstrates a general understanding of biological process by articulating descriptions & explanations largely using own words and with some depth	Demonstrates confusion about biological process as evidenced through presentation of descriptions and explanations
Application of biology to PH practice (Course LO6, Q1e/Q2e)	Superior ability to relate biological principles to application in public health practice, supported through strong examples with explanation	Solid ability to relate biological principles to application in public health practice, generally supported through examples with explanation	Generally lacks the ability to relate biological principles to application in public health practice; lacking support through examples with explanation
Written communication	Extremely well written, with superior flow and little to no proofing (≤ 2 errors/pg)	Generally well written, with good flow and/or minor proofreading (3-5 errors/pg)	Poorly written and/or substantial proofreading needed (> 5 errors/pg)
Mechanics	-----	All formatting instructions followed; references cited and reference page formatted per instructions	Fails to follow >1 format instruction; references/reference page missing or both formatted incorrectly

Appendix B: PUBH4100 Ignite Presentation Assignment Rubric

LO1 assessed using data from:

- Understanding of biological concepts
- Application of biology to PH practice

	3 (Excellent)	2 (Good)	1 (Poor)
Magnitude of issue (CLOs 1, 2) <i>CLO=Course learning outcome</i>	Clearly/superiorly identifies, defines, and demonstrates magnitude of the PH issue, strongly supported by data	Adequately identifies, defines and demonstrates the magnitude of the PH issue, supported with some data	Fails to clearly identify, define, demonstrate magnitude of the PH issue; lacks supporting data
Risk factors for outcome (CLO 1)	Risk factors concisely but comprehensively described	Risk factors adequately described	Risk factors poorly described
Understanding of biological concepts (CLO 4)	Demonstrates strong understanding of biological concepts by clearly articulating definitions and processes in own words and with depth	Demonstrates a general understanding of biological concepts by articulating definitions and processes using own words and with some depth	Demonstrates confusion about biological concepts as evidenced through presentation of definitions and processes
Application of biology to PH practice (CLO 6)	Superior ability to relate biological principles to PH practice, supported through strong, multiple examples with explanation	Solid ability to relate biological principles to PH practice, generally supported through an example with explanation	Generally, lacks ability to relate biological principles to PH practice; lacking support through an example with explanation
Effective slides (e.g., readable, organized)	Slides are well organized and readable; main points clearly presented; exceeds expectations with text and visual aids	Slides are generally well-organized and readable; main points generally presented clearly; some visual aids supplement text	Slides are not consistently organized/readable; main points not always clear; and/or visual aids detract from slides
Presentation quality (transitions, knowledge of key points)	Presenter demonstrates strong knowledge, supplementing slide points with verbal information; sections always transition smoothly; presentation does a superior job of telling a complete story	Presenter demonstrates some additional knowledge/ occasionally supplement slide points with verbal information; sections generally transition smoothly; and/or presentation generally tells a complete story	Presenter does not supplement slide points with verbal information; sections transitions are not smooth; and/or little integration of information across the presentation
Oral communication	Presenter speaks clearly, is well paced, and provides a fluent delivery w/few mistakes	Presenter generally speaks clearly, some sections may be rushed, and/or delivery w/moderate mistakes	Difficulty understanding presenter, many sections are rushed, and/or substantial delivery errors
References		Images & direct quotes cited correctly in PPT; reference page correctly formatted	Images and/or direct quotes cited incorrectly in PPT; reference page incorrectly formatted
Mechanics		All instructions followed	>1 formatting instruction not followed

Appendix C: PUBH4960 Capstone Portfolio Rubric

LO3 and LO4 assessed using data from “PLO Reflection” and “PLO Artifacts.”

Category	3	2	1	Points Earned	
Title page			Includes all required elements; professionally formatted		
Overview Statement	Clearly articulates reason for choosing program of study, public health passions, evolution as an individual through your PH studies, and future goals, with in-depth, insightful reflection on the path to forming your PH identity.	Articulates reason for choosing program of study, public health passions, evolution as an individual through your PH studies, and future goals, with general reflection on the path to forming your PH identity.	Describes program of study, reason for choosing program of study, public health passions, and future goals, with little reflection on the path to forming your PH identity and/or with some room for question.		
PLO-Reflection	Clearly articulates why artifacts were chosen and relationship to PLO achievement; in-depth, insightful reflection addresses all aspects of the PLO and substantially builds on discussion of artifacts with additional examples.	Generally articulates why artifacts were chosen and relationship to PLO achievement; general reflection addresses most aspects of the PLO and moderately builds on artifacts with additional examples.	States why artifacts were chosen but lacks discussion of relationship to PLO achievement; doesn't build on artifacts with additional examples; and/or comprehensively address the PLO.	PLO1	
				PLO2	
				PLO3	
				PLO4	
PLO-Artifacts	----	Artifacts clearly relate to the PLO and include appropriate documentation (graded, with comments if available).	Artifacts do not relate to the PLO and/or lack appropriate documentation.	PLO1	
				PLO2	
				PLO3	
				PLO4	
Synthesis	Insightful, in-depth reflection clearly articulates how public health educational experiences synthesize with other undergraduate coursework/ experiences; includes substantial supporting examples.	Moderate reflection articulates how public health educational experiences synthesize with other undergraduate coursework/ experiences; includes some supporting examples.	Statement does not clearly connect public health educational experiences to other undergraduate experiences and/or includes minimal to no supporting examples.		
Professionalism	Superior effort to produce a professional product with respect to organization, grammar, spelling, and typing errors; follows all format instructions.	Exhibits elements of professionalism but needs some organization, proofing and/or formatting edits.	Requires substantial organizational, proofing and/or formatting edits.		
Final Score					