SAINT LOUIS UNIVERSITY.

Program Assessment: *Annual Report*

Program(s): B.S. Public Health

Department: N/A – Undergraduate Public Health Programs

College/School: College for Public Health and Social Justice

Date: June 30, 2018

Primary Assessment Contact: Lauren D. Arnold, PhD, MPH

1. Which program student learning outcomes were assessed in this annual assessment cycle?

Per the Assessment plan, program learning outcomes (LOs) 3 & 4 were assessed in AY2017-2018:

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.

Note, the most recent assessment plan stated that LOs 1 & 2 would be assessed in Fall 2017 and LOs 3 & 4 would be assessed in Spring 2018. However, the timeline for LOs 1 & 2 was pushed to Summer 2017 to comply with the assessment report that was submitted to the University in September 2017.

2. What data/artifacts of student learning were collected for each assessed outcome? Were Madrid student artifacts included?

LO3: Recognize ways to implement evidence-based approaches to public health issues in communities.
Direct Assessment: Exam questions from EPI4000 (F-2017), PUBH3200 (F-2017), and PUBH2100 (Sp-2018); capstone portfolio from PUBH4960 (Sp-2018)
Indirect Assessment: Graduation exit survey administered in April/May 2018

LO4: Communicate public health issues with an emphasis on social justice and the core disciplines of public health.
Direct Assessment: Exam questions from PUBH2100 (Sp-2018); Capstone portfolio from PUBH4960 (Sp-2018)
Indirect Assessment: Graduation exit survey administered in April/May 2018

Madrid artifacts were not included as EPI4000, PUBH3200, and PUBH4960 are not offered in Madrid.

3. How did you analyze the assessment data? What was the process? Who was involved?
    NOTE: If you used rubrics as part of your analysis, please include them in an appendix.

LO3: Recognize ways to implement evidence-based approaches to public health issues in communities.
Direct Assessment: PUBH2100 (Intro to Global Health), PUBH3200 (Evidence Based Public Health), and EPI4000 (Introduction to Epidemiology) instructors identified a sample of exam questions that mapped to LO3 (Appendix A). In PUBH2100, the percentage of students answering each question correctly was calculated. In PUBH3200 and EPI4000, the number of questions answered correctly was calculated for each student and distribution of percentage of correct responses was examined.

LO4: Communicate public health issues with an emphasis on social justice and the core disciplines of public health.
Direct Assessment: The Spring 2018 PUBH2100 (Intro to Global Health) instructor identified a sample of exam questions that mapped to LO4 (Appendix B). The percentage of students answering each question correctly was calculated.

LO3 & L04 Direct Assessment: Capstone Portfolio
The Capstone portfolio (artifacts and reflection) was used to assess LO3 with a 3-point rubric (3=exceeds; 2=meets; 1=doesn't meet) developed by course instructors (Appendix C). A doctoral student in public health who served as Graduate Teaching Assistant (and who will teach the Capstone course in AY2018-2019) evaluated the portfolios for LO3 achievement. The lead course instructor reviewed with the GTA how to evaluate the portfolios, and provided examples. After the GTA evaluated the first few portfolios, the lead instructor reviewed the findings to ensure the rubric was used as intended. Both course instructors reviewed all portfolio evaluations after they were complete.

LO3 & L04 Indirect Assessment: Graduation Exit Survey
The Graduation Exit Survey was administered in April/May 2018. Students rated their perceived achievement of L03 on a scale of 1 (very uncomfortable) to 5 (very comfortable). A Graduate Assistant (MPH student) was responsible for compiling the survey data, under the guidance of the Program Director. The goal was that 80% of students would report achievement at a level of 4.0 or higher (comfortable/very comfortable).

4. What did you learn from the data? <u>Summarize</u> the major findings of your analysis for each assessed outcome.
   NOTE: If necessary, include any tables, charts, or graphs in an appendix.

LO3: Recognize ways to implement evidence-based approaches to public health issues in communities.
Assessment data demonstrated that while LO3 achievement was high across all areas, the level of achievement strengthened as the level of courses increased (e.g. 2000-level Introductory course vs. 3000- and 4000- level junior/senior courses vs. 4000-level senior Capstone). Although all students achieved LO3 per Capstone project assessment, there was a range skill levels. Specific findings are as follows:
- EPI4000: Of the 5 exam questions that assessed LO3 in Fall 2017, 66% of students got 80% (n=4 or more) of the questions correct. The breakdown was:
  - 5 questions correct – 37% (n=13 students)
  - 4 questions correct – 29% (n=10 students)
  - 3 questions correct – 23% (n=8 students)
  - 2 questions correct – 8% (n=3 students)
  - 1 question correct – 3% (n=1 student)
- PUBH3200: Of the 6 exam questions that assessed LO3 in Fall 2017, 85% of students got 80% (n=5 or more) of the questions correct. The breakdown was:
  - 6 questions correct – 50% (n=10 students)
  - 5 questions correct – 35% (n=7 students)
  - 4 questions correct – 10% (n=2 students)
  - 3 questions correct – 5% (n=1 students)
- PUBH2100: Of the 6 exam questions that assessed LO3 in Spring 2018 the percentage of students that got each question correct was:
  - Midterm Q13 correct – 57% (n=51/89 students)
  - Midterm Q28 correct – 90% (n=80/89 students)
  - Midterm Q50 correct – 72% (n=64/89 students)
  - Final Q7 correct – 98% (n=84/86 students)
  - Final Q14 correct – 94% (n=81/86 students)
  - Final Q15 correct – 76% (n=65/86 students)
  - **There is a positive trend towards increased achievement of LO3 on final exam questions as compared to midterm exam questions.**
- Evaluation of the Capstone portfolio (n=27 seniors) found that 100% of students achieved LO3. Scores ranged from 2.0 to 3.0, with an average score of 2.6/3.0 and standard deviation of 0.36.

On the graduation exit survey, the BSPH-LO3 average score – 4.32 / 5.0 (n=19 responses).

LO4: Communicate public health issues with an emphasis on social justice and the core disciplines of public health.
Assessment data demonstrated that while LO4 achievement was high, the level of achievement was stronger in the senior Capstone portfolio as compared to the Introductory level public health course. Although all students achieved LO4 per Capstone project assessment, there was a range skill levels. Specific findings are as follows:

- PUBH2100: Of the 6 exam questions that assessed LO4 in Spring 2018 the percentage of students that got each question correct was:
  - Midterm Q14 correct – 58% (n=52/89 students)
  - Midterm Q19 correct – 88% (n=78/89 students)
  - Midterm Q20 correct – 63% (n=56/89 students)
  - Final Q3 correct – 91% (n=78/86 students)
  - Final Q27 correct – 99% (n=85/86 students)
  - Final Q37 correct – 98% (n=84/86 students)
  - **There is a positive trend towards increased achievement of LO4 on final exam questions as compared to midterm exam questions.**
- Evaluation of the Capstone portfolio (n=27 seniors) found that 100% of students achieved LO4. Scores ranged from 2.1 to 3.0, with an average score of 2.7/3.0 and standard deviation of 0.21.

On the graduation exit survey, the BSPH-LO3 average score – 4.68 / 5.0 (n=19 responses).

5. How did your analysis inform meaningful change? How did you *use the analyzed data to make or implement recommendations for change* in pedagogy, curriculum design, or your assessment plan?

As the data were just compiled, the Undergraduate Public Health Steering Committee will review this report and discuss potential changes at their fall semester meeting.

This is only the second year the Public Health Capstone course was offered. As such, although a positive trend toward LO3 and LO4 achievement is seen, it is too early in the assessment process to look at trends over time. The rubrics used to evaluate LO achievement in the Capstone portfolio this year were revised from last year; however, they may be in need of further revision as they evaluated the portfolio as a whole and did not separate reflection (indirect assessment) from artifact review (direct assessment). Additionally, as the LOs have multiple components, the rubric may need to better distinguish between these components in order to identify potential areas of weakness within the larger LO; this information can then be used to examine potential changes to courses earlier in the curriculum that will strengthen LO achievement by the time students take Capstone. Alternately, there may be a need to revise the LOs themselves to reduce the "multiple component" challenge. These issues will be discussed in the upcoming year (e.g. by the Undergraduate Public Health Steering Committee, in discussion with the Director of University Assessment, in consultation with CTTL, and/or in consultation with other programs on campus, particularly those that have a portfolio component).

Due to the PUBH2100 class size (89 students at the start of the semester), scantron exams were given, and there wasn't capacity to individually abstract data from each scantron and record in Excel which of the identified assessment questions each student got correct and then to stratify the responses by major. Thus, we were unable to calculate the percentage of students that answered all 6 identified questions correctly (as done for PUBH3200 and EPI4000). Recognition of this limitation has led to a potential change in the collection of assessment data in AY2018-2019 (see below).

Changes to future assessment process:
As several of the classes in the Public Health major are taken by students who are PH minors or who are majoring in fields other than Public Health, there is a need to stratify the assessment data by major. However, this is a time-intensive process, particularly for larger classes (e.g. >50 students), and faculty time/resources are limited. Thus, the Undergraduate Public Health Programs will explore dedicating an existing Graduate Assistant (GA) in AY2018-2019 to support program assessment. For example, under supervision from the Program Director and in collaboration with course instructors, the GA will develop an Excel spreadsheet for each class in which assessment data will be collected in which each student, their major, and exam question results or assignment results will be noted; data can be collected at pre-determined points in the semester rather than having faculty submit results to the Program at the conclusion of the semester or academic year.

6. Did you follow up ("close the loop") on past assessment work? If so, what did you learn? *(For example, has that curriculum change you made two years ago manifested in improved student learning today, as evidenced in your recent assessment data and analysis?)*

Following up on the AY2016-2017 assessment of the capstone portfolio, which done for the first time in Spring 2017, the rubric for evaluation of LO3 and LO4 was developed based upon that used for LO1 and LO2 in the

AY2016-2017 assessment period. However, as this is the first year LO3 & LO4 were assessed, it is not possible to follow-up on prior data at this time. However, based on student and instructor feedback from the Spring 2017 Capstone course, some changes were made to the portfolio; for example, students now submit two – rather than one - artifacts per LO. Although the impact of this change was not formally assessed, it was noted by those evaluating the portfolios that the additional artifacts helped provide further opportunity for students to demonstrate LO achievement.

IMPORTANT: Please submit any revised/updated assessment plans to the University Assessment Coordinator along with this report.

*Please see the attached revised timeline for AY2018-2019 program assessment, which focuses on LO1 and LO2.

Appendix A: Exam Questions Used to Assess BSPH-LO3

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

PUBH2100 Exam Questions

- **Midterm, Q13:** What is the name of the global vaccine distribution system that helps ensure that vaccines remain effective from manufacturer to administration?

- **Midterm, Q28:** The Progresa/Oportunidades program in Mexico focuses on prevention for a single disease at a time. (true/false)

- **Midterm, Q50:** There is likely to be continued high demand for education and employment opportunities for young people for many years to come (tru/false, interpreting a population pyramid)

- **Final, Q7:** What HIV/AIDS prevention strategy did Thailand promote heavily to reduce transmission?

- **Final, Q14:** Which of the following evidence-based interventions for tobacco control is designed to protect people from second-hand smoke?

- **Final, Q15:** Which of the following is a primary prevention intervention to prevent nutritional deficiencies in young children?

EPI4000 Exam Questions

- **Exam 1, Q35:** An emergency manager conducts active surveillance to assess lung disease in first responders who worked in New York City following the 9/11 terrorist attacks. He uses the data he collected to calculate crude incidence of lung disease and compares this to incidence of lung disease in the general population of NYC residents. He concludes that the higher rates for first responders are related to their occupational exposure. You argue that the comparison is not valid because…
  a. The number of first responders studied is smaller than the population of New York City
  b. The incidence rates do not account for the difference in age structure of the population
  c. There are concerns about under-reporting of lung disease in the first responder population
  d. None of the above – making this comparison is perfectly okay.

- **Exam1, Q58:** The Department of Health wants to compare death rates in Jefferson and St. Louis Counties. A crude death rate of 1.2 per 1,000 was reported in Jefferson County. St. Louis County data are below:

	St. Louis County Population	# of deaths
< 30	34,550	55
30 to <65	74,280	230
≥ 65	64,020	400

Using these data, you conclude everything **except**:
  a. About 4 people for every 1,000 die in St. Louis County each year.
  b. As expected, the death rate increases with age.
  c. The middle age group is dying at about 2-times the rate of the < 30 year-olds.
  d. Jefferson County is a healthier place to live than St. Louis County.

- **Exam2, Q39:** As part of a survey, 1,500 nursing home residents are asked about suffering a broken hip while living in the home, use of a cane, and need for glasses. It is found that 222 residents suffered a broken hip at some point while living in the nursing home; 1,030 need glasses; and 850 use a cane. What type of epi design was used for this study?
  a. Case report
  b. Cross sectional study
  c. Ecological study
  d. Surveillance study

- **Exam2, Q43:** A researcher wants to assess what neighborhood changes city parents think would increase the amount of time their children spend outdoors. He wants to send surveys to all parents whose children attend elementary school in St. Louis City, but the schools won't release this information. So, he goes to each school and hands a survey to parents picking up their children. The sampling strategy used by this researcher is:
  a. Simple random sampling
  b. Stratified sampling
  c. Convenience sampling
  d. Quota sampling

- **Exam2, Q52:** In outbreak investigations, we wait to implement control measures until after the source of the outbreak is confirmed. (True/False)

PUBH3200 Exam Questions

- **Exam1, Q29:** According to best practices, asset mapping is done using secondary sources and googlemaps. (True/False)

- **Exam1, Q44:** The high school students want to take pictures of people as part of photovoice. You explain that there are ethical issues related to protecting individual's privacy. Suggest how you can address ethical concerns in a way that allows students to capture images of people.

- **Exam1, Q47:** You decide to ask high school athletes about their experiences with pressure to continue playing after an injury. What primary data collection method would you use? In 1-2 sentences, explain why this is appropriate.

- **Exam2, Q1:** One might argue that the closure of the Homer G Phillips hospital was evidence based in part because decision-makers considered all of the following pieces of evidence **except**:
  a. The community's perspectives on benefits of the hospital
  b. Financial status/needs of the hospital
  c. National policy on de-segregation
  d. Availability of other hospitals (assets) in the city

- **Exam2, Q23:** To help plan the intervention, you construct a logic model using a right-to-left model approach. This means that you first:
  a. Determine activities that need to be conducted
  b. Identify resources that will be needed
  c. Define program goals
  d. Review current policies and programs that are in use
  e. Identify measurable outputs that can be used for evaluation

- **Exam2, Q39:** Give a specific example of something you would use the windshield tour to assess related to the parks you identified. Explain why this is important to planning your intervention.

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

PUBH2100 Midterm Exam Questions
- Q14. CDC's MMWR is an example of what category of information source used in public health?
- Q19. What term refers to a combination of economic, cultural, and educational factors that put people at risk of risk factors for illness or injury?
- Q20. The testimonials used in some of the SunSmart ads reflect which key component of social cognitive theory?

PUBH2100 Final Exam Questions
- Q3. What are the three core functions of public health?
- Q27. What intervention strategy aims to create awareness, educate, and spur a desired action in the target population?
- Q37. Knowledge alone is usually sufficient to change behavior. (true/false)

Appendix C: PUBH4960 Capstone Portfolio Rubric for Assessment of LO3 & LO4

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

Evaluation of performance		
1	Does not meet expectations	Portfolio only provides one example of an EB approach to PH issues or only presents EB approaches in one community.
2	Meets expectations	Portfolio identifies evidence-based approaches to public health issues in more than one community but does not explain why they are evidence-based.
3	Exceeds expectations	Portfolio identifies evidence-based approaches to public health issues in more than one community and demonstrates an understanding of *why* these approaches are evidence-based. health characteristics, determinants; gives examples of these in more than one population and/or discusses how these impact health in the identified populations.

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

Evaluation of performance		
1	Does not meet expectations	Portfolio (artifacts, reflection) does not clearly articulate different facets of PH issues using written or visual communication skills; addresses both social justice and/or 1 of the following aspects of the issues presented: epidemiologic, biostatistical, behavioral, environmental, policy.
2	Meets expectations	Portfolio (artifacts, reflection) articulates different facets of PH issues using written or visual communication skills; addresses both social justice and 2-3 of the following aspects of the issues presented: epidemiologic, biostatistical, behavioral, environmental, policy.
3	Exceeds expectations	Portfolio (artifacts, reflection) articulates different facets of PH issues using written or visual communication skills; addresses both social justice and epidemiologic, biostatistical, behavioral, environmental, and policy aspects of the issues presented.