SAINT LOUIS UNIVERSITY.

Doisy College of Health Sciences Program-Level Assessment: Annual Report

Program: **Investigative and Medical Science (IMS)**   Department: **Clinical Health Sciences (CHS)**

Degree or Certificate Level: **BS**   College/School: **Doisy College of Health Sciences**

Date (Month/Year): **09-21-2020**   Primary Assessment Contact: **Minh Kosfeld**

In what year/cycle was the data upon which this report is based collected? **2019-2020**

In what year/cycle was the program's assessment plan most recently reviewed/updated? **2019-2020**

1. Student Learning Outcomes
Which of the program's student learning outcomes were assessed in this annual assessment cycle?

- PLO #2: Students will deliver a clear description of a medical sciences project.
- PLO #5: Students will act with professional integrity.

2. Assessment Methods: Student Artifacts
Which student artifacts were used to determine if students achieved this outcome? Please 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.

- PLO #2:

  An oral presentation describing a Urinalysis case/ **BLS 1100 Foundations of Medical Laboratory Science**

  An oral presentation describing a research project/ **BLS 4610 Research Design, Critique & Presentation**

- PLO #5:

  An ethics case assignment in which students resolved a professional conflict in a medical setting/ **BLS 1100 Foundations of Medical Laboratory Science**

  An online quiz about professional behaviors expected in a medical school interview setting/ **BLS 4120 Medical Biochemistry II**

No Madrid student artifacts were included.

3. Assessment Methods: Evaluation Process
What process was used to evaluate the student artifacts, and by whom? Please identify the tools(s) (e.g., a rubric) used in the process and include them in/with this report.

- PLO #2:

  The assessment of students' ability to deliver a clear description of a medical sciences project and their advancement was based on two oral presentations; one was a group presentation of a simple Urinalysis case done in a freshman course and the other was an individual presentation of a more complex research

project in a junior level course. The instructor for each course evaluated the students' skills using the associated rubrics (see Appendix) and submitted the data to the program director at the end of the term. The program director identified students scoring $\geq$ 4 out of 5 as meeting the criteria stated in the rubric.

*Due to COVID-19 Pandemic and converting to online course delivery immediately after spring break, there was a change in plans as to which presentation to use for PLO assessment. Normally, the final course assignment, Student Presentation of Research Project, is used for this assessment. For SP2020, however, the Literature Critique Presentation was the assignment used for PLO#2 assessment instead.

- PLO #5:

The assessment of students' ability to act with professional integrity and their advancement was based on two assignments: one was an ethics case given in a freshman level course in which students resolved a professional dilemma and the other was an online assessment given in a senior course where students demonstrated knowledge of professional behaviors expected in a medical school interview. The program director taught both of these courses and evaluated both student artifacts. For the first assignment, students' performance was rated according to the rubric attached (Appendix) and students scoring $\geq$ 4 out of 5 were identified as meeting the criteria stated in the rubric.

*Due to COVID-19 Pandemic and converting to online course delivery immediately after spring break, the second assignment for PLO #5 had to be converted to an online format instead of an in-class professional training session. Consequently, each student's performance was rated according to their scores from an online quiz instead of the rubric as originally intended. The Program Director assigned the following scale as meeting the criteria stated in the rubric, 70-80% = introduce, 81-90% = competent, and 91-100% = master.

See Appendix for the artifacts and their associated rubrics

4. Data/Results

What were the results of the assessment of the learning outcomes? 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)?

- PLO #2:

BLS 1100 Foundations of Medical Laboratory Science

100% (45 out of 45) of the students were able to describe key content of their urinalysis case, meeting the standard for "Introduce". All of these students were also able to attribute clinical significance to the key content, meeting the standard for "reinforce". 91% (41 out of 45) of these students were able to defend their critical analysis of the case, meeting the standard for "master".

BLS 4610 Research Design, Critique & Presentation

87% (27 out of 27) of the students were able to effectively communicate an understanding of a medical research article, achieving a ranking of "Introduce"; to critique the validity of the article, achieving a ranking of "reinforce"; and to proficiently defend their analysis when questioned, achieving a ranking of "master".

- PLO #5:

BLS 1100 Foundations of Medical Laboratory Science

87% (39 out of 45) of students were able to identify unprofessional behavior as the cause of a medical conflict, meeting the standard for "Introduce". The same proportion of students (39/45) was able to associate professional values to effectively resolving the conflict, meeting the standard for "competent". However, only 78% (35/45) were able to propose a professional behavior that would support their peer in a tense clinical situation, meeting the standard for "master".

BLS 4120 Medical Biochemistry II

Based on the scores from an online assessment in which students were asked to select appropriate professional behaviors in a medical school interview setting, all students met the standard for "master" as their scores ranged between 96 and 100%. This achievement may be overrated however, since the online assessment did not allow for rating the student's in-class demonstration directly.

5. Findings: Interpretations & Conclusions

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

- PLO #2:

  The program target for this PLO is that an average of 85% of freshmen and sophomore students will achieve the ranking of "introduce" or higher and an average of 85% of juniors will achieve the ranking of "reinforce" or higher using corresponding assessment rubric. This target was met.

  The data also tell us that students are doing better than expected with each group demonstrating a higher level of communication skill than required. All freshmen and sophomore students were able to achieve a master level score. Similarly, all but one of the junior students were able to reach the master level.

  By designing similar type projects (oral presentations) with increasing difficulty, we can monitor student progression from their first year through their junior year. Our data show this progression in two ways: that the IMS students were able to advance from group to individual presentation and from a simple case study to a more complex research project.

- PLO #5:

  The program target for this PLO is that an average of 85% of freshmen and sophomore students will achieve the ranking of "introduce" or higher and an average of 85% of juniors will achieve the ranking of "competence" or higher using the corresponding assessment rubric. This target was met.

  The data also tell us that students are doing better than expected with each group demonstrated a higher level of professionalism than required. All freshmen and sophomore students were able to achieve the ranking at the competent level, and some even at the master level. All senior students were able to reach the master level.

  Although the assignments are not related and the latter was completed online due to COVID-19, our data still show evidence of progression as more students in the junior year were able to achieve the higher ranking levels compared to those in the earlier years.

6. Closing the Loop: Dissemination and Use of <u>Current</u> Assessment Findings

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

The faculty submitted the data to the program director at the end of the term. The program director analyzed the data and prepared the draft of the annual assessment report which was reviewed and approved by the faculty.

B. How specifically have you decided to use 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 • Student artifacts collected • 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 the findings.

- PLO #2:

  Even though the program target was met, the program director realized during data analysis that the evaluation of these artifacts is mainly subjective. This recognition triggered the program director and the faculty to review the assignments, the course grading rubric, and the assessment rubric. We do not believe that the assignments need to be changed but the course grading rubric and the assessment rubric should be modified to make evaluations more objective and meaningful. Thus, the course instructors will expand the course rubric by including specific skills so that the data can identify specific areas of improvement and guide appropriate remedial actions. The program director will also refine the assessment rubric accordingly.

- PLO #5:

  During data analysis, the program director encountered 2 difficulties: 1) how to measure the "develop" level as stated under the "competent" ranking in the assessment rubric and 2) how to evaluate progression when the assessment tools are not aligned. In reviewing the ethics case assignment, the program director determined that this artifact was not entirely relevant to PLO #5. It focuses more on resolving a conflict than professionalism among peers.

  These difficulties prompted the program director to review the assignments, the course grading rubric, and the assessment rubric. The review has identified several areas for improvement. 1) The assessment rubric for this PLO should be modified to enable effective and efficient data analysis. The program director will rewrite the rubric using measurable action verbs so that the data can be easily interpreted and quantified. 2) The artifact for the freshman level course will be changed to a self-recommendation letter for medical school, focusing on professional behaviors viewed as desirable by medical school admission committee. This new artifact will align better with the in-class professional training session provided in their junior year, focusing on professional behaviors expected in a medical school interview setting. The better alignment will enhance assessment of progression for this PLO.

Note: any changes to the program rubric and program assessment plan are noted and recorded.

If no changes are being made, please explain why.

NA

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7. **Closing the Loop: Review of <u>Previous</u> Assessment Findings and Changes**
   A. What is at least one change your program has implemented in recent years as a result of assessment data?

- PLO #2:

  Since the last assessment cycle (2017-2018), the course instructor for BLS 4610 Research Design, Critique & Presentation had added criteria to the course rubric to account for the % of students achieving the highest "Master" ranking, who were not counted before.

- PLO #5:

  Due to COVID-19, we could not have the group activity and scenarios discussion in the professional training session to give students an opportunity to demonstrate professionalism as planned.

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

- PLO #2:

  This change is assessed by the number of students meeting the "master" ranking.

- PLO #5: NA

C. What were the findings of the assessment?

Using the updated course rubric, the instructor was able to identify 96% of students as meeting the "master" ranking. This data is important as it shows progression from knowledge to synthesis. As a bonus, students seem to benefit from the added instruction in the rubric as evidenced by the number of students reaching the master level.

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

PLO #2:

Usually, the data are compared to the previous year results in determining future actions for program improvement. Since we did not have the data from the prior assessment cycle for such comparison, we will continue using the current rubric, with added details as stated in 6B, and reassess according to the assessment calendar provided in the corresponding Program Assessment Plan. Additionally, the faculty will consider ways to challenge the students to continue to achieve the highest level of outcomes for this PLO.

PLO #5:

Since we did not implement the in-class professional training session in this assessment cycle due to COVID-19, we plan to do so in the next cycle and evaluate its effectiveness according to the assessment calendar provided in the corresponding Program Assessment Plan

IMPORTANT: Please submit any assessment tools and/or revised/updated assessment plans along with this report.

Appendix

Current Assessment Rubric

Program Learning Outcome (PLO #2): Students will deliver a clear description of a medical sciences project.		
Introduce Knowledge/Comprehension	Reinforce Application/Analysis	Master Synthesis/Evaluation
• Identify the required elements when presenting a medical science project.	• Deliver an oral presentation that demonstrates a critical analysis of a medical science project	• Defend the analysis of a medical science project proficiently when questioned
Program Learning Outcome (PLO #5): Students will act with professional integrity.		
Introduce Knowledge/Comprehension	Competent Application/Analysis	Master Synthesis/Evaluation
• Identifies professional behavior that is appropriate in a healthcare setting	• Develops interpersonal skills that promote professional collegiality	• Demonstrates professional behaviors toward peers

Revised Assessment Rubric (changes are marked in red)
Revised 09/21/2020 based on data analysis for the 2019-2020 report

Program Learning Outcome (PLO #2): Students will deliver a clear description of a medical sciences project.		
Introduce Knowledge/Comprehension	Reinforce Application/Analysis	Master Synthesis/Evaluation
• Identify the required elements when presenting a medical science project.	• Articulate a critical analysis of a medical science project	• Defend the analysis of a medical science project proficiently when questioned
Program Learning Outcome (PLO #5): Students will act with professional integrity.		
Introduce	Reinforce	Master
• Identifies professional behaviors that are desirable in a healthcare setting	• Demonstrates interpersonal skills that promote professional collegiality	• Propose a professional behavior toward peers when working together as a team

SUMMARY OF CHANGES (as of 09/21/2020) is based on data analysis for the 2019-2020 assessment report.

- Edited the description of the criteria for the "reinforce" ranking in the rubric for PLO #2 to be more specific.
- Modify the rubric for PLO #5 to be consistent with the new tool (self-recommendation letter for post-graduate school / BLS 1100 Foundation of Medical Laboratory Science Lab).

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PLO #2 Case Study Team Presentation
BLS 1100 Foundations of MLS
Fall, 2019

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Objective: Students will deliver a clear description of a medical sciences project.

Assignment: Given a urinalysis case study, the students will work together as a team to present:

- A patient's signs and symptoms
- Clinically significant results
- A suitable diagnosis based on the patient presentation
- The pathophysiology of the disorder

Sample Case Study: CASE STUDY #5:

A 10-year-old boy, who recently recovered from a streptococcal infection, was taken to the doctor with symptoms including fever, nausea, and malaise. Physical examination reveals edema around the eyes and the knees. A routine urinalysis reveals the following results.

PHYSICAL EXAM RESULTS	
COLOR	Yellow
CLARITY	Hazy

CHEMICAL EXAM RESULTS	
BLOOD	Moderate
PROTEIN	300mg/dL Moderate
GLUCOSE	Negative
KETONE	Negative
NITRITE	Negative
LEUKOCYTE ESTERASE	Small

MICROSCOPIC EXAM RESULTS	
RED BLOOD CELLS	20-50 RBC/hpf Moderate
WHITE BLOOD CELLS	10-20 WBC/hpf
BACTERIA	Rare
CASTS	2-5 RBC casts/lpf, 2-5 Granular casts/lpf

Questions:

1. What disease are the results indicative of?
2. What is the significance of the presence of blood along with protein in the urine?
3. Correlate the RBC casts with the diagnosed disease.
4. What is the significance of a positive leukocyte esterase?
5. How could there be a positive leukocyte esterase and a negative nitrite?

PLO #2 Literature Critique Presentation
BLS 4610 Research Design, Critique and Presentation
Spring, 2020

Objective: Students will deliver a clear description of a medical sciences project.

Assignment: Students with similar research interests (e.g., sickle cell anemia) were grouped into teams who reviewed the literature and prepared significant conceptual components for a Group Introductory Presentation. Each member of the team presented a concept of importance and was a team player in advancing the Group Introduction to the point of a coherent, progressive and composite whole that appropriately prepared the listening audience (the course instructor and fellow classmates) with sufficient background to understand future discussions. Each member of the group generated another talk that was an independent discussion of a specific component of the major topic (e.g., role of exercise in induction of sickle cell crises) and included a scientific critique of the published journal article under discussion. After each discussion (group or independent), questions from the class were addressed.

Due to COVID-19 Pandemic and converting to online course delivery immediately after spring break, there was a change in plans as to which presentation to use for PLO assessment. Normally, the final course assignment, Student Presentation of Research Project, is used for this assessment. For SP2020, however, the Literature Critique Presentation was the assignment used for PLO#2 assessment.

PLO #5: Professionalism Assignment
BLS 1100 Foundations of MLS
Fall, 2019

Objective: Students will act with professional integrity.

Assignment: Read the case study given below and respond to the associated questions.

It's July and you are a pediatric intern on your first night of call on your first rotation at Children's Hospital when your team is called to a code in the ICU. On the way, your resident tells you that she just got a call about an urgent problem and sends you to take care of it.

You arrive at the room of a 9-year-old boy who needs intravenous antibiotics for a serious infection. He has chronic medical problems and has been in the hospital many times and has few easily accessible veins. The nurse has been unable to gain IV access after several attempts, and the child's father pushed her out of the way and threatened her if she tries again. Since your resident has even more pressing matters to deal with, you, as a new, inexperienced intern, are called to handle the situation involving an angry father, a patient with an urgent need for antibiotics and an upset nurse.

How would you deal with the situation in a way that delivers good care to the patient, mollifies the father and calms the nurse?

Professional Dilemma: Use the model discussed in class to complete the following:

1. Identify the problem.
2. Determine what personal and professional values pertain to the problem.
3. Propose two approaches to solving the problem and identify the likely consequences of each in relation to those values.
4. How would you handle this situation and why?

<p style="text-align: center;">**PLO #5: An Online Professionalism Assignment**
BLS 4120 Medical Biochemistry II
Spring, 2020</p>

Objective: Students will act with professional integrity.

Due to the COVID-19 Pandemic and converting to online course delivery immediately after spring break, the second assignment for PLO #5 had to be converted to the online quiz below instead of an in-class professional training session.

Assignment: Read the posted PowerPoint lecture and complete the associated quiz.

IMS Professional Quiz

1. **What is the definition of a personal brand?**
   a. How others perceive you
   b. How you live your values
   c. How you present yourself to others
   d. All of the above.

2. **About how long does it take for people to form an impression of you?**
   a. Immediately
   b. 5 seconds
   c. 30 minutes
   d. 1 hour

3. **Which of the following is not included in interview attire?**
   a. Taylor dress
   b. Business suit
   c. Tennis shoes
   d. Clean & controlled hairstyle

4. **What does showing up on time for an interview mean?**
   a. Showing up at the stated time of the interview.
   b. Arriving 30 minutes early.
   c. Arriving 5 minutes late is still considered on-time.
   d. Arriving 15 minutes early.

5. **When you're introduced to another person, you:**
   a. Give them a big bear hug
   b. Greet them with a big smile and firm handshake
   c. Smile, say hi, and give them a wave.
   d. Give them a nod then walk away.

6. **During the interview, you:**
   a. Look people in the eye, listen closely, and ask genuine questions.
   b. Listen, but only speak up when you're called on.
   c. Half listen and half think about the next question to ask.
   d. Text the entire time.

7. **When you get a personal phone call during an interview, you:**

a. Ignore it and call them back later.
b. Excuse yourself and take it outside briefly.
c. Apologize and turn your phone off
d. Answer and have a loud conversation.

8. **During an interview you were asked why the sky is blue. You are not sure so you**
   a. Try to answer it using as many technical terms as you can to impress
   b. Admit that you don't know and ask for another question
   c. Admit that you are unsure and offer your best guess

9. **During an interview you were assigned a team project. You**
   a. Consider your teammates competitors
   b. Make sure your contribution is recognized
   c. Encourage others to participate

10. **After an interview, you:**
    a. Send a thank you note within 24 hours of interview.
    b. Send a thank you note a few days later.
    c. No need to send a thank you note.