

# Interprofessional Education themes in a Clinical Laboratory Sciences Curriculum

JOSE H. SALAZAR

## ABSTRACT

The purpose of this exploratory case study was to explore and describe how clinical laboratory science students at a tertiary university hospital perceive and conceptualize interprofessional education (IPE) through exposure to IPE in clinical preceptorship and service learning experiences. Participants included five clinical laboratory science students. The data collection and analysis process included multiple interviews, student clinical preceptorship journals, student service learning journals, and a researcher's journal. The constant comparison method was used throughout the study as themes and patterns emerged from the raw data and were discovered.<sup>1</sup>

Findings indicated that participants believed that IPE helped reduce professional hierarchy, promoted equality and respect and maximized interprofessional collaboration between the health professions. Themes that supported IPE were comprised of: hierarchal environment, mutual respect, forming and maintaining an identity, and sharing content knowledge. The results from this study reveal how an interprofessional curriculum can unite clinical laboratory science students with other health professions students early in their formative years to address the inefficiencies and ineffectiveness of a disjointed health care team that negatively affects health care in the United States today.

**ABBREVIATIONS:** WHO – World Health Organization, CLS – Clinical Laboratory Science, IPE – Interprofessional Education

**INDEX TERMS:** Interprofessional education, Service learning, Clinical Laboratory Science

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*Jose H. Salazar, PhD, MLS(ASCP)<sup>cm</sup>, Department of Clinical Laboratory Sciences, University of Texas*

*Medical Branch, Galveston, TX*

*Address for Correspondence: Jose H. Salazar, PhD, MLS(ASCP)<sup>cm</sup>, Clinical Assistant Professor, Department of Clinical Laboratory Sciences, University of Texas Medical Branch, 301 University Boulevard, Galveston, TX 77555, 409-772-3044, jhsalaza@utmb.edu*

## INTRODUCTION

The field of healthcare is highly dynamic, increasing in complexity, and becoming more specialized in response to advancements in medical technology and recent developments in the practice of medicine. These advancements make it difficult for individual health providers to keep up with each other's role in the delivery of healthcare.<sup>2</sup> According to the World Health Organization (WHO), interprofessional education is necessary in preparing a collaborative practice-ready healthcare workforce that is better prepared to respond to local health needs.<sup>3</sup>

In 2010, the Josiah Macy Jr. Foundation published the article Interprofessional Care Coordination: Looking to the Future which cited strong evidence that healthcare delivered by well-functioning teams of health professionals led to better patient outcomes, yet we still educate our health professionals in separate silos.<sup>2</sup>

## Purpose of the Study

The purpose of this case study was to explore and describe how clinical laboratory science students at a tertiary university hospital perceive and conceptualize interprofessional education through exposure to IPE in clinical preceptorship and service learning experiences.

## Research Questions

1. How do clinical laboratory science students conceptualize interprofessional education?
2. What are the perspectives of clinical laboratory

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science students regarding interprofessional education?

3. What role do the students perceive service learning experiences providing in a CLS curriculum?

### Methods

Purposive sampling was utilized in this study to “identify emerging themes that take adequate account of contextual conditions and cultural norms”.<sup>4</sup>

### Participants

The participants in this study were five clinical laboratory science students enrolled at a tertiary care teaching hospital who were completing their Bachelor of Science degree in CLS. These students were selected because they have been exposed to the interprofessional roles that various health professions undertake in providing patient care. In addition, these students participate in IPE curriculum and service learning events, and have a vested interest in IPE curricular reform and developmental process. Pseudonyms were assigned to these five students in order to protect their confidentiality.

### Data Sources

Data sources included interviews, student clinical preceptorship journals, student service learning journals, and a researcher’s journal. These various forms of data allowed the researcher to explore perceptions of IPE from multiple angles. The researcher examined, tracked, and reviewed data sources throughout the data collection period until no new codes, categories or themes emerged from the data analysis indicating that saturation was achieved.

### Findings

After careful and repeated analysis of ten interviews, five participant journals, and the researcher’s journal, four themes and seven sub-themes emerged from the data:

- Hierarchal environment
  - Catering to medical students
  - Minimizing the hierarchy
  - Gaining self-worth within the hierarchy
- Mutual respect
  - Lacking respect from other health professions
  - Earned respect
- Forming and maintaining an identity
  - Lacking and forming an identity
  - Maintaining an identity

- Sharing content knowledge

### Hierarchical environment

Participants reported the presence of professional hierarchy during service learning events, specifically from students who had not interacted with CLS students in previous interprofessional events. In contrast, students from other programs who were involved in previous interprofessional service learning activities understood and valued the role and responsibilities that CLS students fulfilled within the student healthcare team.

Although professional hierarchy was identified as a barrier during service learning experiences, it was noted that interprofessional service learning events contributed to the removal of interprofessional barriers. Participants indicated that IPE activities served as a catalyst for organizing and promoting collaborative practices that allowed CLS students to experience a higher level of responsibility and decision-making within the healthcare team.

Gaining self-worth within the hierarchy. Participants indicated an increased gain of self-worth when they were acknowledged as resourceful and contributive by members of other health professions. An increase in self-worth and removal of hierarchical barriers positively correlated with IPE service learning events. Participants reported an increase in effective interprofessional communication and better understanding of issues encountered by other health professions. One participant pointed out that, learning the types of communication issues during his clinical preceptorship will enable him to be a better communicator when he goes into clinical practice.

### Mutual respect

Participants expressed the need for respect between the various health professions. The need for respect was mentioned throughout classroom experiences, clinical preceptorships, and interprofessional service learning. Mutual respect encompassed the various health professions acknowledgement toward each other’s professional boundaries, skills set, and also potential limitations.

Lacking respect from other health professions. Participants perceived a lack of respect from the other health professions specifically during service learning

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events. Much of the perceived lack of respect stemmed from the other health professions' lack of knowledge about the role of CLS within the health care team. One participant's source of frustration stemmed from the abrupt and negative inquiry about how could CLS possibly help in an interprofessional service learning event.

Participants also voiced that they had to defend their role within the interprofessional activities. The data suggested that the perceived lack of respect originated from other health professions not knowing or understanding the CLS profession. The participants expressed that health professions students who had previously been exposed to the CLS profession in fact respect, invite, and welcome CLS students to interprofessional service learning events. Participants expressed their dissatisfaction with not having CLS faculty available to provide guidance and leadership during interprofessional service learning events. In fact, several participants indicated that CLS students received minimal recognition and respect from other health professions faculty when CLS faculty did not attend interprofessional service learning events. It is necessary for faculty members to have knowledge, skills, and values of interprofessional collaboration to promote IPE effectively. Further, faculty must be involved in extracurricular activities to serve as role models and mentors within educational, clinical, and laboratory environments.

Earned respect. CLS students expressed feeling good about being wanted and respected by others. In fact, participants were motivated to participate in more interprofessional collaborative events. Earned respect also led to the appointment of a CLS student to the board of directors at the free community clinic in which students from all health professions volunteer to.

### **Forming and maintaining an identity**

Participants expressed their difficulty in being recognized as a professional identity within the healthcare team.

Forming an identity. Participants explained how the development of a professional identity allowed the field of CLS to earn recognition as a health profession. Two participants indicated that formation of a professional identity added depth and substance to a profession otherwise merely known as "the lab". Referring to CLS as "the lab" was perceived as unspecific, disconnected,

and unimportant to the healthcare team. Descriptive and purposeful titles such as clinical chemists, blood bankers, hematologists, and clinical microbiologists gave the field of CLS tangible and explanatory identities that fit within the culture of a health care team. CLS students progressed from having no identity to being a full-fledged participant, a legitimate member of the health care team. Identity, in this case is about ways of being and modes of belonging in the community of health care.

### **Sharing content knowledge**

Participants spoke about sharing their content knowledge with other health professions students and the impact it had on their attitudes. Participants explained that health professions peers were surprised at the level of knowledge that CLS students possessed. One participant indicated that a medical student acknowledged that a CLS student knew as much as the medical students. Participants also stated that they experienced a rewarding feeling when they were able to pass share their knowledge with other health professions students.

Interprofessional opportunities that allowed CLS students to share content knowledge with students from other health professions were perceived as useful for CLS to gain acceptance within the health care team. Participants also felt that sharing content knowledge allowed CLS students to communicate interprofessionally with other health professions. In collaborative discussions such as patient case studies, CLS students were able to exchange health information with students from other health professions. A common language for team communication is important in patient-centered care.

### **Interpretation of Findings**

#### **Question 1: How do clinical laboratory science students conceptualize interprofessional education?**

The data collected from the participants depicted IPE as an overarching collaborative approach to educating health professions students as future interprofessional team members. Understanding one's own professional identity also allows one to recognize and appreciate others' roles and responsibilities in relation to one's own role.<sup>5</sup> CLS students conceptualized IPE as a necessary mechanism for health professions students to learn about their role within the healthcare team and also to understand the roles and responsibilities of other health professions within the same healthcare team.

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Participants viewed IPE as a true interprofessional endeavor. That is, they believed that IPE activities would be conducted, led, or presented by staff that would be inclusive and knowledgeable of all health professions. In addition, such leaders should be well educated on the issues and pitfalls of IPE. All participants voiced a need for improving the infrastructure of IPE to address scheduling, knowledgeable leadership, and faculty/student mentoring. Participants also thought that IPE would serve as a model to promote equality throughout the health professions. Equality can only be achieved if all health professions are held accountable to the same standards. Participants agreed that participation in interprofessional education should be equally mandated throughout all the health profession and not be optional.

### **Question 2: What are the perspectives of clinical laboratory science students regarding interprofessional education?**

Participants' perception of their IPE interactions with other health professions addressed the aspects of this question. CLS students' perspective of IPE was that IPE promoted the health profession of CLS to the rest of the healthcare team. Through IPE service learning activities and case study discussions, CLS students' perspective of IPE was that it offered maximum exposure to the contributions that CLS provided to the health care team. Participants' perspective of IPE also indicated that IPE was a causative agent for change in attitudes and behavior. All participants indicated that other health professions students' attitudes changed for the better when they understood the role of CLS within the healthcare team.

Interprofessional interactions via IPE encouraged participants to professionally bond with other health professions students. In fact, students from other health professions began to invite CLS students to participate in the development and planning of future interprofessional activities. CLS students were also included in the discussion of patient lab results and their interpretation. These interactions gave CLS the perspective that IPE was a valuable source for their inclusion into the healthcare team as a valued resource. In turn, CLS students reported a greater sense of self-worth and acceptance. Although students indicated that IPE was a positive influence within the context of CLS and health professions education, all participants communicated that IPE at this

university was going through growing pains. In several instances, the inclusion of all health professions remained lacking. It was noted that IPE had a firmer grasp in some health professions, and had a minimal presence in the clinical environment. Overall, the perspective from participants is that IPE is difficult to implement within an academic health science center.

### **Question 3: What role do the students perceive service learning experiences providing in a CLS curriculum?**

This query was addressed through the perceptions of CLS students' experiences in free community clinics and health fair events. Participants related that service learning added value to the CLS curriculum. Such value was added through the semi-structured learning environment that interprofessional service learning events provided for CLS students. These events were especially important for CLS because they allowed students to directly interact with faculty and students of other health professions. Typically, CLS students would only interact indirectly with these groups in a clinical setting.

Service learning experiences also provided CLS students with the opportunity to teach others about the roles and responsibilities of their program within a healthcare environment. In addition, CLS students believed that they became more knowledgeable about other health professions' roles and responsibilities as a result of participating in service learning opportunities. Moreover, CLS students explained that interprofessional service learning led to better learning outcomes when students had direct supervision from a faculty member in their program.

### **Implications and Recommendation**

The findings from this study revealed the benefits of interprofessional education in health professions education. Findings also highlighted the areas of misalignment and weakness in implementing an IPE program within an academic health science center. In order to become an efficient and effective health care team that can address healthcare issues of the 21<sup>st</sup> century it will be necessary to educate health professions students to become an interprofessional healthcare work force. The method of educating health professions in silos is no longer acceptable. Designing and implementing viable IPE programs will require top level support in the form of promoting equality among the various health

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professions schools, supporting interprofessional community health events, and providing IPE leadership/mentoring training to educators.

### **Implications for Health Care Professions Educators**

Implications of this study for educators in the health care professions include the need for educators to seek faculty development opportunities to become effective at facilitating interprofessional teams of students.

### **Implications for CLS Curricula Developers**

The field of CLS has much to gain from IPE efforts. Implications for curricula developers of CLS programs include the addition and support of IPE activities such as service learning events and case study discussions with other health professions. Since CLS is a field that typically works behind the scenes it is crucial that CLS curricula be designed to allow for interprofessional experiences

Implications for designers should include focusing on who, where, and when as they develop strategies for collaboration between IPE learners, educators, and clinical environments. CLS students have much to gain from IPE initiatives. As a result of being introduced to other health professions CLS students will be recognized as part of the healthcare team by faculty and students from other health professions. It is important for the curriculum to allow for reflection and debriefing following these experiences. Based on the data service learning projects and case study discussions can serve as purposeful activities to integrate CLS students with other health professions that allow for reflection and debriefing.

Curriculum designers need to integrate assessment and feedback mechanisms into IPE curriculums. Only then can curricula show if the competency domains are being addressed. Feedback will allow a continuous cycle for improvement to ensure relevance and engagement. These mechanisms should allow input from all participants in IPE. Collaborative efforts in IPE activities during students' formative years has the potential to foster positive future interprofessional relationships between practicing health care practitioners.

### **Recommendations for Further Research**

This study captured CLS students' conceptualization of IPE in one specific time frame of their educational career.

Although this specific time frame gave insight into CLS students' current perception of IPE, the evolution of their conceptualizations over time may provide valuable information for future IPE curriculum development. A longitudinal of participants through the completion of their program and into the profession may provide a broader picture of CLS students' conceptualization of IPE.

According to participants, the community component of service learning was beneficial in promoting IPE initiatives. A natural progression for this study would be to include participants from the local health care community. These participants could involve community leaders, healthcare liaisons, social workers, and patients. The inclusion of patients within the interprofessional healthcare team offers a different perspective from those who deliver healthcare.<sup>6</sup> Including patients as participants would give insight into how they conceptualize and perceive the healthcare team. Such information may help IPE initiatives create more efficient and effective processes. Further research should also focus on how practicing health professionals conceptualize and perceive IPE.

## CONCLUSION

The findings in this study inform health professions students, faculty, staff and administrators about how CLS students conceptualize IPE. Participants clearly voiced the benefits of IPE, weak areas, and the need for IPE. In order to move forward with IPE initiatives it will be necessary for health professions administration, faculty, and staff to consider the following recommendations from this study. 1) Integrate IPE into curricula across all health professions, 2) Promote equality throughout all of the health professions, 3) Incentivize faculty to buy in to IPE, 4) Develop a strategic plan to sustain IPE initiatives from the academic arena and into the clinical environment.

Findings illustrated how an interprofessional curriculum can unite the health professions early in their formative years to address the inefficiencies and ineffectiveness of a disjointed health care team that negatively affects health care in the United States today. Through the data, this qualitative study revealed how clinical laboratory science students conceptualize interprofessional education through exposure to interprofessional education in clinical preceptorship and service learning experiences.

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Participants desire a health professions curriculum that promotes equality, respect, and communication. Bi-directional educator and learner relationships are an essential component of IPE. Curricula designed to nurture and support these types of bi-directional IPE relationships within health professions education results in the saving of lives. Yes, directly or indirectly properly designed curricula does indeed save lives.

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