Community-Integrated Laboratory Practice: A Wicked Interprofessional Experiential Learning Implementation and Evaluation Plan

Nicole Parham, DHSc, MEd, MLS(ASCP)

Doctoral Candidate, Health Sciences
Radford University
Department of Public Health and Healthcare Leadership

Abstract

Healthcare systems are experiencing increasing workforce shortages and operational complexity, particularly within clinical laboratory services that support diagnostic decision making. Clinical Laboratory Scientists play a critical role in healthcare delivery but are often underrepresented in interprofessional workforce planning discussions. Preparing future healthcare professionals to address workforce challenges requires educational approaches that incorporate interprofessional collaboration, experiential learning and systems thinking. Interprofessional experiential learning activities provide opportunities for students to analyze complex healthcare challenges while developing collaborative problem-solving skills and professional identity. This project describes a wicked interprofessional experiential learning activity within the course, Community-Integrated Laboratory Practice: Values, Service, and Workforce Pathways. This activity takes place in a hybrid classroom and simulation-based learning environment and engages students from Clinical Laboratory Science (CLS), Nursing, and Health Administration programs. Over six to eight weeks, students participate in case analysis, stakeholder mapping, and an interprofessional workforce planning simulation involving laboratory leadership, nursing management, and healthcare administration. The activity intentionally supports development of Interprofessional Education Collaborative (IPEC) competencies, including interprofessional communication, roles and responsibilities, teams and teamwork, as students collaboratively analyze workforce challenges and develop strategic responses. Student learning is evaluated through reflective journals, simulation participation, stakeholder analysis assignments, and interdisciplinary strategy presentations. Rubric-based assessment emphasizes systems thinking, interprofessional communication, ethical reasoning, and professional advocacy while encouraging reflection and evaluative judgement. This learning activity demonstrates how interprofessional simulation and collaborative case analysis can prepare healthcare students to engage with complex workforce challenges. Integrating experiential learning with IPEC competencies may strengthen workforce preparedness, enhance

interdisciplinary collaboration, and increase the visibility of laboratory professionals in healthcare decision-making processes. The design may also be adapted across health professions education programs seeking to address workforce sustainability and strengthen interprofessional collaboration.

Community-Integrated Laboratory Practice: A Wicked Interprofessional Experiential Learning Implementation and Evaluation Plan

Nicole Parham

Department of Public Health and Healthcare Leadership, Radford University

HSCE 831: Educational Strategies for the Health Sciences II

Dr. Jenny Hall

March 9, 2026

Healthcare systems increasingly face complex workforce challenges that influence patient care, operational efficiency, and interprofessional collaboration. Workforce shortages in Clinical Laboratory Science (CLS) are particularly concerning because laboratory testing informs most of the clinical decisions within healthcare. Clinical Laboratory Scientists play a critical role in healthcare delivery, yet laboratory professionals are frequently underrepresented in healthcare workforce planning discussions. Preparing future healthcare professionals to engage with these challenges requires educational strategies that extend beyond traditional lecture-based instruction. Experiential learning and interprofessional education allow students to examine authentic healthcare problems while collaborating with peers from other disciplines. These approaches strengthen professional identity development, promote systems thinking, and improve communication across healthcare professions (Chan, 2022; van Diggele et al., 2020).

This implementation and evaluation plan proposes a wicked interprofessional experiential learning activity within the course *Community-Integrated Laboratory Practice: Values, Service, and Workforce Pathways*. The activity is delivered in a hybrid educational setting that combines classroom instruction with simulation-based learning activities and engages students from CLS, Nursing and Health Administration programs. Students collaboratively analyze the wicked problem of evolving workforce complexity in healthcare systems and develop strategic responses to workforce challenges. The design of the activity intentionally supports development of Interprofessional Education Collaborative (IPEC) competencies, including interprofessional communication, roles and responsibilities, and teams and teamwork (Interprofessional Education Collaborative, 2023). Students will collaborate to analyze workforce challenges and propose solutions. By integrating experiential learning, wicked learning principles, and interprofessional collaboration (Hanstedt, 2023; Kolb, 1984), this activity prepares students to navigate complex workforce issues and participate more effectively in healthcare decision-making processes.

Wicked Problem Focus

The wicked problem guiding this experiential learning activity is evolving workforce complexity in healthcare systems, particularly within clinical laboratory services. For example, healthcare workforce shortages involve multiple interconnected factors including:

Limited clinical training pipelines

Increasing diagnostic testing demands

Workforce burnout

Financial constraints within healthcare organizations

Limited professional visibility of laboratory personnel

These factors interact dynamically and involve multiple stakeholders. Workforce shortages represent a wicked problem that requires adaptive collaboration and systems thinking rather than simple solutions (Hanstedt, 2023).

Educational Setting

The experiential learning activity occurs within a hybrid educational environment combining classroom discussion, project-based analysis, and simulation-based learning activities. The course structure allows students to engage in both guided classroom learning and immersive experiential exercises designed to mirror real-world healthcare decision-making processes. Students work in interprofessional teams throughout the activity. Classroom sessions provide foundational knowledge related to healthcare workforce challenges, while simulation sessions allow students to apply knowledge in collaborative problem-solving scenarios. This hybrid design supports both conceptual learning and experiential application.

Participating Disciplines

This experiential learning activity involves students from multiple disciplines. The Primary discipline is CLS and the partner disciplines are nursing and health administration or public health administration. These disciplines regularly interact in healthcare systems and experience the downstream consequences of laboratory workforce shortages.

Theoretical and Pedagogical Framework

The design of this wicked interprofessional experiential learning activity is informed by several complementary educational frameworks commonly used in health professions education, including experiential learning theory, wicked learning principles, interprofessional education competencies, and team-based learning strategies. Together, these approaches support the development of systems thinking, collaborative decision making, and professional identity formation in complex healthcare environments.

Experiential Learning

Experiential learning theory emphasizes learning through experience, reflection, and application in authentic contexts. Kolb (1984) described experiential learning as a cyclical process involving concrete experience, reflective observation, abstract conceptualization, and active experimentation. Contemporary research continues to support experiential learning as an effective strategy for developing professional competencies in healthcare education because it allows learners to integrate theoretical knowledge with real-world practice (Morris, 2020). In this activity, students engage in experiential learning through simulation exercises, interdisciplinary collaboration, and reflective assignments that encourage them to analyze workforce challenges and apply new insights to professional decision making.

Wicked Learning Principles

The activity also incorporates wicked learning principles that expose students to complex problems characterized by ambiguity, competing priorities, and evolving information. Workforce shortages in healthcare represent a wicked problem because they involve multiple stakeholders and dynamic system conditions. Wicked learning environments encourage students to engage in iterative problem analysis and interdisciplinary dialogue rather than seeking simplified solutions (Hanstedt, 2023). The students would revisit the workforce case scenario multiple times throughout the activity as new information emerges. This iterative approach encourages students to adapt their strategies and reconsider assumptions about workforce planning.

Interprofessional Education Competencies

The experiential learning activity is intentionally designed to support the development of IPEC competencies. The competencies and examples include the following:

values and ethics – students examine ethical considerations related to workforce decisions, including patient safety, equitable resource allocation, and professional accountability, while negotiating solutions during interprofessional discussions and simulation activities.

roles and responsibilities – students analyze how different professions contribute to workforce planning decisions.

interprofessional communication – students practice communicating disciplinary perspectives during team discussions and simulation exercises.

teams and teamwork – students collaborate to develop workforce strategies and evaluate potential outcomes.

These competencies provide a framework for preparing healthcare students to collaborate effectively across professional boundaries and address shared healthcare challenges (IPEC, 2023).

Team-Based Learning

Team-based learning strategies are incorporated throughout the activity to promote collaborative problem solving and shared accountability among interdisciplinary teams. Research in health professions education demonstrates that team-based learning strengthens communication skills, increases student engagement, and enhances collaborative decision making in complex healthcare contexts (Burgess et al., 2020).

Description of the Experiential Learning Activity

Activity Title

Interprofessional Workforce Complexity Simulation

Duration

Six to eight weeks within a semester-long course.

Activity Overview

Students participate in a hybrid classroom and simulation-based experiential learning project focused on a healthcare organization experiencing laboratory workforce shortages that affect patient care and healthcare operations. Students work in interdisciplinary teams to analyze the workforce challenge, identify stakeholder perspectives, and propose collaborative strategies for addressing workforce shortages. The activity incorporates multiple experiential learning components, including:

case-based analysis

stakeholder mapping

stakeholder consultation interviews

interprofessional team discussions

simulation-based workforce planning exercises

reflective assignments

The simulation environment represents a healthcare leadership meeting involving laboratory leadership, nursing management, and healthcare administration. Students must negotiate workforce strategies while considering patient safety, operational constraints, and professional responsibilities. This approach differs from traditional laboratory education models by placing laboratory professionals within interprofessional workforce planning discussions rather than focusing solely on practical/technical laboratory competencies.

Learning Outcomes

The outcomes of this activity align with Bloom's taxonomy and emphasize higher-order cognitive and affective domain learning, including ethical reasoning, professional identity development, and collaborative decision making. At the end of the activity, students will be able to:

Analyze workforce challenges using systems thinking. *(Analyze – Cognitive)*

Demonstrate effective interprofessional communication. *(Apply – Cognitive/ Psychomotor)*

Evaluate ethical implications or workforce decisions affecting patient care. *(Evaluate – Cognitive)*

Advocate for the role of laboratory professionals in healthcare systems. *(Synthesize /Create – Affective)*

Develop adaptive strategies for addressing workforce challenges. *(Create – Cognitive/Affective)*

Implementation Timeline

The implementation timeline reflects Kolb's (1984) experiential learning cycle, moving from concrete experience (simulation and interviews) to reflective observation (journals), abstract conceptualization (strategy development), and active experimentation (simulation discussions).

Weeks 1-2: Orientation and Case Introduction

Weeks 3-4: Case Investigation and Stakeholder Engagement

Weeks 5-6: Interprofessional Workforce Simulation

Weeks 7-8: Reflection and Strategy Refinement

Assessment Plan

Students learning will be evaluated using multiple assessment strategies designed to measure development of interprofessional collaboration skills and systems thinking. Multiple forms of assessment are used to capture both cognitive and affective learning outcomes. Reflective journals support experiential learning reflection, strategy presentations evaluate systems thinking and professional advocacy, and simulation participation assesses interprofessional collaboration skills. The key assessment components include reflective journals analyzing interprofessional collaboration experiences, participation in simulation activities, stakeholder analysis assignments, interdisciplinary workforce strategy presentations, and peer evaluation of collaborative teamwork. The breakdown of the assessment for grades is the following:

Reflective journal – 25%

Interprofessional strategy presentation – 25%

Simulation participation – 20%

Peer evaluation – 5%

Stakeholder analysis and interview summary – 25%

Rubric-based evaluation emphasizes systems thinking, ethical reasoning, interprofessional communication, and professional advocacy. These rubrics were designed using principles of authentic assessment and evaluate judgement to measure students' ability to apply interdisciplinary knowledge in complex workforce scenarios (Naidoo et al., 2021). See Table 1. for the simulation assessment rubric, Table 2. for the workforce strategy presentation rubric, and Table 3. for the reflection journal rubric.

Table 1. Simulation Assessment Rubric

Total Points Performance Level: Excellent 15 - 11, Proficient 10 - 6, Developing 5 - 0

Table 2. Workforce Strategy Presentation Rubric

Total Points Performance Level: Excellent 24 - 19, Proficient 18 - 13, Developing 12 – 7, Beginning 6 – 0

Table 3. Reflection Journal Rubric

Total Points Performance Level: Excellent 24 - 19, Proficient 18 - 13, Developing 12 – 7, Beginning 6 – 0

Evaluation Plan

Evaluation of the learning activity will include both student performance evaluation and program effectiveness evaluation. Student performance will be evaluated through reflection assignments, group presentations, and simulation participation. Program effectiveness will be evaluated through student feedback surveys and faculty observation. See Table 4. for the evaluation matrix. The evaluation design incorporates principles of evaluative judgement, which emphasize students' ability to assess the quality of their own work and that of their peers (Naidoo et al., 2021). Rubric-based evaluation further supports transparent assessment criteria and structured feedback (Panadero & Jonsson, 2020). See Table 5. for IPEC Competency Alignment

Table 4. Evaluation Matrix

Table 5. IPEC Competency Alignment

Implementation Considerations

Successful implementation requires coordination among participating academic programs. Faculty must collaborate to schedule interdisciplinary sessions and facilitate simulation activities and partnerships with healthcare organizations may enhance the authenticity of the simulation by incorporating real workforce challenges. Faculty development is an important consideration for first-time implementation: instructors benefit from orientation to the simulation scenario, practice facilitating interdisciplinary debrief discussions, and calibration on rubric use. Co-facilitation between faculty from different health professions programs is recommended to model interprofessional collaboration and ensure that disciplinary perspectives are equitably represented.

Following initial implementation, the activity should be evaluated for effectiveness and refined accordingly. Faculty should review student performance data across all assessment components to identify patterns suggesting the need for instructional adjustments. For example, if students consistently score at the developing level on systems thinking or ethical reasoning criteria, additional scaffolding or preparatory readings may be needed in earlier weeks of the activity.

Student feedback collected through a program evaluation survey (see Appendix H) should be reviewed after each cohort to identify areas for improvement in facilitation, resource quality, and simulation design.

The activity was designed for a hybrid course environment involving CLS, nursing, and health administration students; however, the design is adaptable across a variety of health professions education contexts. Programs may modify the case scenario to reflect workforce challenges relevant to their institutional or regional setting, and the number of participating disciplines may be adjusted based on capacity, provided at least two are engaged to preserve the interprofessional design. Coordinating schedules across programs may be logistically challenging, and stakeholder interview access may vary by student location or professional network; faculty should consider maintaining a bank of pre-approved interview contacts or virtual interview options to ensure equitable access. Ongoing updates to the case scenario are also recommended to reflect current workforce data and emerging healthcare challenges.

Conclusion

Workforce complexity in healthcare represents a significant challenge that requires interdisciplinary collaboration, systems thinking, and adaptive problem solving. Traditional educational approaches that rely primarily on lecture-based instruction may not adequately prepare students to navigate these evolving challenges or participate effectively in workforce decision-making processes. The wicked interprofessional experiential learning activity described in this implementation and evaluation plan provides a structured opportunity for students to engage with these issues through authentic, practice-oriented learning experiences. Through case analysis, stakeholder consultation interviews, simulation-based workforce planning discussions, and reflective assignments, students examine the perspectives of multiple healthcare professions while developing collaborative strategies to address workforce challenges. These activities intentionally support the development of IPEC competencies, including roles and responsibilities, interprofessional communication, and teamwork, while strengthening students' ability to analyze complex healthcare systems. By integrating experiential learning with wicked problem pedagogy, the activity encourages students to evaluate the feasibility of proposed workforce strategies and consider ethical, operational, and professional implications. This learning design provides a model for preparing future healthcare professionals to engage in collaborative workforce planning and may be adapted across health professions education programs seeking to strengthen workforce sustainability and interprofessional collaboration.

References

Burgess, A., van Diggele, C., Roberts, C., & Mellis, C. (2020). Team-based learning: Design, facilitation, and participation. BMC Medical Education, 20, 461.

Chan, C. K. Y. (2022). Assessment for experiential learning. Routledge.

Hanstedt, P. (2023). Creating wicked students: Designing courses for a complex world. Routledge.

Interprofessional Education Collaborative. (2023). Core competencies for interprofessional collaborative practice.

Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. Prentice Hall.

Morris, T. H. (2020). Experiential learning: A systematic review and revision of Kolb's model. Interactive Learning Environments, 28(8), 1064–1077.

Naidoo, O., Tai, J., & Penman, M. (2021). Preparing students for the future through developing evaluative judgement. The Clinical Teacher, 18(2), 115–120.

Panadero, E., & Jonsson, A. (2020). A critical review of the arguments against the use of rubrics. Educational Research Review, 30, 100329.

van Diggele, C., Roberts, C., Burgess, A., & Mellis, C. (2020). Interprofessional education: Tips for design and implementation. BMC Medical Education, 20, 455.

Appendix A.

Case Study: Workforce Complexity in Clinical Laboratory Services in the New River Valley

Case Title:

Addressing Laboratory Workforce Challenges at Carilion New River Valley Medical Center

Background:

Carilion New River Valley Medical Center (CNRV) is a regional hospital serving residents of Radford, Christiansburg, Blacksburg, and surrounding communities in the New River Valley of southwest Virginia. The hospital provides emergency care, surgical services, diagnostic testing, and specialized medical services for the region. The facility operates as part of the Carilion Clinic health system and includes a Level III trauma center that treats thousands of patients each year. (, n.d.). Like many healthcare systems across the United States, CNRV relies heavily on laboratory testing to support diagnosis, treatment planning, and patient monitoring. Laboratory testing is essential for emergency care, chronic disease management, surgical services, and outpatient diagnostic procedures. However, the hospital has recently experienced increasing workforce challenges within its clinical laboratory, including staffing shortages and increasing diagnostic testing demands. Hospital leadership has expressed concern that these workforce issues may affect turnaround times, staff workload, and patient care outcomes.

Current Workforce Situation:

The clinical laboratory at CNRV supports multiple hospital departments including:

emergency medicine

inpatient medical units

surgical services

outpatient diagnostic services

The laboratory currently operates 24 hours per day and employs:

Clinical Laboratory Scientists (CLS)

Medical Laboratory Technicians (MLT)

Phlebotomists

Laboratory supervisors and managers

In recent years, the laboratory has experienced several workforce challenges:

retirement of experienced laboratory scientists

difficulty recruiting new CLS professionals to rural areas

increasing diagnostic testing demand

staff burnout related to workload and overtime

As a result, some laboratory shifts have been understaffed, and turnaround times for certain diagnostic tests have occasionally increased.

Stakeholders Affected:

Several healthcare professionals and groups are affected by laboratory workforce shortages.

Emerging Workforce Challenges:

Hospital leadership has identified several factors contributing to workforce complexity within the laboratory:

limited regional training pipelines for CLS professionals

competition with larger urban health systems

increased diagnostic testing demand

high workload and burnout among laboratory staff

limited understanding among hospital leaders about the laboratory's role in clinical decision making

Some proposed solutions have included:

use of travel laboratory professionals

increased laboratory automation

cross-training of staff

collaboration with academic programs to support workforce development

However, each potential solution involves trade-offs related to cost, staffing sustainability, and patient care.

Interprofessional Workforce Planning Meeting:

The hospital administration has organized an interprofessional workforce planning meeting to explore potential strategies for addressing laboratory staffing challenges.

Participants include representatives from:

laboratory leadership

nursing management

hospital administration

clinical laboratory staff

Each group has different perspectives regarding how workforce issues should be addressed.

The purpose of the meeting is to develop collaborative strategies that support patient care while maintaining sustainable staffing levels.

Student Role in the Case:

Your interprofessional team has been invited to participate in a simulated workforce planning meeting at Carilion New River Valley Medical Center.

Your team will analyze the workforce situation and develop recommendations that address the laboratory staffing challenges while considering:

patient safety

workforce sustainability

operational feasibility

financial limitations

professional collaboration

As part of this activity, your team will conduct a brief informational interview with a practicing healthcare professional (CLS, nurse, or healthcare administrator) to gain insight into real-world workforce challenges.

Discussion Questions:

Teams should consider the following questions when analyzing the case:

What factors are contributing to workforce challenges within the clinical laboratory?

How do laboratory staffing shortages affect other healthcare professions?

What ethical considerations should guide workforce decisions?

How can healthcare professions collaborate more effectively to address workforce challenges?

Which potential workforce strategies appear most realistic for this healthcare system?

How can laboratory professionals advocate for greater participation in healthcare decision making?

Deliverables:

Each interprofessional team will develop a workforce strategy proposal that includes:

identification of key workforce challenges

stakeholder perspectives

evaluation of workforce solutions

recommendations for collaborative action

Teams will present their strategy during the interprofessional workforce planning simulation.

Appendix B.

Stakeholder Mapping

Instructions:

Working with your interprofessional team, complete the stakeholder mapping table below. Identify stakeholders who are affected by laboratory workforce challenges or who influence workforce

planning decisions within the healthcare system. Consider how each stakeholder may view the problem differently and what concerns or priorities they may bring to workforce discussions.

Mapping Table:

Interprofessional Perspectives:

Discuss how different healthcare professions may view the workforce challenge differently.

Which stakeholder perspectives are most aligned with patient care priorities?

Which stakeholders may have competing priorities?

How might communication between professions influence workforce decisions?

Ethical Considerations:

Workforce decisions often involve ethical considerations related to patient safety and professional responsibilities.

Identify at least two ethical concerns related to laboratory workforce shortages.

Reflection Questions:

Discuss the following questions with your team.

Which stakeholders have the greatest influence over workforce decisions?

Which stakeholders may be underrepresented in workforce planning discussions?

How can interprofessional collaboration improve workforce planning outcomes?

How might stakeholder interviews influence your workforce strategy proposal?

Deliverables:

Each team will submit a completed stakeholder mapping worksheet and use this analysis to inform their workforce strategy proposal and simulation presentation.

Appendix C.

Stakeholder Interview Guide – Workforce Complexity in Clinical Laboratory Services

Purpose of the Interview:

The purpose of this interview is to help students gain insight into real-world workforce challenges in healthcare settings. Students will interview a practicing professional from one of the participating disciplines (Clinical Laboratory Science, Nursing, or Health Administration) to better understand how workforce shortages affect healthcare operations, patient care, and interprofessional collaboration. Insights from this interview will be used to evaluate the feasibility of proposed workforce strategies developed during the course activity.

Interview Guidelines:

As a team, review the following guidelines before conducting the interview:

In your teams, designate a member to introduce the team and explain that the interview is for educational purposes only.

Plan for the interview to last approximately 10–15 minutes; assign a timekeeper within your team.

As a team, do not record identifying personal or institutional information.

Assign a note-taker within your team to capture key insights rather than recording the conversation verbatim.

As a team, be respectful of the professional's time and perspective.

Interviewee Information (Do Not Include Identifiable Details):

Professional Role: _____

Years of Experience: _____

Practice Setting (hospital, clinic, laboratory, etc.): _____

Section 1: Workforce Challenges

Suggested Questions

What workforce challenges are currently affecting your department or profession?

How do staffing shortages affect daily operations in your workplace?

How do workforce shortages influence patient care or service delivery?

Notes:

Section 2: Interprofessional Collaboration

Suggested Questions

How do different healthcare professions collaborate to address workforce challenges?

Are there situations where better communication between professions could improve workforce planning?

What role does your profession play in workforce planning discussions?

Notes:

Section 3: Evaluating Workforce Strategies

Students should briefly describe their proposed workforce strategy and ask the following:

Do you think this strategy would be realistic in your workplace?

What barriers might prevent this strategy from being implemented?

What changes would you recommend to make the strategy more effective?

Notes:

Section 4: Student-Generated Questions

Students should develop additional questions relevant to their workforce strategy.

Student Question:

Interview Response Notes:

Reflection After the Interview:

After completing the interview, briefly reflect on the following:

What new insights did you gain about workforce challenges?

Did the interview change your perspective on your proposed workforce strategy?

What recommendations from the professional influenced your team's proposal?

What did you learn about the role of different healthcare professions in workforce planning?

Deliverables:

Students will submit a 1–2 page interview summary that includes:

overview of the professional's role

key workforce challenges identified

insights related to interprofessional collaboration

feedback on the team's proposed workforce strategy

reflection on how the interview influenced their recommendations

Appendix D.

Team Collaboration Worksheet – Interprofessional Workforce Strategy Development

Purpose:

This worksheet is designed to guide interprofessional student teams as they analyze the workforce case study, integrate stakeholder insights, and develop collaborative workforce strategies. The worksheet supports systems thinking, interprofessional communication, and collaborative problem solving. Students should complete this worksheet throughout the project as they prepare for the interprofessional workforce planning simulation.

Team Information:

Team Members and Disciplines. Team roles may include facilitator, note taker, research lead, or presentation coordinator.

Part 1: Case Analysis

Discuss the case study and identify the primary workforce challenges affecting the healthcare facility.

Key workforce challenges identified by your team:

Which challenges have the greatest impact on patient care?

Part 2: Stakeholder Perspectives

Using your stakeholder mapping worksheet, summarize key perspectives.

Which stakeholder groups have the greatest influence on workforce decisions?

Part 3: Insights from Stakeholder Interviews

Summarize the key insights from your professional interview. Did the professional recommend any specific solutions or strategies? List the insights and tell how it affects your workforce strategy for each interview.

Part 4: Interprofessional Perspectives

Discuss how different healthcare professions view the workforce problem. Where do perspectives overlap or differ? List the professions and their perspectives.

Part 5: Ethical Considerations

Workforce decisions often involve ethical dilemmas. Identify ethical considerations related to the workforce challenge. List the ethical issue, impact on patients or staff, and the stakeholders affected.

Part 6: Workforce Strategy Development

Based on your analysis, develop a proposed workforce strategy.

Proposed strategy title

Description of the strategy

Goals of the strategy

Expected benefits

Part 7: Strategy Evaluation

Evaluate the feasibility of your proposed strategy. List Evaluation Factors, Considerations, Potential Barriers, and Possible Solutions to Barriers for the following:

Patient Safety

Financial feasibility

Workforce sustainability

Interprofessional collaboration

Part 8: Preparation for Simulation

Your team will present and discuss your workforce strategy during the simulation.

Discuss the following questions:

What key points will your team emphasize during the presentation?

Which profession will present each part of the strategy?

What questions might other stakeholders ask about your proposal?

Part 9: Team Reflection

After completing the activity, reflect on your team collaboration.

What strengths did your team demonstrate during this activity?

What challenges did your team experience when working across disciplines?

How did interprofessional collaboration influence your workforce strategy?

Appendix E.

Simulation Scenario Guide – Interprofessional Workforce Planning Meeting

Purpose of the Simulation:

The purpose of this simulation is to provide students with an opportunity to apply systems thinking, interprofessional collaboration, and professional advocacy skills while addressing a complex workforce challenge in a healthcare organization. Students will participate in a simulated workforce planning meeting involving representatives from multiple healthcare professions.

During the meeting, interprofessional teams will present and discuss strategies for addressing clinical laboratory workforce shortages while considering patient care, operational constraints, and stakeholder perspectives. This activity supports development of IPEC competencies, including roles and responsibilities, interprofessional communication, teams, and teamwork.

Simulation Context:

The simulation is based on a workforce challenge affecting Carilion New River Valley Medical Center, a regional hospital serving Radford and surrounding communities in southwest Virginia. Hospital leadership has identified increasing workforce shortages in the clinical laboratory. These shortages have begun to affect laboratory turnaround times and staff workload. The hospital administration has convened an interprofessional workforce planning meeting to discuss potential solutions. Participants in the meeting represent different healthcare professions with varying priorities and perspectives.

Simulation Participants:

Students will participate in the simulation as members of an interprofessional workforce planning committee. Each team should include representatives from the following professions:

Clinical Laboratory Science

Nursing

Health Administration

Students should represent the perspectives and priorities of their assigned profession when discussing workforce strategies.

Simulation Objectives:

By participating in the simulation, students will:

analyze workforce challenges within a healthcare system

demonstrate effective interprofessional communication

advocate for the role of their profession in workforce planning

evaluate the feasibility of workforce strategies

collaborate to address complex healthcare problems

Simulation Preparation:

Before the simulation session, students should complete the following activities:

analyze the workforce case study

complete the stakeholder mapping worksheet

conduct a stakeholder interview

develop a proposed workforce strategy with their team

Each team should prepare a 5–7 minute workforce strategy presentation.

Simulation Structure:

The simulation will follow four phases.

Phase 1: Opening of the Workforce Planning Meeting

The instructor introduces the simulation and outlines the purpose of the meeting.

Students are reminded that the goal is not to find a single solution but to explore strategies through interprofessional discussion.

Teams briefly review their proposed workforce strategies.

Phase 2: Team Strategy Presentations

Each interprofessional team presents its workforce strategy proposal.

The presentation should include:

identification of key workforce challenges

stakeholder perspectives

proposed workforce solutions

potential benefits and limitations of the strategy

Other participants may ask questions during the presentation.

Phase 3: Interprofessional Discussion and Negotiation

Following presentations, participants engage in a collaborative discussion.

Students should consider:

patient safety implications

financial and operational constraints

professional responsibilities

long-term workforce sustainability

Students are encouraged to advocate for their professional perspective while remaining open to interdisciplinary collaboration.

Phase 4: Reflection and Debrief

After the simulation, the instructor facilitates a structured debrief discussion.

Students reflect on the following questions:

How did different professions approach the workforce challenge?

What conflicts or competing priorities emerged during the discussion?

Which strategies appeared most feasible in the healthcare setting?

What role should laboratory professionals play in workforce planning discussions?

Students will incorporate these reflections into their written reflection assignments.

Appendix F.

Healthcare Facility Organization Chart Template – Carilion New River Valley Medical Center Workforce Planning Case

Purpose:

This organizational chart helps students visualize the leadership structure within a healthcare organization and identify how workforce planning decisions may move through different levels of administration. Understanding organizational structure can help students analyze stakeholder influence and communication pathways during workforce planning discussions. Students should review the chart and consider how each role may influence staffing decisions and resource allocation within the healthcare system.

Blank Organizational Chart

Student Activity:

Using case study and stakeholder mapping worksheets, students should consider the following questions:

Which positions have the greatest influence over workforce planning decisions?

Which positions represent clinical perspectives?

Which positions represent administrative perspectives?

How might communication flow between departments during workforce planning discussions?

Which positions might advocate for laboratory workforce needs?

Appendix G.

Reflection Prompts and Peer Evaluation Form

Part 1: Reflection Prompts - Experiential Learning Reflection

Purpose:

Reflection is an important component of experiential learning because it helps students connect experience, analysis, and professional growth. Students will reflect on their participation in the workforce complexity project, including the case study analysis, stakeholder interviews, interprofessional collaboration, and workforce planning simulation. Students should submit a reflective journal entry (approximately 2–3 pages) addressing the prompts below.

Reflection Questions:

Understanding Workforce Complexity

What workforce challenges were most significant in the case study?

How did workforce shortages affect different healthcare professions and patient care?

Interprofessional Collaboration

How did working with students from different healthcare disciplines influence your understanding of the workforce problem?

What communication strategies were effective when discussing different professional perspectives?

Were there any disagreements among team members? How were these resolved?

Stakeholder Insights

What insights did you gain from the stakeholder interview?

Did the interview change your perspective on the workforce strategies proposed by your team?

Professional Identity and Advocacy

What did this activity reveal about the role of your profession in healthcare workforce planning?

How can professionals in your field advocate for their role in healthcare decision making?

Systems Thinking and Problem Solving

Which workforce strategies appeared most realistic for the healthcare organization?

What barriers might prevent these strategies from being implemented?

Personal Learning and Future Practice

What did you learn from this activity that may influence your future professional practice?

How might interprofessional collaboration improve workforce planning in healthcare systems?

Part 2: Peer Evaluation Form – Interprofessional Team Collaboration

Purpose:

Peer evaluation allows students to assess the contributions of their team members during workforce strategy development and simulation activities. This process helps promote accountability, collaboration, and professional communication within interprofessional teams. Each student should evaluate the contributions of their team members using the following criteria.

Team Member Being Evaluated

Student Name: _____

Evaluator Name: _____

Team Role: _____

Evaluation Criteria

Rate each category using the following scale:

1 = Needs improvement
2 = Developing
3 = Satisfactory
4 = Strong
5 = Excellent

Written Feedback

What was this team member's greatest contributions to the project?

What suggestions do you have for improving their teamwork or collaboration?

Reflection on Team Collaboration

Briefly describe how your team functioned during the project.

Submission Instructions

Students should submit the completed peer evaluation form along with their reflection assignment. Peer evaluations will contribute to the team collaboration component of the course assessment. A peer evaluation should be completed for each member of their team.

Appendix H.

Program Evaluation Survey – Interprofessional Workforce Complexity Activity

Purpose:

This survey collects student feedback to evaluate the effectiveness of the Interprofessional Workforce Complexity activity and identify areas for future improvement. Responses are

anonymous and will be used by course faculty to refine implementation, facilitation, and assessment strategies in subsequent offerings. Students should complete this survey individually after submitting all course deliverables.

Part 1: Activity Design and Implementation

Please rate the following items using the scale below:

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Part 2: Open-Ended Feedback

What aspect of this activity was most valuable to your professional development?

What aspect of this activity was most challenging or difficult?

What changes would you suggest to improve this activity for future students?

Did the interprofessional team structure support your learning? Please explain.

Is there any additional feedback you would like to share with course faculty?

Faculty Use Note: Survey results should be reviewed and summarized following each course offering. Aggregate ratings and thematic analysis of open-ended responses should inform revisions to the case scenario, simulation structure, assessment rubrics, and facilitation approach prior to the next implementation cycle.

Lesson Title Introduction to Workforce Complexity in Healthcare Systems	Lesson Title Introduction to Workforce Complexity in Healthcare Systems
Learning Objectives By the end of this activity students will be able to:	Describe workforce challenges affecting clinical laboratory services. Identify stakeholders involved in healthcare

	workforce planning. Explain the roles and responsibilities of different healthcare professions. Begin applying systems thinking to healthcare workforce problems.
Pre-Class Preparation Students review assigned readings on healthcare workforce shortages and laboratory workforce challenges. Students also review the workforce case scenario describing a healthcare organization experiencing laboratory staffing shortages.	Pre-Class Preparation Students review assigned readings on healthcare workforce shortages and laboratory workforce challenges. Students also review the workforce case scenario describing a healthcare organization experiencing laboratory staffing shortages.
Materials and Resources	Workforce shortage case study (See Appendix A.) Healthcare workforce reports Stakeholder mapping worksheet (See Appendix B.) Course lecture slides IPEC competency overview
Activity Description Faculty introduces the wicked problem of evolving workforce complexity in healthcare systems. Students are assigned to interprofessional teams composed of CLS, nursing, and health administration students. Teams analyze the case study and begin identifying stakeholders affected by workforce shortages.	Activity Description Faculty introduces the wicked problem of evolving workforce complexity in healthcare systems. Students are assigned to interprofessional teams composed of CLS, nursing, and health administration students. Teams analyze the case study and begin identifying stakeholders affected by workforce shortages.
Instructional Methods	Case-based learning Guided discussion Interprofessional team formation Stakeholder mapping exercise
Assessment of Learning Students submit a stakeholder mapping worksheet identifying key individuals or groups involved in workforce planning decisions.	Assessment of Learning Students submit a stakeholder mapping worksheet identifying key individuals or groups involved in workforce planning decisions.
Reflection and Debrief Students discuss:	Which professions are most affected by workforce shortages, and which are not? How do workforce shortages influence patient care?
Lesson Title	Lesson Title

Stakeholder Perspectives and Workforce Challenges	Stakeholder Perspectives and Workforce Challenges
Learning Objectives By the end of this activity students will be able to:	Analyze causes and consequences of workforce shortages. Evaluate how workforce challenges affect different healthcare professions. Demonstrates interprofessional communication during team discussions. Incorporate real-world stakeholder perspectives into workforce analysis.
Pre-Class Preparation Students review interview guidelines and prepare questions for stakeholder interviews.	Pre-Class Preparation Students review interview guidelines and prepare questions for stakeholder interviews.
Materials and Resources	Stakeholder interview guide (See Appendix C.) Workforce case materials Interprofessional discussion prompts Team collaboration worksheets (See Appendix D.)
Activity Description Students conduct systems analysis of the workforce case scenario and examine the operational and ethical implications of staffing shortages. Each team conducts a brief informational interview with a practicing professional from CLS, nursing and health administration to gain insight into real-world workforce challenges. Teams discuss interview findings and evaluate whether their proposed strategies are realistic within current healthcare systems.	Activity Description Students conduct systems analysis of the workforce case scenario and examine the operational and ethical implications of staffing shortages. Each team conducts a brief informational interview with a practicing professional from CLS, nursing and health administration to gain insight into real-world workforce challenges. Teams discuss interview findings and evaluate whether their proposed strategies are realistic within current healthcare systems.
Instructional Methods	Experiential Learning Stakeholder interviews Interprofessional team discussion Case analysis
Assessment of Learning Students submit a stakeholder interview summary describing insights gained from the professional consultation and how the information influenced their workforce strategy.	Assessment of Learning Students submit a stakeholder interview summary describing insights gained from the professional consultation and how the information influenced their workforce strategy.
Reflection and Debrief Students discuss:	How professional perspectives changed their understanding of workforce challenges?

	What barriers did professionals identify for implementing solutions?
Lesson Title Interprofessional Workforce Planning Simulation	Lesson Title Interprofessional Workforce Planning Simulation
Learning Objectives By the end of this activity students will be able to:	Demonstrate effective interprofessional communication. Advocate for their profession's role in healthcare decision making. Evaluate workforce strategies using systems thinking. Collaborate to develop interdisciplinary workforce solutions.
Pre-Class Preparation Teams prepare a workforce strategy proposal informed by case analysis and stakeholder interviews.	Pre-Class Preparation Teams prepare a workforce strategy proposal informed by case analysis and stakeholder interviews.
Materials and Resources	Simulation scenario guide (See Appendix E.) Organizational chart of healthcare system (See Appendix F.) Workforce data reports Simulation evaluation rubric (See Table 1.)
Activity Description Students participate in a simulation-based workforce planning meeting representing a healthcare leadership discussion. Each interprofessional team presents its proposed workforce strategy and negotiates potential solutions with other teams. Teams must consider patient care implications, operational feasibility, ethical considerations, and interdisciplinary collaboration.	Activity Description Students participate in a simulation-based workforce planning meeting representing a healthcare leadership discussion. Each interprofessional team presents its proposed workforce strategy and negotiates potential solutions with other teams. Teams must consider patient care implications, operational feasibility, ethical considerations, and interdisciplinary collaboration.
Instructional Methods	Simulation-based learning Team-based learning Interprofessional dialogue Problem-based learning
Assessment of Learning Teams present their workforce strategy proposal during the simulation. Faculty evaluate presentations using a rubric focusing on systems thinking, interprofessional collaboration, ethical reasoning, and communication skills.	Assessment of Learning Teams present their workforce strategy proposal during the simulation. Faculty evaluate presentations using a rubric focusing on systems thinking, interprofessional collaboration, ethical reasoning, and communication skills.

Reflection and Debrief Students discuss:	How collaboration influenced decision making? What challenges emerged when negotiating workforce solutions?
Lesson Title Reflection and Evaluation of Workforce Strategies	Lesson Title Reflection and Evaluation of Workforce Strategies
Learning Objectives By the end of this activity students will be able to:	Evaluate the effectiveness of proposed workforce strategies. Reflect on interprofessional collaboration experiences. Identify unresolved challenges related to workforce complexity. Demonstrate evaluative judgment when assessing solutions.
Pre-Class Preparation Students review feedback received during the simulation and prepare a final reflection.	Pre-Class Preparation Students review feedback received during the simulation and prepare a final reflection.
Materials and Resources	Reflection prompts (See Appendix G.) Peer evaluation form (See Appendix G.) Workforce strategy presentation rubric (See Table 2.)
Activity Description Students refine their workforce strategies based on simulation outcomes and stakeholder feedback. Teams present final recommendations and discuss how their perspectives evolved throughout the project.	Activity Description Students refine their workforce strategies based on simulation outcomes and stakeholder feedback. Teams present final recommendations and discuss how their perspectives evolved throughout the project.
Instructional Methods	Reflective learning Group discussion Peer feedback Collaborative evaluation
Assessment of Learning Students submit a reflective journal analyzing lessons learned from interprofessional collaboration, insights gained from stakeholder interviews, and limitations of proposed workforce solutions.	Assessment of Learning Students submit a reflective journal analyzing lessons learned from interprofessional collaboration, insights gained from stakeholder interviews, and limitations of proposed workforce solutions.
Reflection and Debrief Students discuss:	How did their understanding of workforce complexity change? What strategies may realistically improve workforce sustainability?

Criteria	1 - Developing	2 - Proficient	3 - Excellent
Systems Thinking	Identifies one or no contributing factors to workforce challenges; analysis remains descriptive without examining causes or stakeholder impact	Identifies at least two contributing factors and describes how they affect patient care or operations, though connections between factors are not fully developed	Names three or more interconnected contributing factors (e.g., pipeline gaps, burnout, automation demands) and explains how they affect multiple stakeholder groups and patient care outcomes
Interprofessional Collaboration	Presents only from own discipline's perspective; does not acknowledge or engage with other professions' viewpoints during discussion	References at least one other profession's perspective during discussion; makes some attempt to acknowledge differing priorities, though integration is limited	Actively references perspectives from at least two other disciplines; adjusts proposal in response to feedback from other professional groups during negotiation
Ethical Reasoning	Does not identify any ethical considerations; proposal does not address patient safety or professional accountability	Names at least one ethical concern (e.g., patient safety, equitable resource allocation) but does not identify who is affected or propose a response	Identifies at least two specific ethical tensions (e.g., cost vs. patient safety, staff burnout vs. coverage needs), names stakeholders affected, and proposes a concrete response for each
Professional Advocacy	Does not explain the role of any specific profession in workforce planning; presentation does not distinguish disciplinary contributions	Explains at least one concrete contribution their profession makes to patient care or workforce planning, though the connection to the broader system is not fully developed	Clearly articulates the role of laboratory professionals in healthcare decision-making with specific examples; makes a case for greater inclusion of CLS perspectives in workforce planning discussions
Communication	Presentation is difficult to follow; student reads from notes without engaging the audience; responses to questions are vague	Main points are communicated but delivery is uneven; some reliance on notes; responses to audience questions are partially	Presents key points clearly without reliance on notes; responds to audience questions with specificity; uses language accessible to

	or off-topic	developed		an interprofessional audience
Criteria	1 -Beginning	2 - Developing	3 - Proficient	4 - Excellent
Workforce Problem Analysis	Limited or unclear understanding of workforce challenges	Identifies workforce challenges but analysis is limited or incomplete	Demonstrates understanding of workforce challenges with some supporting analysis	Demonstrates comprehensive understanding of workforce complexity and clearly identifies multiple contributing factors
Stakeholder Integration	Stakeholder perspectives are not addressed	Mentions stakeholders but perspectives are not fully considered	Includes stakeholder perspectives but integration is limited	Incorporates perspectives of multiple stakeholders including insights from stakeholder interviews
Interprofessional Collaboration	Presentation reflects a single disciplinary perspective	Limited collaboration across professions	Shows evidence of interdisciplinary collaboration with some integration of perspectives	Clearly demonstrates collaborative approach integrating perspectives from multiple professions
Feasibility of Workforce Strategy	Strategy is unrealistic or not clearly related to the workforce problem	Strategy may address the issue but lacks feasibility or practicality	Strategy is reasonable but some practical considerations are missing	Proposed strategy is realistic, sustainable, and supported by evidence and case analysis
Ethical and Professional Considerations	Ethical implications are not considered	Ethical issues are mentioned but not clearly analyzed	Identifies ethical considerations but discussion is limited	Thoughtfully addresses ethical implications and professional responsibilities
Communication and Organization	Presentation is difficult to follow or unclear	Presentation lacks organization or clarity in some areas	Presentation is organized and mostly clear	Presentation is clear, well-organized, and effectively communicates ideas to an interprofessional audience
Criteria	1 -Beginning	2 - Developing	3 - Proficient	4 - Excellent

Depth of Reflection	Response is primarily descriptive; recounts events without examining meaning or personal growth	Reflects on at least one experience but analysis remains surface-level; limited connection to professional growth	Demonstrates thoughtful analysis of experience; connects specific moments from the activity to professional learning	Demonstrates deep, critical reflection; explicitly connects experience to professional identity development and articulates how learning will influence future practice
Connection to Interprofessional Collaboration	Does not address collaboration experiences or interprofessional dynamics	Briefly mentions working with other disciplines but does not analyze how collaboration influenced thinking or decisions	Reflects on specific interprofessional interactions; describes at least one instance where collaboration changed their understanding of the workforce problem	Critically analyzes how interprofessional collaboration shaped understanding; addresses both areas of alignment and tension across disciplines
Stakeholder and Systems Thinking	Does not address how workforce challenges affect the broader healthcare system or multiple stakeholders	Identifies at least one stakeholder group affected by workforce shortages but does not examine systemic connections	Analyze how workforce shortages affect multiple stakeholders and explains at least one systemic connection between contributing factors	Demonstrates sophisticated systems thinking; addresses interconnected factors, unintended consequences, and how stakeholder perspectives shape workforce outcomes
Professional Identity and Advocacy	Does not reflect on professional role or identity; no reference to the student's discipline in relation to workforce planning	Mentions their professional role briefly but does not connect the activity to professional identity development or advocacy	Reflects on how the activity influenced professional identity; describes at least one way their profession contributes to workforce planning or patient care	Articulates an understanding of their profession's role in healthcare decision-making; describes specific advocacy strategies for greater professional representation

Writing Quality and Organization	Difficult to follow, lacks clear organization; does not meet length requirements	Some organization but inconsistent; writing is generally clear though errors are present	Well-organized and clearly written; meets length requirements; appropriate professional tone throughout	Clear, well-organized, uses professional language appropriate for healthcare education; all prompts are fully and substantively addressed

Learning Outcome	Assessment Method	Evidence Collected
Systems thinking	Stakeholder analysis and interview summary	Written analysis, interview answers, and interview summary
Interprofessional communication	Simulation participation	Instructor observation
Ethical reasoning	Reflective journal	Reflection analysis
Professional advocacy	Strategy presentation	Team presentation
Collaborative decision making	Peer evaluation	Peer feedback

IPEC Competency	Activity Component
Values and Ethics	Ethical analysis of workforce decisions
Roles and Responsibilities	Stakeholder mapping exercise
Interprofessional Communication	Simulation dialogue and team meetings
Teams and Teamwork	Collaborative workforce strategy development
Clinical Laboratory Scientists	CLS professionals are responsible for performing diagnostic tests, ensuring quality control, validating results, and communicating critical laboratory findings to healthcare providers.
Nursing Staff	Nurses rely on laboratory results to monitor patient conditions and guide treatment decisions. Delayed results can affect medication administration, patient monitoring, and discharge planning.
Physicians and Advanced Practice Providers	Physicians depend on laboratory testing for diagnosis and treatment planning. Delays in laboratory testing may affect clinical decision making and patient flow.
Hospital Administration	Administrators must balance workforce needs with financial constraints, regulatory requirements, and patient safety standards.
Patients	Patients experience the effects of laboratory workforce challenges through delays in diagnosis, longer hospital stays, or delayed treatment decisions.

Stakeholder	Role in Healthcare System	How Workforce Shortages	Stakeholder Priorities	Influence on Workforce Decisions	Level of Influence and Impact

		Affect Them			
Example: Clinical Laboratory Scientist	Perform Diagnostic testing and ensure result accuracy	Increased workload, burnout, delayed testing	Adequate staffing, quality testing, patient safety	Moderate to high	Influence- Low to Moderate, Impact- High

Ethical Concern	Stakeholders Affected	Possible Consequences
Student Name	Discipline (CLS, Nursing, Health Admin)	Role in Team
Stakeholder	Main Concern	How Workforce Shortages Affect Them
Evaluation Area	Criteria	Rating
Participation and Engagement	Participated actively in team discussions	1 2 3 4 5
Participation and Engagement	Prepared for team meetings and activities	1 2 3 4 5
Interprofessional Communication	Respected perspectives of other professions	1 2 3 4 5
Interprofessional Communication	Communicated ideas clearly during discussions	1 2 3 4 5
Collaboration and Teamwork	Contributed to development of workforce strategy	1 2 3 4 5
Collaboration and Teamwork	Supported collaboration and group decision making	1 2 3 4 5
Professional Responsibility	Completed assigned tasks on time	1 2 3 4 5
Professional Responsibility	Demonstrated professionalism during the project	1 2 3 4 5

Survey Item	Rating (1-5)
The learning objectives for this activity were clearly communicated.	
The case study presented a realistic and meaningful workforce challenge.	
The simulation activity helped me understand how different professions approach workforce challenges.	
The stakeholder interview helped me better understand real-world workforce challenges.	
Working in an interprofessional team strengthened my collaboration skills.	
The rubrics and assessment expectations were	

clear and fair.	
Faculty facilitation supported my learning during this activity.	
This activity increased my awareness of the role of laboratory professionals in healthcare systems.	