UNDERSTANDING THE ROLE AND TRAINING OF INTERDISCIPLINARY
PROFESSIONS: EMERGENCY MEDICAL TECHNICIANS

by

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Abstract

Understanding the role and training of all healthcare professionals is essential for RNs who are responsible for delegating, receiving, and transferring patient care too. An educational program which educates nursing students about the role, and training of EMTs was designed in an attempt to enhance interprofessional collaboration, communication, and the safe transfer of patients across the two professions. EMTs were selected as a profession of interest related to the acute, and often frantic environment in which RNs and EMTs interact. The purpose of the educational program was to educate program participants related to the role, and training of the varying certifications of EMTs within the New England area. The review of literature examined components of effective communication within healthcare settings, identified patient safety concerns related to ineffective communication, and examined the role and training of varying EMT certifications within the New England area. The educational program utilized an interactive PowerPoint lecture, scenarios, group discussion, and handouts to facilitate learning. Seventeen SNA members from RIC attended the program which was evaluated through the use of a post education evaluation tool. 100% of program attendees completed the voluntary post education surveys. Analysis of post education evaluation tool results, which evaluated attendees interest in program content, presenters' delivery of content, and the program design where predominantly positive. No participants strongly disagreed with any of the provided Likert scale questions. Educating RNs on the role and training of the varying healthcare professionals they routinely interact, receive, and transfer patient too will decrease communication errors, and improve quality of care.

Table of Contents

Understanding the Role and Training of Interdisciplinary Professions: Emergency
Medical Technicians

Background/Statement of Problem

Effective communication among healthcare professions is essential in providing

safe, and efficient healthcare. Registered nurses (RNs) are responsible for

communicating patient information, and delegating patient needs across a wide variety of

healthcare professions with varying educational levels and abilities. In considering the

vast amount of interprofessional disciplines the RN must communicate, delegate, and

transfer patient care to, it is essential that RNs receive adequate interprofessional

education.

The American Association of Colleges of Nursing (AACN), which serves as a

regulatory authority responsible for the development of nursing education requirements,

identifies interprofessional communication and collaboration as an essential component

of a Bachelor of Science in Nursing (BSN) degree. The AACN (2008) clearly identified

interprofessional communication and collaboration as a key factor associated with the

improved health outcomes of patients. Careful examination of the executive statement

released by the AACN (2008) which included interprofessional communication and

collaboration as one of the nine essential components of BSN programs demonstrated the

significance of interprofessional education, but failed to identify specific professions

which nursing students would become acquainted with while receiving their formal

education. In considering the lack of specificity related to reviewed interdisciplinary

professions within BSN programs, the profession of emergency medical technicians

(EMTs) was selected as an appropriate interprofessional group to educate Rhode Island

College (RIC) Student Nursing Association (SNA) members on.

Interprofessional education specific to the profession of EMTs was selected as a

priority related to the high acuity, and emergent environment in which RNs, and EMTs

routinely interact. Additionally, Tupper, Gray, Pearson, & Coburn (2015) describes

patients that are acutely ill or suffering from physical or mental impairments as high risk for medical errors since their ability to communicate for themselves may be impaired. Research by Tredinnick-Moir (2013) supports the need for interprofessional education among the professions by identifying the existence of role ambiguity, and communication barriers between RNs and EMTs. The study also related documented medical errors to communication issues between the two professions. A review of national educational curriculum standards obtained via The National Highway and Traffic Safety Associations (NHTSA) Office of Emergency Medical Services and a review of the syllabi of courses included within the Rhode Island College (RIC) BSN nursing program demonstrated that each profession's curriculum standards fail to address the role and training associated with one another's professions.

The clinical problem identified is the potential for ineffective communication related to interprofessional knowledge deficits between RNs and EMTs. The significance of the problem relates to patient safety and to the effective delivery of healthcare. As identified by Hall (2005), healthcare professions develop their own culture which is a direct reflection of their professional training and role. Effective communication across healthcare professions would be facilitated by the enhanced cultural awareness among interprofessional disciplines. Supporting research by Brock, et al. (2013) revealed a correlation between interprofessional education, and patient safety. Research data demonstrated improved communication and enhanced teamwork among healthcare professionals that received interprofessional education. Interprofessional disciplines must understand each other's education, capabilities, and role in order to effectively communicate and provide quality, collaborative care.

The purpose of the educational program was to educate program participants related to the role, and training of the varying certifications of EMT's within the New England area. Education that is specific to the role, training, and certification levels of EMTs within New England will be provided to RIC SNA members so that they may

understand the limitations and training associated with the varying EMT certification levels available. The developed program attempted to enhance interprofessional collaboration, communication, and the safe transfer of patient care across the two medical professions.

The proposed project type was a quality improvement project, and related to the APRN's role as an educator. RIC BSN students and SNA members were informed of the qualifications and training associated with the varying certifications held by EMT's within the New England area.

Literature Review

Relevant research findings and supporting documentation was collected through the use of online databases including PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline, and Google Scholar. Reference pages of reviewed articles were utilized in isolating pertinent primary sources. Search criteria was limited to available full text documents published from 2000 to 2015. Keywords, and terms utilized for the search included patient handoff, healthcare communication tools, interprofessional communication, interprofessional education, communication and patient safety, leadership, and nurse report.

The review of literature attempted to examine the significance of effective communication among healthcare professionals, and identify patient safety concerns related to ineffective communication among healthcare providers. Intra-facility, inter-facility, and prehospital communication barriers were explored. Additionally, interprofessional education was reviewed as related to effective communication

Patient Safety

Effective communication among healthcare professionals is essential in providing safe, quality healthcare. A simple misinterpretation, or inadvertent failure to convey pertinent healthcare information can result in a variety of safety concerns for the vulnerable population of patients seeking healthcare. Communication failures within healthcare systems result in avoidable medical errors and are detrimental to patient safety.

A qualitative study by Sutcliffe, Lewton, & Rosenthal, (2004) demonstrated a clear association between faulty communication, and medical errors. The study method utilized a 600-bed teaching hospital, and obtained a total sample population of 26 residents whom were randomly selected among the available population of 85 residents within the selected hospital. Semi-structured, face-to-face interviews related to work environments, activities, and medical misshapes which occurred no more than three

months prior to the interview were utilized in obtaining relevant research data. Participants described each mishap in depth, including the contributory factors, and were asked to categorize each incident into provided categories. Interviews lasted between one to two hours, were recorded, and later transcribed. A qualitative data program was used to translate interview questions, and responses into categorized coding. Emerging themes were identified from the collected data via inductive analysis. Research results identified a total of 70 reported mishaps which were most frequently related to contributory factors such as communication, and patient management. Recurring patterns of communication difficulties were identified by the sample population, and were associated with the occurrence of medical mishaps. Interprofessional communication difficulties between residents and attending's, residents and community physicians, residents and specialists, and residents and nurses were identified. Predominant themes related to communication difficulties included hierarchy concerns, insufficient information, and inadequate modes of communication.

Ong. & Coiera, (2011) conducted a systematic review which detailed the nature of intra-hospital handoff communication failures, examined factors affecting handoff communication, and reviewed the effectiveness of current interventions utilized to enhance the communication of medical information among healthcare professionals. Methods utilized included the extraction of data from available studies related to handoff communication between healthcare providers. The review contained primary studies focusing on handoff communication during intra-hospital transfers and were dated between1980 and February 2011. Search terms consisted of intra-hospital transfer, intra-hospital transport, handover, and handoff. Literature that did not provide primary data, or specify a detailed methodology, including the method of data collection and sample size, was excluded. Extracted and examined data focused on study design, population characteristics, sample size, setting, interventions, and outcome measurements. Only twenty-four out of 516 resulting articles met the study inclusion criteria. The researchers

noted various communication issues arising from the intra-hospital transfer of patients within various hospital settings. Predominant challenges associated with communication deficits included the failure to communicate transport time, required resources, and express knowledge deficits. Absent, improperly utilized, and or insufficient communication tools resulted in informal and unstructured patient handoffs. Additionally, factors identified as contributing to communication deficits included time restraints, the unpredictability of medical events, insufficient staffing, demanding workloads, varying approaches to patient care, and the difficulty in assessing information and communicating with providers across units on different shifts. The researchers demonstrated that there is consistent evidence related to the need for improved communication and information transfer.

In an attempt to solidify the relationship between communication barriers, and patient safety, Manser, (2009) conducted a literature review. The review focused specifically on the ability of healthcare professionals to communicate and work together effectively as a team. The review contained articles dated between 1950 and 2007. Search terms included teamwork, leadership, collaborative work, collaborative activity, interdisciplinary practice, team training, and cross training. Database searches were limited to dynamic healthcare settings including operating rooms, intensive care units, and emergency rooms. Trauma teams and emergency resuscitation teams were included in the reviewed literature. Inclusion criteria were specific to articles published in English that addressed teamwork in dynamic domains of healthcare. Search results produced a total of 277 publications that fulfilled the inclusion criteria. Methods utilized in the represented studies to assess attitudes and perceptions included interviews, focus groups, and surveys. Prospective observational studies were used to describe and assess behavior. Retrospective case analysis of medical records and of incident reports was also utilized in applicable research studies. Cumulative analysis of empirical studies that investigated the relationship between teamwork and adverse events was conducted. Studies relevant to the

retrospective analyses of adverse events and incident reports found 22-32% of analyzed events to be related to communication or teamwork issues. Similar results were found in observational studies. The researchers described a clear correlation between adverse events and ineffective communication or teamwork processes.

Interprofessional Collaboration

Healthcare systems are comprised of multiple professions that are responsible for providing healthcare services, and ensuring patient safety. The variety of highly specific, and uniquely trained healthcare professionals enables the delivery of individualized, comprehensive care; but also creates the potential for a multitude of communication errors among the varying professionals within the system. Effective interprofessional collaboration and communication is essential in providing safe, quality care.

Hall, (2005) explored the barriers associated with interprofessional teamwork. The keywords utilized to provide supporting evidenced included interprofessional relations, professional status inequalities, interprofessional education, health and social care, conflict, and group behavior. Professional culture, professional identities, and the lack of interdisciplinary education are identified as key factors that hinder interprofessional communication, and impede the teamwork processes. Distinct professional values, role ambiguity, and the varying educational programs among healthcare professions are noted to diminish interprofessional collaboration. Individual professions develop their own unique cultures that are based on education, and their role. The failure of professions to understand one another's culture is identified as a significant communication barrier within healthcare systems.

Reeves et al. (2010) conducted a systematic review to explore the effectiveness of interprofessional education (IPE) interventions. The researchers assessed the effectiveness of IPE interventions compared to educational interventions delivered to professions separately. Additionally, the effectiveness of IPE interventions compared with control groups that received no educational interventions were assessed. Databases

MEDLINE, CINAHL, and the Effective Practice and Organization of Care Group (EPOC) registry were utilized to obtain included studies. Inclusion criteria for the systematic review consisted of studies that included an intervention related to interprofessional exchanges and educational interventions and the results of the studies needed to be objectively measured or reported with validated instruments. Study interventions needed to be evaluated using a random control trial (RCT), controlled before and after studies (CBA), or interrupted time series (ITS). Only six out of the resulting 1802 studies met the inclusion criteria for the systematic review. Four studies employed a RCT design, and two studies utilized a CBA design. All included studies assessed the effectiveness of IPE against a control group which received no education. No studies were identified or included which assessed the effectiveness intervals of IPE interventions against the individualized education of professions. Reported findings provided a range of outcomes: Varying data results and the number of included studies impeded the ability of a cumulative meta-analysis. The resulting documentation supports the positive influence of IPE. Four of the six included studies produce positive outcomes related to the implementation of IPE.

Communication Across Healthcare Organizations

Effective communication between healthcare facilities is dependent upon the effective transition of healthcare information across varying disciplines, providers, and facilities. The complexities associated with intra-facility communication pose a significant risk for ineffective communication. Delayed, misconstrued, or inapt communication at any level of patient transition across healthcare facilities can significantly impede the efficiency and safety of healthcare delivered.

Shah, Burack, & Boockvar, (2010) examined the communication barriers that exist between separate healthcare organizations. The objective of the study was to identify perceived communication barriers between hospitals, and nursing homes related to patient transfers. The study included Medicare and Medicaid certified nursing homes

in New York State. Research data was collected via mail surveys. A total of 647 questionnaires were sent out, and 229 were returned resulting in a 35.4% participation rate for the survey. Survey results demonstrated that perceived communication barriers were related to unplanned and sudden patient transfers (44.4%), night or weekend transfers (41.4%), hospital provider's lack of effort (51.0%), unfamiliar patient transfer (45.0%), and time constraints (43.5%). Larger hospitals, teaching hospitals, and urban nursing homes demonstrated a greater perceived importance related to the reported communication barriers. Cross site staff, hospital laboratory personnel, and nursing home pharmacy services demonstrated a lower perceived importance related to the reported communication barriers.

Tredinnick-Moir, (2013) explored communication issues that occur during inter-facility transfers, and prehospital transfers between paramedics and nurses. The qualitative research study utilized semi-structured interviews of paramedics and emergency room (ER) nurses within the greater Toronto area, Durham, and surrounding regions. A total of 20 individuals were contacted to take part in the study, all agreed to participate. Of the 11 paramedics and 9 RNs interviews, 45-recorded incidents related to patient transfer and handoff communication were recorded. Critical incidents described by interviewees were transcribed, broken into segments, and coded via two independent coders using the content analysis approach. Analysis of the data found that eight of the incidents were reported positively, and 37 incidents were reported to be negative. The most prevalent themes reported related to teamwork, attribution, generalization, role ambiguity, and patient condition. The theme teamwork accounted for 35% of the positive incidents, and 16% of the negative incidents related communication events. The theme attribution accounted for only four of the positive statements, and 18% of the negative incidents. Generalization accounted for 19% of the positive incidents, and 11% of the reported negative incidents. Role ambiguity accounted for 13% of negative incidents.

Communication incidents related to a patient's condition were mostly negative, only 6 of 60 comments related to this theme were reported as positive.

Delegation

Effective communication, and delegation among intraprofessional, and interprofessional health care members is an essential skill required of RNs. The RN is charged with the complex challenge of orchestrating patient care, system resources, and interdisciplinary team members in a manor which potentiates the delivery of healthcare in an efficient manor. Delegation is a critical task which requires strong leadership skills, and a thorough understanding of the capabilities of interdisciplinary team members.

An integrative review by Ptaff, Baxter, Jack, & Ploeg, (2013) explored influencing factors in the newly graduated RN's engagement in interprofessional collaboration. Whittemore and Knalf's framework for integrative reviews guided the project research. A comprehensive search of interprofessional collaboration and new graduate literature from 2000-2012 was reviewed. Inclusion criteria was limited to peer reviewed studies performed within the U.S. and Canada. All peer reviewed articles had to be specific to RN's that had graduated within 3 years, and have outcomes specific to barriers/facilitators to interprofessional collaboration. Studies focusing on nursing students, registered practical nurses, or advanced practice nurses were excluded. Initial database inquiries yielded 205 records with only a sample of 26 research and non-research reports meeting inclusion criteria. A systematic and iterative approach was used to extract and categorize available data. Project analysis identified lack of self-confidence, knowledge, experience, communication, skills, support, and respect as barriers to interprofessional collaboration and delegation among new nurses. Data analysis identified that newly graduated nurses experienced knowledge deficits related to the role of interprofessional healthcare members. Knowledge deficits related to how, when, and which healthcare professionals to consult for patient needs were identified.

Etheridge (2007) conducted a descriptive, qualitative study that examined the perceptions of recent BSN graduates related to making clinical judgments. New nursing graduates employed on adult medical-surgical units in West Michigan were included in the study. All participating nurses were female, between 22 and 26 years of age, graduated from a BSN program, passed the NCLEX on the first attempt, participated in a nurse intern program after graduation, and no longer worked with a preceptor. Semi-structured interviews were conducted to examine the newly graduated nurses meaning of making clinical judgments. Interviews occurred on three separate occasions: within one month of working independently from a preceptor, two to three months following the initial interview, and again eight to nine months after the initial interview. Dominant themes identified related to lack of confidence in clinical judgment, professional role ambiguity, and interprofessional role ambiguity. Interview responses expressed the lack of confidence new nurses felt related to their independent decision-making, and in interacting with interprofessional medical providers. Interviewed graduates reported being unaware of the level of responsibility required of nurses.

Leadership

Leadership is a vital characteristic needed for effective interprofessional collaboration and education to occur. The RNs role as as a leader in the effort to provide collaborative care within healthcare systems is complex and well documented. Team dynamics, leadership, and effective interprofessional collaboration are essential components in the effort to provide efficient quality care within healthcare settings.

Literature by Olenick, Allen, & Smego (2010) analyzed the definition, characteristics, and attributes associated with interprofessional education. A comprehensive literature review of the concept of interprofessional education was performed in an attempt to solidify the concepts, definition and characteristics. Results of the literature review revealed varying interpretations, overlapping terminologies, interchangeable terms, and an absence of uniformity in the application of a definition for

the term interprofessional education. Defining attributes for interprofessional education were identified as the 1.) active involvement by two or more members of a health care team; 2.) experience of learning and socialization; 3.) process resulting in participants learning with, from, about about one another that is shared across disciplines; 4.) andragogical experiences; 5.) knowledge and value sharing process; 6.) collaborative patient centered care.

An operational definition of interprofessional education has been identified by Olenick, Allen, & Smego (2010) as

     "an andragogical, interactive, experiential learning, and socialization process. IPE   occurs when two or more members of a health care team, who participate in either patient assessment and/or management, learn with, from, and about each other as they   collaboratively focus on patient-centered care and achieving optimal health outcomes. In   IPE, knowledge and value-sharing occur within and across disciplines" (p.80).

The concept analysis identified 18 consequences of interprofessional education.

> "Through IPE, learners: 1) gain negotiation, 2) leadership, 3) teamwork, and 4) improved communication skills. They become better able and prepared, 5) to exchange knowledge and information, 6) share decision-making, 7) manage conflict, and 8) provide patient-centered care through a better understanding of respective roles. Evidence also suggests that interprofessional learners have 9) improved self-esteem, 10) improved self-confidence, and 11) improved competence in practice. IPE 12) fosters mutual respect and 13) mutual trust between health care professionals, 14) improves quality of care, and 15) makes health care teams cohesive by relinquishing stereotypes. Furthermore, 16) lifelong learning and 17) personal growth are also benefits or consequences of IPE.

Ultimately, the most desired consequence of IPE is 18) collaborative practice.**"**
(Olenick, Allen, & Smego, 2010, p. 80).

Teamwork, and interdisciplinary collaboration is optimized by the presence of an effective team leader. Understanding the dynamics of interprofessional collaboration, and effective leadership styles is essential in developing efficient interprofessional educational programs. Literature by Sasnett, & Clay (2008) elaborates on the varying leadership styles available and their application in interdisciplinary health science education programs. A review of literature focused on the application of the Boltman and Deal Leadership model's application to health sciences. A cumulative analysis of resulting research data was performed to determine leadership styles used by healthcare providers. Medical disciplines included within the study were identified as nursing, occupation therapy, medicine residency directors, radiation therapy, and interdisciplinary, and health information management personnel. Data interpretation revealed that most healthcare provider groups demonstrated a prevalence toward Bolman and Deal's Human resource frame, in which leaders focused on the feelings and relationships of people and assume that the organization must meet employee's basic needs. Identification of leadership styles among groups could facilitate collaboration by augmenting individual leadership styles, or by creating healthcare teams that are analogous in leadership styles.

Collaborative leadership among healthcare organizations, and professions is essential in developing educational infrastructures capable of meeting interprofessional education goals. Multiple healthcare organizations and disciplines have addressed the need for interprofessional education and collaboration. As demonstrated in a report by the Interprofessional Education Collaborative Expert Panel (2011)., organizational leaders in professional organizations such as the American Association of Colleges of Nursing, American Association of Colleges of Osteopathic Medicine, American Association of Colleges of Pharmacy, American Dental Education Association, Association of American Medical Colleges, and the Association of Schools of Public Health are collaborating

together in an attempt to restructure their respective educational infrastructures. Identified challenges to the implementation of core interprofessional competencies include the lack of support from institutional leadership members, resource allocation, lack of institutional collaboration, interprofessional knowledge deficits among educators, and practical issues such as scheduling complications.

Professional Role and Training: EMTs

A review of literature failed to produce a significant amount of scholarly research related to EMS professionals. Research which explored interprofessional relations, teamwork dynamics, and interprofessional education of EMS professionals was scarce. National, and state specific protocols were utilized as primary sources of information in clarifying the professional role and training of EMT's within New England.

The title, EMT, is often used ambiguously to describe a wide variety of EMS professionals that have distinct certifications, roles, and educational requirements. Independent state regulation of EMS systems allows for variations in the certification, scope of practice, and educational requirements of EMS professionals throughout the country. Despite independent state regulation of EMS systems, nationally registered emergency medical technician (NREMT) certifications, titles, and associated curriculum standards are utilized by most states. Forty-six states require the successful completion of the national EMS certification exam as part of their initial licensure processes. The National Highway Traffic Safety Administration, (2007) identifies NREMT certifications as the EMT, Advanced EMT (AEMT), and EMT-Paramedic (EMT-P). EMT certifications available in the New England area include the EMT/EMT-Basic (EMT-B), AEMT/EMT-Cardiac (EMT-C), and the EMT-P. Rhode Island is the only state within New England that utilizes the EMT-C certification (Rhode Island Department of Health, 2014).

The National Highway Traffic Safety Association (2007) identifies education standards associated with each NREMT certification available. All NREMT certifications

contain a minimum core curriculum consisting of 14 components and 56 subcomponents which are either introduced, or thoroughly reviewed depending on the level of certification obtained. Core curriculum components are identified as Preparatory (seven subcomponents), Anatomy & Physiology, Medical Terminology, Pathophysiology, Life Span Development, Public Health, Pharmacology (three subcomponents), Airway Management (three subcomponents), Assessment (six subcomponents), Medicine (fifteen subcomponents), Shock & Resuscitation, Trauma (eleven subcomponents), Special Patient Populations (five subcomponents), and EMS Operations (six subcomponents). Total course length including classroom, lab, and clinical time for the varying NREMT certifications are estimated to require 150-190hrs for the EMT certification, 150-250hrs for the AEMT certification, and an estimated 1000-1200hrs for the EMT-P certification. Educational requirements of the EMT-C certification are consistent with the core curriculum requirements of the AEMT. (Rhode Island Department of Health, 2014).

Clinical requirements for the EMT/EMT-B certifications require observation hours, and a minimum of 10 patient assessments. Clinical requirements for the AEMT/EMT-C certifications require the student to demonstrate the safe administration of medications at least 15times to a living patient, the ability to gain vascular access at least 25 times, and the ability to effectively ventilate at least 20 live patients. Additionally, the AEMT/EMT-C must demonstrate the ability to adequately assess and develop a treatment plan for patients with chest pain, respiratory distress, and patients with a change in mental status. The AEMT must also demonstrate the ability to perform adequate assessments on pediatric, adult, and geriatric patients. Clinical requirements for the NREMT-P no longer focus on a minimum number of clinical hours. Requirements now focus on the mastery of skills, and specific patient assessments. Clinical requirements for the EMT-P programs are dependent on individual state requirements, and exceed that of the EMT, and AEMT. (The National Highway Traffic Safety Association, 2007)

Each level of EMT has a specific role/scope of practice which is regulated and

defined at the state level. No EMS provider can work with a national certification alone; all must possess a state license or authorizing agency's designation to work. (The National Highway Traffic Safety Association, 2007). The EMT/EMT-B's role or professional responsibility is to assess, transport, and provide basic care to patients. Basic care obligations of the EMT/EMT-B include providing CPR with an AED when available, trauma/first aid care, and noninvasive airway management. The EMT/EMT-B may administer oxygen, and assist patients in administering prescribed nitroglycerin or an anaphylactic epipen as indicated. Pharmacological treatments available to the EMT-B are limited, often require medical approval, and vary according to state regulations. The AEMT/EMT-C 's role or professional responsibility expands upon that of an EMT/EMT-B, and includes ECG interpretation, ACLS administration, IV insertion, medication administration in accordance with state specific protocols, and airway management. The AEMT/EMT-C may administer approved medications in accordance with local protocols via PO, IV, IO, ET, SQ, INH, and IM routes. The AEMT/EMT may also obtain certification in endotracheal intubations (ET). The responsibilities of the EMT-P include and expand upon those of EMT/EMT-B, and AEMT/EMT-C. The EMT-P is expected to provide the highest level of EMS care possible. In accordance with specific state regulations, EMT-Ps may perform Invasive interventions such as intubations, pleural decompressions, cricothyrotomies, and central line placement. The EMT-P has the highest level of pharmacological education available to EMS professionals, and may administer specific medications that other EMT levels may not in accordance with state protocols, and medical direction. EMT-Ps may also obtain certifications to infusion IV drips such as heparin and nitroglycerin to assist in intrahospital transport. No EMS professional can administer medications, or perform interventions that are not specified in their local protocols while providing care independently (The National Highway Traffic Safety Association, 2009).

The comprehensive summation of research and literature presented within the current literature review clearly demonstrates a significant correlation between communication barriers and patient safety. Additionally, prevalent communication barriers within and across healthcare organizations have been demonstrated to be abundant, and complex in nature. Addressing communication issues will undoubtedly require a multifaceted and ongoing quality improvement approach. Promoting interprofessional education programs, decreasing role ambiguity, and increasing interprofessional cultural awareness will enhance teamwork processes, and decrease communication barriers within and across healthcare organizations. Healthcare professionals must understand each other's roles, knowledge base, and capabilities in order to work together effectively as a team, and in order to one another when communicating.

Theoretical Framework

The Adult Learning Theory by Knowles, and the Logic Model by the Kellogg Foundation were utilized as theoretical frameworks in the construction and delivery of an educational program. Malcolm Knowles's theory of adult learning establishes that the teacher serves as a facilitator in the process of learning. As a facilitator, the teacher designs a set of procedures that actively involve adult learners in the process of learning. Designed procedures serve to prepare the learner, establish a setting which promotes learning, enable mutual planning, identify the learners educational needs, develop objectives that will adequately address the learners needs, develop a pattern in learning processes, supplement identified learning patterns with optimal materials and techniques, evaluate learning outcomes, and reevaluate learning needs. The student researcher assumed the role of the facilitator within the designed program. Program preparation incorporated the identified procedures within Knowles adult learning theory in an attempt to prepare the adult learners.

The adult learning model is based on six identified assumptions related to the adult learner, which consist of the need to know, the learners self concept, the role of learners experiences, the learners readiness to learn, orientation to learning, and the learners motivation for learning. (Knowles's et al., 2005) The need to know, relates to the adult learners need to understand why they must learn something before engaging in the process of learning. Learner's self-concept refers to the adult's self-concept of independent decision making. Essentially, adult learners acquire new knowledge in a self-directed manor. The role of learner's experiences identifies that the adult learners life experience can serve as a valuable resource in learning new material. The readiness to learn relates to the adult learner's ability or willingness to take action in doing what must be done to acquire needed knowledge. Orientation to learning identifies that adult learners' motivation to acquire new knowledge is directly related to their perception of the usefulness of the information in real life situations. Motivation relates to the adult

learners internal and external motivators related to the acquisition the new knowledge. These assumptions, which summarize the needs of the adult population to be taught, were applied to the sample population in an attempt to maximize learning.

The Kellogg Foundation's Logic Model was utilized in planning, implementing, and evaluating the developed educational program. According to the Kellogg Foundation, (2004) the Logic Model provides a systematic, and visual way to express the relationships among the specific resources, planned activities, and planned changes or results available. The Logic Model is composed of five components that are demonstrated visually via a map like configuration or progressive diagram. The five primary components within the model are identified as factors (resources/barriers), activities (processes/techniques/tools), outputs (results), outcomes (individual changes), and impacts (system changes). A Program Effectiveness Survey was utilized to evaluate the developed educational program. The Program Effectiveness Survey was utilized as a means to facilitate attendees in expressing their individual reflections on the education provided.

Method

The Logic Model was used to guide the development of the educational program. The five components of the logic model related to the designed program development were identified as:

1.) **Factors:** RIC SNA cooperation and participation, and the utilization of RIC facilities/equipment.

2.) **Activities:** Use of PowerPoint lecture, scenario development, and distribution of developed handouts.

3.) **Outputs**: Project results were demonstrated through the use of the selected Program Effectiveness Survey (Appendix B).

4.) **Outcomes**: Individual changes were not identified since pre and post education surveys were not incorporated within the program.

5.) **Impact:** Enhanced interprofessional communication, and an increase in patient safety related to interprofessional handoff.

Needs Assessment

A needs assessment was conducted by using the existing data approach. According to the Iowa State University (2015), five need assessment techniques can be utilized in assessing the need of communities, groups, or organizations. The five needs assessment techniques consist of the existing data, an attitude survey, key informant method, community forum, and a focus group interview. The existing data approach uses existing data to obtain insight and assess the needs of a group, or community. Benefits of the approach are that it utilizes available data, and minimizes assessment costs. Limitations associated with utilizing the existing data approach as a needs assessment include, the availability of current data, and the use of indirect or nonspecific indicators (Iowa State University).

A review of literature specific to communication barriers among healthcare professionals, intraprofessional communication barriers, interprofessional communication barriers, and interprofessional education was conducted for supporting documentation. Research related to interprofessional education courses was reviewed. Current interprofessional education programs were explored, and available data related to program outcomes and effectiveness was drawn from in an attempt to legitimize the need for the educational program.

A thorough review of RICs undergraduate nursing program curriculum was performed. Syllabi from all undergraduate-nursing courses were collected and reviewed for interprofessional content that provided information related to the profession of EMTs. The review of RICs BSN syllabi, and curriculum failed to demonstrate an educational program that provided interprofessional education that related specifically to EMTs. Interprofessional, and communicational education was found to be incorporated into collected syllabi. Specific information related to the profession of EMTs was not included. Review of RICs BSN program curriculum, and nursing course syllabi demonstrated a lack of nursing courses within RICs BSN program that provided education content related to the role, training, or education of EMTs as of August of 2015.

National education standards for EMTs were collected and reviewed for content specific to interprofessional education. Curriculum standards for EMT courses offering EMT-Basic (EMT-B), EMT-Cardiac (EMT-C), EMT-Intermediate (EMT-I), and EMT-Paramedic (EMT-P) certification were reviewed related to the incorporation of interprofessional education. The Division of EMS within the Rhode Island Department of Health was utilized as an authoritative body related to curriculum standards specific to the EMT-C certification available in RI. The National Highway and Traffic Safety Associations Office of EMS was utilized as an authoritative body related to National EMS certification curriculum standards. Education related to the communication, and

documentation of patient information was found to be included in EMS curriculum standards, but specific interprofessional education related to the role and training of RN's was not evident.

Purpose

The purpose of the educational program was to educate program participants related to the role and training of the varying certifications of EMT's within the New England area. Proper implementation of the developed program will enhance interprofessional teamwork, decrease role ambiguity across disciplines, increase patient safety, and will ensure the continuity of care of patients during their transition between professions.

Goal

The goal of the program was to improve interprofessional communication and collaboration among RNs and EMTs, and to decrease role ambiguity across the professions. Educational, and professional differences among the varying certifications of EMTs within the New England area was expanded upon to facilitate the learners understanding of the role associated with each EMT certification.

Design

The developed program utilized an interactive PowerPoint lecture, scenarios, group discussion, and handouts to facilitate learning. In an attempt to incorporate the adult learner's participation in the developed program, the lecture began by identifying the topic, and asking participants to identify the varying EMT certifications within New England. Next, a scenario was provided to the group that highlighted the importance of interprofessional education and role ambiguity. The scenario related to the safe transfer of a patient between healthcare facilities, and across interprofessional disciplines. Learners were asked to identify which EMT certification would be able to assume care of an identified patient within the scenario. The purpose of the scenario was to engage the learner in the developed program, and to enable the adult learner to relate the content to

their pursuant professions. Content specific to the EMT/EMT-B, AEMT/EMT-C, and the EMT-P's education, role, and professional limitations was provided via PowerPoint lecture, and handouts. Delegation, and leadership roles of the RN were related to the limitations associated with EMT certifications and patient transfer. Copies of state specific EMS protocols within New England were made available for review during the presentation. Specific sources for circulating EMS protocols were provided to allow students to obtain individual copies if desired.

Following the lecture, approximately five minutes was allocated for answering questions. The correct answer with the supporting rationale for the pre-educational scenario was provided during the post-lecture timeframe. Learning objectives were reinforced by incorporating the teach-back method in class discussion following the lecture. The program developer's email address was provided to allow participants an opportunity to ask questions if unable to within the allocated lecture schedule. The developed program required approximately 30 minutes of student participation. Program participants were asked to complete a voluntary post education evaluation (Appendix B) following the completion of the developed program. A $25.00 dollar Visa gift card was raffled off as an incentive for program participation. Matching raffle tickets were stapled to each evaluation survey, participants were instructed to hold onto one ticket, and to place the other into a designated container while submitting completed evaluation surveys. The winning raffle ticket was randomly selected from the raffle box once all completed surveys were submitted. The student researcher was not present during the completion of student feedback surveys, and a volunteer collected the completed surveys.

Learning Objectives

Specific learning objectives were established to facilitate the developed programs effectiveness. Additionally, a teaching plan (table 1) which summarized individual learning objectives, program content, teaching methods, and the methods of evaluation

was constructed, and utilized in the development of the educational program. Participants of the program will:

-Identify the varying certification levels of EMT's within New England. (EMT-B, EMT-C, AEMT, EMT-P)

-Obtain basic understanding of the educational requirements associated with each level of EMT certification within New England.

-Articulate an understanding of the role, and limitations associated with the varying certification levels of EMT's within New England.

-Demonstrate enhanced delegation and leadership abilities related to increased interprofessional education

Table 1

Teaching Plan

Learning Objectives	Content	Teaching Method	Evaluation
Identify the varying certification levels of EMT's within New England.	Present varying EMT certifications found within each state in New England	Lecture Handouts Teach back Method	Course Evaluation Scenario Participation
Articulate an understanding of the role and limitations associated with the varying certification levels of EMT's	Relate varying EMT certifications with training, and role	Lecture Handouts Teach back method	Course Evaluation Scenario Participation
Demonstrate delegation and leadership abilities	Developed scenario which requires learner to apply interprofessional education to facilitate appropriate patient transfer	Lecture Scenario	Scenario Participation
Obtain basic understanding of the educational requirements associated with each level of EMT certification	Discuss education requirements related to each certification	Lecture Teach Back Method Handouts	Course Evaluation

Sample

  The educational program was specifically tailored to members of the SNA at RIC. All members of the SNA were undergraduate nursing students enrolled within RIC's BSN program. Specific demographics on program participants were not collected. Inclusion criteria included RIC nursing majors, intended nursing majors, SNA members, and guests. Exclusion parameters were not related to age, gender, ethnicity, or any other demographic information. Membership, and participation in SNA activities was voluntary. Participation in the post education evaluation (Appendix B) was voluntary. Participation from a minimum of 15 attendees was desired. All attendees were approached for their participation in the developed program.

Site

The developed program, and the completion of the post education evaluation (Appendix B) took place on the RIC campus. RIC, located in Providence, RI, is a state institution of higher learning that offers various certifications and degree programs to suit the varying educational needs of the general population. Approximately 50% of undergraduate students are enrolled in programs such as education, nursing, and social work. RIC also offers multiple nursing graduate degrees including clinical nurse specialist (CNS), acute care nurse practitioner (ACNP), certified registered nurse anesthetist (CRNA), population/public health certifications, and nursing care management of graduate studies (GCS).

Procedures and Timeline:

RICs SNA president was contacted, and granted permission to incorporate the developed project into the organizations scheduled meetings was obtained. Information relevant to the project needs assessment was collected, and analyzed. RIC Institutional Review Board (IRB) application was submitted prior to September 30, 2015. The finalized PowerPoint presentation was submitted to RIC faculty for approval prior to December 1, 2015, and a presentation date was tentatively planned for February 2016. The delivery of the developed program required no more than 35 minutes. Program attendance, and participation was voluntary. An informed consent form (Appendix A) was reviewed, and distributed to program attendees. The voluntary post education evaluation (Appendix B) took approximately 5 minutes for each student to complete and occurred at the conclusion of the presentation. Completed evaluations and informed consent forms (Appendix A) were collected by a student volunteer, and stored in an office in RIC's Graduate office for review. A 25.00 Visa gift card was raffled off, and provided to the winning participant once all surveys were submitted. Post education evaluations (Appendix B) were reviewed, and analyzed by March 1, 2016. The written

project was submitted for final review by March 30th, 2016. Project revisions, and the dissemination PowerPoint were completed and submitted by April 2016.

Desired Outcome

The developed program would increase participant's knowledge of the role and training associated with the varying certifications of EMTs throughout New England. Professional limitations associated with the available EMT certifications within New England were identified. The program developer anticipated that nursing leadership and delegation skills will be strengthened by the information provided. Additionally, it was anticipated that the educational program provided would enhance interprofessional collaboration, and continuity of care.

Organizational/System Factors

Success of the program depended greatly on the collaboration of RICs SNA, and on the participation of its individual members. The project was not complicated by unforeseen scheduling conflicts, or by any significant delays, which could have been detrimental to the project's overall completion. No issues related to the utilization of RIC's equipment, or classroom space occurred. The quality and quantity of applicable research data was subject to the voluntary participation of SNA members.

Human Subject Considerations

RIC SNA members, RIC undergraduate nursing students, intended nursing students, and guests were the intended subjects of the educational program. Approval from RICs IRB was sought to ensure subjects were not inadvertently harmed related to the developed program. Faculty approval was required to ensure effective use of RIC equipment, and classrooms. Participation in the developed program was completely voluntary. The completion of post educational review surveys was voluntary, anonymous, and confidential. A student volunteer was selected among the attendees to collect and submit student-completed surveys. A $25.00 dollar Visa gift card was raffled

off as an incentive for program participation. There were no exclusions related to age, gender or race.

Program Evaluation

Post education evaluations (Appendix B) were provided to participants to enable students the opportunity to provide confidential feedback on the educational program provided. Completion of evaluations were anonymous, and voluntary. As demonstrated in appendix B, post education evaluations utilize Likert scales to provide participants with a simple, rapid method of providing program feedback.

Likert scales are simple, quantitative evaluation tools that utilize a five to seven-point scale ranging from strongly agree to strongly disagree (Statistics café, 2012). Likert scales enable learners to provide feedback in a manner that is measurable, valid, and reliable. The Likert scale can have some downfalls such as student bias. Students may feel that they do not want to score to high (strongly agree) or to low (strongly disagree), which can result in participants scaling in the mid-range and skewing the results. Additionally, students may feel obligated to participate in the program evaluation despite being informed that participation or completion of the survey is voluntary. This sense of obligation, combined with the anonymous submission of feedback forms can result in data that is whimsically provided. Despite the potential for inaccurate data entries, Likert scale surveys provide students with an easily understood, and timely tool to express concerns or successes of learning. The numeric scale, and formatting of Likert scales enables the rapid quantification of results (Statistics café).

Post education evaluations (Appendix B) took approximately 5-10 minutes to complete. Completed post education effectiveness forms were securely stored within RICs Graduate office. Collected data was assessed and analyzed in an attempt to demonstrate the developed programs effectiveness. Content retention, and the learners ability to appropriately apply or demonstrated learning was assessed collectively as a group through the use of in-class discussion, participation in provided scenarios, and in

requesting participants to reiterate program objectives via the teach back method. Data obtained via post education evaluations was analyzed for trends. Statistical evidence related to post education evaluation results were used to determine if participants found the developed program effective related to content, delivery, and the educator's application of knowledge.

Plan for Dissemination

The outcome of the developed program, including the results of the survey were reported at the graduate research dissemination seminar at RIC prior to graduation. A complete description of the completed project was submitted to RIC, and is publically available through the college via digital commons, and in print at the RIC library.

Results

A total of 17 participants attended the educational program. Three of the subjects were male, and fourteen of the subjects were female. One hundred percent of the attendees participated in the post education evaluations (Appendix B). Responses to the 10 Likert scale questions were predominantly positive. Class participants strongly agreed 71% of the time, agreed 23% of the time, scored neutrally 5% of the time, and disagreed less than 1% of the time to the provided Likert scale questions. No participants strongly disagreed, or selected N/A to any of the provided Likert scale questions. Please see table 2 for a detailed summary of post education evaluation responses.

Program participants identified the best aspects of the presentation as the presenter's ability to convey the intended message, the presenter's knowledge of content, the review of EMS protocols, the application of program content across professions, and the provided question and answer scenarios. Participants identified the following areas as needing improvement: presenter's volume; difficult to hear, inclusion of more graphics or videos, and audience engagement. Additional comments provided from program participants included feedback such as: "very interesting", "loved it", "very interesting topic relating two very interconnecting professions", and "provided insight into EMT and RN relationships"

Table 2

Post education evaluation Likert scale Questions	# of students that strongly agree	# of students that agree	# of students that are neutral	# of students that disagree	# of students that strongly Disagree
Question 1	6	8	3	0	0
Question 2	6	8	2	1	0
Question 3	14	3	0	0	0
Question 4	9	5	3	0	0
Question 5	12	4	1	0	0
Question 6	12	5	0	0	0
Question 7	15	2	0	0	0
Question 8	15	2	0	0	0
Question 9	16	1	0	0	0
Question 10	16	1	0	0	0

Post Education Evaluation Results

Summary and Conclusions

An interprofessional educational program specific to the role and training of EMT's within New England was designed and delivered to SNA members within RIC College. The educational program was delivered via a PowerPoint driven lecture, and incorporated teaching strategies such as the teach-back method, and scenario implementation. The developed program was evaluated through the use of classroom discussion, a post education evaluation tool, and by the attendee's ability to apply the delivered educational content to scenarios within the presentation.

 Baseline knowledge of program content was assessed prior to the initiation of the program by asking program attendees to identify, if they could, the varying levels of EMTs within New England. One attendee out of seventeen was able to identify the three levels of EMTs within RI, but failed to elaborate on the EMT certification levels available in other areas of New England. No attendees were able to identify the educational, legal, or professional differences between the varying levels of EMT certification.

Interpretation of the post education evaluation results (table 2) demonstrates that the presentation format engaged the interest of attendees, that the discussion on the content enhanced the attendees understanding of program content, and that the majority of attendees understood the content delivered within the educational program. Additionally, interpretation of the post education evaluation results (table 2) demonstrates that the majority of attendees felt comfortable approaching the presenter with questions and concerns, that the presenter was open to feedback, that attendees were treated with respect, and that the presenter was was prepared.

Program attendees were prompted to reiterate content specific to the educational programs goals prior to progressing the educational program, and after the presentation was complete. Reiteration of provided content, and the application of the teach-back

method demonstrated a general understanding of the education content provided, and served to reinforce the retention of key education concepts through the use of repetition.

The educational program incorporated two scenarios which required attendees to utilize concepts specific to the programs goals. Each scenario required attendee's to identifying which level of EMT would be needed to facility the transfer of patient care. Attendees successfully and voluntarily engaged in class discussion in solving provided scenarios. Reiteration of key concepts specific to the provided scenarios was provided to ensure that even those that did not participate understood the programs content.

Limitations were identified in the developed educational program. The first limitation applies specifically to the evaluation tools used. The utilized evaluation tools failed to adequately quantify factors such as the attendee's knowledge level prior to the programs implementation, and failed to adequately quantify attendees overall understanding of provided content after program delivery. The development of a pretest, and posttest is recommended. A pretest would establish a measurement of baseline knowledge which could be utilized in quantifying the programs proposed knowledge deficit, and in creating a baseline measurement for comparison when combined with posttest scores.

The education program was also limited by the number of attendees. The small sample size of only 17 attendees limits the utility of project results. A large, diverse sample would create a more accurate reflection of program effectiveness, and would better represent the total population of nursing students at RIC. Additionally, educating a total of 17 students fails to adequately effect the interprofessional education needs of the entire population of nursing students at RIC.

Interprofessional education needs, and associated communication barriers have been identified repetitively as an issue within healthcare systems by various professional healthcare organizations throughout the years. Despite leading healthcare organizations recognition and identification of the issue, a proven, and easy applicable solution has yet

to be discovered. The multifaceted, multifactorial paradigm that encompasses how highly trained healthcare professionals from varying, and specifically trained disciplines interact is incredibly complex. Despite the seemingly overwhelming task of deciphering human interactions, and developing reliable interventions to enhance communication among such a large group of professions, I do believe a difference can be made.

As identified in the literature review, factors complicating interprofessional education and communication include teamwork dynamics, leadership roles, and psychological and sociological factors. Additionally, system, and infrastructural factors such as cost, finance, and resource allocation play a huge role in implementing change. Despite notable challenges, benefits to improved interprofessional education and communication could reduce healthcare costs, decrease medical errors, improve patient outcomes, and improve patient satisfaction.

The developed education program attempted to combat an extremely complex issue in a seemingly simplistic manor. The developed program assumes that interprofessional communication issues and professional animosity among individual healthcare professions stems from basic knowledge deficits which are specific to each professions education level, training, and professional role. Each profession is unique, has priorities specific to their profession, and is trained to functional optimally in their role. With this said, varying professions cannot work effectively as a team, or communicate successfully, if they fail to understand one another's educational, and professional limitations or strengths. Despite project limitations, and a lack of quantifiable evidence, the developed educational program successfully educated its participants related to the role and training of EMTs within New England

Recommendations and Implications for Advanced Nursing Practice

Interprofessional education programs which focus on the training, limitations, and professional role of healthcare professions should be incorporated into the educational curriculum of all healthcare professionals. It is recommended that the developed program be expanded upon in an attempt to create a comprehensive interprofessional education program which incorporates information on a multitude of healthcare professions. Educational institutions should seek out, and utilize multidisciplinary healthcare professionals in developing a comprehensive interprofessional education program.

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Appendix A
IRB Approved Information Letter
Rhode Island College

Understanding the Role and Training of Interdisciplinary Professions: Emergency Medical Technicians (EMT)

Your voluntary participation is being requested related to your attendance in an educational program about the role and training of EMTs. Please read this form and ask any questions that you have before choosing whether to be in the study.

Jason Morin, a graduate student in the Acute Care Nurse Practitioner Program, has developed, and will be delivering the developed program.
Debra Servello, a professor at Rhode Island College, is the primary investigator in this study.

Why this Study is Being Done (Purpose)
The purpose of the program will be to educate program participants related to the role, and training associated with the varying certifications of EMTs. Participants will be asked to complete a brief evaluation of the program.

What You Will Have to Do (Procedures)
If you choose to be in the study, we will ask you to:
* Attend in February 2016
* Read and answer some survey questions. The questions ask about your opinion of the educational program provided. This will take about 5 minutes.

Compensation
As a way to thank you for your time, a $25.00 Visa gift card will be raffled off at the conclusion of the developed program. Participants must be present at the time of the raffle to be eligible; only one winner will be selected.
Risks or Discomforts
There are no risks identified. Participation is voluntary, anonymous, and confidential. The student researcher will remove himself from the room for the completion of student feedback surveys. Program participants will be instructed to place feedback surveys into a provided manila envelope when completed. A volunteer will be requested to notify the student researcher when all participants have completed evaluation surveys.

Benefits of Being in the Study
Participation in the educational program may enhance your understanding of the role of EMTs, delegation responsibilities, and leadership roles.

Deciding Whether to Be in the Study
Being in the study is your choice to make. You can choose not to be in the study. You can change your mind and quit the study at any time, and you do not have to give a reason.

How Your Information will be Protected
Because this is a research study, results will be summarized across all participants and shared in reports that we publish and presentations that we give. Your name will not be obtained, or used in any reports. Your participation in the developed program will be confidential, and anonymous. Completed post education evaluations will be kept in a locked office file, and seen only by myself and other researchers who work with me. If there are problems with the study, the records may be viewed by the Rhode Island College review board responsible for protecting the rights and safety of people who participate in research. The information will be kept for a minimum of three years after the study is over, after which it will be destroyed.

Who to Contact
You can ask any questions you have now. If you have any questions later, you can contact the student researcher, Jason Morin, at jmorin_6070@email.ric.edu, 401-451-4557, or Debra Servello at dservello@ric.edu.
If you think you were treated badly in this study, have complaints, or would like to talk to someone other than the researcher about your rights or safety as a research participant, please contact Cindy Padula at IRB@ric.edu, by phone at 401-456-9720.

Statement of Consent
I have read and understand the information above. I am choosing to be in the study "Understanding the Role and Training of Interdisciplinary Professions: Emergency Medical Technicians" I can change my mind and quit at any time, and I don't have to give a reason. I have been given answers to the questions I asked, or I will contact the researcher with any questions that come up later. I am at least 18 years of age.

Adapted from Rhode Island College (2015). Retrieved September 20, 2015, from
http://www.ric.edu/irb/applicationforms.php

Appendix B
Post Education Evaluation

Thank you for taking the time to provide feedback for this presenter/ presentation in this confidential questionnaire. Please circle the answer that best applies to the question. The information that you provide in this survey will be used to ensure reliable content, validity and student satisfaction is achieved.

	Strongly Agree	Agree	Neural	Disagree	Strongly Disagree
1) I feel that this presentation format engaged my interest.	1	2	3	4	5
2) I find that this presentation stimulates my interest in reading about this subject outside of this course.	1	2	3	4	5
3) I feel comfortable approaching the presenter with questions and concerns.	1	2	3	4	5
4) I find that the content of the presentation helped me to understand my course content better.	1	2	3	4	5
5) I find that the discussion within the presentation helped in understanding the presentation content.	1	2	3	4	5
6) I understood the content of the presentation.	1	2	3	4	5
7) The presenter was open to student feedback.	1	2	3	4	5
8) The presenter was well prepared.	1	2	3	4	5
9) The presenter effectively encouraged students to ask questions and apply answers.	1	2	3	4	5
10) The presenter treated students with respect.	1	2	3	4	5

11) What have been the best aspects of this presentation?

12) What aspects need improvement?

13) Additional comments for the presenter?

Adapted from Center for Teaching (2015)