INTERPROFESSIONAL ROLE OF CADAVER LABORATORY EXPERIENCE IN PARAMEDIC EDUCATION AT CREIGHTON UNIVERSITY

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Abstract

Background

This brief report introduces and provides a reflection on the interprofessional role of an annual cadaver laboratory experience in the paramedic program at Creighton University, United States. Similar experiences in paramedic education have been noted to be beneficial in increasing paramedic student’s knowledge of anatomy and ability to perform procedures. Learners that participated in this report and reflection reported gains in their education and appreciation of other professions that support previous research on the topic and the value of this distinct experience.

Keywords: paramedic, education, interprofessional, cadaver

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Introduction
The education of paramedics is evolving and becoming more reliant upon simulation. However, contemporary mannequins commonly used in simulated EMS education do not necessarily replicate the variance of human anatomy. (1) Previous research found statistically significant increases in paramedic student’s anatomical knowledge and their ability to perform procedural skills on real patients after attending a cadaver workshop. (1) Specifically, an improvement of performing various airway management skills and thoracentesis were reported. (1)

Annually, paramedic students from Creighton University's EMS Education program have the opportunity to attend a cadaver exploration laboratory. This opportunity occurs during the spring semester, which is the second semester of their three -semester paramedic education program. The session is organized by Creighton medical students who are also paramedic program graduates. Previous experiences have reported mutual interprofessional benefits in knowledge and increased professional understanding between medical and paramedic students following a cadaver lab experience. (2) The session is held in the cadaver laboratory within the School of Medicine with the support of the Biomedical Sciences Department. This experience utilizes cadavers that are dissected by first-year medical students for the laboratory component of their anatomy course.

Description of the Learning Experience
Paramedic students don gloves and are encouraged to be hands-on in the experience while learning and asking questions. Generally, the entire paramedic cohort, approximately twenty-five, will attend but occasionally a few students elect not to attend. It is important to note that the utmost respect is expressed at all times towards the anatomical donors. With the use of already dissected cadavers, paramedic students are able to view, explore, and compare actual healthy, diseased, and surgically repaired human anatomy. Four or five suitable cadavers are identified by the medical students for this experience. An emphasis is placed on cardiac anatomy and interventions, pulmonary anatomy and common diseases, abdominal anatomy and common surgeries, orthopedic and joint repairs, as well as neuro-anatomy and strokes.

This experience also intends to provide paramedic students the opportunity to perform psychomotor skills on actual human tissue. In different stations, students are able to practice endotracheal intubation, both surgical and needle cricothyroidotomy, intraosseous access, and pleural decompression. Performing these skills on cadavers allows for palpating landmarks and experiencing how they can anatomically differ from one body to another.

Reflections on the Learning Experience
Following the cadaver lab session, students provided written reflections on their experience and the impact on their paramedic education. The students generally admitted their nervousness prior to attending the lab as this was new and uncommon to them. However, they felt more comfortable as the session progressed due to the interactions with the instructors. This was attributed to the instructor’s backgrounds and ability to connect the experience to paramedic education and practice. As one student described, “Having physicians and medical students at each station opened up the opportunities for learning. Any questions were promptly and descriptively answered. The instructors took the time to show us the skills and discuss how certain diseases affected the life of the cadavers and their death.”

Another student described additional benefit from the interprofessional aspect of the experience: “The physicians really had a passion for teaching us. It was great because I will probably see them in the future and I know they have a respect for paramedics.”

Many students identified themselves as hands-on learners and benefited from being able to physically interact with the anatomy. As one student stated “Being able to hold different organs and looking closely at anatomic structures cements the knowledge gained in class.”
Students also reported increased understanding of anatomy and being able to perform
skills on human tissue. As another student wrote:

“Feeling legitimate anatomical landmarks on a real human body made all
previous instruction come together and make sense. As many of the manikins do
not have the same feel as a real human body.”

Students also reported an increase in their confidence to perform skills in actual practice
following the session

“... I felt more confident leaving the lab exercise that I would be able to
successfully complete the procedures now that I have practiced on a human body
rather than just the manikins.”

Through positive feedback and reflection, many students expressed appreciation for the
session and described multiple advantages of supplementing their classroom and
simulated education with cadaver exploration. For many, this cadaver lab experience
served as a connecting hub between classroom education, simulated psychomotor skill
sessions, and additional knowledge beyond just what we do. As one student articulated:

“It is all too often that we as students get caught in a cycle of verbalizing
procedures and treating manikins that present the same every scenario. Getting to
perform invasive procedures on cadavers very much helped me deepen my
understanding of not only how to perform the tasks but also why we do the
invasive skills from a pathological standpoint.”

Conclusion
From the research, our own experiences, and student reflections there is a benefit in
paramedic education from cadaver lab sessions. There are important interprofessional
opportunities and benefits in mutual respect and understanding when the cadaver lab
includes paramedic and medical students. We plan to continue this experience with the
assistance of paramedic graduates that proceed to medical school, as they provide valued
experience in clinical anatomy and EMS practice.

We acknowledge a limitation to this experience is the availability of cadavers and
their previous medical histories, however this contributes to each year being a slightly
different lab experience. Just as we have found benefit from the experience, we
encourage other paramedic and health profession education programs to conduct
interprofessional cadaver lab opportunities.

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