

Post Sabbatical Leave Report

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Sabbatical Term: Fall 24

I would like to begin this report by saying thank you for the opportunity to take this sabbatical leave. It was a time of personal refreshing that I am grateful for as well as a time for professional development in both the medical and educational domains. There were several complications that arose which altered my sabbatical experience, including the need to address the EMS Workforce grants, a change to the timeline, and a change in the simulation activities, all of which will be explained below. I was able to have regular, face to face updates with Mark Dunneback and we discussed the timeline and simulation activities prior to my sabbatical leave.

ORIGINAL STATEMENT OF PURPOSE, Objectives and Activities

Goal: It was my intent to utilize a sabbatical leave to refresh standard certification courses, complete the independent study, and challenge the exam for critical care transport.

Objective 1: develop a self-study strategy to prepare for ISBC certification by identifying critical care concepts, education and study strategies. The activity is to identify best practices in critical care transport with regard to transportation safety, airway and anesthesia, medical, and traumatic emergencies. This included renewal of industry recognized certification in Medical Emergencies and Pediatrics. This also included a consultation with West Michigan Air Care (WMAC) Medical Director, Christopher Milligan to discuss content and curriculum for establishing a critical care course.

Objective 2: utilize published information from the International Board of Specialty Care (IBSC) to map the curriculum and develop a critical care course. While the main objective was to review IBSC standards, there is already recognition of the significant role of simulation activities in the curriculum, so the key objective of the sabbatical was to participate in simulation activities with WMAC in curriculum development.

Objective 3: Personal reflection and renewal; this was to increase my participation and resume my leadership role in a bible study that I had started, but relinquished during my son's medical issues.

DATE OF SABBATICAL LEAVE

Fall semester 2024. Dean Dunneback and I discussed concluding my summer IU load (EMT 246, PT-5 and PD IU's) by the Independence Day break and starting sabbatical at that time. However, at the end of June, Moriya Hurst, who was to assume PD responsibilities during my absence, fell and suffered a serious fracture that required her to take medical leave. MDHHS requires a program director to be in place, therefore I delayed the start of my leave by 8 weeks, until Moriya was medically cleared to return. I concluded summer term with submission of MDHHS licensing and NREMT exam paperwork for two EMT and the paramedic cohorts, and orientation for the incoming paramedic class. This delayed start did have an impact on the final goal of my sabbatical. In regards to the EMS Workforce grants, I was not able to transition that responsibility so I continued to work with Jessica Lutz and Karin Denman to

ensure students had the access to funds, that funds were allocated appropriately, and close out the final reports for the three grants ending MDHHS fiscal year, 9/30/24.

Activity Fulfillment and Conclusions

Objective 1

Developing a strategy for self-study was based on the detailed content outline published by the IBSC. The outline breaks down the content into 5 categories with a corresponding proportion that provided a rough timeline for allocating study: Transport and Safety (12%); Airway, Anesthesia and Analgesic (24%); Medical (24%); Trauma (20%); and Special Populations (20%). Additionally, each category provided specific objectives which were utilized to determine strength or weakness, and those with the weakest level of comfort were areas for concentrated study. For example, an objective under Trauma was to “adapt a care plan based on the analysis of lab values, monitoring equipment, and diagnostics (such as x-ray or ultrasound).” Since I already had some pre-requisite knowledge of x-rays this became an area for review. However, ultrasound was an entirely new procedure, so study included developing a comprehensive knowledge of ultrasound, the equipment and how it works, as well as a complex understanding of specific techniques (Focused Assessment Sonography in Trauma, FAST). Depending on how comprehensive the breadth and how complex the depth of learning required, I then chose study materials from reference books, podcasts, or videos to engage that material.

Part of the strategy was to refer to best practices in the field. Beyond the text references, I utilized several other standards. The first was the EPIC course. This is a local certification course that authorizes paramedics in the West Michigan Regional Medical Control Consortium to provide patient care from tertiary hospitals to the primary care centers in Kalamazoo and Grand Rapids. This online course was completed during the sabbatical, with the practical portion pending later in 2025. Another industry wide certification that was completed during the sabbatical was the Advanced Cardiac Life Support Instructor. This had expired and I was able to use sabbatical time to teach a couple of classes and reinstate my ACLS instructor certification. I had intended to renew a pediatric certification however the opportunity was only available during July and with the delay in starting the sabbatical, that opportunity was missed.

The other reference that I utilized was the West Michigan Air Care Policies, Procedures, and Protocols. These were provided to me in consultation with Christopher Milligan, the WMAC Medical Director. These were used as review material for topics that I had some previous experience, and supplemented the text as part of the in-depth review of complex material. The WMAC documentation will also make up a considerable portion of the curriculum for the critical care class and will form the foundations for competency evaluation during skills labs and simulation portions of the curriculum. There are some limitations to the approach of using protocols as a teaching tool. For example, the competency for arterial line insertion in the radial artery is detailed however one item says “performs an Allen Test” but you have to refer back to the book to discover what that test is and how to do it.

Objective 2:

The objective here was to develop a curriculum map. The IBSC content outline denotes 5 topic areas while their exam blueprint states 12. These content areas with their specific objectives were

examined and compared to known course schedules from the Cleveland Clinic and Creighton University. The Creighton course is 6 credits and meets once per week for 6 hours, for 16 weeks (96 hours) plus a clinical component, although the length is not published. Cleveland Clinic course is non-credit, 96 hours plus 24 hours of clinical and an additional 8 hours of skill and IBSC testing (not included in the overall tally). These compare equally to the class time of the University of Maryland, Baltimore's critical care class, except the clinical component which UMBC does not offer. I utilized these courses to develop a schedule structure and course strategy that will be presented to course and curriculum with the hope of a 2026 initial course offering. The curriculum plan for KVCC will mimic the Cleveland approach which is to offer the IBSC exam as the final exam for the class.

A key component of the sabbatical and the curriculum development was to incorporate simulation experience. The sabbatical proposal was to participate in simulation training with West Michigan Air Care, under Dr. Milligan's supervision. The sabbatical was approved on 2/14/24 and on 2/22/24 WMAC's closure was unexpectedly announced. I was able to secure an alternative experience although with different format. Dr's Mastenbrook and Fales were able to secure permission for me to observe in simulation activities with the Emergency Medicine (EM) Residents from W-Med as well as participate in the EMS Fellows didactics meetings. Overall, I spent more time in those activities than in the original simulation plan, despite their being less actual simulation time. The attached agenda outlines the simulation and didactic activities.

There were several benefits to this new opportunity. The didactics provided direct access to the EMS Fellows, EM Physicians who are studying for specific certification in prehospital care. This was a combination of face to face and hybrid meetings. The topics were EMS critical care and presented current research on the discussion topic; such as electrical injuries or care of the entrapped patient. It was through this activity that Dr. Mastenbrook expressed his interest to participate in our critical care course development and became a program advisory board member. Simulation provided a chance to observe W-Med's simulation activities and access simulation documentation. While simulator parameters were like ours they are much more scripted in how the scenario unfolds, often offering specific timing for when a confederate would ask about guidance on a particular drug or test result. Even when using simulators, scenarios were scripted so that when certain questions were asked the instructor would play pre-recorded video or audio to ensure scenarios were valid. This includes branching logic descriptions; if you give drug X then this, but if drug Y then that, emphasizing clinical decision making skills. One of the major differences was the manpower associated with their scenario's. There would often be a standardized patient and a confederate in addition to an instructor. Student-Instructor ratios were equal to the state EMS requirements. Most interesting was the scoring associated with summative testing, delineated specific interventions that vary by scenario. When observing summative competency exams I noted that each exam had a link to a specific grading rubric tailored to that scenario.

Interdisciplinary simulation activity: In Feb 2025 KVCC paramedic students were able to participate in the Medical Support Unit simulations with the EM residents at W-Med. This was a series of "ambulance calls" where the KVCC students acted as the paramedic caring for simulated patients while the EM Physicians responded to calls for medical support. This was a fantastic experience for both the physicians and paramedic students involved and has set the footing for moving forward with annual occurrence. This opportunity would not have occurred without the change in simulation venue.

Objective 3:

This objective was to resume leadership of a Bible study that I had started years ago, and turned over to someone else during my son's illness. This was actually the component I was most excited about. I had originally planned to return the meeting to our home, and did have a couple of meetings there, but we continued in the host home as it was a better layout and larger area for a group to meet. There were a couple of informal teachings that I did based on Q&A from the group and a formal one on Sukkot. There was a definite shift in the overall meeting structure that resulted from teaching on prayer, and we began to spend more time as a group praying for each other and our families. The general format is food and fellowship, short teaching or discussion, followed by a prayer time. I have scheduled the meeting every other week, although we did cancel some due to schedule conflicts. I had stated that this was the thing I was most excited about, and resuming leadership, building relationships, and the opportunity for spiritual growth certainly proved to be the most rewarding aspect of the sabbatical.

Additional Objective:

Last May PA 48 of 2024 was passed by the Michigan Legislature. This new law changed the public health law providing an alternative to programmatic accreditation (CoAEMSP) by allowing MDHHS to approve non-accredited program sponsors. It also requires MDHHS to develop their own licensing exam. Previously we eliminated our paramedic certificate in favor of the AAS pathway. With this change in program sponsor approval, I believe that we need to reinstate the paramedic certificate, in order to remain competitive. There has also been a renewed interest in the Advanced EMT level of care as a way to alleviate workforce shortages. I spent several weeks reviewing the AEMT hours requirements and mapping that to our existing pathway. I have developed a plan to institute a new certificate program for AEMT. This will be a combination of a new course with existing paramedic courses that would allow students to be eligible for AEMT licensure at the end of the first term (fall) of the paramedic program. That AEMT certificate would integrate with the reinstated paramedic certificate as an alternative pathway to paramedic licensing. This will still need medical director and advisory board support and substantive program change accreditation approval before being brought to course and curriculum.

Overall, I was able to accomplish the main objectives of the clinical which were to review the IBSC content, explore the curriculum for a critical care paramedic course and compare the two. While Dr. Milligan was able to provide some resources, I was looking forward to consulting with him more, but the unfortunate demise of WMAC limited that opportunity. I am very pleased that the alternative experience provided a high quality and interaction with multiple EMS Physicians in both didactic and simulation domains that was not part of the original plan, but I feel was an overall better experience. I was able to complete the enhance paramedic course for interfacility transports. I was also able to reinstate my ACLS instructor status. Unfortunately, I was not able to complete the IBSC certification exam. However, I was able to complete the self-study and curriculum review and propose program changes for Advanced EMT, Paramedic Certificate, and Critical Care. I am very appreciative of the opportunity to resume the leadership of the Bible study and the growth of personal relationship with that group.

References

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- American Academy of Orthopedic Surgeons. (2018). *Critical Care Transport* (2nd ed.). (A. N. Pollak, Ed.) Burlington, MA: Jones and Bartlett.
- American Academy of Orthopedic Surgeons. (2023). *Critical Care Transport* (3rd ed.). (A. Mejia, Ed.) Burlington, MA: Jones and Bartlett.
- Bledsoe, B. E., & Benner, R. W. (2006). *Critical Care Paramedic*. Upper Saddle River, NJ: Brady.
- International Board of Specialty Care. (2023, August). *IBSC for Critical Care Paramedics*. Retrieved August 2024, from IBSC Certifications: <https://www.ibscertifications.org/roles/critical-care-paramedic#gsc.tab=0>
- West Michigan Air Care. (2024, September). West Michigan Air Care; Operations, Procedures, and Protocols. (C. Milligan, Ed.) Kalamazoo, MI: WMAC.
- West Michigan Regional Medical Control Consortium. (2024, October 29). Enhanced Paramedic Interfacility Care. Kalamazoo, MI: West Michigan Regional Medical Control Consortium.

Activity Log:

- 9/6/24 CoAEMSP Town Hall with the EMS Education Community
- 9/11/24 EM Sim Day
 - Simulation: Tricyclic Antidepressant Toxicity
 - Simulation: Rapid Sequence Intubation/Paralysis
 - Skills: Traumatic Eye Injury, Foreign Body Removal
- 9/11/24 CoAEMSP Conversations with Site Visitors
- 9/17/24 ACLS Instructor Renewal; WMed
- 9/18/24 CoAEMSP webinar with Dan Limmer, Writing Test Items
- 9/27/24 MDHHS Conference, KCC
 - Data Driven Education
 - Creating Scenario's
 - Grant Writing
 - Escape Rooms
- 10/16/24 EM Sim Day
 - Simulation: Tricyclic Antidepressant Toxicity
 - Simulation: Rapid Sequence Intubation/Paralysis
 - Skills: Foreign Body Removal, Traumatic Eye Injury
- 10/16/24 EMS Fellowship Didactics:
 - Ch26.3 Trauma systems
 - Ch 39.3 Field Trauma Triage
 - Ch 99.3 Prehospital Triage for Mass Casualty
 - Ch 72.3 Emergency Care Regionalization

- 10/23/24 EMS Fellowship Didactics:
 - Ch 27.3 Blunt Trauma Considerations
 - Ch 28.3 Motor Vehicle Crashes
 - Ch 40.3 Trauma Stabilizing Procedures
 - Care of the Entrapped Patient
- 11/13/24 EM Sim Day
 - Simulation: Bradycardia Algorithms
 - Simulation: Rapid Sequence Intubation/Paralysis
 - Skills: Tech Review of Cardiac Monitors; Transcutaneous Pacing, Synchronous and Asynchronous electrical therapy
- 11/13/24 EMS Fellowship Didactics
 - Ch 31.3 Electrical Injuries
 - Ch 33.3 Thermal and Chemical Injury
 - Ch 67.3 Analgesia
 - Case Presentation: Soccer Field Lightning Strike, MCI
- 11/20/24 EMS Fellowship Didactics (Hybrid)
 - Mi-Train Med Run/Chem Pak, Course ID 1031785 (preclass)
 - Ch 46.3 Toxicology; <https://youtu.be/WKiwX5GwLhw> (preclass)
 - Ch 47.3 Rx and evaluation of specific toxins; organophosphates
<https://youtu.be/06exlTNIsj0?si=hjNstlVepmOrQRpL>
 - Ch 103.3 Medical Support for Hazardous Materials;
https://youtu.be/oqjVDa_EHek?si=8fXLacnnff7pi3m
 - Ch 104.3 Chemical Properties of Hazardous Materials
 - Case Presentation: Phoenix FD, McDonalds HazMat Event; https://youtu.be/eY__H-CMvw0
 - App Review for HazMat ID, Traige
- 11/26/24 Statewide EMS Fellowship Journal Club
 - Cardiac arrest Resuscitation; Time to First Epi, England v Denmark
- 11/27/24 EMS Fellowship Didactics
 - Ch 75.3 Air Medical Services
 - Ch 68.3 Point of Care Testing in EMS, CLIA
 - Ch 69.3 Ultrasound application in the prehospital setting
 - Ch 74.3 Interfacility Transport, EMTALA
 - Case Discussion: witnessed arrest during patient handoff
- 12/4/24 EMS Fellowship Didactics, (Hybrid)
 - Ch 115.3 Research Basics: <https://youtu.be/7IT4XB-tgpc>
 - Ch 116.3 Informed Consent: https://youtu.be/SKQ_y23M-sE
 - Ch 120.3 Cost Analysis Research: <https://youtu.be/hJkApAWvHcs>
 - Ch 121.3 Statistical Concepts in EMS Research: https://youtu.be/HtVbfdMJh_8
 - Activity: Grant Writing Basics and Sample Application: <https://youtu.be/0Vf79YiyE5w>
- 12/11/24 EM Sim Day
 - Simulation: Respiratory Failure: Asthma
 - Simulation: Pediatric Difficulty Breathing
 - Skill: Ultrasound, FAST exam

- 12/11/24 EMS Fellowship Didactics,
 - Ch 117.3 Out of Hospital Cardiac Arrest Research
 - Ch 118.3 Trauma Research Methodology
 - Ch 119.3 Pediatric Research Methodology
 - Activity: ResQPro, Operationalizing LA Peds ETT
- 12/12/24 Webinar; EMS for All – Australasian Council of Paramedicine, The Role of University Degrees in Transforming Paramedicine into a Respected Profession. CMU's 20 day international student/faculty exchange experience.
- 12/13/24 CoAEMSP Town Hall with the EMS Education Community

