Transition to Practice: A Novel Life Skills Curriculum for Emergency Medicine Residents

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# California ACEP

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WELCOME new members!

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Pacific Coast Emergency Medical Associates
Pacific Emergency Providers APC
Pacifica Emergency Medical Associates
Palomar Emergency Physicians
Redondo Emergency Physicians
San Dimas Emergency Medical Associates
Shasta Regional Emergency Medical Associates
Sherman Oaks Emergency Medical Associates
Tarzana Emergency Medical Associates
Temecula Valley Emergency Physicians
Valley Presbyterian Emergency Medical Associates
Vituity Emergency Medicine Advocacy Physicians
Vituity Idaho-LLP
Emergency physicians are well suited to serve in positions of leadership. We are natural problem solvers, and we work with all other specialties to gain consensus for the best treatment for our patients. Perusing the curriculum for the American College of Healthcare Executives, the majority of resources cover topics like “How to think like a physician” or “Getting Physician Alignment”. As doctors, we have a unique ability to understand each other and to lead in medicine. This is a trait that many administrators crave to acquire and often struggle without.

The Accreditation Council for Graduate Medical Education (ACGME) is the organization that sets the requirements for training physicians. Times have been changing over the course of the last 10 years in medical education. This means that physicians like me, who finished training 20 years ago, may not be aware of the goals and expectations for new physicians currently completing training. It’s an important gap to highlight because what the ACGME sets as standards now, will only augment an emergency physician’s ability to be a future leader in the delivery of care.

The ACGME is pivoting requirements in an effort to shape physicians into more than just professionals who know the right medicine or procedure to perform. As we’ve seen more recently, lots of people can be trained in the competencies of medical knowledge and patient care. So, what makes a physician different? That is an important question in all specialties as scope creep haunts the new ranks of the workforce. The answer is in the other 4 competencies that the ACGME has instituted. What’s more interesting is that they are nearly identical for all resident physicians, regardless of specialty, and together they are what creates physician leaders.

The first is problem-based learning and improvement, a competency to prepare physicians for the fast-changing science of medicine. We teach them to become lifelong learners and to use evidence-based medicine for their patients appropriately. Other health care professions use protocols and policy to prescribe which therapies are correct for certain patients, but physicians are well trained to investigate, evaluate,
and selectively apply the literature. The ACGME also has requirements
to develop the ability to add to medical knowledge by completing
scholarly activity in their specialty.

Next is the competency of interpersonal skills and communication.
It sounds simple, like “be nice to people,” but it’s really much more
than that. This incorporates the ability to communicate with patients
and family members. You could be the greatest doctor in the world
but essentially ineffective if you can’t build trust and convince your
patients to engage in their health and help you to make them better.
This competency also requires that we teach new physicians how to
effectively deliver feedback and communicate concerns about the
system in which they are working. Medicine has old, strong traditions
and physicians who trained long ago did not have the same emphasis
on acquiring these skills as we place on trainees today. Sometimes
it shows in the hospital, and we witness career limiting behaviors in
physicians who maybe weren’t trained to understand that they might
be working against themselves when they do not demonstrate these
interpersonal communication skills.

The hardest competency to educate physicians on is professionalism.
Again, that sounds inconceivable when you consider what we do as a
profession. However, doctors have developed a ‘reputation’ and we’ve
long touted a pedagogical hierarchy that has not advanced with the
current legal obligations to create an ideal work environment. We don’t
treat residents in training like we did before. The ACGME monitors
programs based on residents’ ability to raise concerns without fear
or intimidation; they also survey trainees on abuse, harassment,
mistreatment, discrimination, or coercion in the workplace. Bravo to
the ACGME for working to change the culture of medical education.
In this way, professionalism fosters wellness and also requires that we
teach new doctors how to be well themselves.

Lastly, I want to address the competency of system-based practice.
In my opinion, this is where our biggest potential as emergency
physicians lies. Historically, physicians have been taught that they are
‘the head of the ship’ and ultimately responsible for everything that
happens to a patient. How terrifying is that? And, understandably, that
can wear down our wellness because we were traditionally taught
not to trust the system in which we work. System-based practice is
how we now educate residents to align with the system and work to
make it better, more efficient, and safer. This is a huge opportunity
for flexing our leadership as doctors who understand medicine,
workflows, reimbursement, and the integration required to make a
system function in a way that benefits not only the patient, but also
the providers. In my opinion, physicians are perfectly poised to be
able to lead efforts like this that can make or break a hospital’s narrow
or upside-down profit margin. It also enables us to engage with the
system so that we can actually improve patient outcomes. I’m glad
the ACGME now focuses physician training on more than just caring
for individual patients. If we don’t train our future physicians to have
these skills, we will surely ‘die by a million clicks’ helping institutions to
check unimportant boxes in shallow attempts to move the needle on
frivolous metrics.

Thanks to new ACGME requirements, we are now charged with
the responsibility of making physician leaders who possess the
knowledge, skills, and abilities to improve the system of care delivery.

Dr. Winston is the Chief of Medical Education at Kaweah Health in Visalia, CA and Director of Academic Affairs
for Vituity.
Case Denied – Example 1
A 55-year-old female brought in by ambulance for high blood pressure and chest pressure. In the field, her blood pressure was 200/100. She was given nitroglycerin and aspirin by the paramedics. The patient complains of chest pressure, headache, and nausea. She has a past medical history significant for hypertension and diabetes mellitus. A comprehensive diagnostic workup was performed including multiple laboratory studies, EKG, Chest X-Ray, and a CAT Scan of the brain. Intravenous medications were given while in the emergency department (ED) and the emergency physician discussed the case with the Hospitalist and the decision was reached to admit the patient into the hospital for blood pressure control and to exclude a cardiac cause of her chest pain.

This patient was treated in February 2021. Anthem denied payment of this claim in April 2021 and it was appealed shortly thereafter. No response to the appeal was received. The appeal was resent in August of 2021. This claim remains unpaid and unadjudicated 17 months after the date of service.

Case Denied – Example 2
A 68-year-old male trauma victim from a motorcycle accident who presented to the ED with right pleuritic chest pain and right shoulder pain. He has a past medical history of hypertension and diabetes mellitus. A comprehensive workup was performed including laboratory tests, chest and shoulder X-Rays, as well as CAT Scans of the brain and cervical spine without contrast, and CAT Scans of the chest, abdomen, and pelvis with contrast. The patient was given Intravenous morphine for pain control. The patient was found to have multiple right rib fractures, a traumatic right pneumothorax, and a right scapula fracture. After consultation, the patient was transferred to a Trauma Center for a higher level of care.

Anthem denied payment for this claim. It was appealed and anthem denied the appeal. A second level appeal has been done and the results of the appeal are pending.

What is the Law? Health & Safety Code Section 1371
Here is exactly what California law states:

(a) (1) A health care service plan, including a specialized health care service plan, shall reimburse claims or a portion of a claim, whether in state or out of state, as soon as practicable, but no later than 30 working days after receipt of the claim by the health care service plan, or if the health care service plan is a health maintenance organization, 45 working days after receipt of the claim by the health care service plan, unless the claim or portion thereof is contested by the plan, in which case the claimant shall be notified, in writing, that the claim is contested or denied, within 30 working days after receipt of the claim by the health care service plan,
or if the health care service plan is a health maintenance organization, 45 working days after receipt of the claim by the health care service plan. The notice that a claim is being contested shall identify the portion of the claim that is contested and the specific reasons for contesting the claim.

(a)(4) If a claim or portion thereof is contested on the basis that the plan has not received all information necessary to determine payer liability for the claim or portion thereof and notice has been provided pursuant to this section, the plan shall have 30 working days or, if the health care service plan is a health maintenance organization, 45 working days after receipt of this additional information to complete reconsideration of the claim. If a plan has received all of the information necessary to determine payer liability for a contested claim and has not reimbursed a claim it has determined to be payable within 30 working days of the receipt of that information, or if the plan is a health maintenance organization, within 45 working days of receipt of that information, interest shall accrue and be payable at a rate of 15 percent per annum beginning with the first calendar day after the 30- or 45-working-day period.

In other words, plans must pay something on a claim (usually you see this in the form of down coding and paying a lower rate) and, if they contest the claim due to insufficient information and the provider provides additional information, the plan must pay within a set window of time or they owe the provider interest on the amount owed.

This section of law has been ignored by Anthem. There is currently a multi-pronged approach to try to make Anthem comply with California law.

**Redress in the Courts– TVEP v. Anthem**

Temecula Valley Emergency Physicians (TVEP) and multiple other groups have sued Anthem over nonpayment. Unfortunately, only non-contracted groups can sue, those under contract must pursue their contractual remedies such as arbitration. Not all non-contracted groups are able to fund a lawsuit that could take years while the claims go unpaid.

If your group is interested in joining the lawsuit, please let us know and we can connect you to the appropriate parties.

**Regulatory Enforcement**

CalACEP staff and members have been meeting with state regulators and building a coalition of legislators and other healthcare organizations to apply pressure on those regulators to take action.

The first step was notifying the Department of Managed Health Care (DMHC) of the problem. After explaining the problem to DMHC, they met with Anthem, who alleged, among many other things, that the claims were false or incomplete claims. We have cited law that defines a complete claim and outlined exactly how Anthem’s assertions are false. Unfortunately, DMHC has failed to act when given clear evidence.

As a result, we started setting up meetings between CalACEP members whose groups are impacted by Anthem’s nonpayment and their local state elected officials. Thus far we have met with 20 legislators to discuss Anthem’s practices. They have agreed that it is a problem, but because the law is already clear, legislators do not have the ability to act against Anthem directly, rather they can only try to put pressure on regulators.

When it became clear that we needed a different way to inspire DMHC to act, we worked with ACEP to send a joint letter to members of the California Congressional delegation and the Centers for Medicare and Medicaid Services (CMS) asking them to apply pressure on Anthem to change their practice. CMS has asked for case examples involving ERISA claims and we are hopeful they will take some action.

**What Can You Do?**

CalACEP continues to make this a priority and has begun to work on applying public pressure through pitching stories to key healthcare reporters. If your group has been impacted by Anthem’s nonpayment practices, please reach out to CalACEP so we can include your group in our discussions at the state and national levels.
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#AdvancED2022
California ACEP’s annual conference has taken several identities through the years, from the Scientific Assembly to the Annual Assembly and, most recently, AdvancED. We are so glad we were finally able to host this conference in-person for residents and medical students.

This year’s theme was “Meet the Moment”. In light of the uncertainty caused by the COVID-19 pandemic and the emergency medicine workforce report, we looked at the ways emergency medicine has and will continue to “Meet the Moment” at hand. Whether that’s creating the emergency medical services system or changing practice with point of care ultrasound, emergency physicians have never been afraid to change the mold and carve out new paths for the specialty. Our attendees came away from AdvancED 2022 feeling empowered to meet this particular moment facing emergency medicine.

Thanks to the enthusiasm and amazing talent of our conference planning work group, California ACEP was able to offer unique and innovative content for our resident and medical student members, including fast paced talks from a diverse variety of speakers of all levels of training and backgrounds, a residency fair, a skills track, and a poster session featuring both clinical and educational innovations.

We were also delighted to have Diane Birnbaumer, MD, FACEP giving the keynote address on adapting your career to stay in love with emergency medicine, all while she adapted and gave the talk virtually due to COVID.

The traditional-sim games were re-imagined California-style as a fun, new challenge. SkilledED is a skills-based challenge designed for residents and medical students where individuals had the opportunity to practice low-frequency, high-risk procedures, as well as test their skills with ultrasound and other tools used in the emergency department. We are excited to see how this track continues to grow in the future!

In addition to didactic programing and hands-on skills stations, this year we were once again able to see posters from individuals at all training levels. The two posters that faculty felt best “Met the Moment” in emergency medicine were: “Management of New Pregnancy Diagnosis in the Emergency Department” submitted by Carl Preiksaitis of Stanford and “A Novel ED Discharge Planning Tool to Increase Food Access” submitted by Sohini Halder of UCSF. Congratulations to both research teams!

We sincerely thank everyone who attended, volunteered, presented, and spoke at the AdvancED 2022 conference! It would not have been the same without you. We hope to see you in 2023.

Sincerely,

Natasha Wheaton, MD
AdvancED 2022
Conference Chair

Madeleine Alexeeva, DO
AdvancED 2022
Assistant Conference Chair

Kelsey McQuaid-Craig, MPA, CAE
California ACEP
Director of Policy and Programs

Thank you to the Conference Planning Team!

<table>
<thead>
<tr>
<th>Medical Student</th>
<th>Resident</th>
<th>SkilledED</th>
<th>Poster</th>
</tr>
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<tr>
<td>Jonathan Wagner (Track Chair)</td>
<td>Daniel Udrea (Track Chair)</td>
<td>Kristy Schwartz (Track Chair)</td>
<td>Andy Grock (Track Chair)</td>
</tr>
<tr>
<td>Jessie Werner</td>
<td>Sunny Bang</td>
<td>Sage Wexner</td>
<td>Christian Tomaszewski</td>
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<tr>
<td>Ryan Pedigo</td>
<td>Jason An</td>
<td>Kim Sokol</td>
<td>Alice Chen</td>
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<tr>
<td>Louie Wang</td>
<td>Rebecca Ruiz</td>
<td>Steven Lai</td>
<td>Ashley Vuong</td>
</tr>
<tr>
<td>Lucia Lin</td>
<td>Meg Maeda</td>
<td>Chun Joey Chang</td>
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Transitions are a familiar topic in medical education. Of particular interest to medical educators in recent years has been the need to ease the intense and stressful experience of transitioning from preclinical to clinical undergraduate medical education and from medical school to residency, while relatively little attention has been paid to examining the transition from residency to independent practice.1-2

The transition from residency to independent academic or community practice as an attending physician is a vulnerable time that presents significant challenges including final responsibility for patient care, management and leadership tasks, the education of residents, a new workplace environment and colleagues, and practice management skills.3 In addition to these workplace-based challenges, graduating residents often cite deficiencies in practical life and job skills such as preparing a curriculum vitae (CV) and cover letter, contract negotiation, personal finance, and time management.3-4 Many residency programs touch on some of these topics throughout each resident’s time in training; however, despite the gravity and generalizability of the subject matter, there is little published evidence of broad-based, fully-developed, evidence-based curricula in emergency medicine (EM) devoted to teaching senior residents to successfully navigate these issues while transitioning to independent practice.4-7

**GOAL OF CURRICULUM AND OBJECTIVES**

We developed a multi-modal, learner-driven, interactive curriculum to address the unique nonclinical challenges senior EM residents face during the transition from residency to independent practice. The overarching goal of this curriculum is for residents to cultivate the necessary life skills in each of these domains to successfully navigate the transition to independent practice and beyond. Specific objectives were determined by the targeted needs assessment of the residents and junior faculty (Table 1).
CURRICULAR DESIGN
We used the framework of Kern’s six-step model for curriculum development in medical education in developing this curriculum. A targeted needs assessment of current residents and junior faculty in both academic and community settings in our geographic area identified nine topics for inclusion in this pilot curriculum, one to be covered each month over the course of the curriculum in a just-in-time format. These topics are shown in Table 1.

The first session of the curriculum preceding the topic sessions is an interactive panel with recent graduates in academic positions, fellowships, and community practice to discuss how to obtain a position in each of these practice areas and answer questions. This is followed monthly by sessions that use learner-driven instructional methods and implementation strategies for each session of the transitions-to-practice curriculum.

Table 1. Objectives, instructional methods, and implementation strategies for each session of the transitions-to-practice curriculum.

<table>
<thead>
<tr>
<th>Session topic</th>
<th>Objective</th>
<th>Instructional design and implementation</th>
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<tbody>
<tr>
<td>Developing a CV and cover letter</td>
<td>Design a cover letter that includes a statement of intent, your unique qualifications, and how these qualifications fit with your target position. Prepare a CV with sufficient detail and appropriate sections based upon the position for which you are applying.</td>
<td>Artifact development and feedback&lt;sup&gt;1&lt;/sup&gt; - Residents review the cover letter and CV of recent graduates who were successful in obtaining a position in their desired practice environment. They then produce their own CV and cover letter and receive feedback from faculty on their work.</td>
</tr>
<tr>
<td>Interview strategies</td>
<td>Employ interview strategies to provide appropriate answers based upon question type and the job for which you are applying.</td>
<td>Role-playing&lt;sup&gt;6-10&lt;/sup&gt; - Faculty role-play interview questions with the residents based upon the practice setting they intend to enter.</td>
</tr>
<tr>
<td>Contract negotiation</td>
<td>Use key contract-negotiation strategies when discussing salary, benefits, shift count, new role, expectations, and other key aspects of your first contract after residency.</td>
<td>Role-playing&lt;sup&gt;6-10&lt;/sup&gt; - Residents review sample contracts within their target practice setting and market with a faculty member to review pears and pitfalls. Residents then role-play with faculty how to negotiate various aspects of their contract.</td>
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<tr>
<td>Time management</td>
<td>Develop a system for task prioritization, time blocking, and saying yes or no to new opportunities. Apply time management strategies to maximize productivity and minimize distractors.</td>
<td>Group discussion and think-pair-share&lt;sup&gt;9-10&lt;/sup&gt; - Residents discuss time blocking and task prioritization systems and develop a Covey 2x2 table based upon their priorities. They then think-pair-share to identify ways in which to maximize their productivity to achieve their goals.</td>
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<tr>
<td>Burnout prevention</td>
<td>Analyze prospective difficulties in your first year of independent practice and how these may put you at risk for burnout.</td>
<td>Narrative medicine&lt;sup&gt;11-13&lt;/sup&gt; - Residents and faculty present stories of difficult cases and life situations and use reflective writing to process each other’s stories. This is followed by debriefing and discussing useful tools for mindfulness and burnout prevention.</td>
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<tr>
<td>Medicolegal pitfalls</td>
<td>Compare approaches to clinical cases that are at high risk for litigation in emergency medicine.</td>
<td>Team-based learning&lt;sup&gt;9,14-15&lt;/sup&gt; - Using real-life, de-identified cases that have led to litigation in the past, residents form teams to discuss and debate their approach to these scenarios. If no cases are available, there are books with several examples.</td>
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<tr>
<td>Personal finance management</td>
<td>Apply principles from the book The White Coat Investor to develop a personal budget for your first year out in independent practice.</td>
<td>Book club and budget preparation&lt;sup&gt;9&lt;/sup&gt; - Residents read The White Coat Investor prior to attending the session. They then discuss it in a book club format. Finally, they develop a personal budget based upon the book and their discussion.</td>
</tr>
<tr>
<td>Billing and coding</td>
<td>List the necessary elements from the history of present illness, review of systems, physical exam, and medical decision-making sections of a chart required to bill for each level (1-5).</td>
<td>Chart review&lt;sup&gt;16-17&lt;/sup&gt; - Residents review their own charts and those of their faculty and assign a level to each chart for billing purposes. They then compare their results to that of the medical coders and discuss the results and strategies for improvement as a group.</td>
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CV, curriculum vitae.
methods including group processes such as team-based learning and role-playing, self-directed learning via reflection and learning plan development, and practical application of skills by developing artifacts and obtaining feedback for improved performance. Table 1 demonstrates the objectives, instructional design, and implementation strategies for each session.

We chose an interactive format as residents needed to produce tangible products and learn to use these skills as part of the curriculum. A largely learner-driven strategy was selected due to limitations in available resources. The most significant resource required for this curriculum is time. Faculty time is needed to review documents or role-play scenarios and provide feedback to the residents. We unfortunately lacked dedicated conference time for this content; thus, this curriculum was delivered outside of typical didactic time on various evenings at faculty homes or restaurants. If time were allotted during didactic conference for class-specific content, this would be an ideal curriculum for senior residents. Obtaining buy-in from program and departmental leadership to support this curriculum is crucial to its success.

IMPACT/EFFECTIVENESS

To evaluate the outcomes of this pilot curriculum we used a program-oriented approach, focusing on the extent to which the curricular objectives were successfully delivered and achieved via the tangible outcomes associated with each session, which were observed in real time. The deliverables of each session were achieved as stated in the objectives, as determined by the curriculum director and the session faculty leaders. Additionally, we employed a participant-oriented evaluation approach using a mixed-methods, survey-based format, including quantitative questions regarding the importance of the content covered in the transition to independent practice, whether the objectives were met during the session, and how well residents felt prepared for each component of the transition to practice after participating.

This was followed by an open-ended feedback section for descriptive comments regarding the benefits and areas for improvement of each session.

The quantitative evaluation survey questions employed a five-point Likert scale with the following anchors: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. Using Messick’s framework of validity, we addressed two areas of validity evidence in developing our evaluation survey questions. By developing the evaluation to match the content delivered in direct consultation with the content experts for each session, as well as receiving feedback on the questions from two medical education experts outside our department at our institution, this provided content validity. We piloted the survey on five second-year residents and three members of the residency education leadership team for clarity of the questions, relevance to the content covered, and grammatical errors. Edits were made based upon critiques received from the respondents, addressing response process validity.

The survey was administered to the residents in attendance at each session. There were eight residents at each workshop out of 11 members of the senior class (due to some covering clinical responsibilities). All eight residents in attendance at each session completed the survey. The results of this evaluation are presented in Table 2. Other key stakeholders including residency program leadership and core faculty who taught or provided feedback to the residents within the curriculum also provided valuable feedback regarding the curriculum that mirrored the resident responses.

This curriculum was piloted on 11 senior EM residents. Postcurriculum implementation surveys were analyzed and coded for themes by the author. During the evaluation phase, residents expressed greater confidence in the application, interview, and contract negotiation process for their first position after residency due to participating in the pilot of this curriculum. All stated that they felt this curriculum had prepared them to face the transition to independent practice and alleviated much of their anxiety. Additionally, they felt that they could apply many of these topics to their current practice in residency, specifically citing the billing and coding and time management sessions.
Residency program leadership evaluated the positive feedback from these sessions and is working to make them a regular component of the EM didactic curriculum. Additionally, our core faculty have expressed regret at not having received similar training when they were residents.

**LIMITATIONS**

While there are few published curricula covering the transition to practice within EM, there are likely several programs covering some or potentially all of this content already. A national needs assessment and survey to identify what is currently being done across all programs may
inform the literature further on this topic. Additionally, the conference and faculty time required to implement this curriculum proved onerous to our program during the pilot phase, requiring outside time for implementation. A significant investment on the part of the program and faculty for class-specific content during conference time and incentivization of the faculty to participate may be necessary to make this a successful endeavor at each program. Finally, selected comments were provided from the evaluations of each curricular session. These comments were reviewed and selected by the author, and while attempting to remain impartial and report comments that are representative of all those received, this may have resulted in selection bias. The reporting of the quantitative post-implementation evaluation data as well as the constructive feedback was provided in an attempt to ameliorate this potential for bias.

CONCLUSION

This multi-modal, learner-driven, interactive curriculum was well received within our EM residency program. It could also be adapted to any graduate medical education training program with minor, specialty-specific adjustments given the wide applicability of these skills for residents in all specialties as they navigate the transition to independent practice. Going forward, it will be important to gather more objective outcomes in order to determine the ultimate value of this and other future curricular initiatives addressing the transition to practice.

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Conflicts of Interest: By the WestJEM article submission agreement, all authors are required to disclose all affiliations, funding sources and financial or management relationships that could be perceived as potential sources of bias. No author has professional or financial relationships with any companies that are relevant to this study. There are no conflicts of interest or sources of funding to declare.

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REFERENCES

INTRODUCTION: Safety concerns surrounding the coronavirus 2019 pandemic led to the prohibition of student rotations outside their home institutions. This resulted in emergency medicine (EM)-bound students having less specialty experience and exposure to outside programs and practice environments, and fewer opportunities to gain additional Standardized Letters of Evaluation, a cornerstone of the EM residency application. We filled this void by implementing a virtual clerkship.

METHODS: We created a two-week virtual, fourth-year visiting clerkship focused on advanced medical knowledge topics, social determinants of health, professional development, and professional identity formation. Students completed asynchronous assignments and participated in small group-facilitated didactic sessions. We evaluated the virtual clerkship with pre- and post-medical knowledge tests and evaluative surveys.

RESULTS: We hosted 26 senior medical students over two administrations of the same two-week virtual clerkship. Students had a statistically significant improvement on the medical knowledge posttests compared to pre-tests (71.7% [21.5/30] to 76.3% [22.9/30]). Students reported being exposed to social determinants of health concepts they had not previously been exposed to. Students appreciated the interactive nature of the sessions; networking with other students, residents, and faculty; introduction to novel content regarding social determinants of health; and exposure to future career opportunities. Screen time, technological issues, and mismatch between volume of content and time allotted were identified as potential challenges and areas for improvement.

CONCLUSION: We demonstrate that a virtual EM visiting clerkship is feasible to implement, supports knowledge acquisition, and is perceived as valuable by participants. The benefits seen and challenges faced in the development and implementation of our clerkship can serve to inform future virtual clerkships, which we feel is a complement to traditional visiting clerkships even though in-person clerkships have been re-established. [West J Emerg Med. 2022;23(1)33–39.]

BACKGROUND

The coronavirus 2019 (COVID-19) pandemic drastically altered educational and residency application landscapes for emergency medicine (EM)-bound medical students by restricting in-person visiting clerkships. As an alternative to traditional in-person visiting clerkships, we created, implemented, and evaluated a virtual “visiting” clerkship with a focus on advanced and less commonly taught topics (ie, social EM and professional development). Based on the most recent recommendations, many institutions have removed restrictions on in-person rotations but continue to limit visiting rotations to one per student. Looking forward, the virtual environment creates a unique opportunity for programs to continue to meet their applicants more in depth, in addition to circumventing geographic and socioeconomic barriers often faced by students participating in traditional visiting rotations.

CURRICULUM DESIGN

Rather than replicating a traditional clerkship virtually, we designed our curriculum to focus on advanced medical topics: social determinants of health; structural competency; and professional identity formation by employing Kern’s method for curriculum development. We identified educational needs as institutional COVID-19 restrictions were released. We performed a needs assessment including data from our postgraduate year one class as near peers. Our topic list was further refined by consensus among the author group, which included a clerkship director, associate program directors, medical education fellow, and senior EM residents. We developed goals and objectives informed by the topic list and the additional goals of exposing students to our residency program and social EM, as well as advancing professional identity formation. Our traditional in-person sub-internship experience typically covers medical knowledge topics commonly seen in the emergency department as well as skills to help learners thrive while rotating in person. In addition to being vastly different from a traditional experience given that it would be delivered...
virtually, we felt that this rotation could possibly serve as an ideal environment to cover social EM and professional identity formation, topics that would benefit from minimal interruptions or competing pressures.

**OBJECTIVES**

Curriculum goals included teaching advanced EM clinical knowledge, introducing social EM and professional identity formation, and providing exposure to our residency program. See Table 1 for course goals and objectives.

When choosing educational methods, we used the conceptual framework developed by Brown et al to maximize online learning and engagement. This framework encourages expectation management, learner engagement, and "nudging." Our orientation outlined expectations, including asynchronous assignments and recommended norms for small group. We prioritized interactive teaching modalities and active learning to maximize engagement such as smallgroup learning among as well as our “Virtual Escape Room” (Appendix A) and simulation. Our small group, case-based discussions used a flipped classroom model, an effective and recommended modality for virtual instruction. All small-group facilitators were reminded of the best practices for online, small group teaching, which included use of introductions, learner-directed questioning to encourage equal participation, and "nudging" – reminders for learners to actively participate (See Appendix B).

Each virtual clerkship session was held on weekdays over two weeks for a total of 10 instruction days. The students were expected to complete various asynchronous learning assignments (estimated two hours daily) and attend four hours of Zoom (Zoom Video Communications, Inc, San Jose, CA) sessions daily. (See Appendix C for example schedule and specific content.) Cases from “Foundations of EM,” a national free, open-access online resource, were used to teach medical knowledge. Social medicine instruction was done using modules from the International and Domestic Health Equity and Leadership (IDHEAL) Section from the University of California, Los Angeles. Chosen modules included Language, Incarceration, Gender Identity, Race, and Homelessness, and assigned readings from those modules were delivered to learners via email. The Virtual Escape Room consisted of a tricyclic antidepressant overdose case, created by authors AV and TJ (Appendix A) with inspiration from another published escape room. The virtual simulation was carried out over Zoom, and cases from our traditional clerkship were used, which cover pediatric anaphylaxis, motorcycle trauma, hypothermia, and abdominal aortic aneurysm. The “Communities of Practice Panel” consisted of a panel of faculty/ attendings who practice in different EM environments (ie, tertiary referral center, county, community, Veterans Administration, and critical access community). Many of these modalities have previously been highlighted as effective teaching modalities. Within the professional identity formation theme, learners read Carol Dweck’s “Mindset” to prepare for a book club-type discussion – a modality previously well-received by other learners. Finally, students were introduced to basic...
Table 1. Course goals and objectives of a virtual emergency medicine clerkship.

<table>
<thead>
<tr>
<th>GOALS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To build upon existing EM knowledge through less commonly</td>
<td>By the conclusion of this rotation, the students should be able to:</td>
</tr>
<tr>
<td>taught core EM chief complaints</td>
<td>Medical Knowledge</td>
</tr>
<tr>
<td>2. To expose students to the broad variety of ED practice</td>
<td>1. Describe an approach to several commonly seen chief complaints in EM.</td>
</tr>
<tr>
<td>environments and patient populations they will care for through</td>
<td>Social EM</td>
</tr>
<tr>
<td>panels and case-based discussions</td>
<td>2. Compare how different practice environments, associated</td>
</tr>
<tr>
<td>3. To improve the knowledge base, and importance of justice in</td>
<td>healthcare systems, and access to care affect care plans.</td>
</tr>
<tr>
<td>healthcare in caring for ED patients of diverse socioeconomic</td>
<td>3. Discuss areas within medicine, including within EM, how biases</td>
</tr>
<tr>
<td>statuses, race, ethnicities, gender, and sexual orientations.</td>
<td>may affect patient care and create strategies to overcome one’s own bias.</td>
</tr>
<tr>
<td>4. To introduce students to clinical and non-clinical niches in EM</td>
<td>4. Describe how language, race, gender, homelessness, and</td>
</tr>
<tr>
<td>including toxicology, critical care, ultrasound, EMS, medical</td>
<td>addiction affect patient care.</td>
</tr>
<tr>
<td>education, research, healthcare administration, and social</td>
<td>Professional Identity Formation</td>
</tr>
<tr>
<td>determinants of health</td>
<td>5. Describe clinical and non-clinical practice environments as well as</td>
</tr>
<tr>
<td>5. To expose students to a variety of learning modalities including</td>
<td>niches within EM.</td>
</tr>
<tr>
<td>practicing their own teaching skills</td>
<td>6. Understand the importance of a growth mindset over a fixed mindset and</td>
</tr>
<tr>
<td>6. To introduce the concept of professional skill-set development</td>
<td>develop strategies to incorporate a growth mindset.</td>
</tr>
<tr>
<td>and how growth mindset may impact clinical encounters</td>
<td>7. Apply principles of growth mindset to commonly experienced</td>
</tr>
<tr>
<td></td>
<td>scenarios in the clinical setting.</td>
</tr>
<tr>
<td></td>
<td>8. Describe challenges of interviewing virtually.</td>
</tr>
<tr>
<td></td>
<td>9. Outline effective strategies for identifying medical content,</td>
</tr>
<tr>
<td></td>
<td>learning, and organizing medical knowledge in the 21st century.</td>
</tr>
<tr>
<td></td>
<td>10. Describe challenges and opportunities of teaching in the 21st</td>
</tr>
<tr>
<td></td>
<td>century.</td>
</tr>
<tr>
<td></td>
<td>11. Demonstrate ability to teach peers on pre-selected topic.</td>
</tr>
</tbody>
</table>

EM, emergency medicine; ED, emergency department; EMS, emergency medical services.

pedagogical techniques and practiced non-medical teaching sessions for their peers and faculty; feedback was provided.

Asynchronous assignments consisted of Emergency Medicine Reviews and Perspective C3 podcasts, free openaccess medicine (FOAM) curated by the Academic Life in EM (ALiEM) AIR series, Foundations of EM “Frameworks,” and articles introducing topics of social EM.24,25,30,31 Asynchronous content was designed to correspond to daily synchronous content; specifics can be found on Appendix C. We made our virtual clerkship available to all fourth-year medical students applying into EM via the Visiting Student Application Service (VSAS) website and offered it twice during the 2020-2021 academic year.31 Given our predicted teaching resources, we estimated an ideal class size of less than 25 students per session. Ultimately, 26 students enrolled (nine in the first session, 17 in the second session). Attendance at all sessions was mandatory.

We recruited a group of residents and faculty to teach for a total of 24 lecturers and 26 small-group facilitators across both sessions. Facilitating the clerkship during the two-week session required one of three clerkship directors to be present on Zoom four hours per day, in addition to administrative tasks related to that day’s activities.

We assessed medical knowledge with a 30-item, peerreviewed, multiple-choice test consisting of questions donated by RoshReview
(Rosh Review LLC, Huntington Woods, MI), a commercial question bank company. RoshReview validates questions against real-world exam performance such as the in-training exam for EM residents. Questions were chosen by the course directors by a systems-based approach (ie, neurology, cardiovascular, etc) with the goal of choosing questions that were reflective of clerkship's curriculum. Students did not have the ability to see the answers to the questions after taking the pre-test. Because the test was conducted at home, students theoretically could access open-access content in real time. Students completed the same medical knowledge test on the first and last days of the clerkship. We calculated mean scores and compared preand post-tests using a paired t-test, analyzed with the software statistical package Stata 16.1 (StataCorp, College Station, TX). Test scores had no bearing on final grades.

Each two-week clerkship contained five social EM sessions, which were assessed by an anonymous survey exploring previous experience with the topic and comfort with applying content learned to the clinical environment (Appendix D). This tool had been previously used in residency education by the IDHEAL group. It was developed by

**Table 2. International and Domestic Health Equity and Leadership sessions survey.**

<table>
<thead>
<tr>
<th>Question/statement</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you ever had formal instruction on social determinants of health? (n = 98)</td>
<td>81 (83%)</td>
<td>17 (17%)</td>
</tr>
<tr>
<td>Have you ever had formal instruction on social determinants of health during an emergency medicine rotation or departmental education conference? (n = 98)</td>
<td>42 (43%)</td>
<td>56 (57%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Have you ever had formal instruction on topic discussed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic (n = 98)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Language (n = 23)</td>
</tr>
<tr>
<td>Incarceration (n = 18)</td>
</tr>
<tr>
<td>Gender (n = 16)</td>
</tr>
<tr>
<td>Homelessness (n = 15)</td>
</tr>
<tr>
<td>Race (n = 16)</td>
</tr>
<tr>
<td>Unknown (n = 10)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>8 (35%)</td>
</tr>
<tr>
<td>1 (6%)</td>
</tr>
<tr>
<td>9 (56%)</td>
</tr>
<tr>
<td>6 (40%)</td>
</tr>
<tr>
<td>11 (69%)</td>
</tr>
<tr>
<td>7 (70%)</td>
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</table>

<table>
<thead>
<tr>
<th>Please rate your agreement with the following statement</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td>I learned about how this topic affects the health of my patients.</td>
</tr>
<tr>
<td>I feel more confident about how to address this topic when seeing patients in the ED.</td>
</tr>
<tr>
<td>This topic is important for the care of patients in the ED.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Strongly agree</td>
</tr>
<tr>
<td>79 (80%)</td>
</tr>
<tr>
<td>65 (66%)</td>
</tr>
<tr>
<td>87 (89%)</td>
</tr>
</tbody>
</table>

ED, emergency department.
content experts after literature review to maximize content validity. We analyzed questions relevant to this clerkship. Participants were sent an online anonymous survey after each of the five sessions. In total, we sent a total of 130 surveys (five surveys per participant) and analyzed the data descriptively.

We assessed students’ overall attitude toward the course with a 16-item evaluative survey consisting of 11 multiple-choice, one slider scale, and four free-response items. The survey was created by SV, who has a Master's in Education, had advanced training in survey design and experience in qualitative research, and was the course director, all providing content validity evidence. We read survey items aloud among the author group and piloted the survey with a small reference population to optimize response process validity. The survey was distributed on the last day of class (Appendix E). We calculated and reported descriptive statistics for survey questions with discrete answer choices. For free-response data within the survey, two authors (SV and AV) performed a thematic analysis. SV trained AV, a senior resident, to perform a thematic qualitative analysis. The analysts independently reviewed the data and later met to establish a final coding scheme, which they then independently applied to all data. After applying the final coding scheme, they identified discrepancies and finalized themes. The simple percent agreement between the two analysts was 80.3%. Discrepancies were resolved via in-depth discussion and negotiated consensus.

This study was deemed exempt by the University of California, Los Angeles Internal Review Board (IRB #20-002014) approved on November 19, 2020.

IMPACT/ EFFECTIVENESS

Twenty-six students participated in the virtual clerkship representing 22 medical schools and all regions of the US. All students completed the medical knowledge pre- and post-test. Mean test scores improved from 21.5 (standard deviation [SD] +/-2.6) to 22.9 (SD +/- 1.24) (P = 0.006), effect size 0.68, 95% confidence interval, 0.12-1.24.

Of the 130 IDHEAL post-module surveys administered, 98 (75%) were completed. Of the modules chosen, incarceration was least likely to have been previously covered with only 6% (1/18) of respondents having prior instruction. Eighty-nine percent (87/98) of respondents “strongly agreed” that these topics were important for patient care in the ED, and 66% (65/98) felt more confident after completing the modules. See Table 2 for full results.

Almost all (25/26, 96%) students completed the end-of-rotation evaluative survey. Of all respondents, 95% “strongly agreed” or “agreed”...
<table>
<thead>
<tr>
<th>Domain</th>
<th>Themes</th>
<th>Exemplar quotes</th>
</tr>
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<tbody>
<tr>
<td><strong>FAVORITES</strong></td>
<td></td>
<td></td>
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</tbody>
</table>
| **Course design** | **Interactive education** | Respondent 11: “Some of my favorite sessions were the teaching sessions, the escape room, and the simulation”  
Respondent 12: “board style cases from foundations”  
Respondent 23: “Enhancing my medical knowledge/clinical skills by participating in numerous simulations and mock oral board-style, small group exercises” |
| **Topic variety** | | Respondent 9: “Incredible mix of content and social EM”  
Respondent 10: “Having this diversity of sessions made it easier to engage fully for the two hours that each topic was covered every day. It would’ve been tough to stay focused for 4 hours of medical knowledge didactics or 4 hours of social EM/career topics, so mixing it up was great”  
Respondent 20: “I like the mix of medical content with professional development and social issues.” |
| **Social determinants of health focus** | | Respondent 6: “The social EM aspect of this course was incredibly powerful and important”  
Respondent 11: “Social discussions are incredibly valuable and vital to the work providers (particularly in EM) do. The medical knowledge will always be hammered into us whether it’s in medical school or residency, but the social determinants of health are truly vital in understanding the populations we serve.”  
Respondent 12: “Learning about social aspects of EM from experts and listening to their experiences and perspectives” |
| **Professional identity formation** | **Networking with other students, residents, faculty** | Respondent 10: “it was a great way to get to know more about my peers and build a bond.”  
Respondent 11: “I loved meeting other students from across the country.”  
Respondent 12: “I absolutely loved how many attendings, residents, and fellows I was able to meet. If I came there in person, I do not think I would have met even an eighth as many.” |
| **Exposure to future career opportunities** | | Respondent 4: “It was great to get to know people who specialize in different areas and options for fellowship”  
Respondent 18: “information about the program, fellowships and culture” |
| **LEAST FAVORITE/ BARRIERS** | | |
| **Technology related** | **Screen time** | Respondent 1: “long zoom hours”  
Respondent 7: “Towards the end of the last week I was feeling the zoom fatigue” |
| **Technical issues** | | Respondent 3: “Zoom challenges can be rough audio and freezing”  
Respondent 5: “only issue were the brief problems with Wi-Fi connectivity” |
| **Course design** | **Too much content for time allotted** | Respondent 14: “I wish we had a bit more time on the foundations cases or had a follow up 10-15 minute review of the topics”  
Respondent 15: “I wish there was a little more small group time!” |
| **Instructor orientation** | | Respondent 4: “Whenever you split people into small groups, ALL proctors should implement the round-robin approach for participation AND the proctor should tell the students when their turn is over. Most proctors did this, and I really appreciate it. When it didn’t happen, the sessions felt less fluid” |
| **Alignment of asynchronous and synchronous content** | | Respondent 9: “Some of the asynchronous resources were not too connected to the sessions that day.” |

EM, emergency medicine.
that the rotation should be repeated in the future, and all “strongly agreed” or “agreed” that the rotation would impact the way they ranked our program. Major themes from the qualitative analysis are described in Table 3.

Prior literature has demonstrated knowledge acquisition and retention from virtual curricula, and we saw similar results, albeit our study demonstrated only a modest improvement.35,36 One explanation for the lack of larger change is that our assessment items may not have been perfectly aligned with our curriculum as the questions were pulled from a standard question bank. For future versions, we would strongly consider constructing and validating our own internal assessment of medical knowledge to be better aligned with our objectives. Additionally, students rated themselves as more confident in discussing and managing social medicine topics. Ideally, we would be able to conduct a repeat assessment at a predetermined timepoint to assess whether the social EM content had modified their practice as residents. While we emphasized our program’s strong social EM vision, other programs may replicate this curriculum to focus on their own strengths. In the past, visiting clerkships have acted as a recruiting tool for residencies,8 and virtual clerkships may also allow residencies to highlight strengths and successfully recruit.

Students from 22 institutions participated in our clerkship at minimal cost to them (only the cost to apply via VSAS). In contrast, EM applicants averaged 1.9 visiting rotations costing almost $1000 per rotation in 2019.37-39 While many institutions have implemented scholarships for underrepresented in medicine students, virtual clerkships remove financial barriers for all students and may be an invaluable option for students with familial or other obligations.40 Virtual clerkships represent an additional strategy to help mitigate the socioeconomic barriers of visiting rotations.

While students perceived our virtual experience to be valuable, several challenges were encountered. The clerkship required significant administrative efforts and a large number of facilitators to create the intimate small-group experiences critical to its success. There was no protected time or funding for the instructors. Overall, at least 40 hours per clerkship among NW and SV were required, which did not account for planning and time from all instructors who volunteered their time. These requirements may be adjusted by limiting the number of students enrolled. Furthermore, as we look to the future, simultaneously administrating a virtual clerkship and in-person clerkship will likely require significant additional administrative support.

While this rotation ultimately served 25 students, we considered this rotation to be a success as we were fortunate to match three interns of our current class from the Virtual Clerkship. If we were to repeat this clerkship again, we would expand our evaluation efforts as it was limited, mainly only allowing for assessment in small groups. One other addition would be to encourage asynchronous communication among students and faculty. Examples of communication would be continued improvement of the environment and incorporation of daily questions expanding on the day’s content to further enhance spaced repetition. Lastly, interest in our virtual clerkship was likely increased due to COVID-19 restrictions on in-person opportunities. Future versions will require more advertisement and may not bolster as much interest.

We envision we will offer both versions of each clerkship separately moving forward. However, we likely would not offer a formal SLOE to students who pursue the Virtual Clerkship given we cannot comment on their clinical skills in the virtual format. However, we would gladly write a letter of recommendation as, in some ways, program leadership may get to know these students in a more personal way, especially with certain aspects of the SLOE such as “commitment to EM.” Finally, we may incorporate some of the social EM content and other teaching modalities into the traditional clerkship.

CONCLUSION

This virtual clerkship was created in response to an acute educational need created by the COVID-19 pandemic. However, our experience suggests that virtual learning experiences may be valuable in the future as an adjunct to traditional in-person
rotations. Virtual rotations provide flexibility allowing for the incorporation of topics not traditionally taught (eg, social EM), allow residencies and students increased access to one another, and may eliminate socioeconomic barriers advancing educational equity.

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Conflicts of Interest: By the WestEM article submission agreement, all authors are required to disclose all affiliations, funding sources and financial or management relationships that could be perceived as potential sources of bias. No author has professional or financial relationships with any companies that are relevant to this study. There are no conflicts of interest or sources of funding to declare.

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Maria Raven, MD, MPH, FACEP published an opinion piece titled “Post Roe: Women still have the right to emergency medical treatment” in The Hill Opinion.

Rosny Daniel, MD received the American College of Emergency Physicians’ National Emergency Medicine Junior Faculty Teaching Award.


Ramon W Johnson, MD, FACEP was awarded the 2022 ACEP Council Champion of Diversity and Inclusion Award.

Michael A Gisondi, MD, FACEP published his article, “10 Things Medical School Faculty Members Should Do Tomorrow at Work” in the International Clinician Educators Blog.

Carl M Preiksaitis, MD, Rana Kabeer, MD, Wil Gibb, MD, and Jonathan Hootman, MD presented their airway education project, “The Stanford Airway Review Curriculum: Using Video Review to Enhance the Learning Practice of Emergency Airway Management” at The Stanford Medicine Teaching and Mentoring Academy’s Medical and Bioscience Education Day.

Mimi Lu, MD, FACEP received the ACEP 2022 National Emergency Medicine Faculty Teaching Award.

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The California Emergency Medicine Advocacy Fund (CEMAF) has transformed California ACEP’s advocacy efforts from primarily legislative to robust efforts in the legislative, regulatory, legal, and through the Emergency Medical Political Action Committee, political arenas. Few, if any, organizations of our size can boast of an advocacy program like California ACEP’s; a program that has helped block Medi-Cal provider rate cuts, lock in $500 million for the Maddy EMS Fund over the next 10 years, and fight for ED overcrowding solutions! The efforts could not be sustained without the generous support from the groups listed below, some of whom have donated as much as $0.25 per chart to ensure that California ACEP can fight on your behalf. Thank you to our 2020-2021 contributors (in alphabetical order):

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- Culver Emergency Medical Group
- Emergent Medical Associates
- Mills Peninsula Emergency Medical Associates
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Fall
Narrative Medicine

Winter
TBD
For more information on upcoming meetings, please e-mail us at info@californiaacep.org; unless otherwise noted, all meetings are held via conference call.

### SEPTEMBER 2022

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>1st at 10am</td>
<td>Board of Directors Meeting</td>
<td>San Diego, CA</td>
</tr>
<tr>
<td>2nd</td>
<td>AdvancED 2022 Conference</td>
<td>San Diego, CA</td>
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<tr>
<td>6th at 9am</td>
<td>Reimbursement Committee</td>
<td>Zoom</td>
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<tr>
<td>16th at 10am</td>
<td>Council Delegation Subcommittee A</td>
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<tr>
<td>16th at 12pm</td>
<td>Council Delegation Subcommittee B</td>
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<tr>
<td>16th at 2pm</td>
<td>Council Delegation Subcommittee C</td>
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<tr>
<td>23rd at 10am</td>
<td>Council Delegation Meeting</td>
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<tr>
<td>29th - 30th</td>
<td>ACEP Council Meeting</td>
<td>San Francisco, CA</td>
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### OCTOBER 2022

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<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st - 4th</td>
<td>ACEP22</td>
<td>San Francisco, CA</td>
</tr>
<tr>
<td>13th at 10am</td>
<td>Government Affairs Committee (GAC)</td>
<td>Zoom</td>
</tr>
</tbody>
</table>

### NOVEMBER 2022

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st at 9am</td>
<td>Reimbursement Committee</td>
<td>Zoom</td>
</tr>
<tr>
<td>2nd at 9am</td>
<td>Executive Committee</td>
<td>Zoom</td>
</tr>
<tr>
<td>17th at 10am</td>
<td>Board of Directors Meeting</td>
<td>Zoom</td>
</tr>
<tr>
<td>24th - 25th</td>
<td>Chapter Office Closed</td>
<td>Thanksgiving Holiday</td>
</tr>
</tbody>
</table>
TUNE IN!

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Phone: (800) 222-8669
Email: Ken_bradford1@comcast.net
Website: www.lifewestambulance.com

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Phone: (707) 644-1761
Fax: (707) 644-1784
Email: jpierson@medicambulance.net
Web: www.medicambulance.net

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Web: www.riggsambulance.com

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Email: Chris.Wade@rocklin.ca.us
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