

## UC Irvine

# Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health

### Title

Medical Toxicology Rotations in US Emergency Medicine Residency Programs: Trends and Requirements

### Permalink

<https://escholarship.org/uc/item/9200w6kw>

### Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 24(3.1)

### ISSN

1936-900X

### Authors

Jennett, Brian  
Willson, Conner M.  
Harlan, Maxwell  
[et al.](#)

### Publication Date

2023

### DOI

10.5811/westjem.61102

### Copyright Information

Copyright 2023 by the author(s). This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

	Finance	Concern for promotion	Career trajectory	Job availability	Geography	Gender	Sexual orientation	Race	Burnout	Family responsibilities*	Protected time	Advanced degree	Length of residency training	Length of fellowship training	Desire for additional expertise	Intellectual appeal of their field	Clinical opportunities in that field	Mentor in the field*	Understood as a prerequisite for certain jobs
Not at all	50.00%	11.11%	0.00%	0.00%	27.78%	94.44%	100.00%	100.00%	38.89%	16.67%	27.78%	55.56%	55.56%	0.00%	0.00%	16.67%	11.11%	11.11%	
Slightly	27.78%	11.11%	5.56%	27.78%	22.22%	5.56%	0.00%	0.00%	5.56%	16.67%	27.78%	22.22%	22.22%	11.11%	16.67%	22.22%	33.33%	22.22%	
Moderately	16.67%	33.33%	27.78%	16.67%	22.22%	0.00%	0.00%	0.00%	27.78%	11.11%	16.67%	22.22%	11.11%	5.56%	38.89%	38.89%	22.22%	16.67%	22.22%
Very	5.56%	33.33%	33.33%	22.22%	11.11%	0.00%	0.00%	0.00%	16.67%	16.67%	38.89%	16.67%	11.11%	16.67%	22.22%	27.78%	38.89%	16.67%	27.78%
Extremely	0.00%	11.11%	33.33%	33.33%	16.67%	0.00%	0.00%	0.00%	11.11%	11.11%	5.56%	0.00%	0.00%	27.78%	16.67%	0.00%	16.67%	16.67%	

\*One survey participant did not answer this question

Figure.

of past, current and incoming MEFs against the national Emergency Medicine workforce.

**Methods:** This is a cross-sectional study utilizing an anonymous REDcap based survey of Emergency Medicine trained physicians who have completed or are currently participating in a MEF from multiple institutions across the United States. Quantitative analysis of the demographic distribution of medical education fellows was performed.

**Results:** 18 MEFs (55%) completed the electronic survey. Of the respondents, 50% identified as male and 50% identified as female. 88.9% reported being less than 35 years old during fellowship. 33.3% are Doctors of Osteopathic Medicine. 77.8% of MEFs pursued fellowship after completing a three-year residency program. Majority of respondents are completing a 2-year fellowship (66.7%) while also receiving an advanced degree (77.8%).

**Conclusions:** Our results show that a higher percentage of women and DOs choose to complete a MEF when compared to the national work force. The majority of those who choose a MEF are from three-year programs with plans to complete a 2 year fellowship. This data helps to identify those who are more inclined to apply for a MEF.

### 39 Medical Toxicology Rotations in US Emergency Medicine Residency Programs: Trends and Requirements

Brian Jennett, Conner M. Willson, Maxwell Harlan, Hayden Smith, Johnathan Hurdelbrink, Nash Whitaker, Nick Kluesner

**Background:** Within United States (US) emergency medicine residency programs (EMRPs) there is heterogeneity in the requirement of medical toxicology rotations. There are no specific Accreditation Council for Graduate Medical Education (ACGME) guidelines for programs to have a required/dedicated rotation, though toxicology has a non-nominal representation on the emergency medicine board certification examination and annual patient presentations to US Emergency Departments.

**Objective:** To quantify the prevalence of a required/dedicated toxicology rotation in US EMRPs and evaluate

associated program characteristics.

**Methods:** A list of all ACGME accredited EMRPs in the 2022-2023 match was obtained and reviewed by two independent reviewers. These individuals documented per program website: toxicology rotation requirement status, program location, years with ACGME accreditation, number of residents per year, length of program, and academic affiliation. A third reviewer was utilized when reviewers did not agree or data was limited.

**Results:** Of the 276 reviewed EMRPs, 52% had a required/dedicated toxicology rotation. Program characteristics by toxicology rotation status are presented in Table. Analyses revealed that longer programs (i.e., 4-years) and those located in a large metropolitan area (i.e., > 1 million

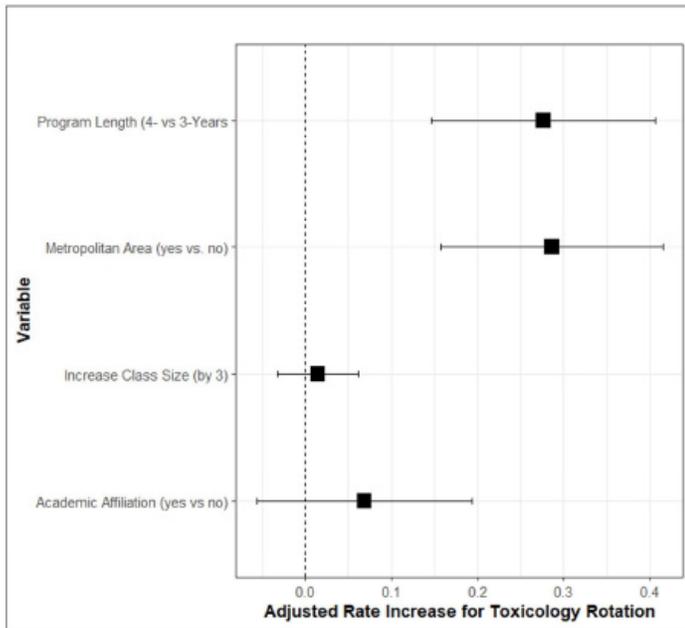
**Table.** Program characteristics for accredited emergency medicine residency programs located in the United States stratified by required/ dedicated toxicology rotation, n=276

Program Characteristic	Toxicology Rotation <sup>1</sup>	
	Required (n=143)	Not Required (n=130)
Length of Program <sup>1</sup>		
3 years	100 (70%)	121(93%)
4 years	43 (30%)	9 (7%)
Median number of residents per class <sup>2</sup>	12 (IQR: 8, 15)	10 (IQR: 8, 12)
Years Accredited with ACGME		
</=5	36 (25%)	51 (39%)
6 – 10	20 (14%)	12 (9%)
11-15	10 (7%)	10 (8%)
> 15	77 (54%)	57 (44%)
Academic Affiliation <sup>1</sup>	95(66%)	73(56%)
Metropolitan area		
> 1 million people	121 (85%)	74 (57%)
> 2 million people	99 (69%)	63 (48%)

Superscripts represent number of programs with this data element not documented on webpage. IQR: interquartile range.

people) had higher rate of having a dedicated toxicology experience (Figure). Model failed to show an association between a required/dedicated rotation and the number of residents per year and academic affiliation.

**Conclusions:** In this study it was found that approximately half of EMRPs had a required/dedicated toxicology rotation. Residents were more likely to have a toxicology experience if they were at a program that was longer in length and in a large metropolitan area. No associations with the number of residents or academic affiliation were discerned.



**Figure.** Adjusted rate increase for having dedicated toxicology rotation (52%) in accredited emergency medicine residency programs in the United States. Modeling included 266 of the 276 eligible programs-given completeness of available information on respective webpages. The number of residents estimate was based on increasing class size by an increment of three- model excluded variable of years accredited due to it only serving as a proxy to age program.

## 40 National Needs Assessment for Medical Resuscitation Leadership Education

Michael Sobin, Sazid Hasan, Nai-Wei Chen, Brett Todd, Danielle Turner-Lawrence

**Background:** Effective leadership of medical resuscitations remains one of the key tenets of emergency medicine graduate medical education. The first milestone of emergency medicine residency training states that a high achieving resident “prioritizes critical initial stabilization action and mobilizes hospital support services in the resuscitation of a critically ill or injured patient.” Yet the prevalence and methods of resuscitation leadership training amongst emergency medicine residencies is unknown.

**Objectives:** To identify the current state of medical resuscitation education in emergency medicine residencies and the need for curriculum development.

**Methods:** A needs assessment survey was adapted from a previously published and validated medical leadership training evaluation and disseminated to program directors from emergency medicine residency programs in the United States through REDCap in the fall of 2021. The survey queried the presence of a medical resuscitation leadership

curriculum, participation, delivery, and focus.

**Results:** 80 (30.7%) emergency medicine programs completed the survey. 63 (78.8%) were three-year residency programs. 42 (52.5%) identified as an academic program, 30 (37.5%) as a community program, and 8 (10.0%) as a county program. 19 (23.8%) programs stated they offered a formal medical resuscitation leadership curriculum to their residents, with notable intuitional variability in curriculum focus (Table 1) and delivery methods (Table 2). 54 (67.5%)

**Table 1.** Program leadership curriculum focuses.

Curriculum Focus	Frequency
Clinical Resuscitation Leadership skills	18/19 (94.7%)
Trauma Resuscitation Leadership skills	17/19 (89.5%)
Administrative Leadership skills	1/19 (5.3%)
Communication & Interpersonal skills	17/19 (89.5%)
Cultural sensitivity	3/19 (15.8%)
Teaching/education	5/19 (26.3%)
Health policy and managed care	0/19 (0%)
Leadership theory	6/19 (31.6%)
Team building	13/19 (68.4%)
Management skills	7/19 (36.8%)
Conflict resolution	8/19 (42.1%)
Other	0/19 (0%)

**Table 2.** Leadership education delivery method.

Education Delivery Method	Frequency
Lectures	10/19 (52.6%)
Small Group Discussions	12/19 (63.2%)
Seminars/Workshops	1/19 (5.3%)
Simulation	16/19 (84.2%)
Case studies	5/19 (26.3%)
Self-directed learning	2/19 (10.5%)
On-shift teaching	10/19 (52.6%)
Mentorship	7/19 (36.8%)
Journal Club	1/19 (5.3%)
Other	0/19 (0%)

programs had additional leadership training opportunities through hospital, university, community, or research sponsored programs.

**Conclusions:** Though resuscitation leadership is regarded as one of core competencies of emergency medicine residency training, a minority of U.S. residency programs provide a specific curriculum. The impact on resident leadership performance, optimal delivery methods, and content focus of resuscitation leadership curricula needs to be further characterized.