

## UC Irvine

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

#### Title

Backup Policies and Practices in Emergency Medicine Residencies: A National Study

#### Permalink

<https://escholarship.org/uc/item/4vh453jw>

#### Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 27(2.1)

#### ISSN

1936-900X

#### Authors

Marioenzi, Amy

Lipner, Kaitlin

Prucha, Michael

et al.

#### Publication Date

2026-03-26

#### DOI

10.5811/westjem.64164

#### Copyright Information

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

emergency care at IUH-B, a level III trauma center with 60 ED beds, in June and July 2025. Quantitative data were analyzed with descriptive statistics and chi-square testing; qualitative data underwent transcription and thematic analysis.

**Results:** Thirty-nine participants completed surveys and 40 completed interviews. Many were aware of the upcoming residency programs (59%), but only 49% correctly identified an EM resident's training level. Most (95%) felt residents would improve care quality, access, and modernization in Bloomington. Only 5% expressed concern about resident involvement, mainly supervision. Qualitative themes (Table 1) revealed optimism about benefits such as increased staffing, shorter wait times, and improved physician retention. Participants valued a resident who is competent, personable, and attentive, while wanting adequate supervision. Prior experience or awareness of the programs did not significantly influence comfort or support ( $\chi^2=0.004$ ,  $p=0.95$ ;  $\chi^2=0.034$ ,  $p=0.85$ ). The initial round of thematic coding resulted in high inter-rater reliability with a Cohen Kappa value of 0.724 ( $p<0.001$ ).

**Conclusions:** Community members expressed strong support for the new residency programs and confidence in future residents providing safe, supervised care. Minimal concerns centered on experience and oversight. Findings highlight the need for community education regarding residents' roles and training as IUH-B prepares for program implementation.

Table 1. Qualitative Thematic Analysis Codebook: Themes, Categories, and Codes

| Theme                                          | Category                       | Code                                                                                           |
|------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------|
| Benefits of Residency Program                  | System Level                   | Extra Staff, Increased Providers, Reduced Wait Times, Increased Retention, Up-to-date Training |
|                                                | Community Level                | Economic Benefit, Community Benefit, Increased Educational Opportunities                       |
| Concerns Regarding Residents                   | Inexperience                   | Lack of Knowledge, Rushing                                                                     |
|                                                | Overconfidence                 | Arrogance, Not Asking for Help                                                                 |
|                                                | Supervision                    | Lack of Oversight, Proper Supervision                                                          |
| Trust (or Distrust)                            | Patient-Provider Communication | Honesty, Professionalism, Bedside Manner                                                       |
|                                                | Clinical Demeanor              | Bedside Manner, Positive Attitude, Listening Skills                                            |
| Advice to Residents from a Patient Perspective | Collaboration                  | Learn from Staff                                                                               |
|                                                | Preparedness                   | Stay Updated, Humility, Knowledge                                                              |

## 66 Backup Policies and Practices in Emergency Medicine Residencies: A National Study

Amy Mariorenzi, Kaitlin Lipner, Michael Prucha, Gianna Petrone, Alexander Sheng

**Background:** Emergency Medicine (EM) residency programs face the challenge of developing systems to manage unexpected absences. Currently, there is no published literature describing the state of backup policies in EM.

**Objectives:** This study aims to fill that gap by examining the backup policies of ACGME-accredited EM residencies in the United States, highlighting variations and commonalities.

**Methods:** We conducted a cross-sectional survey of EM residency directors across the US. Respondents completed an electronic survey with multiple-choice and open-ended questions. Descriptive statistics were used for analysis.

**Results:** Out of 282 directors surveyed, 107 responded (37.9%). Approximately 80% of programs have a formal backup policy. Academic programs are more likely to have such policies than community-based programs (92.7% vs 54.2%). Four-year programs have a higher prevalence of formal back up policies compared to three-year programs (91.7% vs 76.3%). Smaller programs with 8 or fewer residents per post-graduate year were less likely to implement formal policies (50%).

About 54% of program directors believe their backup policy effectively meets their program needs, 34% are ambivalent, and 10% feel their policies are inadequate. For those dissatisfied or ambivalent ( $n=45$ ), the key challenges include managing multiple call-outs (58%), over-use of backup (56%), and unclear distinction between excused vs unexcused absences (44%).

The predominant backup structure involves a resident on a 24-hour backup shift (55%). Conversely, 34% of programs may leave the shifts unstaffed when someone calls out.

Table 1: Program Demographics of EM Residencies ( $n = 104$ )

| Variable               | Category            | n (104) | %      |
|------------------------|---------------------|---------|--------|
| Program type           | Academic            | 41      | 39.40% |
|                        | Community           | 24      | 23.10% |
|                        | County              | 13      | 12.50% |
|                        | Combination / Other | 26      | 25.00% |
| U.S. division (9)      | South Atlantic      | 23      | 22.10% |
|                        | Mid-Atlantic        | 22      | 21.20% |
|                        | East North Central  | 16      | 15.40% |
|                        | Pacific             | 13      | 12.50% |
|                        | West South Central  | 9       | 8.70%  |
|                        | New England         | 9       | 8.70%  |
|                        | West North Central  | 5       | 4.80%  |
|                        | East South Central  | 4       | 3.80%  |
|                        | Mountain            | 3       | 2.90%  |
| U.S. region (4)        | South               | 36      | 34.60% |
|                        | Northeast           | 31      | 29.80% |
|                        | Midwest             | 21      | 20.20% |
|                        | West                | 16      | 15.40% |
| Training length        | 3 years             | 80      | 76.90% |
|                        | 4 years             | 24      | 23.10% |
| Residents per PGY year | 8 or fewer          | 26      | 25.00% |
|                        | 9--12               | 34      | 32.70% |
|                        | 13--16              | 31      | 29.80% |
|                        | 17--20              | 9       | 8.70%  |
|                        | 21 or more          | 4       | 3.80%  |
| Total residents        | Median              | 36      |        |
|                        | IQR (Q3-Q1)         | 17      |        |

Table 2: Backup Systems: Policy Prevalence, Structures, Make-Up Rules and Burden-Reduction Strategies

| Variable                                                               | Category | n (104) | %      |
|------------------------------------------------------------------------|----------|---------|--------|
| <b>Formal Backup? (Q6)</b>                                             |          |         |        |
| Yes                                                                    |          | 83      | 79.80% |
| No                                                                     |          | 21      | 20.20% |
| <b>Backup structure (Q7)*</b>                                          |          |         |        |
| Resident assigned to 24-h backup                                       |          | 57      | 54.80% |
| Split 24-h backup (12+12 h)                                            |          | 2       | 1.90%  |
| Resident assigned to specific site                                     |          | 12      | 11.50% |
| Resident assigned to specific shift                                    |          | 5       | 4.80%  |
| Volunteer to cover without pay                                         |          | 15      | 14.40% |
| Residents receive financial compensation                               |          | 11      | 10.60% |
| Residents receive future shift reduction                               |          | 52      | 50.00% |
| Faculty covers open shift                                              |          | 6       | 5.80%  |
| Advanced practice clinician covers open shift                          |          | 6       | 5.80%  |
| Shift left unstaffed if resident calls out                             |          | 35      | 33.70% |
| Backup for a week (new theme)                                          |          | 6       | 5.80%  |
| Rearrange schedule instead of calling backup (new theme from comments) |          | 2       | 1.90%  |
| <b>Make-up shift required? (Q8)</b>                                    |          |         |        |
| Case-by-case approval by program leadership                            |          | 33      | 32.35% |
| Yes - always require make-up shift                                     |          | 31      | 30.39% |
| Other                                                                  |          | 22      | 21.57% |
| No - make-up shift never required                                      |          | 16      | 15.69% |
| <b>Burden reduction strategies (Q9)*</b>                               |          |         |        |
| Evenly distribute backup shifts                                        |          | 60      | 57.70% |
| Provide financial compensation                                         |          | 9       | 8.70%  |
| Make backup optional                                                   |          | 2       | 1.90%  |
| Allow residents to request specific backup days                        |          | 7       | 6.70%  |
| Rearrange the schedule to avoid calling backup                         |          | 60      | 57.70% |
| Limit the number of activations per resident                           |          | 13      | 12.50% |
| Home electives include backup coverage                                 |          | 34      | 32.70% |
| Required rotations include backup                                      |          | 45      | 43.30% |
| Other                                                                  |          | 8       | 7.70%  |

\*Survey respondents were allowed to choose more than one option, if applicable

Regarding make-up shifts, decisions may be case-by-case (32%), always required (30%), never required (15%), or follow other customized rules (21%).

**Conclusions:** This study is the first exploration of backup systems in ACGME-accredited EM residency programs in the United States, providing valuable insights into the various approaches and challenges faced by these programs.

## 67 Rapid Cycle Deliberate Practice Improves Time to Critical Actions in Trauma

Jaron Raper, Zachary Pacheco, Andrew Bloom, Erin Shufflebarger, Benjamin Von Schweinitz, Zachary Jasper, Helena Kons, Erica Anderson, Emily Grass, Sherell Hicks

**Background:** Simulation-based trauma education is integral to developing early competence in advanced trauma life support (ATLS). Immersive simulation (IS) offers experience but provides limited opportunities for feedback and deliberate repetition. Prior research in procedural

education supports Rapid Cycle Deliberate Practice (RCDP)'s effectiveness in the acceleration of time-critical actions, but data specific to ATLS is limited.

**Objectives:** To compare the performance of fourth-year medical student trauma teams trained using RCDP versus IS, examining time to completion of key ATLS actions.

**Methods:** This prospective, randomized study was conducted at a single academic medical center. Fourth-year medical EM clerkship students participated in team-based simulated trauma resuscitations using either IS or RCDP. In a subsequent assessment case, times to completion of ATLS tasks were recorded: primary survey, hemorrhage control, intravenous (IV) access, blood/fluid transfusion, FAST, Chest/pelvis x-ray, secondary survey, trauma consultation, pelvic binder application, tranexamic acid (TXA), and chest decompression. Mean times for each task were compared between groups using the Mann-Whitney U test.

**Results:** Ten team simulations were analyzed (Immersive = 5; RCDP = 5). Mean completion times (seconds) for RCDP versus IS were as follows: Primary survey (36.5 vs 56.4;  $p = 0.14$ ), Hemorrhage control (121.3 vs 159.6;  $p = 0.72$ ), IV access (39.5 vs 92.9;  $p = 0.14$ ), Blood/fluid transfusion (51.0 vs 102.8;  $p = 0.18$ ), FAST exam (114.8 vs 146.7;  $p = 0.56$ ), Chest/pelvis x-ray (119.8 vs 121.4;  $p = 1.0$ ), Secondary survey (189.5 vs 138.8;  $p = 0.063$ ), Trauma consultation (229.3 vs 316.3;  $p = 0.19$ ), Pelvic binder (162.5 vs 188.5;  $p = 0.62$ ), TXA (144.7 vs 220.5;  $p = 0.80$ ), Chest decompression (37.8 vs 152.3;  $p = 0.016$ ).

RCDP teams demonstrated faster mean performance across nearly all domains, with chest decompression achieving statistical significance and IV access and transfusion trending toward significance.

**Conclusions:** RCDP simulation yielded faster execution of ATLS tasks compared with IS, reaching significance for chest decompression and near-significance for IV access and transfusion. Despite a limited number of simulations, the trend across tasks suggests meaningful educational benefit, meriting further study.

