EM Resident Education in Rural EDs: The Nebraska Experience

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‘Ideally, medical education should change as our knowledge base changes and as the needs, or perceived needs, of patients, medical practitioners, and society change.’

Curriculum Development
Six Steps

- Problem ID/General Needs Assessment
- Targeted Needs Assessment
- Goals and Objectives
- Educational Strategies
- Implementation
- Evaluation/Feedback

Why do they want to do this?

- What is the mission of the program?
- Where does the rural rotation fit into the curriculum?
  - Required rotation
  - Selective
  - Elective
ED Staffing
Nebraska and the Dakotas

- Annual ED census \( \leq 10,000 \)
- ABEM
  - Rural 12%
  - Urban 48%
- EM residency
  - Rural 31%
  - Urban 65%

What is the residency program looking for?

- Patients
  - Volume
  - Acuity
  - Special features/population
- Supervision
  - Credentials
- Facility
  - Location
  - Resources
II.D.4. ... The primary clinical site and other emergency departments where residents rotate for four months or longer should have at least 30,000 emergency department visits in each annually. Educationally justifiable exceptions will be considered, such as clinical sites in a rural setting.

http://www.acgme.org/acWebsite/downloads/RRC_progReq/10emergencymed07012007.pdf
Ave 1-1.25 pts/hr for residents at primary ED


857 rural EDs with annual census > 10,000

Muelleman, *Acad Emerg Med* 2010
Table 1: Percentage rural and urban emergency department total admission rates

| ED location | Admissions (95% CI) |  
|-------------|---------------------|------------------|------------------|------------------|------------------|
|             | All                 | Telemetry        | Intensive care   |                  |                  |
| Urban       | 33.35 (31.50-35.20) | 14.24 (12.87-15.61) | 4.38 (3.58-5.18) |                  |                  |
| Rural       | 21.74 (19.01-24.47) | 3.4 (2.28-4.52)   | 0.9 (0.31-1.49)  |                  |                  |
| *P value*   | < 0.05              | ≤ 0.05           | ≤ 0.05           | ≤ 0.05           |                  |

ED, Emergency department.

Table 2: Rural and urban emergency department procedures and resuscitations

| ED location | Procedures or resuscitation (95% CI) |  
|-------------|--------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|             | Intubation                           | Adult trauma     | Laceration repair | Dislocation/fracture relocation/reduction | Pediatric trauma |
| Urban       | 0.9 (0.39-1.05)                      | 2.1 (1.22-2.24)  | 2.7 (1.7-2.88)   | 0.2 (0.0-0.32)   | 0.2 (0.0-0.32)   |                  |                  |                  |
| Rural       | 0                                    | 0.7 (0.07-1.07)  | 6.1 (3.58-6.48)  | 1.3 (0.36-1.7)   | 0.8 (0.14-1.24)  |                  |                  |                  |
| *P value*   | ≤ 0.05                               | ≤ 0.05           | ≤ 0.05           | ≤ 0.05           | ≤ 0.05           |                  |                  |                  |

ED, Emergency department.

© MC Wadman, B Fago, LH Hoffman, TP Tran, R Muelleman, 2010.
http://www.rrh.org.au
II.B.2. The physician faculty must have current certification in the specialty by the American Board of Emergency Medicine, or possess qualifications acceptable to the Review Committee.

a) This standard applies to all core physician program faculty and to other attending staff who provide supervision for emergency medicine residents.

http://www.acgme.org/acWebsite/downloads/RRC_proqReq/10emergencymed07012007.pdf
- Rural background
  - 73.3% positive impact, 26.7% no impact
- Non-rural background
  - 12.5% positive impact, 81.3% no impact, 6.3% negative impact
- Planning rural practice
  - 83.3% positive impact, 16.7% no impact
- Planning non-rural practice
  - 15.8% positive impact, 78.9% no impact, 5.3% negative impact

II.D.3. The hospital must ensure that all clinical specialty and subspecialty services are available in a timely manner for emergency department consultation and hospital admission. Clinical services should include, but are not limited to, internal medicine and its subspecialties, surgery and its subspecialties, pediatrics and its subspecialties, orthopedics, obstetrics and gynecology.

http://www.acgme.org/acWebsite/downloads/RRC_progReq/10emergencymed07012007.pdf
II.D.3. If any clinical services are not available for consultation or admission, the hospital must have a written protocol for provision of these services elsewhere. This may include written agreements for the transfer of these patients to a designated hospital that provides the needed service.

Targeted Needs Summary

‘Optimal Rural Site’
- ABEM certification for all supervising faculty
- Single physician staffing
- High quality, up-to-date medical care
- Limited resources, consultation, specialty back-up
- Significant transport time to tertiary care
- Rural community setting
- Unique patient population
Goal & Objectives

- What are we teaching?
  - The 2011 Model of Clinical Practice of Emergency Medicine
  - Upcoming Rural Models
Educational Strategies

How do we teach it?

- ‘The Rural ED Experience’
  - Solo coverage
  - Unselected rural patient population
  - Manage ED flow
  - Determine resource allocation
  - Responsibility for patient transfer process

- Didactics
Resident attendance

- II.A.4.s. ... ensure that residents are relieved of clinical duties to attend these planned educational experiences. Although release from some off-service rotations may not be possible, the program should require that residents participate, on average, in at least 70% of the planned emergency medicine educational experiences offered (excluding vacations). Attendance should be monitored and documented;

Resident attendance

- I.B.6. The number and geographic distribution of participating sites must not preclude the satisfactory participation by all residents.

Teleconferencing

II.A.4.t) *The Committee will consider the use of alternative methods of education, such as interactive teleconferencing, with appropriate educational justification.*

Implementation

- How do we get started?
  - Paperwork
    - PLA
    - IAA
  - Financial
  - Faculty development
  - Logistics
    - Travel
    - Housing
    - Site resources
Rural Rotation Impact

- Programs
  - 111/126 programs
  - 6/111 required rotations
  - 16/111 electives with pre-designated site
  - 76/111 electives w/o pre-designated site
- Residents
  - 197 completed rural rotation (8%)
  - 56% required
  - 44% elective

Rural Rotation Impact

- Job selection
  - 160/2380 rural (6.7%)
  - Required 24/111 (21.6%)
  - Elective w/ pre-designated site 27/389 (6.9%)
  - Elective w/o pre-designated site 91/1632 (5.6%)
  - No elective 18/248 (7.3%)

n = 38
21% rural
All grads
  8% SD
  11% ND
  37% Nebraska
  (8% Wyoming)