

# Examining an Evidence-Based Medicine Culture in Residency Education

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## INTRODUCTION

- Innovations in evidence-based medicine (EBM) training have focused on curriculum design and knowledge gained.
- What about the educational culture and environment for EBM training?

## METHODS

- Survey questions adapted from a learner-centered survey validated by Mi, et al.
- Survey included in CERA omnibus survey of Family Medicine residency program directors in 2015
- Analysis – Descriptive stats, EBM Culture Score (ECS) calculated, mean ECS score compared, linear regression of ECS score by demographics

## RESULTS & CONCLUSION

- Response rate 60.6%
- Program characteristics - table 1
- Means for questions - table 2
- ECS score correlated with:
  - Gender of program director (t=2.47, P=0.01)
  - Proportion of international medical graduates (IMGs) in program (ANOVA, F=2.43, P=0.048)

To improve EBM teaching in residency, program directors should focus on:

- 1) authentic curricular activities
- 2) whole-program commitment
- 3) EBM infrastructure



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## Data

**Table 1: Program and Program Director Characteristics\***

Mean age of program (SD)		33.0 years (13.3)	
Characteristics		n	%
Size of Community	Low than 30k	17	8.3
	30-75k	46	16.9
	75-150k	59	21.7
	150-500k	64	23.5
	500k-1m	48	17.6
	>1m	38	14.0
Total		272	100.0
Type of Program	University	50	18.3
	Community (university-affiliated)	174	63.7
	Community (unaffiliated)	38	13.9
	Military	8	2.9
	Other	3	1.1
Total		273	99.9
Program Region	Northeast	12	4.4
	Mid-Atlantic	38	14.0
	South Atlantic	46	17.0
	East South Central	12	4.4
	East North Central	42	15.5
	West South Central	27	10.0
	West North Central	27	10.0
	Mountain	25	9.2
Total		42	15.5
Proportion of International Graduates	0%-24%	196	50.7
	25%-49%	45	16.8
	50%-74%	45	16.8
	75%-100%	42	15.7
	Total	288	100

\*Totals may not be equal due to missing data. Percentages may not add to 100% due to rounding.

**Table 2: EBM Culture Score Means by Statement (1=Strongly Disagree, 5=Strongly Agree)**

Question	Mean (SD)
In our family medicine residency program...	
...there is a commitment to life-long learning in our practice environment.	4.72 (0.45)
...our faculty members promote an atmosphere of mutual respect.	4.68 (0.53)
...residents are encouraged to become problem solvers.	4.68 (0.58)
...the use of clinical evidence is part of the routine for clinical practice in our practice environment.	4.55 (0.51)
...there is a high level of acceptance of EBM in our residency practice environment.	4.47 (0.65)
...evidence-based information resources (eg, Essential Evidence, Dynamed, FPIN, etc) are readily available in the residency practice environment.	4.47 (0.86)
...our faculty members model evidence-based practice during rounds and case discussions in the clinical setting.	4.26 (0.60)
...our faculty members promote the application of EBM in solving clinical problems for individual patients.	4.25 (0.62)
...faculty members serve as collaborative facilitators in the residents' EBM learning process.	4.20 (0.73)
...the integration of EBM into clinical practice is met with skepticism by clinicians in our practice environment.	4.18 (0.94)
...we protect resident time for EBM training.	4.09 (0.95)
...there is a high level of faculty involvement in teaching EBM at our residency training site.	4.08 (0.81)
...our faculty members provide residents with clear feedback on their EBM practice.	3.64 (0.90)

## Literature Review

- **General Quality**
  - Varied, but many low quality studies.
  - Kirkpatrick levels 1 (reaction) and 2 (knowledge) outcomes generally. Rare self-report of level 3 (process) outcomes
- **Factors that support EBM culture**
  - *Clinical integration and authenticity*
  - *Interaction with and support from knowledgeable faculty*
  - *Role modeling by senior clinicians and support from organizational leadership*
  - *Support of librarian/information management specialist.*
  - *Resources available to practice (librarian, internet, journal subscriptions, etc.)*
  - *Structure for curriculum (objectives, scaffolding)*
  - *Resident peer teaching of concepts*
- **Factors that inhibit EBM culture**
  - *Residents challenged for time and knowledge of EBM – hard to practice without these.*
  - *Curriculum more focused on appraising and applying than asking and searching.*



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