Disclosures

• Specific Disclosures
  – None

• General Disclosures
  – None
Resident in Difficulty

- A trainee who demonstrates a significant enough problem that requires intervention by someone of authority.
  - Insufficient medical knowledge,
  - Poor clinical judgment,
  - Inefficient use of time,
  - Behavioral issues,
In-Training Examination

- A formative assessment of residents’ basic and clinical knowledge.
- ITE scores are predictive of both qualifying and certifying exam performance.
- ITE scores are used as marker of progression and in those who drop below a defined benchmark (20-35th percentile score).
- Remediation programs are offered.
Aim

To examine the reported effects of remediation models on the In-Training Exam.
Methods

• A systemic literature review, qualitative evaluation and a quantitative meta-analysis were performed from 1980 to 2017.

• A search strategy involving six literature databases, 12 search terms, and four inclusion criteria was used.

• The authors independently retrieved and reviewed articles. Studies in any language quantifying the association of an educational intervention and the In-Training Exam outcomes for resident surgeons compared with a no intervention or a pre-intervention assessment were chosen.

• Two reviewers independently evaluated study quality and abstracted the data.
Methods

Medical Education Research Study Quality Instrument Scores (MERSQI)

- Study Design (3 pts)
- Sampling (3 pts)
- Type of Data (3 pts)
- Validity of evaluation instruments (3 pts)
- Data Analysis (3 pts)
- Outcomes (3 pts)
Methods

Meta-analysis

• Outcome variable
  • Improvement in pre and post intervention test variable
  • Score
  • Percentile
  • Percentile Rank

• Calculate effect sizes using a random effect model.
RESULTS
SEARCH
American Board of Surgery In-Training Examination;
American Board of Surgery In-Service Examination;
ABSITE;

EXCLUSIONS:
Not US residency
Not General Surgery
Not relevant to ABSITE

EXCLUSIONS:
Focus on Subsets
Focus on impact of externalities
Focus on impact of co-relations
Focus on impact of QE and CE exams
Focus on Surveys
Editorial/Commentaries
Duplications and Extensions

230 Abstracts reviewed
134 Abstracts reviewed
92 Papers reviewed
Study Characteristics

1669 residents were involved

Early year PGY residents (1-3)

<table>
<thead>
<tr>
<th>Variable</th>
<th>#</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention and Post-intervention</td>
<td>24</td>
<td>77%</td>
</tr>
<tr>
<td>Observation</td>
<td>7</td>
<td>23%</td>
</tr>
<tr>
<td>Control vs. Study Group</td>
<td>3</td>
<td>10%</td>
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Qualitative Analysis

Using a “Grounded theory” approach, interventions were grouped into:

- Establishing a passing benchmark,
- Creating a mandatory remedial program,
- Mandating didactic conference attendance
- Instituting structured reading programs,
- Creating problem-based learning groups,
- Using Learning Management Systems and/or Social Media,
- Enforcing self-directed learning,
- Miscellaneous activities.
MERSQI

Y-Values

HIGH

ACCEPTABLE

LOW

MAX 18

MIN 4

UT VASCULAR
SUMMARY AND LIMITATIONS

- Limited and lower quality literature on remedial Interventions
- Predominantly single center studies
- Predominantly concentrate on junior residents
- Not correlated with success in summative assessment
- Interventions that work
  - establishment of a program benchmark,
  - structured reading programs
  - mandatory remedial programs
CONCLUSION

• To effectively assist improvement in residents’ In-Training Exam scores
  • establish a program benchmark,
  • Institute mandatory remedial programs,
  • Provide a structured reading programs,