Pilot Study of an Integrated Third Year Medical Student OB/GYN and Surgery Clerkship

Wanjiku Musindi, MD
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Authors

Understanding Patients with Reproductive and Surgical Needs

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Objectives

- Emphasize common elements of patients with reproductive and surgical diseases.
- Increase students’ lifelong application of common and enduring principles of surgical and obstetric care.
- Compare clerkship experience with students in traditional clerkship design.
Design

- Novel 16 week integrated curriculum structure
  - Introductory Week – Ground School
  - Assessment Week
  - Weekly small groups
  - Longitudinal preceptors – Expert Educators

- Integration of curriculum content
  - Objectives
  - Didactic sessions and eLearning materials
  - Clinical skills
Design

- **Study group**
  - 3rd year medical student volunteers doing ob/gyn or surgery consecutively in the fall of 2012
  - Random selection stratified for gender and pre-clinical tract
  - Excluded “at risk” students
  - Preference between advanced surgery or advanced ob/gyn track

- **Comparison group**
  - 3rd year students in traditional surgery and ob/gyn rotations during the same period
# Integrated clerkship design

<table>
<thead>
<tr>
<th>Legend:</th>
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<tbody>
<tr>
<td>Anesthesia</td>
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<tr>
<td>Core Surg</td>
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<td>Core Gyn</td>
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<td>Ortho/Plastics</td>
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<td>Cardiac/ENT</td>
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<td>Urology</td>
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<td>L&amp;D</td>
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<tr>
<td>Adv. Surg</td>
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<tr>
<td>Adv. Gyn</td>
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- **Anesthesia**
- **Core Surg**
- **Core Gyn**
- **Ortho/Plastics**
- **Cardiac/ENT**
- **Urology**
- **Sub Gyn**
- **L&D**
- **Adv. Surg**
- **Adv. Gyn**

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<tbody>
<tr>
<td><strong>Advanced Surgery Track</strong></td>
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<td><strong>Evaluation</strong></td>
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<td><strong>Advanced OB/Gyn Track</strong></td>
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**Ground School**

- [Color-coded legend for specialties]

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**Advanced Surgery Track**

- [Details for advanced surgery track]

**Evaluation**

- [Evaluation criteria for clerkship]

**Advanced OB/Gyn Track**

- [Details for advanced OB/Gyn track]
Measures

- Survey of learning environment and clerkship evaluation
- Assessments
  - Formative: Reflection exercise, Midterm NBME shelf exam, OSCE, quizzes
  - Summative: Clinical performance evaluation, Small group presentation, Oral exam, NBME shelf exam
- Structured exit interviews
Traditional Design

- Ob/gyn Clerkship
  - 6 weeks – divided experience gynecology and obstetrics

- Clinical skills immersion course

- Surgery Clerkship
  - 8 weeks – divided into 4 week blocks on 2 different services

- Assessments
  - Didactic participation (surgery)
  - NBME shelf exams
  - Oral exam (ob/gyn)
  - Clinical performance evaluation
Statistical Considerations

- Comparisons
  - Course evaluation instruments
  - NBME shelf exam scores
- Independent t-tests with Bonferroni Correction to compare the two groups
- Structured exit interview
  - Summary of comments evaluated for themes
Results

- 20 students selected from 65 volunteers
  - 19 third year medical students participated
  - One student took an unrelated leave of absence
- 22 students in the traditional clerkships
  - 15 additional completed the traditional clerkship but did not consent to participate in the study
## Demographic characteristics

<table>
<thead>
<tr>
<th></th>
<th>Pilot Students (19)</th>
<th>Traditional Students (22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age</td>
<td>25.1</td>
<td>25.2</td>
</tr>
<tr>
<td>Female</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>ISP</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>IP</td>
<td>15</td>
<td>19</td>
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</table>
Comparison between Pilot and Traditional Ob/Gyn students

<table>
<thead>
<tr>
<th>Objective</th>
<th>Pilot (19) Mn (sd)</th>
<th>Traditional (22) Mn (sd)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives clearly defined</td>
<td>3.47 (0.84)</td>
<td>4.40 (0.63)</td>
<td>0.001</td>
</tr>
<tr>
<td>Rotation effectively prepared me for exam</td>
<td>3.26 (0.93)</td>
<td>4.20 (0.68)</td>
<td>0.003</td>
</tr>
<tr>
<td>Exposure to a wide variety of subspecialties</td>
<td>4.68 (0.48)</td>
<td>3.87 (0.99)</td>
<td>0.003</td>
</tr>
<tr>
<td>I received sufficient feedback</td>
<td>3.05 (1.08)</td>
<td>3.87 (0.74)</td>
<td>0.018</td>
</tr>
</tbody>
</table>

Bonferroni Correction requires a p value of .003 for significance: *** $p \leq .001$
Comparison between Pilot and Traditional Surgery students

<table>
<thead>
<tr>
<th>Activity</th>
<th>Pilot (19) Mn (sd)</th>
<th>Traditional (22) Mn (sd)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time spent in didactic sessions</td>
<td>2.05 (0.62)</td>
<td>1.59 (0.59)</td>
<td>0.019</td>
</tr>
<tr>
<td>Scrubbing cases in OR</td>
<td>3.47 (1.02)</td>
<td>4.23 (0.94)</td>
<td>0.027</td>
</tr>
<tr>
<td>Exposure to a wide variety of subspecialties</td>
<td>4.68 (0.48)</td>
<td>3.32 (0.95)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Seeing patients in clinic</td>
<td>4.58 (0.61)</td>
<td>3.95 (0.84)</td>
<td>0.011</td>
</tr>
</tbody>
</table>

Bonferroni Correction requires a p value of .003 for significance: *** $p \leq .001$
Comparison between Pilot and Traditional students

- Survey: no difference
  - Communication of expectations
  - Specialty choice
  - Instructional and didactic content
  - Case loads
  - Study time
  - Interaction with house officers and faculty
## Specialty choice for Pilot and traditional students

<table>
<thead>
<tr>
<th>Specialty choice</th>
<th>Prior to rotation</th>
<th>After rotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pilot</td>
<td>Traditional</td>
</tr>
<tr>
<td>Anesthesiology</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>General Surgery or surgery subspecialty</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Ob/Gyn</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>
Results

- No differences in NBME shelf exam scores between pilot and traditional groups ($t = -1.43; df = 39; P = .160$).

- Increase in final NBME scores in Pilot students

<table>
<thead>
<tr>
<th></th>
<th>Practice Exam</th>
<th>Final Exam</th>
<th>Difference</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>OB/Gyn</td>
<td>70.6</td>
<td>83.2</td>
<td>12.6</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Surgery</td>
<td>71.2</td>
<td>81.3</td>
<td>10.2</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>
Exit Interviews

- Ground school: More compact/more rigorous
- Small groups
  - Positives - longitudinal nature and integration of topics, interaction with faculty and EEs, interesting, practice presenting a topic.
  - Negatives: too many social sciences/ethical topics and less clinical topics
- Clinical rotations:
  - Positives - exposure to a variety of specialties, balance between inpatient and outpatient services, flexibility and choice, exposure to potential career options previously not considered, interaction with faculty.
  - Negatives: inadequate teaching and learning in OR, 1 week subspecialty rotations too short for faculty/service to become familiar with learners and vice versa and stressful.
Exit Interviews

- Highly rated experiences
  - Pathology sessions
  - Assigned mentors
Conclusions

- Combining the surgical and ob/gyn clerkships did not diminish student satisfaction or performance, and may have contributed to an increase in exposure to surgical subspecialties.

- Adequate foundational, behavioral and clinical science coverage, and satisfaction with didactics and small group sessions.
Conclusions

- Areas of weakness included the provision of feedback, student perception of preparation for NBME exams, and the educational value of the operating room.

- An increased number of pilot students ranked general or urologic surgery and anesthesia as their likely specialty following the pilot, while OB/Gyn remained stable.
Future Directions

- Curriculum Implementation for all students in July, 2014
  - Integration of curriculum in community sites
- Elimination of 1 week rotations except for anesthesia and possibly urology.
- Feedback and feed forward mechanisms built into curriculum
- Faculty development needs identified
- Follow up evaluation using test scores, post-graduation surveys and focus groups will be needed to help determine whether we have met our goal of increasing students’ lifelong application of common and enduring principles of surgical and obstetric care.