Resident duty hour modification affects perceptions in medical education, general wellness, and ability to provide patient care.

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Date: October 23rd, 2015
I do not have an affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

Je n’ai aucune affiliation (financière ou autre) avec une entreprise pharmaceutique, un fabricant d’appareils médicaux ou un cabinet de communication.

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Outline

• Background
• Methods
• Results
• Discussion
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Background

- Resident duty hours under scrutiny
  - Traditional model vs new models
- Change is happening
  - Quebec: maximum 16 hours
  - US: 80 hours/week
  - Europe: 40 - 52.5 hours/week
Background

• National Steering Committee of Resident Duty Hours
  » Formed by RCPSC + Health Canada in 2013

“Duty periods of twenty four or more consecutive hours without restorative rest should be avoided.”

“Pilot projects should be developed... to consider a range of educational tools and innovative scheduling systems.”
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Methods

• Prospective cohort study of senior (PGY 2/3) Internal Medicine residents on dedicated Emergency Department consultation team

• Setting: Residency Programming Committee (RPC) approved a pilot call schedule change* to take effect January 15th, 2014

*Independent of study
### Traditional Call Structure

<table>
<thead>
<tr>
<th>Day</th>
<th>Day Float: 08:00 - 18:00 hrs</th>
<th>Night Float: 17:00 - 0800 hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td></td>
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<tr>
<td>Tuesday</td>
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<td>Day</td>
<td>Day Float:</td>
<td>Night Float:</td>
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<td><strong>Monday</strong></td>
<td>08:00 - 18:00 hrs</td>
<td>17:00 - 0800 hrs</td>
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<td><strong>Tuesday</strong></td>
<td>08:00 - 18:00 hrs</td>
<td>17:00 - 0800 hrs</td>
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<tr>
<td><strong>Wednesday</strong></td>
<td>08:00 - 18:00 hrs</td>
<td>17:00 - 0800 hrs</td>
</tr>
<tr>
<td><strong>Thursday</strong></td>
<td>08:00 - 18:00 hrs</td>
<td>17:00 - 0800 hrs</td>
</tr>
<tr>
<td><strong>Friday</strong></td>
<td>08:00 - 18:00 hrs</td>
<td>17:00 - 0900 hrs</td>
</tr>
<tr>
<td><strong>Saturday</strong></td>
<td>Saturday Call: 09:00 - 09:00 hrs (Day +1)</td>
<td></td>
</tr>
<tr>
<td><strong>Sunday</strong></td>
<td>Sunday Call: 09:00 - 08:00 hrs (Day +1)</td>
<td></td>
</tr>
<tr>
<td>Day</td>
<td>Day Float:</td>
<td>Night Float:</td>
</tr>
<tr>
<td>-----------</td>
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</tr>
<tr>
<td>Monday</td>
<td>08:00 - 18:00 hrs</td>
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<tr>
<td>Saturday</td>
<td>08:00 - 18:00 hrs</td>
<td>17:00 - 0800 hrs</td>
</tr>
<tr>
<td>Sunday</td>
<td>08:00 - 18:00 hrs</td>
<td>17:00 - 0800 hrs</td>
</tr>
</tbody>
</table>
Newly Proposed Weekend Call Structure

- **Saturday**
  - Day Float: 08:00 - 18:00 hrs
  - Night Float: 17:00 - 0800 hrs

- **Sunday**
  - Day Float: 08:00 - 18:00 hrs
  - Night Float: 17:00 - 0800 hrs
Methods

• Online *Opinio™* survey administered pre-duty hour reform, and 6 months post-reform with informed consent from participants

• Previously validated survey: 5-point Likert scale questionnaire (Fabreau *et al* 2013)
  
  » 47 items
  
  » 3 major domains:
    • Senior resident wellness
    • Ability to deliver quality health care
    • Medical education experience

Methods

• 27 senior internal medicine residents
• Data collected over 5 month span (January – June 2014)
• The anonymous data was linked, reverse coded where applicable and analyzed by independent statistician (Research Methods Unit)

Fabreau et al. *BMJ Med Ed* 2013
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• Background

• Methods

• Results
  » Medical Education Experience
  » Resident Wellness
  » Ability to Provide Patient Care

• Discussion
## Medical Education Experience

<table>
<thead>
<tr>
<th></th>
<th>Pre-reform</th>
<th>Post-reform</th>
<th>p-value</th>
<th>Number perceiving improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allows successful teaching</td>
<td>3.12 (0.82)</td>
<td>3.81 (0.59)</td>
<td>0.0009</td>
<td>17 (73.91)</td>
</tr>
<tr>
<td>Allows medical skills proficiency</td>
<td>3.58 (0.88)</td>
<td>4.04 (0.73)</td>
<td>0.001</td>
<td>16 (69.57)</td>
</tr>
<tr>
<td>Allows successful learning</td>
<td>3.52 (0.57)</td>
<td>4.00 (0.56)</td>
<td>0.003</td>
<td>15 (65.22)</td>
</tr>
<tr>
<td>Allows staff physician supervision</td>
<td>3.23 (0.75)</td>
<td>3.38 (0.59)</td>
<td>0.37</td>
<td>7 (30.43)</td>
</tr>
<tr>
<td>Causes rotation disruptions</td>
<td>3.29 (0.88)</td>
<td>2.84 (0.85)</td>
<td>0.04</td>
<td>14 (60.87)</td>
</tr>
</tbody>
</table>
### Senior Resident Wellness

<table>
<thead>
<tr>
<th></th>
<th>Pre-reform</th>
<th>Post-reform</th>
<th>p-value</th>
<th>Number perceiving improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allows general wellness</td>
<td>2.70 (0.64)</td>
<td>3.06 (0.71)</td>
<td>0.04</td>
<td>13 (56.52)</td>
</tr>
<tr>
<td>Allows exposure to personal harm</td>
<td>3.72 (0.82)</td>
<td>2.91 (1.06)</td>
<td>0.0003</td>
<td>17 (73.91)</td>
</tr>
<tr>
<td>Causes conflicting role demands</td>
<td>3.27 (0.83)</td>
<td>2.85 (0.68)</td>
<td>0.08</td>
<td>13 (56.52)</td>
</tr>
<tr>
<td>Allows healthy relationships</td>
<td>2.70 (0.88)</td>
<td>3.13 (0.81)</td>
<td>0.09</td>
<td>10 (43.48)</td>
</tr>
<tr>
<td>Causes feelings of isolation</td>
<td>3.39 (1.03)</td>
<td>2.96 (1.07)</td>
<td>0.02</td>
<td>9 (39.13)</td>
</tr>
</tbody>
</table>
## Ability to Deliver Health Care

<table>
<thead>
<tr>
<th>Allows potential for error</th>
<th>Pre-reform</th>
<th>Post-reform</th>
<th>p-value</th>
<th>Number perceiving improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD)</td>
<td>3.15 (0.76)</td>
<td>2.47 (0.68)</td>
<td>0.0001</td>
<td>17 (73.91)</td>
</tr>
<tr>
<td>Allows clinical skill expertise</td>
<td>3.39 (0.72)</td>
<td>3.91 (0.52)</td>
<td>0.0004</td>
<td>17 (73.91)</td>
</tr>
<tr>
<td>Allows continuity of patient care</td>
<td>4.13 (0.87)</td>
<td>4.22 (0.6)</td>
<td>0.6</td>
<td>6 (26.09)</td>
</tr>
<tr>
<td>Causes expenditure of emotional labour</td>
<td>1.84 (0.74)</td>
<td>1.75 (0.56)</td>
<td>0.58</td>
<td>8 (34.78)</td>
</tr>
<tr>
<td>Allows work efficiency</td>
<td>3.72 (0.75)</td>
<td>4.14 (0.33)</td>
<td>0.001</td>
<td>14 (60.87)</td>
</tr>
</tbody>
</table>
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Limitations

- Resident perceptions only
- Likert scale survey
- Only opinion on patient outcome, medical errors, medical education experience
- Only 23 of 27 senior residents completed pre- AND post-intervention surveys
- Staff Physician opinion not sought in this pilot study
Conclusions

• As per Royal College Steering committee’s request, we successfully completed a pilot study of an alternative call model

• Residents perceived significant improvements in the majority of sub-domains in each of three major domains
  • Senior resident wellness
  • Ability to deliver quality health care
  • Medical education experience
Acknowledgements

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  • Dr. Ian Epstein
  • Meegan Dowe (Department of Medicine)
  • Katie Barkhouse (Department of Medicine)
  • Steve Doucette (Research Methods Unit)
  • Drew DeBay
  • Joel Maxwell (CDHA)
References


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