Duty Hours: Solutions Across Borders
Symposium Report

Held as part of the 2011 International Conference on Residency Education
September 23, 2011
Quebec City, Que.
I. Introduction

The issue of resident duty hours has garnered interest since, at least, the tragic death of Libby Zion in 1984, an event attributed, in part to the resident fatigue. Duty hours restrictions and regulations have continued to be debated and examined worldwide. Within Canada, the issue reached a new level of urgency when an arbitrator in Quebec ruled in June 2011 that 24-hour shifts pose a danger to residents’ health and, therefore, violate section seven of the Canadian Charter of Rights and Freedoms (which ensures security of the person) and section 46 of the Quebec Charter of Rights and Freedoms (which requires employers to provide “fair and reasonable conditions of employment”).

The ruling reverberated throughout the country — generating scores of newspaper articles, alerting many Canadians to the workplace pressures faced by residents, and compelling all medical educators and health care leaders to think deeply about how any changes to residents’ duty hours will affect patient care and medical education. The impact of any changes are equally as significant for practicing physicians, whose duty hours and work-life balance will undoubtedly be affected.

Recognizing this, the Royal College of Physicians and Surgeons of Canada’s International Conference on Residency Education (ICRE) organized the Duty Hours: Solutions Across Borders to explore practical ways that residency programs can respond to challenges. Experts from across Canada, the United States and England met to examine how similar international jurisdictions have responded to restriction in resident work hours, the impact of changes on teachers and various strategies that programs can adopt to thrive in the context of duty hour restrictions.

II. Symposium structure

Chaired by Kevin Imrie, MD, FRCPC, the Royal College’s vice-president of education, the symposium invited four speakers:
- Thomas Maniatis, MD, FRCPC, McGill University;
- Darcy Reed, MD, The Mayo Clinic College of Medicine;
- Fiona Moss, MD, The London Deanery; and
- Adrian Park, MD, FRCSC, Dalhousie University.

The symposium included four presentations, allowed a brief question-and-answer period after each speaker as well as a longer dialogue session following the presentations. All ICRE attendees, including residents, educators, health care leaders and others, were welcome to attend the symposium.

III. Declared conflicts of interest

Dr. Reed cited systematic reviews that were supported, in part, by a grant from the Accreditation Council for Graduate Medical Education.

IV. Presentation from Dr. Thomas Maniatis

Dr. Maniatis opened the presentation by providing a first-hand recount of the lessons learned in overseeing shifting the university’s Internal Medicine program from a 24- to 16-hour shift schedule since 2009. McGill has operated on a hybrid program that allowed some 24-hour call for critical care or to fill schedule gaps, but implemented largely a night float block system.
• Dr. Maniatis noted that staggered rotations with varied arrival times are dependent on minimum number of residents to make it work (usually 5-6). Residents are also exposed to varied day / time blocks over short period of time. With this approach, there is a risk of fragmented team dynamics, and it also treats all residents are being equal, regardless of level of training.

• McGill opted largely for blocks of “night float”, which are dependent on minimum number of residents to make it work (usually 1-2). The benefits included standardized arrival time / departure time, while also allowing a night team dynamic to be established. It also preserved day team dynamic and hierarchy. Negatives included increased fragmentation of remaining rotation blocks and less rotation time for other learning electives.

• Back-up schedules also become very important, as call schedules now look very complex. Staff members have had to identify when exactly faculty or senior residents should be present during a sign over, and allot up to one hour at the start and end of shifts for this process.

• Teaching at night remains a challenge. Other challenges have included approaching handoffs as a teachable skill for residents and faculty, and incorporating teaching and assessment with limited faculty contact in night shifts; to help address this challenge, McGill has incorporated a near-peer evaluation system, whereby senior residents evaluate their junior colleagues, which has increased assessment feedback. Residents have also experienced reduced elective time under the night float system.

• Faculty, Dr. Maniatis noted, have reported a mixed experience. While residents appeared to adapt relatively quickly, the new system represented a huge culture shifts for many faculty. He advised attendees not to underestimate that challenge. Increased stress and responsibility on faculty are also ongoing concerns.

V. Presentation from Dr. Darcy Reed
Dr. Reed examined the results of the 2003 standards imposed by the Accreditation Council of Graduate Medical Education (ACGME) in the United States, as well as the subsequent 2011 recommendations.

• Pre- and post-2003 studies have found that mortality improved slightly, while findings around other patient outcomes (error, complications) have been mixed. Education test scores remained unchanged, while findings related to the operative experience have also been mixed. Resident burnout has improved slightly, while faculty burnout is a growing concern.

• Dr. Reed noted that shifts to 80-hour weeks have had little effect on patient safety and education, while a change to 56 or 48 hours has not been sufficiently evaluated.

• The idea of “teams” must evolve from residents and interns working in tandem to them working in series. They must maximize time when a team member is present and will incorporate new members: ‘floaters’ and physician extenders.

• She advocated implementing formal training in handoff communication, prioritizing professionalism and designing time for quality exchanges. Handoff should not be the last time that the sender is seeing the patient or the only time the receiver will see
the patient. A member of the primary care team must also be present during all handoffs.

- System redesign should therefore aim to manage workload, not just hours, by allocating work by experience level, optimizing hand-off and team continuity, and also consider faculty hours and workload. Faculty also experience challenges in assessing residents they may have less exposure to through new scheduling systems.

VI. Presentation from Dr. Fiona Moss
Dr. Moss, from The London Deanery, shared lessons from its experience in reducing duty hours in England. She noted that research has demonstrated that sleep deprivation can increase patient risk, impede learning and reduce job satisfaction, yet hospitals need medical care during the night and teams need to be trained as effectively as possible.

- Changes in legislation around resident hours, advancements in technology and changes in the organization of care have challenged resident training in England. Acute care and training in acute care both need a complete review.
- Dr. Moss advocated for a system-wide approach aimed at reducing workloads at night. Recommendations included drawing more work into an extended work day, maximizing primary care contributions and reducing out-of-hours operations and increasing treatment and transfer policies.
- She examined the experience at Guy’s Hospital, London, which moved away from working at night by using increased staffing and expertise during the extended work day, clearing all the day’s work by midnight and shifting night teams to multi-professional units. Roles and responsibilities are clear, and issues are deferred where possible to the morning.
- Results have included reduced patient risk, better handover and communication, and reductions in clinical incidents and mortality rates. There has also been recurrent savings of £4.1million.

VII. Presentation from Dr. Adrian Park
Dr. Park, head of the department of surgery at Dalhousie University’s Faculty of Medicine, framed the discussion from a surgical perspective. He noted that surgical training needs are unique and that literature has shown that resident and faculty perceptions differ with respect to the impact of duty hour restrictions. Most residents have felt satisfied with their training, and felt quality of life improves with reduced hours. Faculty, however, have felt overlooked, with their main concern being the risk of declining patient ownership by residents.

- Citing U.S. studies, Dr. Park noted that the total number of cases a resident is exposed to has not diminished, but the composition of these cases has shifted. There has also been a 45-66 per cent decline in cases of surgical residents assuming the “first assist” or “teaching assist” roles.
- How can surgical training in Canada respond to resident duty hour restrictions? Simulation is a potential to address capacity in reduced hours, Dr. Park said, but the
technology is not yet sophisticated enough to substitute for patient contact on a large scale. Surgical streaming, whereby residents can shift earlier from general surgery to more specialized training, could also provide new diverse patient exposure.

- Dr. Reed noted that the options going forward are stark. Simulation remains appealing but technology cannot yet truly replicate the human body’s complexity, while the cost remains prohibitive for many surgical programs. Surgical streaming and more individualized, tailored programs could increase training effectiveness but pose large resource and logistical challenges.

- If duty hours are reduced and no changes are implemented, surgical programs may need to examine adding a year to surgical training. This lengthening could have huge impacts on the already problematic attrition rates, amongst other issues. One-in-five residents do not currently complete surgical training, which poses a significant challenge when considered with the requirements predicted for the next 10-15 years.

VIII. Conclusions and Next Steps

The issue of resident duty hours is a priority for the Royal College. The organization has struck a task force, comprised of representatives from key stakeholder organizations, including postgraduate deans, the Canadian Medical Association (CMA), residents’ associations including the Canadian Association of Internes and Residents (CAIR) and the Federation des médecins residents du Quebec (FRMQ), sister colleges, the Association of Canadian Academic Healthcare Organizations (ACAHO), and others, to work towards the development of a pan-Canadian consensus statement in 2012.

In addition, work is underway to publish a special themed issue on resident duty hours in *BMC Medical Education*, scheduled for publication in summer 2012. The contributing authors comprise a number of presenters from both the 2010 and 2011 symposia at the ICRE.

Finally, the entire Duty Hours: Solutions Across Borders symposium can be played or downloaded now from the ICRE Blog: icreblog.royalcollege.ca. Recordings and slides from other select ICRE 2011 workshops are also posted online.