

Correspondance

Preparing physicians for the real world

I read with interest the article by Christopher Parshuram and associates¹ about fellowship training. My question is this: How do you prepare a 60-year-old physician to work 30 hours continuously with no sleep, in a job where he or she is the most responsible referral physician for a population of 130 000, without doing something similar in the residency program? That is the reality of life for older physicians in the area where I work.

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Reference

1. Parshuram CS, Dhanani S, Kirsh JA, Cox PN. Fellowship training, workload, fatigue and physical stress: a prospective observational study. *CMAJ* 2004;170(6):965-70.

DOI:10.1503/cmaj.1040528

[Dr. Parshuram responds:]

The current situation for trainees reflects tensions among needs for timely and adequate exposure to clinical experience, opportunities to attend — and benefit from — formal education sessions and provision of 24-hour coverage, as well as the priorities of health care budgets. Self-management of fatigue may be an important but unstated aspect of physician training. However, increasing sleep deprivation is associated with deterioration in performance for all human beings¹ and the occurrence of errors² and adverse events³ in health care. Discontinuity of care also increases adverse events.⁴

But is the reality of professional life for physicians, as described by John Acres, a desirable reality that we should be striving to sustain? In our study⁵ the average departure time of staff intensivists was after 9 pm, they were away from the unit for an average of 9.5

hours per day, they returned overnight every fifth on-call day, and they had contact with on-call, in-house physicians once or twice each night. With continuous on-call periods of 3 to 4 days, the potential for sleep deprivation and fatigue among these staff physicians should not be discounted, but any fatigue-related effect on patients was probably counterbalanced by the benefits of continuity. The “best” practice pattern has yet to be defined⁶ but it requires balancing a variety of factors related to continuity of care, fatigue and physician well-being.

In short, the final answers to the broader question raised by Acres are not yet in. Diverse and potentially competing interests will make resolution of this problem particularly challenging. Given the magnitude of the changes that will be required, careful evaluation is warranted before expensive but imperfect solutions are put into place.

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References

1. Dawson D, Reid K. Fatigue, alcohol and performance impairment [letter]. *Nature* 1997;388:235.
2. Barth B, Hendey GW, Soliz T. Errors in post-call medication orders. *Acad Emerg Med* 2001;8:468-9.
3. Aya AG, Mangin R, Robert C, Ferrer JM, Eledjam JJ. Increased risk of unintentional dural puncture in night-time obstetric epidural anesthesia. *Can J Anaesth* 1999;46:665-9.
4. Petersen LA, Brennan TA, O'Neil AC, Cook EF, Lee TH. Does housestaff discontinuity of care increase the risk for preventable adverse events? *Ann Intern Med* 1994;121:866-72.
5. Parshuram CS, Dhanani S, Kirsh JA, Cox PN. Fellowship training, workload, fatigue and physical stress: a prospective observational study. *CMAJ* 2004;170(6):965-70.
6. Gaba DM, Howard SK. Patient safety: fatigue among clinicians and the safety of patients. *N Engl J Med* 2002;347:1249-55.

DOI:10.1503/cmaj.1040887

[Dr. Howard responds:]

Long hours of work in opposition to our circadian clock lead inevitably to a physiologic process that manifests

as fatigue. Sleep deprivation and fatigue in turn lead to predictably negative effects on performance and mood, combining to produce situations where health care providers are at risk of harming patients.¹

The issues of how and when we work cannot be addressed by a single schedule, and there is no magic bullet. The type of professional life described by John Acres is all too familiar, the output of a flawed system that needs to be changed.² Limitation of work hours is only one of many changes that could improve the health care system.^{1,3} No training system can alter basic human physiology, so making trainees work unreasonable schedules does little but perpetuate the problem.

Health care is a hazardous industry where we do risky things to patients.⁴ Practitioners owe it to their patients to be optimally alert and able to perform. No health care professional would find it acceptable to arrive at work impaired by ethanol, yet many of us similarly impaired by chronic loss of sleep continue to care for patients.⁵⁻⁷ Work schedules such as Acres describes must be challenged so that a new reality can be developed to improve both patient care and physicians' health.

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References

1. Howard SK, Rosekind MR, Katz JD, Berry AJ. Fatigue in anesthesia: implications and strategies for patient and provider safety. *Anesthesiology* 2002;97:1281-94.
2. Gaba DM, Howard SK. Patient safety: fatigue among clinicians and the safety of patients. *N Engl J Med* 2002;347:1249-55.
3. Howard SK, Gaba DM. Trainee fatigue: Are new limits on work hours enough? *CMAJ* 2004;170(6):975-6.
4. Gaba DM. Structural and organizational issues in patient safety: a comparison of health care to other high-hazard industries. *Calif Manage Rev* 2000;43:83-102.
5. Dawson D, Reid K. Fatigue, alcohol and performance impairment [letter]. *Nature* 1997;388:235.
6. Powell NB, Riley RW, Schechtman KB, Blumen MB, Dinges DF, Guilleminault C. A comparative model: reaction time performance in sleep-

disordered breathing versus alcohol-impaired controls. *Laryngoscope* 1999;109:1648-54.

7. Roehrs T, Burduvali E, Bonahoom A, Drake C, Roth T. Ethanol and sleep loss: a "dose" comparison of impairing effects. *Sleep* 2003;26:981-5.

DOI:10.1503/cmaj.1040701

TB and adrenal insufficiency

Ronik Kanani and Aleixo Muise¹ describe a case of intra-abdominal peritonitis associated with abdominal pain and hypotension secondary to intra-abdominal tuberculosis (TB). The clinical presentation in this case is suspicious for adrenal insufficiency.

TB is one of the leading causes of adrenal insufficiency worldwide, but the presence of TB may be difficult to diagnose. In a large retrospective study of autopsy results in Hong Kong, Lam and Lo² found active TB in 6.5% of cases; however, in more than 70% of these patients, TB was diagnosed only at autopsy. Adrenal insufficiency was found in 6% of the patients with active TB.

It may also be difficult to identify TB as the cause of adrenal insufficiency, as illustrated by Serter and associates.³

These authors described a 61-year-old man with adrenal insufficiency and an adrenal mass. The results of tuberculin skin testing, staining for acid-fast bacilli and culture were all negative; only histologic examination after adrenalectomy confirmed the diagnosis of TB.

In patients presenting with shock and risk factors for TB it is important to maintain a high index of suspicion for adrenal insufficiency. When in doubt, administration of a stress dose of steroids while awaiting the results of corticotropin (ACTH) and cortisol measurement may save the patient's life.

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References

1. Kanani R, Muise A. A 17-year-old male with an unusual case of peritonitis. *CMAJ* 2004;170(10):1541.
2. Lam KY, Lo CY. A critical examination of adrenal tuberculosis and a 28-year autopsy experience of active tuberculosis. *Clin Endocrinol (Oxf)* 2001;54(5):633-9.
3. Serter R, Koc G, Demirbas B, Culha C, On-

goren AU, Ustun H, et al. Acute adrenal crisis together with unilateral adrenal mass caused by isolated tuberculosis of adrenal gland. *Endocr Pract* 2003;9(2):157-61.

DOI:10.1503/cmaj.1041046

[The authors respond:]

Although TB is one of the leading causes of adrenal insufficiency in the world and should be considered in patients presenting with shock and a history suggestive of TB,¹ the index of suspicion for adrenal insufficiency was quite low in the case that we reported.² Although the patient was initially hypotensive, his blood pressure did respond to fluid administration, and his electrolyte levels were initially normal. In contrast, patients in adrenal crisis usually require steroid treatment and do not respond readily to fluids. Furthermore, the patient underwent multiple CT examinations of the abdomen, all of which showed that the adrenal glands were normal. We did not check the patient's cortisol level, nor did we do corticotropin stimulation test, as it was extremely unlikely that the patient had