

(including the brain stem) during procurement circulatory support will not fulfill the “dead donor rule.”^{7,8} It may be necessary to abandon the dead donor rule to permit the recovery of transplantable organs after cardiocirculatory death.

Mohamed Y. Rady
Department of Critical Care Medicine
Joseph L. Verheijde
Department of Physical Medicine and Rehabilitation
Mayo Clinic Hospital
Phoenix, Ariz.

Joan McGregor
Bioethics, Policy and Law Program
School of Life Sciences and
Department of Philosophy
Arizona State University
Tempe, Ariz.

REFERENCES

1. Shemie SD, Baker AJ, Knoll G, et al. Donation after cardiocirculatory death in Canada. *CMAJ* 2006;175(8 Suppl):S1-S24.
2. Adhiyaman V, Sundaram R. The Lazarus phenomenon. *J R Coll Physicians Edinb* 2002;32:9-13.
3. American Heart Association. Management of cardiac arrest. *Circulation* 2005;112:IV58-IV66.
4. Institute of Medicine Committee on Non-Heart-Beating Transplantation II. *The scientific and ethical basis for practice and protocols. Executive summary*. Washington (DC): National Academy Press; 2000.
5. Magliocca JF, Magee JC, Rowe SA, et al. Extracorporeal support for organ donation after cardiac death effectively expands the donor pool. *J Trauma* 2005;58:1095-1101.
6. Younger JG, Schreiner RJ, Swaniker F, et al. Extracorporeal resuscitation of cardiac arrest. *Acad Emerg Med* 1999;6:700-7.
7. Menikoff J. The importance of being dead: non-heart-beating organ donation. *Issues Law Med* 2002;18:3-20.
8. Bernat, J.L. Are organ donors after cardiac death really dead? *J Clin Ethics* 2006;17:122-32.

DOI:10.1503/cmaj.1060217

Breaking bad news

I thank medical student Nir Lipsman for his insightful and touching article on the hospital's Family Room.¹ This room is usually spoken of, if at all, in hushed and sometimes reverent tones, and when one meets with family members and loved ones there, one is generally met with emotions at the polar ends of the emotional spectrum. The physician's information will lead to either complete devastation or utter elation; there is rarely a reaction in between these extremes.

Attending physicians can learn from Lipsman's advice to avoid dancing around the truth, something I have seen happen far too often. When I informed a Family Room full of people that their loved one in the intensive care unit would be paralyzed from the neck down for life, I was met not with sobs and grief, but with questions: “What is the next step? What can we do to help? When can he come home to live with us?” Like Lipsman, I never cease to be amazed by the strength and resilience of these families.

Jeff Blackmer
Executive Director, Office of Ethics
Canadian Medical Association
Ottawa, Ont.

REFERENCE

1. Lipsman N. The family room. *CMAJ* 2007;176(3):354.

DOI:10.1503/cmaj.1070026

Staffing levels in long-term care facilities

In their recent *CMAJ* commentary,¹ Kimberlyn McGrail and associates correctly noted that in British Columbia private and not-for-profit providers of long-term care have different staffing levels at their sites. However, these differences are driven not by type of ownership but by health authority funding level. Funding varies from \$130 to \$190 per day for each resident even though the facilities care for the same types of clients requiring complex care. With such a wide range in funding, it is expected that there would be differences in staffing levels.

The authors also state that the aggregated superiority of the not-for-profit sector in hospital admission rates was driven by “not-for-profit facilities that were attached to acute care hospitals, were amalgamated to a health authority or had more than one site.” Sites that are owned and operated by health authorities have an advantage over stand-alone private and not-for-profit facilities in that they have access to additional staff.

We would expect that the ratio of staff to patients would have an impact

on quality of care; the role of government should be to determine an adequate funding level for the desired staffing ratio and then to provide it to all sites, regardless of whether they are run by for-profit or not-for-profit agencies.

Ed Helfrich
Chief Executive Officer
BC Care Providers Association
Vancouver, BC

REFERENCE

1. McGrail KM, McGregor MJ, Cohen M, et al. For-profit versus not-for-profit delivery of long-term care. *CMAJ* 2007;176:57-8.

DOI:10.1503/cmaj.1070025

[Two of the authors respond:]

We are in agreement with many, but not all, of Ed Helfrich's points concerning our commentary.¹ First, he acknowledges that there are differences in staffing levels between for-profit and not-for-profit long-term care facilities in British Columbia, something that we and others have found to be true.^{2,3} However, in saying that the prime reason for these differences is the variation in the amount of funding given to different types of facilities that care for similar patients, Helfrich describes the current situation, whereas the study we referred to in our commentary was based on data from the mid to late 1990s, before the complex-care patient designation was introduced. Variation in current funding levels cannot be the reason for the differences in quality of care found in that study.

Second, Helfrich argues that the better performance of facilities operated by health authorities must be driven by those facilities' access to additional staff. This is precisely the point of our commentary. Surely it is quite feasible that different forms of ownership imply different types of access to resources; the important question is whether those resources make a difference. Do multisite not-for-profit facilities do better than single-site facilities because they can share the costs of developing policies and care practices? Or is it because they can share the costs of specialized staff, such as nurse geriatric

cians? Or is there something else at play entirely? In the United States, where Medicare funding levels are the same in for-profit and not-for-profit nursing homes, ownership has been found to be a significant driver of staffing variations.^{4,5} The research priorities that follow from our commentary are to provide more flesh to the skeleton of staffing ratios, in order to determine how to maximize the quality of care provided to our communities' most frail members.

Kimberlyn M. McGrail

Centre for Health Services and Policy Research

Margaret J. McGregor

Department of Family Practice
University of British Columbia
Vancouver, BC

REFERENCES

1. McGrail KM, McGregor MJ, Cohen M, et al. For-profit versus not-for-profit delivery of long-term care. *CMAJ* 2007;176:57-8.
2. McGregor MJ, Cohen M, McGrail K, et al. Staffing levels in not-for-profit and for-profit long-term care facilities: Does type of ownership matter? *CMAJ* 2005;172(5):645-9.
3. Berta W, Laporte A, Valdmans V. Observations on institutional long-term care in Ontario: 1996-2002. *Can J Aging* 2005;24:71-84.
4. Harrington C, Woolhandler S, Mullan J, et al. Does investor ownership of nursing homes compromise the quality of care? *Am J Public Health* 2001;91:1452-5.
5. Hillmer MP, Wodchis WP, Gill SS, et al. Nursing home profit status and quality of care: Is there any evidence of an association? *Med Care Res Rev* 2005;62:139-66.

DOI:10.1503/cmaj.1070036

Thyroid hormone therapy in organ donors

Sam Shemie and associates recommend that consideration be given to using thyroid hormone therapy in all organ donors.¹ We have experimental data suggesting that administering thyroid hormones to hemodynamically stable organ donors could decrease the success of liver transplants.

In a model of ischemia-reperfusion (warm ischemia) in rats, we showed that pretreatment with thyroxine nega-

tively affects the energetic status of the liver by reducing the preischemic and postreperfusion concentrations of adenosine triphosphate in the liver.² We also observed that pretreatment with thyroxine reduces the liver tissue concentration of reduced glutathione, an intracellular antioxidant, and increases the susceptibility of isolated rat hepatocytes to anoxia and oxidative stress.^{2,3} Castilho and associates reported that 3,5,3'-triiodothyronine induces oxidative stress in isolated liver mitochondria, which leads to membrane thiol oxidation and inner membrane permeabilization.⁴ This process is known as the mitochondrial permeability transition and is characterized by swelling and depolarization of the mitochondria, resulting in an inability to produce adenosine triphosphate.⁴ There is evidence that hypothyroidism has generalized protective effects against anoxic ischemia and reperfusion injury, conditions that occur during organ storage and transplantation. In the rat, hypothyroidism reduces liver necrosis associated with cold storage, improves liver function and increases the concentration of reduced glutathione in the liver during reperfusion after cold storage;^{2,3} it also protects rat kidneys from ischemia.⁵

Although these experimental data were obtained in animals and cannot be directly applied to the clinical setting, they suggest that we should consider the possibility that administration of thyroid hormones might damage human liver tissue during organ har-

vesting, cold storage and transplantation and therefore should not be administered to all organ donors. It is also worth considering the possibility that pharmacological hypothyroidism might protect the organs of hemodynamically stable donors during cold storage and reperfusion.

Roberto Imberti

Department of Anesthesiology and Critical Care Medicine
Fondazione Istituto di Ricovero e Cura a Carattere Scientifico
Policlinico San Matteo
Mariapia Vairetti
Department of Internal Medicine and Therapeutics
Sezione di Farmacologia e Tossicologia Cellulare e Molecolare
University of Pavia
Pavia, Italy

REFERENCES

1. Shemie SD, Ross H, Pagliarello J, et al. Organ donor management in Canada: recommendations of the forum on Medical Management to Optimize Donor Organ Potential. *CMAJ* 2006;174(6 Suppl):S13-S30.
2. Imberti R, Vairetti M, Gualea MR, et al. The effects of thyroid hormone modulation on rat liver injury associated with ischemia-reperfusion and cold storage. *Anesth Analg* 1998;86:1187-93.
3. Imberti R, Vairetti M, Silini E, et al. Effects of thyroid hormone modulation on rat liver injury associated with anoxia, oxidative stress and cold storage. *Haematologica* 1998;83(Suppl):46-7.
4. Castilho RF, Kowaltowski AJ, Vercesi AE. 3,5,3'-Triiodothyronine induces mitochondrial permeability transition mediated by reactive oxygen species and membrane thiol oxidation. *Arch Biochem Biophys* 1998;354:151-7.
5. Paller MS. Hypothyroidism protects against free radical damage in ischemic acute renal failure. *Kidney Int* 1986;29:1162-6.

DOI:10.1503/cmaj.1060234

Letters submission process

CMAJ's enhanced letters feature is now the portal for all submissions to our letters column. To prepare a letter, visit www.cmaj.ca and click "Submit a response to this article" in the box near the top right-hand corner of any *CMAJ* article. All letters will be considered for publication in the print journal.

Letters written in response to an article published in *CMAJ* are more likely to be accepted for print publication if they are submitted within 2 months of the article's publication date. Letters accepted for print publication are edited for length (usually 250 words) and house style.