



Rural docs provide rent-free space to keep lab open

Faced with the threat that the local x-ray clinic and blood lab would close, Drs. Lucy and Rod Rabb of Richmond, Ont., decided they had no choice but to subsidize the health care system. The husband-and-wife team from this Eastern Ontario town of 3700 are donating the \$500 monthly rent in an attempt to encourage the private companies involved to keep providing the services. Closure could have meant time-consuming trips to larger centres for local residents; Richmond is about 35 km southwest of Ottawa.

"We have a huge elderly population and a lot of young parents, so transportation is always an issue," says Rod Rabb, a University of Ottawa graduate who celebrated 30 years in practice in July. "We've also heard of people going to Kanata and waiting 3 to 4 hours."

An Edmonton company, Diagnosti-Care, took over many of the area's x-ray labs in February 1999 and began closing the smaller ones. The adjoining blood-testing clinic, owned by another company, would also have closed. The Rabbs considered all their options, but provincial restrictions on lab licences made the situation impossible: they weren't allowed to renew the local licence and no new licences were being issued. "We're not very high on their priority list," says Rod Rabb.

He says they're willing to continue subsidizing the rent for "quite a while. As long as they provide good service we'll let them stay. Unless, of course, another company wants to rent the space. The patients are very supportive," adds Rabb. "They think we've done the right thing."

Rabb, who told the local paper that "we're subsidizing the health care sys-



Patrick Sullivan

The Rabbs: "We're subsidizing health care."

tem and it's crazy," is not sure what the future holds for the provision of services in Richmond. "It's totally unpredictable." — *Barbara Sibbald, CMAJ*

Prescription soap on the way?

The Canadian Public Health Association (CPHA) wants Health Canada to restrict the availability of antimicrobial soaps in an attempt to slow the increase in the growth of resistant strains of pathogenic bacteria.

At its annual general meeting in Winnipeg in June, delegates passed a resolution urging Health Canada to "implement the appropriate legal instrument to restrict the availability of personal and home-cleaning products that contain nonconventional antimicrobial agents to health care settings in general and to make them available elsewhere only by nonpublic access through pharmacists."

Brad Colpitts, president of the Northwest Territories branch of the CPHA, moved the resolution. He told *eCMAJ Today*, *CMAJ's* online cousin, that the use of antimicrobial agents in hand soaps and other cleaners is rising

as manufacturers tout these new agents as "magic bullets" for killing bacteria. "Some companies are creating the perception that things can be cleaner if only consumers use these magic bacteria-killing bullets."

Many members of the health community predict increasing resistance to antimicrobial agents will be a major problem in the future as virulent strains of bacteria emerge, unaffected by existing antimicrobial agents. Efforts to date have concentrated on encouraging physicians to eliminate inappropriate prescribing of antibiotic medications as the way to combat the rise of resistant strains of bacteria.

Health Canada, through its Laboratory Centre for Disease Control, convened a consensus conference in Montreal 2 years ago in an attempt to come up with an action plan to limit the development and transmission of

antimicrobial-resistant organisms in Canada.

Delegates called for the establishment of a national committee to promote the issue of antimicrobial resistance and for a national surveillance system to detect and monitor both antimicrobial resistance and the use of antimicrobial products. They also recommended a 25% reduction in the number of antibiotic prescriptions written in Canada.

The World Health Organization is adding an international perspective to the issue, particularly since the enormous increase in international travel means individuals exposed to resistant microbes in one country can easily spread them in other countries. For example, resistant strains of gonorrhoea that originated in Asia and Africa have now spread throughout the world. — *Steven Wharry, CMAJ*



New fellowship editor brings social science, medical expertise to *CMAJ*

Dr. Erica Weir, *CMAJ*'s new fellowship editor, is no ordinary medical resident. Weir, a Queen's graduate who came to medicine after a 10-year career as a social researcher, is now in the midst of a double residency in family and community medicine at McMaster University. In choosing her from a field of superb candidates, the selection committee decided that her breadth of experience in social science research, population health and epidemiology would be a boon to the journal. In July, after completing her second year at McMaster, Weir became the journal's second fellowship

editor. Dr. Caralee Caplan, a McGill graduate, was the first. She is now completing a residency in general internal medicine in New York.

Weir, a newly minted family physician who has 3 years left in her community medicine residency, is interested in environmental health, particularly water quality, and the relationship between infectious and chronic diseases. She says the year at *CMAJ* will help hone her appraisal and writing skills. "I will be facilitating research at some point, so this is a great way to understand that role," says Weir, who brings a love of language and literature to the job.

Weir was born in Scotland and her family moved to Moose Jaw, Sask., in 1965, where her father opened a family practice. The family moved to Oshawa, Ont., when Weir was in her teens. At that time she wasn't tempted by medicine; she preferred English and the arts, and earned her bachelor's degree — and the Queen's University Medal in Sociology. She was also awarded a British Council Scholarship to undertake a master's degree in social research methods at the University of Surrey. Afterwards, she stayed in the UK to become a planning assistant in London. Her job was to look at

the relationship between the design of public housing estates and urban riots.

In 1987 she returned to Ontario, where she worked first as a data analyst and then, for 6 years, as a research officer at the Ontario Cancer Treatment and Research Foundation. After working with a senior epidemiologist she became hooked on medicine, and decided to pursue it as a career so that she could better understand the patient's perspective. "Patients' experiences of illness and their view of them will add to my understanding of disease," says Weir, who likes to canoe and bike in her spare moments.

After completing her degree in physical science at the University of Guelph in 1993, she returned to Queen's. In her second year at medical school, she volunteered to work at an orphanage in India run by a Canadian-based group, Childhaven. She had her first major clinical experience there, by providing palliative care to an 11-year-old girl with osteosarcoma. She wrote about the emotional experience in *CMAJ* (1996;155:785-7).

What does her maturity and all this experience allow her to bring to her new career? "Fatigue!" she says with a laugh. "And perhaps a bit of flexibility and patience." — *Barbara Sibbald, CMAJ*



Steven Wharry

Weir: honing her editorial skills

Tuition battle at U of T far from over

The battle over new tuition fees for medical residents at the University of Toronto is far from over, the university warns. Even though first-year residents will not have to pay the \$1950 fee this year because the province has agreed to pick up the tab, it appears that the university has no intention of backing down.

The residents, led by feisty PAIRO (Professional Association of Internes

and Residents of Ontario) President Joshua Tepper, reject the tuition fee outright, arguing that they already save taxpayers millions by staffing Toronto hospitals for less than half the OHIP rate. They also maintain that they save the university "millions" by teaching undergraduate medical students for free. Groups speaking out in support of them have included the CMA and Ontario Medical Association.

The issue was put on hold for a year after the province agreed to pay the fee for first-year residents this year — a move that did not sit well with some observers. Dentist John Mayhall, who chairs the university's Academic Board, told the *U of T Bulletin* that postdoctoral dental students pay tuition fees during their

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Pulse

Tuition fees and medical residents

Even though residents at the University of Toronto successfully protested the levying of tuition fees recently, trainees at other institutions have not been so lucky (see accompanying articles, pages 469 and 478).

Data collected by the Association of Canadian Medical Colleges in 1998 show that while most universities charge a registration fee, all Quebec

medical schools as well as Dalhousie University instead set substantial tuition fees for residents. These range from from \$1683 to \$3084 per year. In Quebec, government grants help defray a large portion of the tuition fee. Even though the Ontario government agreed to pay the \$1950 tuition fee charged to U of T residents this year, there is no guarantee it will pay the fee

in future years. The University of Calgary also has a tuition fee, but at \$664 it is more in line with the registration fees charged by other schools.

Some of the schools that charge only a registration fee have seen substantial increases over the last few years. For instance, at Memorial University the 1998/99 fee represents a 328% increase over the fee levied 10 years earlier.

There is also a wide range of resident pay scales, with salaries depending on the location and rank of training. The lowest levels of pay for all ranks of training are found in Newfoundland and Manitoba. The highest salaries are in Ontario and BC. Depending on rank level, the difference between the highest and lowest pay rate ranges from approximately \$7800 to \$12 000 per year.

This column was written by Lynda Buske, Chief, Physician Resources Information Planning, CMA. Readers may send potential research topics to Patrick Sullivan (sullip@cma.ca; 613 731-8610 or 800 663-7336, x2126; fax 613 565-2382).

Post-MD clinical training fees and salaries, 1998

| University | Registration fee (\$) | Tuition fee (\$) | First-year salary (\$) |
|------------------|-----------------------|------------------|------------------------|
| Memorial | 500 | - | 30 176 |
| Dalhousie | - | 1683 | 32 057 |
| Laval | - | 3071 | 33 596 |
| Sherbrooke | 20 | 2892 | 33 596 |
| Montréal | - | 2886 | 33 596 |
| McGill | - | 3084 | 33 596 |
| Ottawa | 190 | - | 37 974 |
| Queen's | 190 | - | 37 974 |
| Toronto | 190 | 1950 | 37 974 |
| McMaster | 190 | - | 37 974 |
| Western Ontario | 190 | - | 37 974 |
| Manitoba | 706 | - | 30 416 |
| Saskatchewan | - | - | 32 955 |
| Alberta | 606 | - | 32 653 |
| Calgary | - | 664 | 32 653 |
| British Columbia | 286 | - | 37 658 |

Source: Association of Canadian Medical Colleges

Tuition battle ...

(Continued from page 478)

equivalent of residency training. They also serve the public and teach undergraduates. "The arguments have not changed," he said. "Pressure from a well-organized pressure group should not cause us to reconsider a decision we've already made."

Dr. Murray Urowitz, the university's associate dean of postgraduate medical education, had little sympathy for the residents. "Residents applying to the U of T all knew that applying to us meant paying a tuition of

\$1950, yet they still applied and were selected," he told *CMAJ*. "When we sent out our letters of acceptance, we added no new regulations. [And now] many of the trainees have decided to renege on their contract."

The next step in the dispute is an internal review. Urowitz said the task force that will conduct the review was to be appointed in early August, and will likely take 6 to 8 months to complete its work.

He said the university was introducing the fees simply because the province has cut its education grants and "the funding had to come from other legitimate sources."

He said the university remains

adamant that medical students pay the tuition fee, and the Canadian Resident Matching Service will include this fact when it provides information to residents applying for the 2000 match. "The real issue here is not the tuition fee," he said, "but the funding of post-graduate education in this province."

PAIRO, meanwhile, would like a 2-year moratorium on the fee. Tepper says PAIRO will participate in the internal review "but we strongly believe that imposing tuition does not recognize the contribution that residents make to the bottom lines of hospitals and universities." — *Patrick Sullivan, CMAJ*



The case of the duplicate diploma

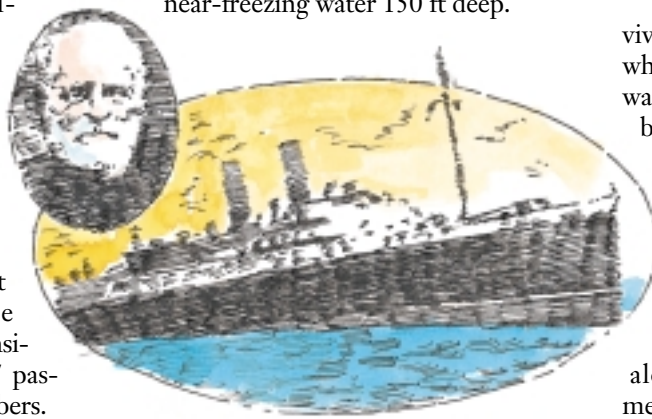
In 1914 a special ceremony was held at the McGill medical school when a recent graduate, Dr. James Grant, became the first alumnus ever to receive a duplicate diploma. He had lost his first one in exceptional circumstances and the faculty bent its own rules to provide him with another.

James Grant was originally from Vancouver Island. He headed east to take up medicine and after graduation in 1913, while interning at the Montreal General, his already unsteady health worsened. Sea air was recommended, and Grant went to work for Canadian Pacific as a ship's surgeon. On May 28, 1914, he sailed out of Quebec on the *Empress of Ireland*, his second west-east Atlantic crossing with the 550-ft liner; he was responsible for the health of 1057 passengers and 420 crew members.

By 2 am the *Empress* had dropped her St. Lawrence River pilot off at Rimouski and Grant was fast asleep in his quarters. At 2:09 he awakened on the floor of his cabin — he had rolled there because of the ship's suddenly extreme list. There were no lights, and he could hear screams. When he

found the door and opened it, he was looking *up* the passageway. It was rising slowly, like a drawbridge.

On hands and knees, Grant ascended the passageway and got his head through a porthole, which was now a skylight. A passenger standing on the level side of the ship "decorked" him. As he stood on the ship's flank with hundreds of other passengers and crew members, the ship slipped away beneath him and he stumbled into near-freezing water 150 ft deep.



As he treaded water, the fog that had enveloped the ship dispersed and Grant saw the nearby lights of another vessel. He began to swim toward it, and was quickly picked up by a boat crowded with shocked, shivering people. The boat returned to its mother

ship and unloaded the rescued. Grant, who was still in his nightclothes, borrowed an outsized pair of trousers, used a piece of string for a belt, and got on with the business of healing.

The boat Grant was now on was the Norwegian collier *Storstad* — the very one that had cut into the side of the *Empress* in the fog. In a mere 14 minutes, the *Empress* was on the bottom of the St. Lawrence, 4 miles from shore. The final death toll was 1012 people.

Throughout the night, until the survivors had been transferred to shore, where every available regional doctor was heading, Grant battled shock and broken limbs. His efforts were reported in the newspapers, which recorded him as one of the heroes of the worst maritime passenger sinking in Canadian history.

A few weeks later, he was given the duplicate diploma from McGill to replace the one that had, along with his luggage and instruments, gone to the bottom of the St. Lawrence River.

Grant returned to Vancouver Island after the disaster and continued to work for CPR — on land — as chief medical officer until 1938. He raised a family of 4, and he was 59 when he died of an ulcer in Victoria. — © *Phil Jenkins*, Chelsea, Que.

Hugh Macdonald

Cool sites

www.netmedicine.com/cyberpt/cyber.htm

Computer technology is revolutionizing medical training. For instance, surgical training is no longer limited by the number of cadavers available, since computers now provide virtual patients for trainees to cut and paste. Now the same technology is available to the general practitioner. The CyberPatient Simulator presents the clinician with a series of interactive patient simulations. Choose from 5 sample cases in 3 categories: acute care simulator, ACLS megacode simulator or pediatric ad-

vanced life support simulator. The clinician is presented with a patient and her complaint, and then proceeds to "save the patient." GPs can choose to get more history, perform a physical, order specific tests or try different treatment options. The system presents a "drug cabinet" and a picture of the patient, as well as text-based information. The site is really a sales pitch to convince doctors to purchase more interactive programs, but the ones available online are fully functional and worth a visit. — © *Michael O'Reilly*, moreilly@cancom.net



Research Update

Bacterial toxin kills most common form of brain cancer

A toxin produced by certain strains of *Escherichia coli*, such as the one that causes “hamburger disease,” induces programmed cell death in astrocytoma, the most common and most deadly primary brain tumour in humans. In the first animal model of the human tumour, researchers from Toronto’s Hospital for Sick Children and the University of Toronto achieved complete regression of human tumours growing in mice with just one injection of verotoxin (*Oncol Res* 1999;11:33-9).

Astrocytomas are “particularly resistant to treatment,” explains Dr. Clifford Lingwood. Patients with the most malignant form of astrocytoma, glioblastoma multiforme, survive an average of 12 months. Current treatment consists of surgical debulking of the tumour and radiation therapy.

Now that verotoxin has shown its worth in mice, Lingwood is hoping to test it in humans, pending approval of the research. “The plan is to have a few adult patients staggered with older children. We would be looking at its safety in adults before trying it in children.”

During cranial surgery, the neurosurgeon would debulk the tumour and inject verotoxin directly into any residual tumour. The main concern about using verotoxin is that verotoxin-producing *E. coli* can cause hemolytic uremic syndrome.

“It’s an obstacle, but I don’t think it’s insurmountable,” Lingwood says. He points out that the syndrome occurs mainly in young children. “It’s quite likely that adults and children older than 3 years are resistant to the

toxin.” There is also evidence that the bacterial infection itself, not just the toxin it produces, is implicated in hemolytic uremic syndrome. “Verotoxin given alone may be less pathogenic.”

There has been a flurry of research into the cancer-killing properties of verotoxin in astrocytoma, Burkitt’s lymphoma, ovarian cancer and some other cell lines. The receptor for verotoxin is found in elevated levels in many samples from these forms of cancer, and particularly from drug-resistant tumours.

Verotoxin induces cell death in both the tumour cells (antineoplastic) and the vascular cells around the tumour (anti-angiogenic). Thanks to this 2-pronged approach, it appears ideally suited to use as a cancer treatment, the authors conclude. — *C.J. Brown, CMAJ*

Research news

New view of tumours and blood vessels

The traditional view that tumours lack blood vessels (avascularity) at first and then develop them as they grow (angiogenesis) is challenged by a new study of tumour growth in rats (*Science* 1999;284:1994-8). Researchers found that tumours initially grow by “co-opting” blood vessels in the host. The co-opted vasculature then regresses, causing the tumour to shrink and lose cells. The remaining tumour is then “rescued” by angiogenesis, which leads it to grow again. Two growth factors appear to regulate the balance between vascular regression and growth, determining whether the tumour will become established.

Tracking down the enzyme that causes metastasis

Two research teams in Israel and Australia have cloned the enzyme that leads to cancer metastasis (*Nat Med* 1999;5:793-802,803-9). The enzyme, heparanase, is expressed in samples from human breast, colon and liver carcinomas. In experiments in mice, heparanase causes T-lymphoma and melanoma cells to become highly metastatic. The enzyme appears to degrade the extracellular matrix of healthy cells, allowing invading cancer cells to colonize. Researchers are hopeful that cloning the enzyme will allow them to develop molecular probes for early detection and treatment of cancer metastasis.

A taxing situation

Quebec physicians with gross incomes of \$150 000 will pay over \$10 000 more in provincial and federal tax than their counterparts in Alberta in 1999, *Strategy* magazine reports. The magazine, published by MD Management Ltd., reported in July that a Quebec doctor would pay \$68 500 in taxes, compared with \$58 200 for doctors in Alberta. The magazine’s calculations assume that the taxpayer claims only the basic personal exemption tax credit.

The roughly 40 doctors in the Northwest Territories/Nunavut pay the least territorial and federal tax in Canada — \$56 800 on gross incomes of \$150 000. In comparison, Ontario physicians can expect to pay \$60 700 for earning the same income, and British Columbia doctors will pay \$64 500.

