FOR THE RECORD

Published at www.cmaj.ca between July 13 and Aug. 10

Ready for refuel

The Canadian Nuclear Safety Commission (CNSC) has approved the restart of the medical isotope-producing National Research Universal (NRU) reactor in Chalk River, Ontario and affirmed Atomic Energy of Canada Ltd.'s (AECL) licence to operate the facility "until October 31, 2011, unless suspended, amended, revoked or replaced."

"To return the reactor vessel to service, AECL had to repair the parts of the vessel that had structurally significant wall thinning due to corrosion and AECL had to develop a strategy to mitigate the corrosion. CNSC staff confirmed that the repairs provide structural integrity to the reactor vessel and that the repairs were done within the applicable nuclear Codes and Standards. CNSC staff noted that the repairs passed the vessel leak test approval by the Technical Standards and Safety Authority, and the acceptance of the final Repair Report by CNSC staff is pending," Micheal Binder, president of the CNSC stated in a summary decision released July 5 (www.nuclearsafety.gc.ca/eng/commission/pdf/2010-07-05-SummaryDecision-AECL-NRU-e-Edocs3572189.pdf).

But the CNSC also signalled its intent to keep AECL on a very short leash.

It ordered AECL to provide an update on operations within six months of restarting the reactor and then to conduct annual inspections of the vessel, the first of which "must be no later than nine months after the NRU restart." And earlier, during a July 5 public hearing into AECL's application to refuel the 50-year-old reactor, Peter Elder, director general of the CNSC directorate of Nuclear Safety and Facilities Regulation, said that there will be close monitoring of the agency's contingency plan to prevent future corrosion (www.nuclearsafety.gc.ca/fr/commission/pdf/2010-07-05-Transcript-HearingAECL-NRU.pdf).

Similarly, Miguel Santini, director of the Chalk River Laboratories' compliance and licensing division, said that AECL will have to demonstrate that it has adequate risk mitigation measures in place to ensure that "defective" fuel is not again loaded into the reactor and that it has properly implemented changes aimed at redressing the "organizational weaknesses that led to the vessel leak." Those included maintenance backlogs, inadequate training and failure to adopt industry best practices.

Bill Pilkington, senior vice-president and chief nuclear officer of AECL, told the public hearing that the agency has comprehensive plans to prevent the same sort of corrosion in the reactor's walls that had led to the extended shutdowns and ensuing repair woes.

The original corrosion resulted from "nitric acid formed by irradiation of air in the presence of light water from reflector leaks," he said. AECL's plan to avoid similar corrosion "is based on reducing air and water ingress. Immediate action has been taken to address water leaks and clear drains to eliminate pooling and splashing on the vessel wall. Action has also been taken to reduce air leaks and improve the delivery of CO_2 [carbon dioxide]. Going forward, CO_2 purity and the pH of water drained from the annulus will be closely monitored. Further reductions of water and air ingress will be achieved through physical improvements during regular planned maintenance outages. Additional mitigation measures are under consideration including the application of a cold spray sacrificial aluminum coating, repair of the reflector leaks, and changes to the reflector water chemistry."

Pilkington said AECL wasn't adverse to longer maintenance outages. "Continued fitness for service will be verified through in-service inspections conducted during planned maintenance outages. In future, the reliability of NRU operation will be enhanced through longer planned maintenance outages. These longer outages will start with the first within nine months of return to service and then will occur annually thereafter subject to review based on NRU performance and outage experience. The duration of annual maintenance outages will be set by the critical path activities and are expected to be about four weeks in duration."

Shortly after the reactor was first shut down in December 2007, Canada and particularly, isotope distributor MDS Nordion, were accused by European officials of refusing to take part in efforts to coordinate global isotope supply (www.cmaj.ca/cgi/doi/10.1503/cmaj.080154).

But Pilkington indicated international cooperation is now the norm. "AECL is in regular communication with the other major isotope producers on projections for the NRU return to isotope production through the Association of Imaging Producers and Equipment Suppliers, or AIPES, in Brussels," he said, while also indicating that AECL is making efforts to keep health care stakeholders in the information loop. — Wayne Kondro, *CMAJ*

New global network to make cities friendlier for the elderly

The World Health Organization (WHO) has established a new global network to help cities improve their physical and social environments to allow elderly citizens to remain healthy and active.

The Global Network of Age-friendly Cities will link participating cities to international aging and civil society experts, facilitate information exchanges, publish guidelines on best practices and provide technical support

and training to foster interventions to improve the lives of older people.

The new network is part of the WHO's ongoing efforts to prepare cities for the imminent merger of two global demographic trends: population aging and urbanization. The WHO estimated that the proportion of people aged over 60 will double from 11% of the global population in 2006 to 22% in 2050, with the elderly outnumbering children for the first time in human history. Likewise, the number of city dwellers is expected to continue rising. According to the WHO, one in five people will live in cities by 2030 (www.who.int/ageing/publications/Global_age_friendly_cities_Guide_English.pdf).

Making cities more age-friendly is the necessary and logical next step to improve the lives of older urban residents and keep cities thriving, says Dr. John Beard, director of the WHO's department of ageing and life course. "Generally, when people look at these trends, they talk about the burden the elderly will pose on health systems and pension plans. We see older people as an untapped resource, and the key to liberating that resource is creating an urban environment that will allow them to participate in all aspects of social life, regardless of their physical condition."

Areas targeted for improvement include outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication, and community support and health services.

Cities that sign onto the network commit to a five-year cycle in which they will assess and improve their "age-friendliness." Within the first two years of the cycle, a city is required to develop an action plan identifying areas for improvement, such as access to public transit, seating or washrooms, which they will submit to the WHO for review and endorsement. They will then have three years to implement the plan, during which they are required to report progress to the WHO.

While the WHO has set guidelines for assessing the "age-friendliness" of a city (www.who.int/ageing/publications/Age_friendly_cities_checklist.pdf), they've yet to issue any global standards of implementation.

"There's definitely a challenge in finding standards that are valid for Toronto [Ontario], but also for Nairobi [Nairobi Province]. It's not an insurmountable challenge, but it's one we're not in a position to meet yet," says Beard.

According to a recent WHO release, many individual cities, both large and small, have already formally applied to join the network, with New York City, New York, the first to join the network, in June.

The WHO has established formal agreements with the French government, the Irish Ageing Well Network, and the Slovenian Network of Age-friendly Cities to develop national programs. Five of Canada's provinces are also running complementary initiatives.

"At the moment, most interest has come from the developed world, but I think that's because less developed countries feel they don't have much to contribute," says Beard. "There's actually a lot happening in less developed countries that we could learn from, and cities in developed nations are very keen to twin with those in developing nations."

People in developing countries are currently aging at a much faster rate than those in developed countries. According to WHO estimates, within five decades over 80% of the world's elderly will be living in developing nations. Meanwhile, the number of older people living in cities in developing countries is expected to jump from 56 million in 1998 to over 908 million in 2050.

The first international meeting of the new network will be held in Ireland in 2012. — Lauren Vogel, *CMAJ*

Older Americans paying more for care and drugs

Aging Americans face higher health care and drug costs than their predecessors, according to a new report by the Federal Interagency Forum on Aging-Related Statistics.

Older Americans 2010: Key Indicators of Well-Being is the fifth in a series of reports by the forum examining the health and well-being of Americans age 65 years and over (www.agingstats.gov/agingstatsdotnet/Main_Site/Data/2010_Documents/Docs/OA_2010.pdf).

According to the report, average health care costs among older Americans have increased significantly since the 1990s. After adjustment for inflation, the average cost of health care for Americans age 65 and over rose from US$9224 in 1992 to US$15 081 in 2006.

Health care costs also rose substantially with age. Americans between the ages of 65 and 74 spent an average US $6864 on health care in 1992, while those age 85 and over spent US$17 841. In 2006, health care costs for Americans between the ages of 65 and 74 averaged US$11 287, while costs for those age 85 and over averaged US$23 664.

Health care costs were higher among older Americans with chronic or multiple conditions, averaging US$25 132 in 2006, and among residents of long-term care facilities, at US$57 022. Low-income individuals also incurred higher health care costs; those with less than US$10 000 in income averaged US$21 033 in health care costs, whereas those with more than US$30 000 in income averaged only US$12 440.

Average out-of-pocket costs also increased. In 2006, older Americans in the poor and near-poor income categories put 28% of their household income toward out-of-pocket health care expenditures, compared to just 12% in 1977. The percentage of household income allocated to out-of-pocket health care costs also increased from 10% to 13% for older Americans in poor or fair health, and from 6% to 8% for those in good, very good, or excellent health.

From 1999 to 2006, more than half of all out-of-pocket health care expenditures by older Americans went toward prescription drugs.

Prescription drug costs made up 16% of total health care expenditures by older Americans in 2006, double the share held in 1992.

Average prescription drug costs for

older Americans increased rapidly during the same period. Americans age 65 and over spent an average US$570 per person on prescription drugs in 1992. In 2004, prescription drug costs among older Americans averaged US$2107.

However, it seems older Americans are getting a return on their increased investment in health care. According to the report, Americans are living longer than ever before. Life expectancies at both age 65 and 85 have increased. Under current mortality conditions, people who survive to age 65 can expect to live an average 18.5 more years, four years longer than they would have in 1960.

The proportion of people age 65 and older with functional limitations also declined from 49% in 1992 to 42% in 2007.

The Federal Interagency Forum on Aging-Related Statistics was established in 1986 to foster collaboration among federal agencies to improve aging-related data. — Lauren Vogel, *CMAJ*

UK government outlines plans to transform National Health Service

The United Kingdom's government outlined its plans to transform the National Health Service into the "envy of the world" in *Equity and excellence: Liberating the NHS*, a white paper published July 12 (www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_117353).

The government promises to give patients more control over their care and their medical records. "Shared decision-making will become the norm," the paper states. Also, patients will be given more choice of health care providers and the ability to rate hospitals according to quality of care.

"First, patients will be at the heart of everything we do," the paper states. "So they will have more choice and control, helped by easy access to the information they need about the best GPs and hospitals."

The second major focus discussed in the paper is on improving clinical outcomes. The government plans to accomplish this by holding the NHS to account against evidence-based outcome measures instead of process targets, developing quality standards, improving the transparency of payment systems and providing financial incentives for health care providers to improve performance.

"Success will be measured, not through bureaucratic process targets, but against results that really matter to patients — such as improving cancer and stroke survival rates."

Another of the government's goals is to empower health care professionals by restricting political involvement in the management of NHS and giving front-line staff more control. "Healthcare will be run from the bottom up, with ownership and decision-making in the hands of professionals and patients," the report states.

The government also intends to cut bureaucracy and improve efficiency, and invest savings into front-line care. It plans to do this by reducing NHS management costs by more than 45% over the next four years and investing up to £20 billion of efficiency savings to improve health outcomes by 2014.

"Of course, our massive deficit and growing debt means there are some difficult decisions to make," the report states. "The NHS is not immune from those challenges. But far from that being reason to abandon reform, it demands that we accelerate it." — Roger Collier, *CMAJ*

Decriminalizing drug use will curb the spread of HIV/AIDS, say health policy groups

The global war on drugs has failed to curb illegal drug use and is fuelling the spread of HIV/AIDS, according to three leading scientific and health policy organizations in a recently released document.

"The current approach to drug policy is ineffective because it neglects proven and evidence-based interventions, while pouring a massive amount of public funds and human resources into expensive and futile enforcement measures," said Dr. Evan Wood, founder of the International Centre for Science in Drug Policy and a researcher at the British Columbia Centre for Excellence in HIV/AIDS, in a press release (www.viennadeclaration.com/uploads/3/1/4/9/3149537/vienna_declaration_release_final_embargoed_until_28_june_2010.pdf).

The two Vancouver-based groups, along with the International AIDS Society, recently launched a global drive for signatories to the Vienna Declaration, the official document of the XVIII International AIDS Conference (AIDS 2010) that took place in the Austrian capital in July (www.viennadeclaration.com/the-declaration.html).

According to the document, the last three decades have seen a steady fall in illicit drug prices and a rise in the number of countries in which people inject those drugs.

It also accuses world governments of fuelling HIV epidemics by criminalizing drug use at the cost of harm-reduction programs, such as safe-injection sites and needle exchanges.

The document states that injection drug use accounts for approximately one in three new cases of HIV, outside of sub-Saharan Africa. In areas where HIV is spreading most rapidly, such as Eastern Europe and Central Asia, HIV prevalence can be as high as 70% among injection drug users, who, in some areas, account for more than 80% of all HIV cases.

Incarcerating drug users has also placed an overwhelming burden on criminal justice systems and state finances, the declaration asserts. Record incarceration rates have coincided with an increase in HIV outbreaks, as prisons often lack HIV prevention services.

"Many of us in AIDS research and care confront the devastating impacts of misguided drug policies every day," said AIDS 2010 Chair Dr. Julio Montaner, president of the International AIDS Society and director of the BC Centre for Excellence in HIV/AIDS, in the press release. "As scientists, we are committed to raising our collective voice to promote evidence-based approaches to illicit drug policy that start by recognizing that

addiction is a medical condition, not a crime."

The declaration calls on governments and the United Nations to review the effectiveness of existing drug policies; implement public health approaches to addressing the negative effects of illicit drug use; decriminalize drug use; and scale up funding for HIV interventions.

The Canadian government has refused to support the declaration, stating it doesn't fit with the country's drug policies, which primarily focus on enforcement. — Lauren Vogel, *CMAJ*

FDA approves stem cell clinical trial

Geron Corporation, a biopharmaceutical company based in Menlo Park, California, has received approval from the United States Food and Drug Administration (FDA) to conduct the first authorized clinical trial of the use of human embryonic stem cells in people. The trial will test a stem cell-based therapy called GRNOPC1 in patients with acute spinal cord injuries.

"We are pleased with the FDA's decision to allow our planned clinical trial of GRNOPC1 in spinal cord injury to proceed," Dr. Thomas Okarma, Geron's president and CEO, said in a press release (www.geron.com/media/pressview.aspx?id=1229).

"Our goals for the application of GRNOPC1 in subacute spinal cord injury are unchanged — to achieve restoration of spinal cord function by the injection of hESC [human embryonic stem cell]-derived oligodendrocyte progenitor cells directly into the lesion site of the patient's injured spinal cord. Additionally, we are now formally exploring the utility of GRNOPC1 in other degenerative CNS [central nervous system] disorders including Alzheimer's, multiple sclerosis and Canavan disease."

The trial for GRNOPC1 had been approved in early 2009, but the FDA suspended it after rats injected with the therapy developed cysts. After conducting a new rat study to improve the detection of cell purity, Geron was given permission by the FDA to proceed with the trial. Phase I of the trial will include only patients who, between 7 and 14 days before starting the therapy, suffered complete thoracic spinal cord injuries.

The primary endpoint of Phase I of the clinical trial is safety of the new therapy, and secondary endpoints are to assess efficacy, including improved sensation in lower extremities and improved neuromuscular control. Once safety has been established, Geron plans to seek FDA approval to expand the study and enrol patients with complete cervical injuries and severe incomplete injuries.

So far, Geron has chosen seven US sites to participate in the clinical trial. The sites will be identified when researchers are ready to enrol study participants. — Roger Collier, *CMAJ*

United States obesity rates continue to rise

Nearly 2.5 million more United States residents were obese in 2009 than in 2007, according to a new report from the Centers for Disease Control and Prevention (www.cdc.gov/mmwr/preview/mmwrhtml/mm59e0803a1.htm?s_cid=mm59e0803a1_w).

In total, 72.5 million Americans are obese, or 26.7% of the population. Obesity rates exceeded 30% in nine states — Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Missouri, Oklahoma, Tennessee and West Virginia — compared to only three states in 2007.

The obesity problem is likely even larger than these numbers suggest, researchers say, because the report is based on self-reported data from a *2009 Behavioral Risk Factor Surveillance System Survey* (BRFSS) of 400 000 people conducted by phone.

"BRFSS estimates of obesity prevalence rely on self-reported height and weight, which likely produces underestimates because both men and women tend to overestimate their height and women tend to underestimate their weight," the report states. "The overall 2009 BRFSS obesity prevalence estimate of 26.7% is 7.2 percentage points lower than the national 2007–2008 estimate of 33.9% from NHANES [National Health and Nutrition Examination Survey], for which height and weight were measured rather than self-reported."

Obesity rates varied according to several factors, including age and ethnicity. People who were 50 years old or more had higher obesity rates than younger people. The highest rate was found in "non-Hispanic black women" (41.9%). Overall, "non-Hispanic blacks" had a rate of 36.8%, and Hispanics had a rate of 30.7%. Rates also fluctuated across education levels. People with college educations were the least likely to be obese — the rate among men in this category was 22.9%, and for women it was 19.8%.

"The problem of obesity is inherently complex, and no single strategy has been determined most effective," the report concludes. "As such, the need for a comprehensive approach was stressed recently in *The Surgeon General's Vision for a Healthy and Fit Nation 2010* and the *2010 report of the White House Task Force on Childhood Obesity*. These reports highlight the need to 1) address both nutrition and physical activity, 2) work across multiple settings … and multiple sectors … and 3) change individual behaviors as well as the environments and policies that affect those behaviors." — Roger Collier, *CMAJ*

Canada's health system needs "urgent" reform

The Canadian health care system needs to be "massively transformed," according to a sweeping blueprint released by the Canadian Medical Association (CMA).

In *Health Care Transformation in Canada: Change that Works, Care that Lasts*, the CMA calls the current health care system "inadequate," citing Canada's "exceedingly long" wait times for necessary medical care, "overworked and discouraged" care providers, and dearth of mechanisms for system monitoring and accountability as indicators of the "urgent need"

for reform (www.cma.ca/multimedia/CMA/Content_Images/Inside_cma/Advocacy/HCT/HCT-2010report_en.pdf).

"Our system of publicly funded health care is founded on the promise that all Canadians receive needed medical care when and where they need it. Far too often, the promise falls short," said Dr. Anne Doig, president of the association, in a press release (www.cma.ca/advocacy/openingstatement).

While universal coverage exists for a narrow range of medically-necessary services, the blueprint for reform criticizes the inconsistency of access to other essential health care services, both within and across jurisdictions. In particular, prescription drugs, mental health services and continuing care have fallen through the cracks in coverage, despite increasing demand from Canada's aging population.

"The present system will not be able to meet future needs. We need a sustainable health care system that can actually meet the needs of patients. We need health care transformation. We need it now," said Doig.

The report recommends actions necessary for change, including the creation of a national patient charter, incentives to reward timely access and quality of care, universal access to prescription drugs, and new systems for accountability. The CMA also calls for the immediate construction of new long-term care facilities.

The Canadian Nurses Association expressed both "optimism and concern" over the CMA transformation blueprint. While welcoming the discussion on health care reform, it questioned how the new recommendations will "meet the legitimate health-care needs of Canadians while being affordable to the public." In particular, the nurses association criticized the "physician-focused" tone of the report, and noted that its recommendations call for the bulk of investment to be directed to physician use, rather than health teams (www.newswire.ca/en/releases/archive/August2010/04/c8487.html).

"We need to be asking what the physician community is prepared to change as its contribution to a transformed health-care system. We cannot build a transformed, patient-centred health system based on a physician-focused delivery model," said Rachel Bard, CEO of the nurses association.

The report was released in advance of CMA's annual general meeting, which will be held Aug. 22–25 in Niagara Falls, Ontario. — Lauren Vogel, *CMAJ*

DOI:10.1503/cmaj.109-3333