cost of \$330 and a booster at \$100) would save \$54 million in treatment costs over 26 years. But it would cost \$373.6 million. "That's just saying we're avoiding the cost of treatment," says Krueger. To break even at the end of 26 years, the vaccine would have to cost \$45; a booster \$15.

Dr. David McLean, head of the agency's Cancer Prevention Program, says health authorities need to explore cost-cutting strategies, including whether 2 shots, rather than 3, would "secure adequate coverage," and whether focusing on subpopulations at higher risk (groups tending toward earlier sexual initiation or populations with higher cervical cancer rates) would be more cost-effective.

However, McLean cautions against using cost as the only measure of value. "Much of the expenditure in health could not in any way be termed cost-effective," he says. "We do many things 'because it is the right thing to do.'"

Moreover, McLean notes evidence suggests that much oral cancer, cancers of the larynx and lung, and many skin cancers (combined with ultra violet light) are HPV related. "I think with a population program we may be very pleasantly surprised at what happens to the incidence of some other cancers."

Still others have ethical issues with the vaccine. "I don't understand a mass vaccination for a sexually contracted disease," says Moira McQueen, director of the Canadian Catholic Bioethics Institute at the University of Toronto. "It gives the clear message that we think sexual activity is okay at any age and they will be protected." Education about the benefits of abstinence, she says, is a better long-term solution for emotional as well as physical health.

The debate will likely ratchet-up this year but NACI Chair Monika Naus doesn't believe it will be as intense as in the US. "I think that Canada is a lot more pragmatic about these kinds of issues," she says. "I am sure there will be some controversy from some sectors, but I would hope that this would be seen as an opportunity rather than a hazard." — Pauline Comeau, Ottawa

Students, scientists push for access to drugs in developing world

High profile Canadian doctors and scientists have joined student activists in a campaign to push universities to reform their policies so that research and life-saving medicines are more accessible in developing countries.

Universities Allied for Essential Medicines (UAEM), a student-led coalition with more than 35 chapters in North America, adopted the so-called Philadelphia Consensus Statement in November 2006. It calls on universities to engage in research for neglected diseases ("needs-based research") and to measure research success according to its impact on human welfare, instead of the number of patents and revenue from licensing agreements. As well, it urges reforms to licensing agreements with biotechnology and pharmaceutical companies so the developing world can have affordable access to the fruits of biomedical research.

The organization is very active at McGill, University of British Columbia and the University of Toronto.

The UAEM vows to hold universities, which are major contributors to the drug pipeline, to their commitment

to creating knowledge that benefits society. "Universities have considerable untapped influence," maintains the group, which is working to bring university presidents on board with the consensus statement. A national week of action is planned for mid-April.

Among the Canadians who have endorsed the statement are Nobel Laureate John Polanyi, former international president of Doctors Without Borders Dr. James Orbinski, co-chair of the 2006 International AIDS conference Dr. Mark Wainberg, International AIDS Society President-Elect Julio Montaner, University of British Columbia microbiologist Robert Hancock and former UN special envoy for HIV/AIDS in Africa Stephen Lewis.

But it is "a lot of passionate students" who sustain the organization, says Caroline Gallant, the 29-year-old Canadian point person for UAEM and PhD candidate at McGill University's Department of Human Genetics. Gallant, originally a liberal arts student, switched disciplines after a stint at an eye clinic in Guyana. The Ford Foundation has provided US\$100 000 over 2 years for administration and projects. UAEM's Grand Challenges in Global Health initiative provides a model for reform; it stipulates that grantees must ensure any medicines or health tools produced be available to the developing world at affordable prices — or patents revert to the foundation.

CARE/Josh Estey 2004

Students at 3 Canadian universities are part of a North American coalition lobbying for access to medicines in the developing world.

The UAEM also urges universities to partner with new organizations that are changing the research landscape, such as the Institute of OneWorld Health and the Drugs for Neglected Diseases Initiative.

In Canada, UAEM members are pushing for revisions to the much-heralded Access to Medicines Regime (formerly known as the Jean Chrétien Pledge to Africa Act) that was supposed to facilitate the export of affordable medicines to the developing world, but has failed to produce any pills.

Richard Gold, director of the McGill Centre for Intellectual Property Policy, endorsed the consensus statement because “universities have a public role, not to make money but to create knowledge and make it accessible as broadly as possible.” And while adding clauses to licensing agreements with biotechnology companies about access to research products in the developing world is “trickier” than ensuring fundamental research is publicly available, and might have to be done case by case, Gold says such conditions should not necessarily be a “deal breaker.”

The Canadian Institutes for Health Research is currently working out its own policies to broaden access to publicly funded research, following the lead of the Wellcome Trust and Britain’s Medical Research Council, which require researchers to provide open access to research results, a stance long-endorsed by *CMAJ*. — Ann Silversides, Toronto

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***C. difficile* inquest too narrow as “Quebec strain” goes international**

You know, you don’t go to the hospital to get more sick,” says Danielle Raymond, recounting how her father, 71-year-old Laurier Raymond, was sent home suffering from severe diarrhea last autumn, several weeks after his admission to Honoré-Mercier hospital in St. Hyacinthe, Que. for cardiac problems. He was back in hospital just days later, weak and fever-

ish, and died Dec. 7 — one of 16 patients at Honoré-Mercier who succumbed during an outbreak of *Clostridium difficile* that began at the hospital in May 2006.

Quebec Coroner Catherine Rudel-Tessier is now sifting through the causes and circumstances surrounding those deaths in St. Hyacinthe. Quebec Health Minister Philippe Couillard ordered the inquest last November after media reports of deviations from infection control guidelines — including the improper sterilization of bed pans.

However, Couillard ignored a plea for a much broader public inquiry from Université de Sherbrooke’s Dr. Jacques Pépin, one of the first infection control specialists to identify the outbreak (*CMAJ* 2004;171:466-72).

According to October 2006 data from l’Institut de la statistique du Québec, there have been more than 1900 deaths in Quebec directly attributed to *C. difficile* since 2002. By 2005, 30 Quebec hospitals were reporting infection rates of 15 per 10 000 patient days — 5 times greater than historic rates. In the first 2 years of the outbreak, the attributable death rate was as high as 16.7%, although now, as patients with *C. difficile* are diagnosed and treated more quickly, that’s been reduced to about 6%.

Pépin argues that the focus on St. Hyacinthe is “far too narrow a mandate, when there are a vast number of unanswered questions on the sequence of events that led to this epidemic.”

Infectious disease experts in the US and Europe are now looking to Quebec to provide clues on combating the spread of a super-bug now commonly known as the “Quebec strain,” even though it likely first surfaced at the University of Pittsburgh in 2000 or 2001, according to Dr. Cliff McDonald, a leading expert in nosocomial diseases at the Centre for Disease Control in Atlanta, Georgia. The strain — officially NPA1/027 — produces levels of 2 kinds of toxins that are 16–23 times more potent than the common strain of *C. difficile* (*Annals of Surgery* 2007;245:267-72). It has been reported in at least 16 US jurisdictions and has been recognized as the cause of outbreaks in at least 5 countries in Europe, reports Ed Kuijper, a mi-

crobiologist at Leiden University in the Netherlands (*Clin Microbiol Infect* 2006;12 Suppl. 6:2-18). Kuijper says epidemiologists are alarmed by the potential stresses on European health care systems, should an epidemic as widespread as Quebec’s ever hit that continent.

The cost would total about €3000-million annually, says Kuijper. “The main issue now is how to get countries in Europe alert for this strain,” he adds. “We’ve learned from Canada that a multifaceted approach is really necessary for effective combat against *C. diff*.”

Among those who speak internationally about the Quebec experience is Dr. Michael Libman, head of infection control at the McGill University Health Centre. He says epidemiologists may never know exactly why *C. difficile* spread to so many health care institutions in a single region, and beyond. But they have several theories. Among them: the age and condition of many hospitals in Quebec, in which 3 to 6 patients share a single bathroom. Libman adds there is little doubt housekeeping budget cuts and nursing shortages contributed to difficulties in controlling the spread of the new strain of *C. difficile*.

On the island of Montréal — which at the peak of the outbreak had infection rates of 23 per 10 000 patient days — the ambulance system may also have