What does it cost to live with HIV?

The annual British Columbia HIV/AIDS conference marked its 10th birthday this fall, and the anniversary arrived at a critical time because BC now claims one of the highest incidence rates for HIV infection in the developed world.

A unique Canadian project discussed at the 1997 conference has been investigating the cost and economic impact of HIV and AIDS. The goal of the Community Health Resource Project is to define direct and indirect costs associated with HIV/AIDS, and, conversely, to explore the economic value of life. The project evolved after discussions with community groups to determine where gaps existed in current cost-related research. “What is missing most notably in other studies is the cost to partners, volunteers and community agencies,” said Dr. Robin Hanvelt of UBC, the study’s principal investigator.

Current direct-cost estimates per lifetime episode of AIDS are as high as $180,000, whereas indirect costs representing lost income because of death and debilitation may reach almost $1 million per case.

This is the only Canadian study to specify the cost of retroviral therapy (57% of participants are taking drug combinations that cost about $12,000 per year, and protease inhibitors cost close to $6000 annually). It also includes a wide range of costs, including the price tag attached to volunteer support, and contains a large sample from “emerging groups” affected by the disease, such as women and natives.

A functional health-status component, which describes people’s perception of their health, is considered a crucial component. As well, participants are asked to record in a diary unmet needs involving basic items such as food and clothing.

Evin Jones of the BC Persons with AIDS Society said patients’ dependence on welfare benefits is her agency’s “central dilemma.” Affordable housing is needed, because even though average rent in downtown Vancouver is $740 per month, the maximum shelter allowance for those receiving welfare is $325 a month. This forces many people to live in decrepit hotels. The requirement that Canada Pension Plan disability benefits be deducted from welfare cheques also causes financial problems, said Jones.

The research project, launched in September 1996, now has 550 participants; 175 are natives, and native leaders play an active role in the project. Data are currently being analysed and results will be disseminated widely in the AIDS community. Hanvelt and his coinvestigator, UBC economist David Schneider, “hope the data will be used in ways that we never anticipated.” — © Heather Kent

WHO condemns broad use of antibiotics on farms

Humans are in danger because of the growing use of antimicrobial drugs in raising farm animals, the World Health Organization (WHO) says. Following an October meeting, WHO reported that public health consequences of excessive use of antimicrobial products in livestock include the emergence of resistant microbes, which can be transferred to humans through the food chain. Researchers attending the meeting received evidence that antibiotic use in animals leads to resistant salmonella infections.

Manitoba MDs say Nein to German physicians

Manitoba’s health minister never dreamed that his plan to hire German doctors to work in remote parts of the province would degenerate into an acrimonious debate between the government’s official opposition, the College of Physicians and Surgeons of Manitoba and the Association of Foreign Medical Graduates of Manitoba Inc.

During a recent trip to Germany, Health Minister Darren Praznik scoured the country for 40 replacement doctors to serve in areas with chronic physician shortages. However, his initiative caused a storm of
Focus changing at children’s hospitals

Dozens of hospitals have closed across Canada in the past 5 years, but the country’s children’s hospitals appear to have survived the cuts. Alberta, Ontario, British Columbia and Nova Scotia have all opted to keep their children’s hospitals open, and Newfoundland is about to lay the foundation for a new facility.

However, speakers at a recent conference of the Canadian Association of Paediatric Hospitals (CAPH) said that in the future these hospitals will differ from today’s stand-alone facilities. Indeed, many of them are already transforming themselves into facilities for children and mothers. This merger of services increases an institution’s pool of patients and can have a significant impact on quality of care. Montreal’s Hôpital Ste-Justine, which pioneered this concept in Canada in 1970, now treats one-third of all neonatal patients in Quebec. The hospital handled 1626 deliveries in 1972, but by 1996 it was dealing with 4056 births, of which 15% were premature by at least 4 weeks.

Similar maternal- and child-health facilities have been established at the IWK Grace Health Centre in Halifax and the BC Women’s and Children’s Hospital in Vancouver. In Ontario, both the Hospital for Sick Children (HSC) in Toronto and Ottawa’s Children’s Hospital of Eastern Ontario (CHEO) are taking a different tack. Both have established “networks” to integrate the clinical services they offer into additional services for children.

HSC has taken a strictly clinical, top-down approach: it is promoting itself as the “hub” for pediatric medicine and developing satellite expertise in particular conditions in other Toronto-area hospitals. Meanwhile, CHEO has taken a community-focused, bottom-up approach.

Changes within the sector have given CAPH a renewed sense of momentum and will probably lead to a name change to reflect the move away from bricks-and-mortar definitions of health care.

Restructuring is leaving some scars. Mergers between hospitals for children and women have disrupted old loyalties and involved huge amounts of paperwork and reorganization. Neonatologist Eli Rees said the Halifax merger needed 25 subcommittees to handle the change within his department alone, and the merger is still incomplete. “A true feeling of unity is still to come,” he says.

Participants agreed that it is hard to gauge whether the new approaches are successful, since few reliable measures of outcome are available. No evidence suggests major financial savings, and reorganization triggers many challenges. For instance, how should the free flow of information be handled among multiple caregivers? How far can health care networks evolve within the present system of physician remuneration?

Still, it seems most Canadians remain satisfied with the health care provided for their children. This is true even in Alberta, where a radical restructuring has included major spending cuts. — © Charlotte Gray (CMAJ contributing editor and vice-chair, CHEO Board of Directors)
mote areas after graduation. “They would sign a contract stipulating that they would practise for 5 to 10 years in rural Manitoba,” Chomiak said. The college in turn proposed that the foreign-trained doctors be eligible to work as physician assistants in remote areas so that their verbal, medical and other skills could be assessed.

Meanwhile, the shortage grows worse, with all 3 physicians recently leaving the small town of Deloraine. Dr. David Lindley said he is moving to a medical centre in Nebraska where he can practise his surgical skills. “There is no anesthetist in Deloraine, even though we have been trying to recruit one for years, and if I remain here another year my surgical skills will have to be reassessed.”

Grant Cassils, president of the Deloraine Chamber of Commerce, is considering sending a delegation to the United Kingdom to search for replacements.

Meanwhile, Praznik said he has not given up on his plan to recruit Germans. The government can grant a ministerial waiver that places doctors on a conditional register that allows them to work immediately. — © David Square

Teen charged with Ritalin trafficking

The RCMP have charged 5 Manitoba teens with trafficking in methylphenidate, which is normally prescribed to treat attention deficit hyperactive disorder. The youths, aged 13 to 15, live in Boissevain, which is south of Brandon near the US border. Police confirmed that 2 of those charged had legal prescriptions for the drug. The police became involved after parents, concerned about missing tablets, contacted police.

Research Update • Le point sur la recherche

The enteropathogen has landed

A recent Canadian discovery concerning the virulence of enteropathogenic Escherichia coli is an unprecedented finding in microbiology. Researchers at the University of British Columbia biotechnology laboratory have found that enteropathogenic E. coli injects its own receptor molecule into the intestinal cell wall for the bacterium to attach itself to (Cell 1997;91:511-20). This is a completely new concept in biochemistry, says Dr. Brett Finlay, one of the study’s authors.

Conventional wisdom assumes that microbes lock onto existing host molecules. A year ago Finlay and his colleagues knew that the bacteria bound to the intestine but did not know precisely how. In fact, they inject a soluble protein into the host membrane, preparing a landing field for the bacteria themselves.

After the bacteria pass through the stomach they shoot the receptor into the intestinal membrane, using numerous accessory proteins to ensure that it docks successfully. The bacteria then attach themselves firmly to these receptors.

To verify this sophisticated sequence of events, the researchers observed specially produced large protein receptors (fusion proteins) entering human cells. They then eliminated the bacterial gene — coding for the protein — and found that the bacteria could no longer bind to human intestinal cells.

This discovery allows researchers to target the bacterial molecule, rather than the host molecule, in their next phase of work. They will now begin shutting down the bacterial injection machinery in an effort to develop E. coli vaccines for beef cattle. The goal is to immunize cattle against the molecule so that they do not harbour E. coli and pass it to humans.

Three Canadian companies are working on vaccines and developing compounds to block receptor delivery.

Although he acknowledges the hit-and-miss history of vaccines, Finlay hopes one is ready within 1 or 2 years. He speculates that other microbes, including the Salmonella and Shigella species, may use a similar mechanism to install receptor proteins in human cells. — © H. Kent