

## Sanitation habits increase global health stresses

The negative effects of pollution and sanitation on health have reached such staggering proportions that only scientists from different disciplines working together will be able to reverse the problem, says an author of the United Nations Environment Programme's most recent *Global Environment Outlook*.



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Nearly 2 billion people in the world live in areas that are under water stress.

While the report echoes dozens of other warnings of impending doom delivered by international experts in recent years, it is unique in its emphasis on solving the health effects of environmental stresses, says Walter Rast, associate director of the River Systems Institute of the Texas State Department of Biology and 1 of 4 lead authors of the Outlook's chapter on water.

Because of the complex interrelationship between the environment and health, multi- and transdisciplinary scientific efforts will be needed if solutions are to be found, Rast says. "Because nature is so complex, we need to have a better idea of the linkages between these components, and this book made the best effort to date."

Water is chief among the concerns listed in the Outlook. Worldwide, more than 1.8 billion people live in areas under "water stress," according to the report,

which was released last October and points out that North America is having trouble keeping its reservoirs full.

In developing countries, sanitation habits are a major stressor on the availability of clean water. The report says about 3 million people worldwide die each year because of water-borne diseases such as Hepatitis A.

"People figure they need safe drinking water, but they sometimes go and poop on a tree without thinking about it," Rast says. "As long as you don't

have basic sanitation, that form will continue unabated. And it spreads enormous disease around the world."

Canada's Arctic faces a different problem: persistent organic pollutants often found in pesticides. These chemicals accumulate in animal fats and the environment, remaining for decades until natural processes break them down.

Aboriginal people who traditionally live off of the land will, like the creatures they eat, have more trouble having children and will get sick more often, the global forecast says.

Because health has such an effect on human productivity, taking care of the environment is a chief economic priority, Rast adds. "If we can show that taking care of the environment is profitable, we'd live in a very different world." — Elizabeth Howell, *CMAJ*

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## The new architecture of medical education

It will be much more than just another glittering multi-million dollar facility in booming Wild Rose Country.

In fact, proponents believe the new \$900 million state-of-the-art Edmonton Clinic, scheduled to open in 2011, will embody a revolutionary experiment in medical education: an attempt to instruct students in the nuances of multi-disciplinary "team" approaches to providing care.

A joint project involving the Capital Health region, University of Alberta and the provincial government, the clinic will feature a fully staffed ambulatory clinic, medical specialists, diagnostic services and rehabilitation services so that patients can navigate from primary care to rehabilitation in 1 location.

However, one-half of the new facility will be devoted to a new model of medical education, where students from the faculties of medicine, nursing, pharmacy, dentistry and even agriculture will train and work together. It will feature teams of physicians, nurses, pharmacists, rehab specialists, nutritionists, dentists and public health workers devising collaborative plans to tackle each patient's medical needs.

"There is going to be an important philosophical shift in medical education," says Dr. Terry Klassen, chair of pediatrics at the University of Alberta Faculty of Medicine. "We're moving into a trans-disciplinary era. The physicians of tomorrow will be working with other disciplines more closely. And this will be one of the first times anyone has planned an entire building around that concept. We think this will be quite revolutionary."

Building the clinic within Alberta's overheated economy has proven a challenge. Already, construction prices have been driven through the roof. It was originally pegged to cost \$450 million but when Alberta Premier Ed Stelmach broke ground on the first phase of construction in early October, the price had more than doubled. And that was with the scope of the clinic scaled back 15%.

The origins of the clinic date back over 15 years to the university's devel-

opment of a team-building course for students from a variety of medical science disciplines.

Deb Gordon, vice president and chief operating officer for the University of Alberta Hospital, said despite enthusiasm for the team-building concept, there was a recognition that too few health care professionals were comfortable working as part of a larger multidisciplinary unit. As a result, many patients were being forced to waste time travelling from facility to facility, to see several different specialists, instead of being able to see everyone they need in 1 facility. "We realized that our health care professionals were not trained to work in this kind of team model. And they weren't trained to work with the kind of approach needed in this kind of ambulatory setting."

Vice Provost Jane Drummond says the University of Alberta's Health Sciences Council, which represents the deans of 8 medical science departments, decided early to commit to the team-building philosophy by requiring students in 14 disciplines to take the course as part of basic curriculum.

Drummond says the clinic will be the physical embodiment of the team-building philosophy. Ultimately, the university plans to establish a masters program in health science education, so that graduates can teach the team-building concept elsewhere. "It's taking the team-building concept to the next level."

The clinic also represents a significant enhancement of resources for health services in northern and central Alberta. Once open, it will create space for 140 additional beds at the University of Alberta Hospital and Stollery Children's Hospital after outpatient care and teaching facilities are transferred to the new facility.

The government is also providing funding so that 800 additional health sciences students can study under the interdisciplinary model.

The facility itself will be divided into 2 main buildings. The north building will house the clinical facilities; the south building will be dedicated to education. Students will have access to the latest educational technology, including classrooms outfitted with the latest simulation technology and research laboratories.

Students will learn by following actual

multidisciplinary teams working in the ambulatory clinic, and by studying and responding to various scenarios in the simulation facilities, Drummond says.

An important difference between team-building philosophy and more traditional medical sciences education is that the multidisciplinary teams learn as much from the students as each student learns from the team, Drummond says. Students from different streams of medical science bring a different mindset and academic background to patient care problems and end up producing new and improved solutions.

"This is not just sitting in a classroom with all the other disciplines," she adds. "When a student is placed with an interdisciplinary team, the student will be teaching the team as much as any of the professors." — Dan Lett, Winnipeg, Man.

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## Elderly face longer bed wait times in hospitals

Older and sicker patients may be subject to longer wait times within hospital emergency departments before they are admitted and transferred to an acute care bed, according to a report by the Canadian Institute for Health Information.

Overall, the report indicated that

there are significant variations in the length of time that patients wait for hospital beds after being admitted. In 2005, roughly one-half of patients waited 1.7 hours or less after being admitted, with about 10% being transferred immediately to acute care beds. The remainder waited much longer, with 10% waiting 15.1 hours or more.

Some 4% waited more than 24 hours for an acute care bed, according to the report, entitled *Large Variations in How long Admitted Patients Wait in Emergency Rooms for Hospital Beds*.

Those patients "tended to be older and have multiple health problems," the report says. Along with age, other factors associated with longer waits include "urgency of treatment needs of patient, need for hospitalization, hospital size and type, patient health status, time of day, day of week, and month of year," says Canadian Institute for Health Information Director of Research and Indicator Development Greg Webster.

"Older patients tend to have more health problems and different types of health problems which may influence the length of time they spend in emergency departments [Figure 1]," Webster adds. "It is important to note that a patient who spent a longer time in the [emergency department] may have been seen by a physician early in their visit and subsequently required diagnostic tests or observation before their visit was completed." — Shawna Lessard, Ottawa, Ont.

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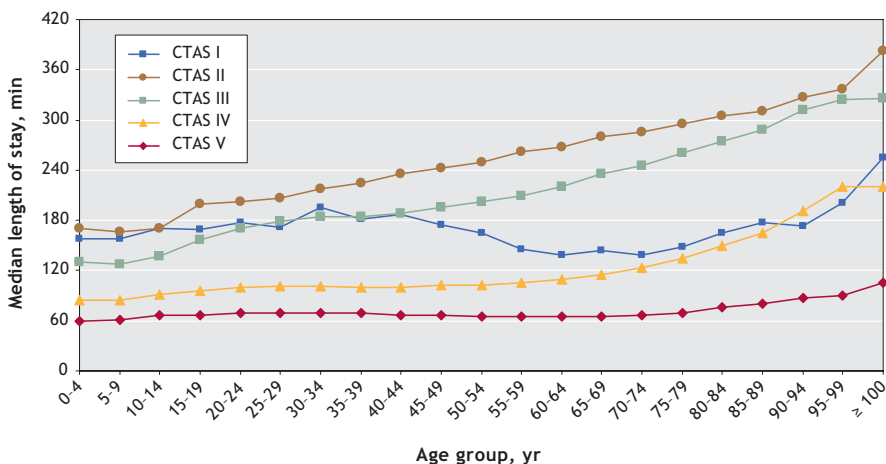


Figure 1: As age of patients visiting emergency wards increases, so does length of stay.