

From bedside to bench and back again

The space between the potential benefit of a medical research project and real improvement in a clinical setting is sometimes closer to a gulf than a gap. If actual patients are to actually benefit from medical research in Canada, the space between the wet-bench and the bedside has to shrink, says Dr. Alain Beaudet, president of the Canadian Institutes of Health Research (CIHR).

"We have very solid basic research in this country. Our intention is not to kill it, but to keep fuelling it. If you have nothing upstream, you will have nothing to translate downstream," says Beaudet. "Where I think we can do better is in ensuring the Canadian public benefits from the excellent medical research in this country."

To improve in this area, says Beaudet, Canada needs to focus more on patient-oriented research, which encompasses both clinical research and health services research. According to a CIHR discussion paper, *Strategy for Patient-Oriented Research*, the term "patient-oriented research" refers to "the continuum ranging from the initial human studies of a new drug or device to research evaluating the implementation of simple or complex interventions in the health care system" (http://nshrf.ca/Opport/Patient_Oriented_Research_Strategy.pdf).

It also includes activities that have traditionally been considered matters to address after research has been completed, such as the translation, dissemination and implementation of new medical knowledge so that it has a direct impact on clinical care. "It is also about ensuring that patients are involved," says Beaudet. "What is important to them is taken into consideration."

The CIHR discussion paper proposes a four-part strategy to "change health care using the levers of research": create patient-oriented research units and networks; train more health care professionals in the core methods of clinical research; eliminate barriers in the research system that create long delays;



Canadian Institutes of Health Research

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and promote the development and adoption of high-quality practice guidelines.

Producing those guidelines will require evidence comparing different approaches to solving clinical problems. "Without high-quality evidence comparing effectiveness, it is difficult to establish guidelines and, ultimately, implement best care practices," the paper states. "Patient-oriented research and its effective dissemination is a key element towards these goals."

An increased focus on patient-oriented research might also help create an infrastructure that is more attractive to private health companies, such as biotechnology firms and medical device makers. An increased industry presence in Canada might result not only in economic benefits for Canadians, says Beaudet, but also provide patients with faster access to new treatments.

Other countries, such as the United

Kingdom, have already substantially increased their investment in patient-centred research, notes Beaudet, pointing also to the United States, which will provide US\$200 million per year to a new Patient-Centered Outcomes Research Institute to research which treatments, tests and protocols for treatment, care management and delivery work best for whom and under what circumstances (www.cmaj.ca/cgi/doi/10.1503/cmaj.109-3269) and is creating a new institute of health to speed up therapeutic innovations (www.cmaj.ca/cgi/doi/10.1503/cmaj.109-3777).

"We have a major advantage in Canada, and we haven't taken full advantage of it," says Beaudet. "We have a universal health care system. That gives us access to fabulous data banks. It opens the possibility of doing things on a large scale that can't be done in the United States."

According to Dr. Bing Gan, a plastic surgeon and president of the Canadian Society for Clinical Investigation, patient-oriented research has fallen behind in Canada in large part due to a lack of clinical investigators. If properly supported, many of today's practising physicians would show more interest in research, unlike a half-century ago, when doctors tended to concern themselves only with the day-to-day running of a medical practice.

"Clinical medicine was once very much a trade, like carpentry or barbering, but in the 50s and 60s, it became clear that research was necessary to improve outcomes of care," says Gan. "Clinicians took it upon themselves to improve knowledge and skills in basic science and research related to clinical medicine."

Still, it remains difficult for clinicians to invest much effort in research. For one thing, notes Gan, there is a remuneration problem. Most physicians work on a fee-for-service basis, and therefore only get paid for performing medical acts of direct patient care. A doctor would not get paid, for

example, for spending a couple of hours enrolling patients in a clinical trial. It is also anything but easy for a doctor to secure research grants.

“Clinicians just cannot compete for research dollars with basic scientists,” says Gan. “I run a basic, wet-bench research lab, but I’m also a surgeon doing clinical work 50 to 60 hours a week. How can I compete with people who spend all their time on research?”

But there is much to gain by increas-

ing the presence of clinicians in the research community, says Gan. Though discoveries made in a lab can eventually lead to wonderful new medical treatments, clinicians are the people most aware of the health problems patients are suffering from today, seeing as how they daily come face-to-face with those patients.

And when a new health problem arises in society, clinicians are often the first to notice it, even if they don’t under-

stand it, says Gan. Several decades ago, for example, practising doctors were the first to notice that clusters of homosexual men were contracting the same disease, later to be called HIV/AIDS, and the first to ask the question: What is this?

“A clinician may not be the best person to answer a question,” says Gan, “but may be the best person to ask a question.” — Roger Collier, *CMAJ*

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