

The Canadian Cochrane Centre
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By Dr. Gordon Guyatt

"At the risk of getting into the game of I'll show you your study, you show me my study, there are studies going back and forth. There is a lot of evidence both ways."

The speaker was a politician – Ralph Klein, in 1999, commenting on research suggesting that private for-profit hospitals have higher death rates than private not-for-profit hospitals. Nevertheless, the comment goes to the heart of medical decision-making. When evidence appears uncertain, how should doctors advise their patients?

Consider two controversies about treatment of patients with heart attacks. In the late 1990's, some experts recommended administering clot-busting drugs called thrombolytics to open clogged blood vessels. Others felt thrombolytic therapy was still experimental.

During the same period, most experts recommended giving all patients with heart attacks a drug called lidocaine to prevent fatal heartbeat abnormalities. A minority disagreed.

Within a few years, evidence on both questions became overwhelming. Thrombolytics reduce death rates, and doctors now routinely administer thrombolytics to patients suffering heart attacks. Routine lidocaine, however, may even increase deaths. Doctors have stopped using it.

Looking back, convincing evidence for the benefit of thrombolytic drugs was available in 1980, a decade before their use became standard practice. In retrospect, the best evidence about lidocaine never supported using the drug.

Why were the experts so wrong? What can we do to ensure that when we are ill, we receive treatment dictated by the best evidence?

Medical experts often develop strong opinions. Historically, experts based these opinions on personal experience and their own theories. Their experience and theories influenced the evidence they collected, and

how they examined that evidence. The result, as the heart attack stories show, was frequent disagreement, and recommendations conflicting with the best evidence.

Fortunately, in the last 20 years, a new branch of medical science has addressed this problem. Systematic reviews of the medical literature now provide unbiased summaries of the best evidence.

How do scientists conducting systematic reviews minimize bias? First, they develop explicit rules to determine which research studies to include, and which to leave out. The rules ensure that only the highest quality studies remain.

They then conduct comprehensive searches to discover all the relevant evidence, and evaluate the quality of that evidence using another set of explicit rules. To avoid bias, at least two reviewers make judgments about which studies to include, and their quality.

Finally, systematic reviews often use statistical methods to arrive at bottom line estimates of a treatment's benefits, and risks.

As noted in this column earlier this month, two systematic reviews sorted out Ralph Klein's dilemma. Private for-profit hospitals and dialysis centers both result in higher death rates than private not-for-profit facilities.

Systematic reviews should guide your doctors' advice. But summarizing the best evidence for all treatments is an enormous undertaking, requiring massive resources.

Fortunately, a worldwide collaboration of researchers has taken on the job. Under the banner of the "Cochrane Collaboration", named after an early advocate for systematic reviews, this international group has the process of summarizing the best evidence for every medical treatment well under way.

Canadian scientists, working through the Canadian Cochrane Centre (CCC) based at McMaster University and 16 Network Sites across Canada, have played a major role in the Collaborations' progress. But now, they have hit a snag. Though more important in ensuring Canadians get the best medical treatment, creating systematic summaries of the literature

doesn't sound as exciting as the human genome project. That makes it harder to obtain money for the job.

In a co-operative effort, federal, provincial and territorial health ministries were supporting the CCC. Since that money ran out two years ago, survival has depended on cobbling together funding from a number of sources. But the resulting shoestring budget has forced major cuts. For instance, the CCC has been unable to provide any funds at all for its Network sites, including one at the University of Manitoba. Six Cochrane topic groups focused on areas such as arthritis and high blood pressure also live a hand to mouth existence.

Despite intensive lobbying, neither Health Canada nor the provincial health ministries have stepped up to the plate to establish desperately needed stable long term funding for the CCC. Governments don't seem to realize that the function, and even survival, of an extremely valuable national resource is at stake.

Canada has the scientific know-how to take a leadership role in ensuring that the best evidence guides the medical treatments we receive. But achieving that leadership role will require that government research funders realize the importance of the Cochrane Collaboration, and its systematic reviews.