Is Canada's drug safety network effective?

A Canadian research network that studies drugs after they are on the market is celebrating its fifth anniversary with good news that its funding will be increased, but some outside observers are concerned about whether the Drug Safety and Effectiveness Network (DSEN) is effective enough. They say DSEN should be able to conduct clinical trials, the effects of its research on government need to be clear, and all of its research results should be publicly available.

The network, which began as part of the Canadian Institutes of Health Research (CIHR) in 2009, is meant to fill a gap in knowledge about drugs after they are approved for sale. Health Canada has no legal mandate to require drug manufacturers to study drugs after approval; it simply collects adverse drug reaction (ADR) reports.

DSEN funds research into problems with approved drugs that are “triggered

not by investigators or practitioners but by the decision-maker,” explains executive director Dr. Robert Peterson, who is also a clinical professor at the University of British Columbia in Vancouver. DSEN has a unique approach to bridging policy concerns and research. It receives “queries” — usually about potential serious ADRs — from Health Canada and provincial drug plans, and assigns them, with funding, to university-based research groups.

As of Oct. 15 2014, DSEN had funded 51 research projects responding to 44 queries (queries may lead to more than one project). Some findings from this research, such as high-potency statin drugs causing acute kidney injury, have grabbed the attention of media and the medical community. DSEN also funds research awards to early-career investigators and research not linked to queries.

In its first five years, DSEN received \$32 million in funding, of which

\$5 million went to Health Canada. In an email, Health Canada says its portion is used to conduct research for and coordinate safety reviews, formulate research queries, manage supporting data, and provide oversight to ensure DSEN results meet the department's needs and priorities. Continuing funding has now been established at \$10 million annually, of which \$1 million will go to Health Canada.

DSEN has had “a fantastic impact,” says Dr. Sharon Straus, director of the knowledge translation program at the Li Ka Shing Knowledge Institute of St. Michael's Hospital in Toronto and a CMAJ associate editor. She also headed DSEN's knowledge synthesis research unit, which has conducted reviews of evidence on drugs, and researched new drugs for type 1 diabetes, cardiac effects of serotonin receptor antagonists, and comparisons of cognitive enhancing drugs for Alzheimer disease. She said the funding helped build

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Canada's Drug Safety and Effectiveness Network assigns and funds research, often into adverse drug reactions.

capacity quickly and create a team “that is seen internationally as a leader in the field.”

“It’s important to have independent research being done, not research that’s related to the drug company,” says Dr. Joel Lexchin, a health policy professor at York University in Toronto who is not involved in DSEN. “DSEN is a reasonable start, but it’s under-resourced.”

DSEN-funded research involves mainly observational studies, many using drug and electronic health record databanks, as well as reviews and some prospective studies. Lexchin points out that large prospective cohort studies might require 10 times the funding that DSEN receives in one year. As well, controlled trials are outside of DSEN’s scope. “The mandate needs to be expanded,” says Lexchin. “CIHR is not

Peterson says that impact is difficult to assess. “We have always been working under the premise that DSEN will provide a contribution to a multi-factorial decision-making process that policy-makers follow when taking regulatory or other actions. In this scenario, causality from one evidence input may be challenging.”

However, Straus explains that there is close interaction with policy-makers, often behind the scenes. “There’s a constant back-and-forth. We respond directly to their needs.” Her team meets with policy-makers to discuss research results and prepares a summary “research brief” and a slide deck that policy-makers can use.

Peterson says a forthcoming performance evaluation of DSEN is expected to look at effects on both research and policy-making.

“I’ve never seen anything out of Health Canada that references the DSEN work.”

in the habit of funding big clinical trials, but there has to be a way of funding them with public money. DSEN is the place for them.”

A March 2013 report from the Standing Senate Committee on Social Affairs, Science and Technology pointed out that DSEN conveys its study results to Health Canada or provincial drug plans, but has no authority to act on the results or to ensure that any regulatory authority does.

Lexchin echoes this concern: “How much does Health Canada take into account the findings to change the product monograph or issue safety warnings? I’ve never seen anything out of Health Canada that references the DSEN work. We need to be able to see more concretely how DSEN is impacting drug effectiveness and safety.”

“Can Canadians feel safer in taking drugs today versus five years ago?” asks Alan Cassels, a pharmaceutical policy researcher at the University of Victoria. “If there is an impact of DSEN on that question, I think it would be very small.”

Cassels also expresses concern that some DSEN-funded research is not publicly available. As part of CIHR, DSEN encourages researchers to publish, but there is no requirement to do so. DSEN does not systematically track publications coming out of funded research, and Peterson admits some research remains unpublished: “Questions may be quite esoteric and may not represent the breakthrough research that the journals are looking for.” Peterson says there is a plan to release summaries of all research in future.

The Senate committee recommended that DSEN findings be made publicly available, and that DSEN be made a permanent body with its own budget that is large enough to meet its mandate. It also recommended an independent assessment to ensure that DSEN continues to operate independent of influence from CIHR and Health Canada. — Carolyn Brown, Ottawa, Ont.

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