



Improving E-Reporting – An Exercise in the Pursuit of Knowledge

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It has been argued that without dissemination, knowledge cannot truly be said to exist.

In some ways, this argument applies to the use of data within Canada's health system. That is, the knowledge we require to manage and improve our health system is dependent on the effectiveness of how we make data available. But when it involves hundreds of different stakeholders, making data available in a way that answers everyone's questions in a format that's favourable to all is no easy feat.

This is the situation that many providers of health information face, given the wide range of data users out there—including federal, provincial/territorial and regional health bodies; hospitals and other health care facilities; health-related NGOs and associations; and researchers, the private sector and the general public. At any given time, the information needs are as varied as the stakeholders themselves. Some want data that are topic-specific and categorized, while others require ad hoc data. Some only need to access and view data, while others want to be able to query reports and publish their analyses. And all stakeholders require easy access, some degree of self-service and, of course, timeliness and comparability.

To address these many needs and begin taking further steps toward ensuring more effective use of data, CIHI turned to electronic reporting many years ago. This singular solution allows stakeholders to ask the questions they want to garner the answers they need in a format that works for them. Our web-based e-reporting products, such as Quick Stats and e-CHAP (Comparison of Hospital Activity Program), have long offered a customer-driven means of finding and working with data for reference, research and analysis.

Like other health information and informatics leaders grappling with how to improve the use of data in managing our health system, CIHI has always looked at what more can be done with e reporting. If this is a preferred means of accessing data, how can it be made better? Our answer has entailed three broad concepts:

1) enterprise-based infrastructure, 2) bundled offerings and 3) communities of practice.

First, it has been important to build a corporate-wide infrastructure for housing and adding value to data. Our clinical enterprise data warehouse, which underlies our various e-reporting products and services, acts as a common environment for bringing together multiple data streams. The warehouse comprises several data marts, which are populated with data from CIHI data holdings. The data in the marts may be linked, where appropriate and in conformance with CIHI's privacy and confidentiality guidelines.

Through the warehouse, CIHI is better able to realize business potentials. Data coming in and out of our e-reporting products are more standardized, which means clients have access to more accurate and comparative data. Data within our e-reporting products are also more robust and better integrated, so that clients are able to perform more complex queries and analysis—about readmissions and episodes of care, for example. And data can be better rolled up and down, allowing for greater re-usability across products.

In addition to standardizing the infrastructure for our e-reporting, CIHI is also taking a more common approach to the bundling of e-reporting products and services. From very early on, the variation in our users and their data needs has led to some degree of stratification in our e reporting products. However, the vision for how these different groups of products fit together has not necessarily been clear. Now CIHI is beginning to distill a new vision for e-reporting by establishing three formalized product bundles, featuring different levels of functionality and depths of access:


- The first bundle, which revolves around our Quick Stats product, is designed to be a one-stop shop for public access—providing researchers, students and the media with instant access to a cross-section of easily digestible, aggregate-level data and health

statistics. Through this bundle, users are able to view data sets in pre-formatted tables and graphs and change some of the variables in specific fields (province, gender, etc.). Also, users can export data into other applications for further analysis. As we redevelop Quick Stats to draw from the clinical enterprise data warehouse, this offering will eventually reflect our most current data.

- The second bundle is designed for authorized users from organizations that submit data to CIHI, and who require data to support regular performance measurement, planning and decision-making. This bundle is based on CIHI's current series of data holding specific e-reporting applications, commonly known as "e-reports." In general, e-reports provide users with access to facility-identifiable data—and our most recent e-reports are built on an advanced business-intelligence platform that links them to specific data marts within our data warehouse. With this granular view of the data, users are better able to compare their organizations against others over time. This helps them to monitor programs and resources, support operations and strengthen data quality. As in the first bundle, data are exportable to other applications for analysis.
- The final bundle is geared towards "power" users from data-submitting organizations and facilities. These are users who require sophisticated decision-support tools for such activities as evaluating performance, building scenario models, developing business cases and analyzing patient inflows/outflows. The third bundle is based on our recently launched CIHI Portal. Built on the same business-intelligence platform as e-reports, CIHI Portal takes full advantage of the platform's dynamic suite of analytical tools. Users can query facility-identifiable data that are integrated across different data marts within the warehouse, and completely customize the reports that they want to build. CIHI Portal also provides access to analytical training, all-new methodological toolkits and comprehensive metadata. Without a doubt, this third bundle features CIHI's most premium e-reporting offering.

In addition to reflecting a premium e-reporting environment, CIHI Portal also embodies the concept of "communities of practice." Essentially, CIHI Portal serves as a common space in which users from health care organizations from across the country can come together to exchange knowledge. First, users can save their reports and analyses, which other registered users can then view and build on. Or users can publish and share production-ready documents for others to review for best practices and lessons learned.

Second, as part of the CIHI Portal offering, CIHI hosts formalized communities of practice. To date, this includes the broadly based CIHI Portal user community and the focused community of Canadian Association of Paediatric Health Centre (CAPHC)



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member sites. Several dedicated tools and services—such as discussion boards and regularly scheduled web conferences—are provided to enable users in communities of practice to better interact with each other. Together, they can work toward determining how best to use data for planning and decision-making.

For example, this enhanced e-reporting ability helped CAPHC's Decision Support Network to create its "best ever" annual report—best ever because for the first time it included reliable and comparative data from all of the network's 16 academic pediatric health centres. CIHI Portal allowed CAPHC to establish a standardized approach to defining and working with data. It was not just the access to data that made the difference for CAPHC, but also the ability for users from member sites across Canada to share in how the data were being analyzed and reported. In the end, CAPHC's new annual report will better inform these facilities about key areas for potential improvement in clinical efficiencies and patient outcomes.

Herein lies the reason why CIHI is so compelled to continue our efforts to strengthen our e-reporting capacity. After all, another argument once made about knowledge is that knowledge itself is a power. And if we perceive the effective use of health data as an indication of our collective knowledge as a health system, then the responsibility of health information providers is not simply to provide data—but also to make data available by means that empower stakeholders to use them better. ●