



The Patient Cost Estimator—An Essential Tool for Health Care Decision-Makers

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You are a manager of a 200-bed community acute care hospital. Your hospital is considering the addition of a new joint replacement program. It is your responsibility to identify the resources required to create a well-resourced, effective program; you must determine the costs of procedures, the number of procedures that will take place and the number of resources to do them, as well as allocate the funding.

You might begin with an internal audit of your hospital's existing volumes, internal costs, resources and overall structure; however, this can only account for services already occurring in the hospital. You can use CIHI Portal to query the Discharge Abstract Database to estimate the number of joint replacements done last year for patients from your catchment area. Since you don't have an existing joint replacement program, how do you determine what the cost benchmarks are for such a program? How do you determine the feasibility of a new program from outside your own walls?

The Patient Cost Estimator is an innovative new tool developed by the Canadian Institute for Health Information (CIHI) that will help you. Just released on the CIHI public website, this new tool allows you to view estimated average hospital costs by Case Mix Group (CMG) at both the provincial and national levels.

The tool presents the estimated average costs of services, along with volumes of patients seen per CMG by jurisdiction and age group. In the above example, this online tool could be used to easily fill in knowledge gaps; it could be used to calculate cost estimates specific to a new joint replacement

program from outside the hospital walls. For this article, the province of New Brunswick is used as an illustrative example.

You could view the average estimated cost of a unilateral hip replacement for a person 18 to 59 years of age (\$10,385) compared to that of someone between 60 and 79 years of age (\$10,281). Using the combination of the estimated frequency of that procedure in New Brunswick (more than double for those 60 to 79) (Figure 1) and the demographics in the area your hospital serves, you can develop an accurate, more informed budget.

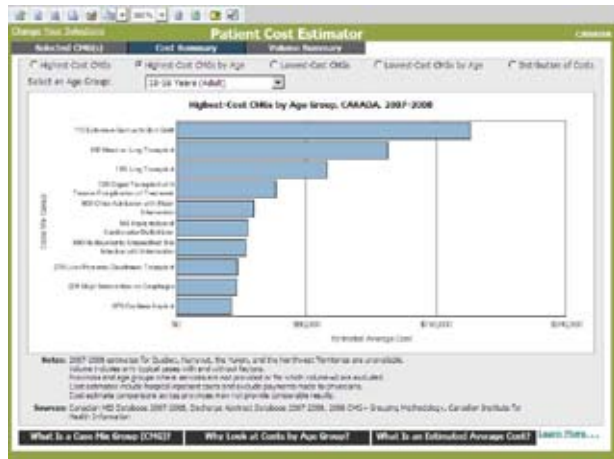
Figure 1 Estimated Average Costs by Case Mix Group and Age Group, New Brunswick, 2007–2008



The tool also produces summary reports, which display the most frequently occurring CMGs by jurisdiction and age group, as well as reports displaying the CMGs incurring the highest and lowest

in-hospital estimated average costs by jurisdiction and age group (Figure 2). Information such as this may also be of interest at a ministerial level to better understand the costs associated with certain procedures.

Figure 2 Canada's 10 Highest-Cost Case Mix Groups by Age Group, 2007–2008



Using the tool to make comparisons across jurisdictions should be done with caution. Cost estimate comparisons across provinces may not provide comparable results because of the differences in care delivery models, as well as differences in the management and reporting of financial information.

How It Works

The tool's estimates are based on typical inpatient experiences, which represent 83% of all inpatient cases submitted by hospitals to CIHI. A typical experience means that the patient had a normal and expected course of treatment. Cases that resulted in unexpected outcomes such as death, transfers or long stays are not included in the estimated average cost calculations. The estimates also exclude physician fees, since they are normally paid directly by the province and not by the hospital.

The estimated average patient cost calculation relies on financial and clinical data provided by submitting hospitals in conjunction with three CIHI tools.

The financial data is provided by CIHI's Canadian MIS Database, the standardized accounting framework used to manage revenues and expenses. Clinical data is provided by CIHI's Discharge Abstract Database (DAD), which contains demographic, administrative and clinical data on hospital discharges.

The three CIHI tools that function to create the estimated average patient cost calculation are the Cost per Weighted Case (CPWC), the Case Mix Group (CMG) and the Resource Intensity Weight (RIW).

The Cost per Weighted Case—or what determined the estimated average cost of services provided to the average patient—is at the foundation of the Patient Cost Estimator. Each jurisdiction has an average CPWC that has been calculated using the total costs provided by the hospitals. The CPWC at the jurisdiction level represents the average cost of one average patient receiving services in a hospital within a specific jurisdiction.

While hospitals have previously had their own hospital-specific CPWC information available to them through CIHI, this is the first time that this type of information has been made accessible in such an easy-to-use format and to such a broad audience.

In addition to the CPWC, each patient case submitted to CIHI is assigned a CMG based on the nature of the activity and the amount of resources required to provide the services within the hospital. Similar activities are grouped together, for example, CMG 320 represents all services provided to an inpatient related to a unilateral hip replacement.

Finally, each inpatient case submitted to CIHI has an RIW assigned to it, a value that represents the level of resources required to provide necessary services.

Either by entering terms into the search field or by selecting pre-set variables, you can locate the estimated average for any number of procedures by patient grouping, age and province.

The Patient Cost Estimator presents an opportunity to increase access to this crucial decision-making insight. Having estimates available that complement facility-specific data in an easy-to-use, accessible format means that hospital managers, health planners and researchers are able to access jurisdictional information and make more accurate financial forecasts. It also provides an opportunity for the public to gain a better understanding of where major costs are incurred by our health system. •

For more information on CIHI's Patient Cost Estimator, please visit www.cihi.ca or write to patientcostestimator@cihi.ca.