



## Hospital Funding Policies: Hospital Readmissions Update

BCHeaPR Study Data Bulletin #16 (May 2013)

### Funding Policy and Readmissions—The Evidence

In April 2010, an activity-based funding (ABF) program was launched in BC, under the direction of the Health Services Purchasing Organization (HSPO).

One important aspect of the initiative was to create financial incentives for hospitals to operate more efficiently. A potential consequence of the incentive to generate additional revenue is that hospitals might either: 1) reduce the intensity of care—which reduces costs, or 2) shorten lengths of stay to the point that quality of care is jeopardized. In other words, hospitals may inappropriately discharge patients early or omit physical or occupational therapies (1).

Other health care systems provide some perspective on the expected consequences of this financial incentive. Early US studies showed that overall readmission rates did not change significantly after the implementation of ABF (2–3). Some studies from the US have shown a change in readmission rates for certain medical conditions, among specific groups of patients, and for certain hospitals (depending on their economic viability) (1,4). Evidence from Europe shows that readmission rates did not change significantly with the introduction of ABF (1).

In the latest development of hospital funding policies, some countries are creating financial disincentives to reduce unplanned readmissions. In Germany, England and the US (Medicare only), hospitals do not receive additional funding for readmissions (for the same problem) within 30 days after discharge (1).

Though ABF is still in its infancy in BC, change in hospital readmission rates are an important indicator of

### What is this research about?

The CIHR-funded *BC Hospitals: examination and assessment of Payment Reform (BCHeaPR)* study examines the impact of activity-based funding on acute care hospitals and related services in BC. Over time, the study team will release analyses on the effects of the change in funding policies. Check [www.healthcarefunding.ca](http://www.healthcarefunding.ca) for updates and policy implications.

quality, but must be considered in the context that some portion of hospital readmissions are due to factors beyond the control of the hospital. Examples include the severity of a patient's underlying conditions or availability of social supports (5,6).

This data bulletin is an update to a previous bulletin, "*Data Bulletin #6 (July 2012): Hospital Readmissions.*"

### Impact of the Incentive

Figure 1 shows annual 28-day readmissions for all causes for BC health authorities that began ABF in April 2010. On inspection, the number of readmissions in BC's health authorities does not appear to change with the introduction of ABF.

The overall trend in 28-day hospital readmission rates is an increase in all health authorities since 2009/10, with the exception of Vancouver Island Health Authority (VIHA) (figures are not adjusted for case mix). The readmission rate at Vancouver Coastal Health (VCH) is the highest among health authorities, while rates at VIHA and Interior Health Authority (IHA) are the lowest.

Interpreting readmission rates is intricate work, as it is not feasible for hospitals to achieve a zero percent readmission rate. While the factors underlying readmissions may be complex and involve post-acute care, some hospitals also treat more complex patients than other hospitals.

To address the issue of patient complexity, Figure 2 shows the percentage of patients with high comorbidity levels by health authority. Health authorities with more complex patients might be expected to have higher readmission rates.

IHA, and to a lesser extent VIHA, see relatively fewer complex patients, at 24% and 28% respectively. Both Fraser Health Authority (FHA) and VCH have a higher percentage of patients with high comorbidity levels, currently about 30% and 31%. For all health authorities the percentage of patients with high comorbidity levels that they treat has been rising. VCH sees the most patients with high comorbidities, which may help explain why it also has the highest readmission rates.

How do BC hospital readmission rates compare to those from other hospitals across Canada? Figure 3 shows the 28-day readmission rate for acute myocardial infarction (AMI) for two hospitals in BC, as well as for one hospital in Alberta (Rockyview in Calgary) and one in Ontario (Humber River in Toronto). Hospitals of the same size and classification have been randomly chosen from the Canadian Hospital Reporting Project (CHRP) for comparison. Each hospital is a large community hospital in an urban setting.

Rockyview General Hospital (AB) and Lions Gate Hospital (BC) have the highest readmission rates at 11.1 and 14.2 per 100 respectively. Humber River (ON) has the lowest readmission rate at 7.8. Surrey Memorial Hospital (BC) has a readmission rate of 9.4 per 100. We do not have comparable comorbidity rates for all Canadian hospitals, so cannot comment on the relative severity of patients treated at each hospital.

Figure 1: 28-day readmission rate for all causes, 2006/07 to 2011/12, for hospitals beginning activity-based funding in April 2010, by health authority

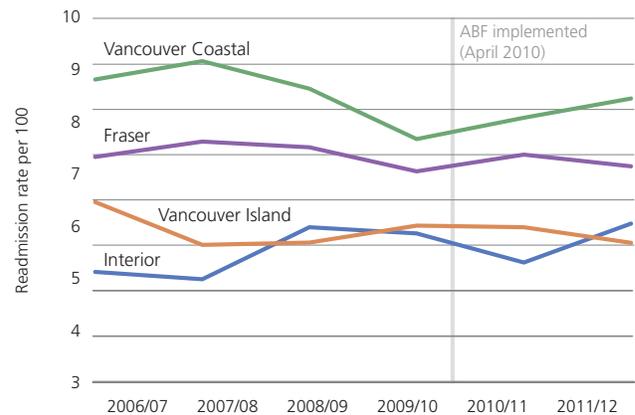


Figure 2: Percent of patients with high comorbidity level, 2006/07 to 2011/12, for hospitals beginning activity-based funding in April 2010, by health authority

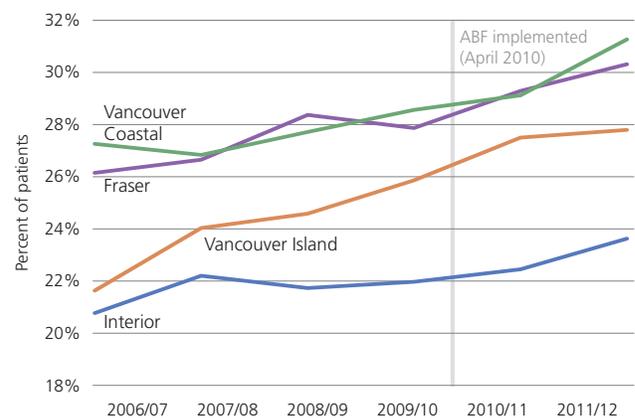
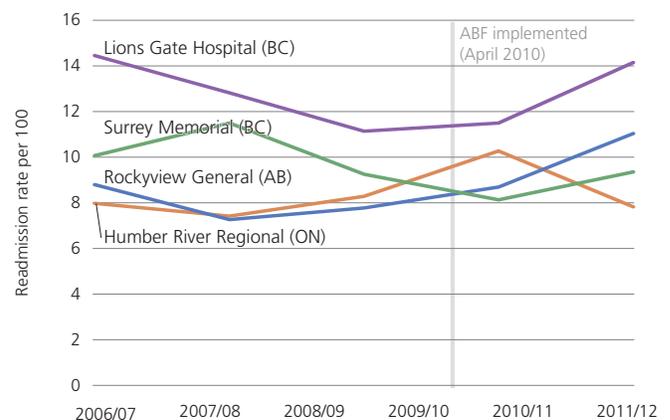


Figure 3: 28-day readmission rate after acute myocardial infarction, 2007/08 to 2011/12, select hospitals across Canada



## Conclusion

Changes in readmission rates provide one important point of data regarding hospital quality. There is no evidence to support that ABF has had an impact, one way or the other, on readmission rates in BC. Figure 1 shows considerable variability in readmission rates between health authorities. Figure 2 shows that patient comorbidities may account for some of the variation, but not all. There is also noticeable variation between readmission rates among hospitals across Canada. This project will continue to calculate and report on readmission rates on a periodic basis.

## Technical Notes

Data source: the Discharge Abstract Database (DAD) and the Canadian Hospital Reporting Project (CHRP).

DAD: The study population included BC residents as well as non-residents who received health care services in BC. Only non-elective cases (urgent and emergency) are included. Only hospitals that were included in the activity-based funding program are included.

To make the study subjects homogeneous we excluded transfers—defined as an admission that occurred within 6 hours following discharge from a different hospital, in-hospital deaths, and planned readmissions.

Readmission rate = (total number of readmissions in a fiscal year)/(total number of index-admissions in the same fiscal year) \*100

Hospital level data are from *CHRP*. All four hospitals selected are community-large hospitals as defined by CHRP and in urban settings.

Patients with a high comorbidity level are defined as having at least one significant comorbidity that affects their cost or length of stay.

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