UBC CENTRE FOR
HEALTH SERVICES AND
POLICY RESEARCH

Payment Reform in BC Hospitals
DATA BULLETIN

Hospital Funding Policies: Hospital Readmissions

BCHeaPR Study Data Bulletin #6 (July 2012)

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), an entity independent from BC's Ministry of Health. One aspect of the initiative was to create financial incentives for hospitals to operate more efficiently by reducing the incentive to restrict services in order to meet budget targets (thus, increasing wait times).

One potential consequence of the incentives is that hospitals might reduce costs to the point that quality of care provided to patients is jeopardized. Hospitals could discharge patients early, omit tests and therapies, or over-provide certain medical services; these examples collectively represent inappropriate care given to patients (1).

Other health care systems provide some perspective on the expected consequences of this change in funding policy on hospital quality of care. Early US studies showed that overall readmission rates did not change significantly after the implementation of ABF (2–4). However, some US studies 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) (1,5,6). Evidence from Europe shows that readmission rates did not change significantly with the introduction of ABF (1).

In some countries using ABF to fund hospitals, financial incentives are being used to reduce unplanned readmissions to hospital. Specifically, in Germany, England and the US, hospitals do not receive additional funding for hospital readmissions within 30 days of discharge (1).

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*** for updates and policy implications.

Though ABF is still in its infancy in BC, changes in hospital readmission rates are an important indicator of quality—keeping in mind that readmission rates can be affected by factors beyond the control of the hospital, such as the severity of a patient's underlying conditions or availability of social supports (7,8).

For reporting purposes, a readmission is considered to occur when a patient has a non-elective return to an acute care hospital for any cause if it occurs within 30 days of discharge from the index episode of care (7).

Impact of the Incentive

Figure 1 shows admissions for acute myocardial infarction (AMI) for BC health authorities beginning ABF in April 2010. Although cardiac intervention cases are excluded from ABF, they can still reflect changes in the health care system as whole that may result from the implementation of ABF. AMI admissions and readmissions are used for this bulletin because, while overall readmission rates are reliable, what they are measuring is vague. AMI readmission is a conventional indicator for measuring health system effects and is sensitive to health system changes.

The number of admissions in BC has been largely steady, with the exception of a decline in Interior Health since 2009-2010, and a slight increase in Fraser Health since 2008-2009.

Figure 2 shows the readmission rates for AMI for BC health authorities beginning ABF in April 2010. Lower readmission rates are positive indicators of hospital quality. Figure 2 shows that:

- FHA has the lowest readmission rates for AMI, currently at about 0.5%. Readmission rates for AMI have seen a long-term, steady decline in Fraser Health and Vancouver Island Health.
- Readmission rates have been rising in Interior Health since 2009-2010.
- The readmission rate for Vancouver Coastal Health is much higher than for the other health authorities, but has declined slightly since 2009-2010, and currently is slightly above 8%.

Interpreting readmission rates is intricate; some hospitals treat more complex patients than other hospitals. Patient complexity is considered to have an effect on readmissions and is beyond the control of the hospital.

Figure 3 shows the percentage of patients with high comorbidity levels by health authority. One interpretation may be that health authorities with more complex patients might be expected to have higher readmission rates.

Interior Health and Vancouver Island Health see relatively less complex patients and the percentage of patients with high comorbidities has remained relatively stable at approximately 5% and 6.5%. However, in 2009-2010 Interior Health did not have the ability to perform percutaneous coronary interventions (PCIs); therefore, more complex patients were treated in other health authorities. The increase in patient complexity in Interior Health may be a result of their new ability to perform PCIs, and would have an effect on the numbers and trends for complexity.

Both Fraser Health and Vancouver Coastal Health have a higher percentage of patients with high comorbidity levels, currently about 10% and 9.5%. For Vancouver Coastal

Figure 1: Number of index admissions for acute myocardial infarction, 2006/07 to 2010/11, for hospitals beginning activity-based funding in April 2010, by health authority

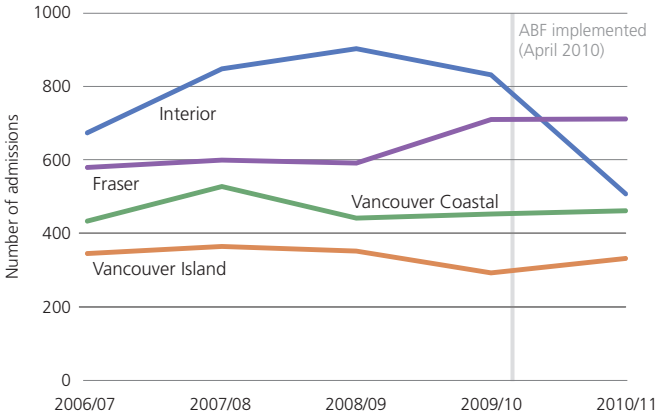


Figure 2: 28-day readmission rate for acute myocardial infarction, 2006/07 to 2010/11, for hospitals beginning activity-based funding in April 2010, by health authority

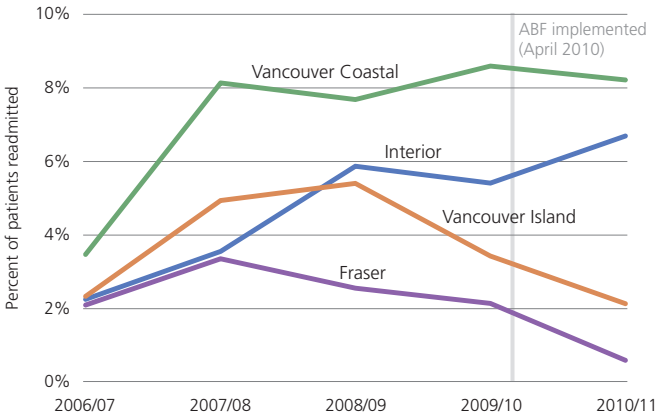
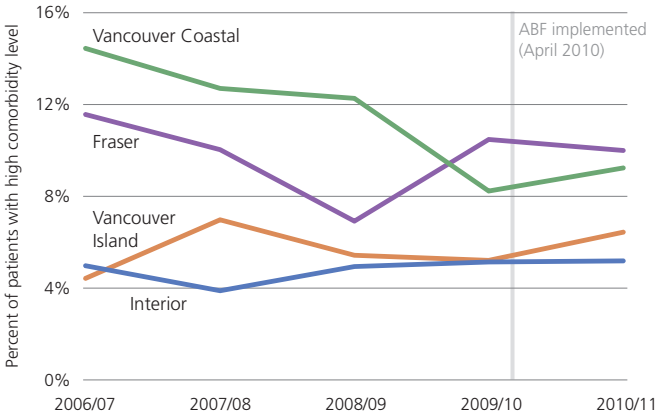


Figure 3: Percent of patients with high a comorbidity level, 2006/07 to 2010/11, for hospitals beginning activity-based funding in April 2010, by health authority



Health, the percent of patients with high comorbidity levels declined until 2009-2010, with a slight increase seen in 2010-2011.

Conclusion

Changes in readmission rates provide one important point of data regarding hospital quality. Figure 2 shows considerable variability in AMI readmission rates between health authorities, some of which cannot be explained by patient complexity. This project will continue to calculate and report on readmission rates on a periodic basis.

Technical Notes

The data source is the Discharge Abstract Database (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.

An AMI readmission is defined as an admission occurring within 28 days following the previous discharge and in the CMG group 193 or 194. To make the study cohort homogeneous, transfers, in-hospital deaths, and planned readmissions to the same hospital were excluded, and only patients 16 to 95 years old were included.

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

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

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How to cite this material:

Sutherland J, Liu G, Crump T, Repin N. Hospital Funding Policies: Hospital Readmissions. BCHeaPR Study Data Bulletin #6 (July 2012). Vancouver: UBC Centre for Health Services and Policy Research; 2012.

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