



## Hospital Funding Policies: Intensive Care Unit Average Length of Stay

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### Hospital Funding Policy and Average Intensive Care Unit Length of Stay

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

According to international experiences, ABF creates financial incentives that have led to a reduction in hospitals' average lengths of stay (1–4). Specific to intensive care, studies in the US have shown a 14% decrease in medical intensive care unit (ICU) length of stay in community hospitals after the introduction of ABF (5). Hospitals in BC are not reimbursed through ABF for ICU patients. However, changes in the hospital system as a result of the introduction of ABF may have an impact on average ICU days.

### Impact of the Incentive

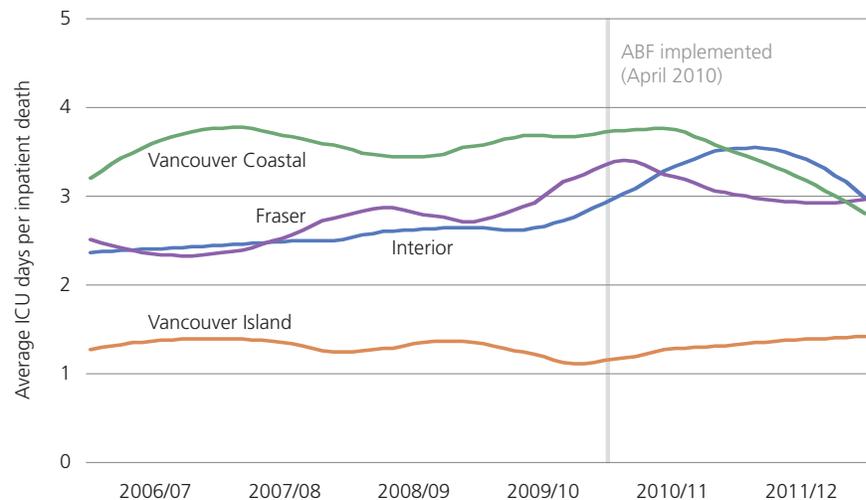
Figure 1 shows that no province-wide trend for average ICU days per death has emerged. Average ICU days per death have declined in the Vancouver Coastal Health Authority (VCH) and in the Interior Health Authority (IHA). The decline for VCH corresponds roughly to the introduction of ABF in BC, while the decline for IHA did not begin until around 2012. Average length

### 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.

of stay for the Fraser Health Authority (FHA) began to decline at about the introduction of ABF, but since 2012 has leveled off and increased slightly according to most recent data. Average ICU length of stay per death for the Vancouver Island Health Authority (VIHA) has slowly increased over time, although the average remains notice-

Figure 1: Average ICU days per inpatient death, 2006/07 to 2011/12, for hospitals beginning ABF in April 2010, by health authority, smoothed



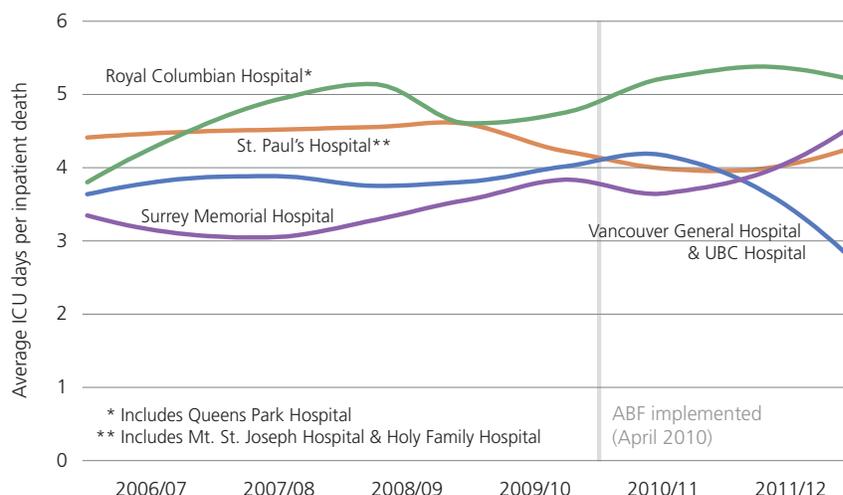
ably lower than the average for the other three health authorities.

Figure 2 examines in closer detail average ICU days per death for the four largest hospitals in BC. While the overall trend across the province, as shown in Figure 1, was a decline in average ICU length of stay per death, this decline is primarily being driven by select hospitals, as seen in Figure 2. Vancouver General Hospital and the UBC Health Science Centre have experienced a decrease in the average ICU length of stay per death beginning shortly after the introduction of ABF. Other hospitals experienced increases in average ICU length of stay over the same period. Figure 2 also shows a large variability in each hospital's starting and ending average ICU length of stay per death. For 2011/12 average ICU length of stay ranges from a low of 2.7 days to a high of 5.2 days.

### Conclusion

In BC average ICU days per death have not shown a consistent province-wide trend, nor one that can conclusively be attributed to the introduction of ABF. Changes in average ICU days per death provide one important point of data regarding hospital cost and reimbursement. This project will continue to calculate and report on changes in length of stay for several indicators on a periodic basis. Previous data bulletins have explored average length of stay, average length of stay for medical procedures, and average length of stay for hip and knee replacements.

Figure 2: Average ICU days per inpatient death, 2006/07 to 2011/12, for four largest hospitals beginning ABF in April 2010, smoothed



### Technical Notes

The data source is the Discharge Abstract Database (DAD). The study population covers BC residents as well as non BC residents who received health care services in BC. The subjects include inpatients between 18 and 79 years old at admission date, those who died during hospitalization, and included both medical and surgical, non-elective cases (urgent and emergency).

Only hospitals that were included in the activity-based funding program are included in the study. Northern Health Authority was excluded from this analysis as it has only one hospital funded through ABF.

Average ICU Days per Inpatient Death = Total number of ICU Days for Inpatients died in a period / total number of inpatients in the same period (there are 13 periods in one fiscal year in BC; one typical period contains 28 days).

Four largest hospitals selected according to total number of inpatient cases in 2011/12.

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