The Evolution of Activity Based Management Performance Reporting in NSW - from Top-Down to Predictive Modelling

Authors: Alfa D'Amato

Introduction
The NSW Health Activity Based Management Performance monitoring system has evolved significantly over the last three years to meet the requirements of the stakeholders as well as the system manager. As the health system is embedding Activity Based Management (ABM), business users expect more up-to-date data and reports to track each health services' performance against activity and cost. The purpose of the ABM Performance monitoring process is to estimate on a year-to-date basis the overall spend on Activity Based Funded services, provide variance against activity targets and, most importantly, combine these results with the overall financial results using a price-volume variance analysis. This process has been performed on a monthly basis for a number of years. At the beginning, the calculations and reporting were performed in Excel-based templates based on top-down cost modelling. The process has now evolved and uses predictive modelling based on the last costing results applied to the current year-to-date activity data. The predictive modelling provides a state-wide view for system managers whilst business users can easily slice and dice cost information by service stream, classification, facilities or specialty level.

Methods
The cost is modelled using Gamma regression and is derived from the latest costing data submission. The Gamma regression extracts and summarises the numeric relationship between each cost driver (predictor) and estimates the contribution of each cost driver to the total formation of the cost. By using relationship estimates from the regression model, it has been possible to predict the cost of new encounters.

Results
ABM is an evidence-based management approach that focuses on patient level data to inform strategic decision-making. Through clinical costing results and other activity data, ABM allows clinicians and managers to identify areas for improvement and make informed decisions relating to patient care through the optimisation of resource allocation. It is a system for continuous improvement and it provides a link with service Key Performance Indicators where activity, cost and performance information is used to attain strategic and operational objectives. The ABF Performance Reporting aims at providing a strategic advantage to all stakeholders involved - not only in casemix, but also in finance and performance monitoring. This development has been embraced by the financial team and is now incorporated in the monthly narrative process.

Conclusions
Activity Based Management in NSW Health has created an opportunity to connect key elements of the system such as finance, purchasing and casemix/ABF. The ABM Performance Reporting solution based on predictive modelling has further strengthened this connection and fostered a transparent environment to collaborate by proving an opportunity to succinctly monitor the health system performance based on price-volume variance. This process allows deeper understanding of the causes of the financial variance as well as activity variance on a year-to-date basis

1. NSW Ministry of Health, North Sydney, NSW, Australia.