

The Contract & Capacity Management Tool

Whatever the chosen maximum waiting time, be it 18 weeks or less, there is always the dilemma arising from the need of operational managers & commissioners to plan capacity deployment at the start of the year.

This need for certainty is counterbalanced by the far higher volatility in short term demand that comes hand-in-hand with very short waiting times. Hence it is the volatility around the smaller portions of the annual average that becomes far more important. HCAF have been researching the volatility associated with NHS demand for over 15 years and have developed a tool that allows these two conflicting demands to be reconciled.

This tool uses the statistical signatures associated with demand to convert all variances into a common unit of standard deviation's away from the plan. Hence if activity is two standard deviations lower than expected we immediately know that we are headed into a statistically significant variance. Greater than a three standard deviation variance is 100% certain to be due to a special cause event such as a fundamental change in referral rates, intervention rates or the shift of an outpatient procedure to become a day case.

Fig 1 & 2 shows a plan to reduce the waiting time with a downward trajectory in total number waiting. Both activity and total number waiting are within control limits and so no action is needed.

Fig. 1: Total number waiting variance

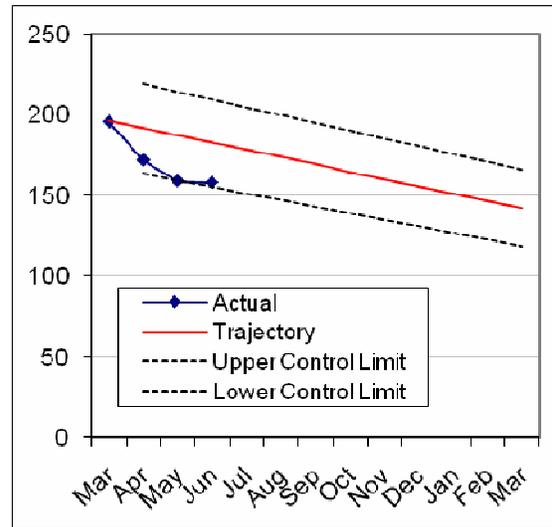
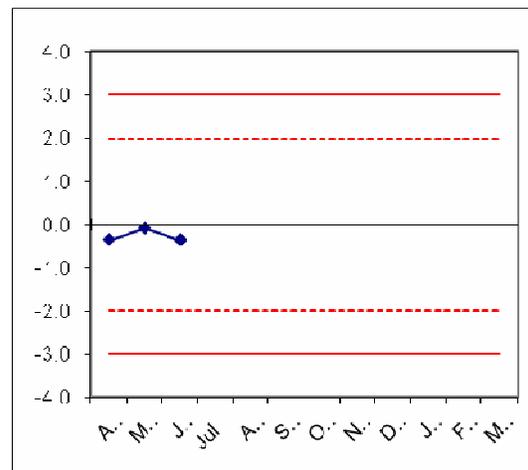


Fig. 2: Activity variance



Figs 3 & 4 show a situation where activity is insufficient to support the required trajectory, i.e. a cumulative negative activity variance with positive number waiting variance.

Fig.3: Total number waiting variance

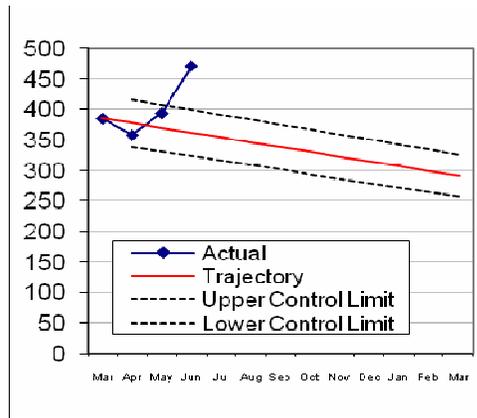


Fig. 4: Activity variance

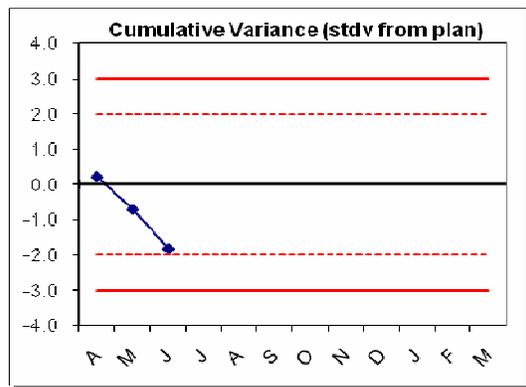


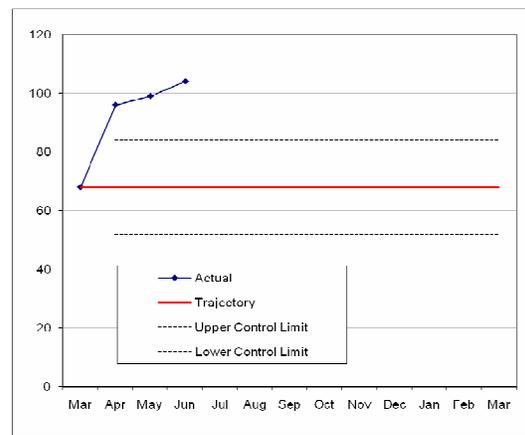
Fig 5 shows a situation where a gross breach of the upper-control limit necessitates investigation of root cause and corrective action.

The development of the activity plan is the result of a sophisticated analysis of the underlying growth in demand for each specialty. This looks at the last 5 to 7 years of activity and waiting list data to derive the fundamental demand trend. Demand is then projected into the current year and a small allowance is added to account for the variability associated with the annual demand. Upper- and lower-control limits are then added which reflect the

statistical signature behind demand in each specialty.

The total number waiting to support a given maximum waiting time is derived from an analysis of waiting time profiles and the change in the shape of the waiting list as short waiting times imply that almost all patients can wait close to the same time. The upper- and lower-control limits associated with total number waiting come from detailed research into the statistical signatures associated with waiting lists.

Fig. 5: Gross number waiting variance



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