**National Supply Chain Assessment**

**Exercise #6**

**Combined Analysis of CMM & KPI Results**

Ideally, capability maturity (CMM) at intermediate, advanced, and state-of-the-art will produce steadily increasing levels of KPI performance, and conversely a lower level of KPI performance will correspond to capability maturity scores at or below the CMM basic level. However, this pattern is not always reflected in assessments; this paper gives some examples of disparate results and hints towards further analysis that may uncover the underlying causes of this type of unexpected pattern.

**Example 1 – Higher CMM in Pharmacy and Stores Management with continued high incidence of stock outs**

The usual first hypotheses for this pattern is to assume that the “fault” lies in the distribution system for not keeping sufficient stocks on hand at the service delivery points. However, this finding should lead the assessment team to question if the distribution is weak and, if so, why. In addition, to review the distribution CMM one should drill down to review levels of stock at the distribution center. If the distribution center is not the central medical store, the same question may need to be asked of the CMS. If the distribution center is not able to supply the required quantities, further questions to ask are:

* Are the required stocks in line with the supply plan?
* If not, why do the needs differ from the supply plan?
* If the distribution center(s) is/are not stocked according to plan, why not? If it is stocked according to plan, but this is proving to be inadequate, why?
* Reasons for not stocking to plan can include delivery failures by vendors (poor VOTIF performance), procurement not following the supply plan, and forecast inaccuracy.
* If this root cause analysis leads back to forecast inaccuracy, why? Issues to review can include data accuracy from the SDPs distorting the forecast, misaligned timing in the forecast, and inadequate budget to meet the needs.
* Additionally, do the cross-cutting functions of HR or data/information identify any lower capability maturity that could help to explain or identify the challenges.

At each point in this analytic trail, the assessment team should review both relevant performance (KPI results) and capability (CMM), as this may identify further disparities that will explain the outcomes in this example.

**Example 2 – Basic level CMM scores for Pharmacy and Stores Management, with high performance in stocked according to plan and few stock outs at SDP level**

In this example, there are likely to be compensatory actions being taken to avert stock out risk by maintaining the stocks according to plan. KPI results that may confirm this are a high level of emergency orders and adjustments to orders from the SDP level. CMM results that could be relevant are strong results in the quality and frequency of data reports and higher level capacity in HR, supported by strong KPI HR and data results. These latter points suggest strong and stable HR that is able to compensate for apparently lower capability maturity.

**Example 3 – Advanced level CMM scores in forecasting, with low KPI results in forecast accuracy.**

A frequent hypothesis in results of this type is weak HR/personnel performance, i.e. the available systems are not being used effectively by the staff concerned. To test this hypothesis, the assessment team should review the HR CMM and KPI results. If these areas also show strong results, the challenge likely lies elsewhere. The most obvious place could be in the data fed to the forecast team from elsewhere in the system, e.g. consumption data, stock levels, wastage. Other areas to review include procurement and financial sustainability CMM scores and KPI results. If the procurement team is not procuring according to plan this will impact all other areas in the supply chain, including forecast accuracy; the facilities will use the product they do have, whether or not this was as forecast. The procurement team may in turn be affected by the availability of funding to make the required purchases in a timely manner. An issue that may not show up easily in the NSCA 2.0 is if, during the period under assessment, treatment or diagnostic regimens were changing. The speed of change will likely be unpredictable, and this will affect the forecast accuracy results.

**Example 4 – Higher level CMM ratings for Pharmacy and Stores Management and Distribution, but low KPI score for order fulfilment.**

The most obvious hypothesis for this example is that despite the good CMM ratings, the central or regional stores are not stocked according to plan, and thus unable to fulfill the orders as requested. Other factors to be explored include:

* Are the SDPs stocked according to plan? If not, the orders to the CMS will not be as expected.
* It will also be necessary to investigate why the SDP orders are not according to supply plans.
* Upstream it will be important to understand why the CMS may not be stocked according to plan to meet the SDP orders. This may indicate issues with procurement, timing of orders, VOTIF, or funding.

**Example 5 – Vendor on time and in full KPI scores are strong, but procurement CMM is at or below basic.**

The general hypothesis for a disparity of this type is that staffing and existing systems, although basic, are performing strongly. Further, the hypothesis is that despite weaknesses in procurement, the vendor basis is strong, stable, and delivering on its promises. It is also possible that lower procurement capability maturity is being supported by strengths elsewhere in the systems, e.g. strong forecasting and funding availability, prompt requests from within the system for new procurements, and experienced staff who are compensating for weaker systems support. A key risk with this type of disparity is that the higher KPI performance is fragile, and dependent on continued good performance by vendors and others.

**General Comments on Apparently Mismatched CMM and KPI scores**

**Low KPI scores with a higher CMM results** – In many cases, this observation could indicate that the system, level, or unit recording the low KPI scores is not taking full advantage of the opportunities provided by the level of capability maturity. This may be because of a lack of local training, other HR constraints, or external constraints such as connectivity for data reports. The assessment team should also look beyond the immediate situation to assess the impact of CMM scores and KPI results in other functions that may impact the area showing this observation. The assessment team should also consider how results from other levels in the system may be impacting the area under review. In many cases, small adjustments in the factors affecting the KPI performance can lead to a disproportionate improvement in performance to match that expected from an intermediate, advanced, or state-of-the art CMM.

**Basic or lower CMM results, but consistently high KPI scores** - In many cases this could indicate that management and staff are compensating for lower CMM, or finding work arounds that enable them to hit high performance on the KPIs. Alternatively, one level may be assisted by higher CMM results from adjacent levels, units or functions that help the level with the lower CMM to out-perform its apparent maturity. Increased HR resources may also assist the level concerned to perform to a higher level than would be expected from the maturity. In such a situation, the higher performance is at the expense of efficiency and cost. The main risk in this scenario is that the higher KPI performance is fragile, and could drop to the level that the CMM results would indicate.