Variance indicator score guideline

# A variance indicator score provides early warning of mismatch between capacity and demand

The variance indicators are a set of criteria that are pointers of mismatch between staff and the care needed by patients. Each criteria is assessed and responded to with a yes or no. A ‘yes’ response results in a weighted score (see Table 1).

The variance indicator score is calculated by adding together the scores from each of the indicators to get a total. The total score results in a ‘traffic light’ status for the ward/unit which is displayed on the hospitals capacity at a glance screen.

Table 1 - Variance indicators and their scores

|  |  |  |  |
| --- | --- | --- | --- |
| Variance indicator | Definition | Score for Yes | Score for No |
| 1. Missed breaks
 | Staff unable to take meal breaks and/or afternoon or morning tea. | 1 | 0 |
| 1. Poor skill mix
 | Staff on duty do not have the required skill set e.g. pain management (epidural or PCA), CPAP, chest drain, advanced resuscitation. | 2 | 0 |
| 1. Poor staff mix (RN, RM, EN, HCA)
 | RN/RM/EN/HCA mix is not supporting the team to provide consistent high quality care.The ratio of home ward staff to casual staff is compromising the quality of care.An administrator is usually present but is absent and not replaced. | 3 | 0 |
| 1. Negative care hours variance
 | Acuity predicted for patients is beyond the capacity threshold i.e. will exceed 40 mins for each staff member with a full 8 hours in clinical in department.**OR** there is 8 hours variance or more to the planned roster i.e. allied health, emergency and perioperative departments. | 4 | 0 |
| 1. Positive care hours variance
 | Recalculated positive care hours of greater than 0. *Excludes minimum staffing.* | - 1 | 0 |
| 1. Care rationing
 | Required patient care that is either omitted, unduly delayed, delivered at a substandard level or delegated inappropriately to someone not qualified to complete it. | 6 | 0 |
| 1. Professional judgment deems it is unsafe
 | Workloads, environment, teamwork. | 7 | 0 |

Every combination of the weighted score has been mathematically tested against the traffic light system and descriptor. Care rationing and professional judgment have the highest weighted scores. This is because they are associated with a high risk of negative consequences or negative consequences being apparent (see Table 2, traffic light orange and red).

A weighted score is used to ensure that system design prevents a possible user error. For example, the selection of positive care hours (-1) and care rationing (+1) would result in a total score of 0. This would mean the ward/unit was in green i.e. staffing meets demand. By definition (Table 2) the ward is not in green if care rationing is occurring.

The variance indicator score can be applied in emergency and perioperative departments or allied health. Negative and positive hours (from a patient acuity system) can be replaced by variance to agreed roster models. For example, 8 staff are required on the roster model, but the department is short 1 FTE on the day. This would result in yes for negative care hour’s variance. All other indicators apply. Testing in these areas would be useful.

# Variance indicator scoring is completed using an electronic system

The shift coordinator completes the variance indicators using a team huddle. Yes/no responses are entered directly into an electronic reporting system. Every indicator must have a yes or no response. The system automatically displays a traffic light colour (representing the total score) on the hospitals capacity at a glance screen. Staff use standard operating procedures to respond to the traffic light status.

Table 2 - Variance indicator traffic light status

|  |  |  |
| --- | --- | --- |
| **Score** | **Traffic Light** | **Descriptor** |
| -1 |  | **Excess care capacity** – the ward/unit has spare capacity at present (i.e. could take more patients, share staff or offer staff short notice leave). |
| 0 – 4 |  | **Staffing meets demand** – the ward/unit has a good match between what needs to be done and the resources available. |
| 5 – 11 |  | **Early variance** – the ward/unit is stretched to maximum capacity and there are signs of stress on patient care delivery or staff. |
| 12 – 17 |  | **Significant care capacity deficit** – the ward/unit is working past its maximum capacity, sacrificing decisions are being made, and there is a high risk of negative consequences. |
| 18 – 21 |  | **Critical care capacity deficit** – the service is operating in a critically degraded state with negative consequences apparent. |

# Scoring is done once per shift and when the ward/unit status changes

Variance indicator scoring is completed at the beginning of the shift. It should take no longer than a minute to complete. Scoring is repeated at any time when the ward/unit status changes. This includes when the ward returns to green (or mauve).

Monitoring and response to variance indicator scoring occurs in real time. The number of times a ward/unit goes outside of the optimal functioning is reported monthly (alongside other measures) to the CCDM council.

The hospital has an overall status derived from each ward/units variance indicator score. For example when 50% of wards are in orange the hospital is in red. The hospital overall status needs to be developed locally.

# Frontline staff complete variance indicator scoring

The shift coordinator takes responsibility for ensuring the variance indicator scoring is completed. All frontline staff can initiate and/or take part in variance indicator scoring.

# The variance indicators are supported by research

The literature on staffing and patient outcomes is extensive. The core data set directory summarises and references some of that literature. Key findings include:

* Missed breaks are implicated in nurse fatigue, error rates, decision making and performance.
* Poor skills mix reduces the chance of the right number of people with the right skills in the right place at the right time.
* Higher levels of registered nurses have been associated with better patient outcomes.
* Negative care hours variance impacts on patient outcomes such as mortality, length of stay and failure to rescue.
* Positive care hours variance is not best use of health resources and may be at the expense of equity of care for patients in other wards/units.
* Care rationing is reported by nurses across all cultures and countries.
* Patients treated in hospitals with the highest care rationing level were more likely to die than those in peer institutions.
* Professional judgment is a sensitive indicator of patient safety with perceptions of quality care associated with lower patient mortality rates.