Turning Data into Information



From a Hospital's Supply Chain Perspective

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Q Overview



Supply Chain Management encompasses many fields that work together at all ends of a process to ensure that products are ready for consumers. This may be from the point of view of a receiver, inventory coordinator, distributer, or others. When collaborating with one another, they ensure accurate quantities and types of products are available. In a hospital, the consumers are healthcare professional and their items go into supply rooms.

A supply room can easily hold 300+ types of items that have their own quantity, size, and usage rate. Healthcare professionals rush inside and out trying to quickly find an item 24/7. Keeping a supply room running, starts with having a good database and being able to turn this data into information. With this information, supply chain analysts can collaborate with healthcare professionals and make recommendations on improving their supply rooms.

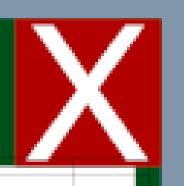


Q Good Data



Sometimes, ensuring your data is accurate requires simple solutions. For example, within the Houston Methodist Sugar Land supply rooms, items in a supply room are organized by commodities. Each commodity is given a color and a zone. So, when a clinical professional is rushing for a bandage, they can easily narrow their focus to the "wound and drain" section. When they have to return an item, they can easily find a large green return bin. This ensures items are not returned to the wrong bin (which can cause inventory levels to be inaccurate).

Preparing Data



Before manipulating data, you have to "cleanse" it and make sure certain data fields (such as unit of measure) are standardized. Once the data is ready to manipulate, analysts will identify which fields are necessary for their purpose and put them into a pivot table. To identify any variances, they have to narrow down the data by only using elevant fields. They can continue to narrow down the data by using calculated values such as totals, averages, or frequencies. Once they establish and find those values, they begin looking for variances. Variances analysts may find include nonexistent values or very large values. The entire set of data can be filtered to only show these variances.

Example: Par Room Usage X

A usage report is a supply room's log that tracks the quantity of an item's replenishment for 90 days. All entries are timestamped and in chronological order. Within 90 days, reports can easily run more than 3,000 lines long. Analysts take these reports and apply the methodology above to determine which items in a supply room are being replenished too often or not often enough to meet its usage. Within a usage report, analysts use the data fields: item number, date, and quantity in their pivot table. These fields narrows the data to 200 lines. In this format, analysts can see how many times each unique item was replenished each day across the 90 day period. Analysts can then then find each item's average and frequency. These values will start to show some variances. Looking at the frequency of each item, analysts might find values that read "#N/A". Filtering to only this variance reduces the data to 41 lines. Another variance they might find include frequencies larger than 45 days (half of the 90 day period). After filtering to show frequencies > 45 days, the data is reduced to 9 lines.

Identifying Information

What do variances such as "#N/A" or frequencies > 45 days mean? This is where the information starts to be identifiable.

> Frequency of an Item = # of Days an Item was Replenished Period of Time = 90 Days

If the frequency of an item = 45, then the item was used every other day!

Analyst would flag this item as fast moving. Fast moving items have to be further analyzed to make a recommendation, such as a change in par level, to a clinical professional.

"#N/A" means an item's usage could not be found in the usage report. If no value was found, you can conclude it was not replenished. Items not replenished are also flagged and discussed with healthcare professionals to determine if having that item is still necessary.

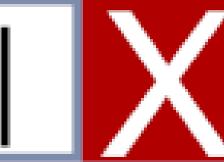
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Q Conclusion



Through a process with flexible application, analysts can turn 3,000 lines of data into 9 lines of information that can easily be identified. Before making recommendations based of this information, they may have to consider other factors.

For a hospital supply chain perspective, factors could include (but are not limited to) limitations in bin or room sizes and context in the number of days an item was used compared to the range of days you are measuring.