



CQO:
The Health Care
Supply Chain

Expired Products as a Percentage of Total Number of On-Hand Products in Inventory



Purpose:

Establish improvement targets or measure target achievement of the percentage of expired products within a health care organization’s inventory.

Value:

Minimize the loss of product through expiration date monitoring, which Supply Chain can control, and avoid using product that is no longer appropriate for patient use, thereby improving patient safety.¹

Equation:

$$\frac{\text{Number of expired products}}{\text{Total number of products on-hand}} = \text{Expired Products as a Percentage of Total Number of On-Hand Products in Inventory}$$

Note: it is favorable to have a lower value for this Key. The lower the value the better.

Example:

- A hospital has 500 expired products for a specific month.
- The hospital’s total number of products on-hand for that specific month is 50,000.

500 ÷ 50,000 = 1% Expired Products as a Percentage of Total Number of On-Hand Products in Inventory

Input Descriptions and Sources:

Input Name	Includes	Excludes
Total number of products on-hand	Any medical/surgical supplies and medical devices within Supply Chain control with an expiration date.	Products with no expiration date indicated, Pharmaceuticals, Office supplies and Services.
Number of expired products	All expired medical/surgical supplies and medical devices.	



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Sources of Data for KPI Calculation:

- Actual expired product recorded during periodic Supply Chain review of inventory
- Health Care Supply Chain Key Performance Indicator (KPI): Number of Expired/Obsolete/Wasted Product(s) as a Percentage of Total Purchases²
- Inventory Management, Managing Outdates, Policies & Procedures Manual for the Health Care Supply Chain, 2nd Edition³

Points of Clarification:

- Does not include obsolete and wasted products. However, organizations may want to group expired/obsolete/wasted together as an overall loss.⁴
- Appropriate removal of a product based on its expiration date may vary by department based on historical usage.
- Expiration dates that appear as month and year (e.g. 11/20) are considered safe to use through the last day of the month.⁵
- “Total on-hand inventory” is the price determined by the organization.
- It is helpful to report the location or category of expired products to monitor for any trending.
- This Key should be tracked monthly and by department.
- Products for patient care are labeled with an expiration date after which the product is no longer considered appropriate for use. The loss through expiration can be avoided by keeping the next expired product in position to be used with the first expired first out (FEFO) and first in first out (FIFO) methods.
- Monitoring the historical usage rate of the product should be considered when determining the appropriate time to remove the product. Items that are not used daily should be organized and monitored to be redeployed within 90 days of expiration so the likelihood that they will be used next is greater.
- Supply Chain should remove items that are set to expire within 30 days of expiration and attempt to return them to the supplier for exchange or partial credit before accepting total loss.
- Consignment agreements should be used, when applicable.

References:

1. Inventory Management, Managing Outdates. Policies & Procedures Manual for the Health Care Supply Chain, 2nd Edition
2. Health Care Supply Chain Key Performance Indicator (KPI): Number of Expired/Obsolete/Wasted Product(s) as a Percentage of Total Purchases.
3. Inventory Management, Managing Outdates. Policies & Procedures Manual for the Health Care Supply Chain, 2nd Edition
4. Health Care Supply Chain Key Performance Indicator (KPI): Number of Expired/Obsolete/Wasted Product(s) as a Percentage of Total Purchases.
5. Inventory Management, Managing Outdates. Policies & Procedures Manual for the Health Care Supply Chain, 2nd Edition