

## 4.20. Forecasting



In mSupply, 'consumption' is defined as stock that is **issued**. Stock lost due to damage, expiry, etc. (managed through [Inventory Adjustments](#)) are not included in 'consumption'. During the later quantification calculation, there are options to include or exclude [Stock Transfers](#) and [Builds](#) in the consumption calculation.

By default, mSupply uses the assumption that future consumption will continue at the same level as consumption over a given historic period. Our experience is that in almost all situations, this method, combined with a conservative provision for buffer stock, yields very good to excellent results. However, in certain situations you will want to provide your own forecasts. Reasons for this could include factors such as:

- Excessive, sudden population increase
- An epidemic causing increased demand
- Historical usage being inaccurate due to operator error or out of stocks.
- A change to Standard Treatment Guidelines meaning a new treatment is being introduced, and there is no historical data
- Morbidity and mortality data has been obtained and used to calculate requirements.

### Item Usage tab

In the mSupply Item Usage tab, you can choose to use from a range of forecasting methods on a per item, per store basis. These methods are detailed below.



**BEWARE!** Once set, these options will continue to govern for every forecast generated by mSupply for this item in this store until you change it!



If a user has the **View items** permission but not the **Edit items** permission, they are still able to use the functionality described here to set forecasts for items in 'this' store (that they are logged in to) since this makes no changes to the properties of the item itself.

The screenshot shows the 'Item details...' window for 'AMOXYCILLIN TABS/CAPS 250MG' (Item code 42). The window has a sidebar with categories like General, Misc, Usage, Stock, Ledger, Quotes, Backorders, Notes, Reconcile, Bill of materials, Purchase Orders, Order options, Dispensing, Reporting, Log, CST, and Stores. The main area displays a table of usage data:

Months	Previous 12 months	Last 12 months	2014(A)
Jan		461700	638600
Feb		109700	321000
Mar		290000	1152000
Apr		274000	398000/Ignore
May	657284	248000	Ignore
Jun	147400	666000	Ignore
Jul	764400	1313100	Ignore
Aug	310210	683500	Ignore
Sep	417080	852200	Ignore
Oct	504000	684100	Ignore
Nov	764200	639000	Ignore
Dec	767642	491000	Ignore

Below the table, there are fields for 'Months' (24), 'Mean usage' (564754.833), and 'Standard dev' (634309.785). There are buttons for 'Refresh usage', 'Show graph', and 'Include builds'. The 'Forecasting' section has four radio button options: 'Use historical Average Monthly Consumption (AMC)', 'Use historical AMC increased by a factor of: 0 %', 'Use a fixed, estimated AMC of: 0 items/month', and 'Use projection: A'. The 'Projections' section has a 'Show projection' dropdown (A), an 'Add year' button, and fields for 'Copy values' from/to columns and 'Modify selected cell by 0 %'. At the bottom are buttons for 'Delete', 'OK & Previous', 'OK & Next', 'Cancel', and 'OK'.

In the **Forecasting** section of the window shown above there are four options:

## Use historic AMC

This is the default option, and is the recommended method. During the later quantification stage ([creating a new tender](#), [creating a new purchase order](#) or the suggested order report), there is an opportunity to provide the number of months of historical data to use to calculate the forecast.

For our worked example, we will use the Historic AMC method, based on 12 months of historic data.

## Use historic AMC increased by a factor of X %

Using this option, mSupply will still calculate requirements based on historical AMC, but increased by the percentage you have entered. For example, you may know that the population increases by 2% per year, and so you can use this percentage to account for that increase in demand.

## Use a fixed, estimated AMC

This option allows you to specify a particular amount that will be applied to all future months. For example, you might have calculated a target consumption for an oral contraceptive based on fixed population and coverage targets.

## Use projection (A or B)

With this option, mSupply allows you to maintain an **A** and a **B** projection, and easily swap between them. Of course you must enter projections for this to be of any use!

## Entering projections

You can enter projections in a number of ways

### Manually entering projections

If you click once on a cell that contains a projection (as opposed to a cell containing historical data), then you can click again to edit the cell's value.



Don't double-click: you need to click once, wait for a second or two, then click again

### Copying a projection

You might want to copy historical data as a starting point for your projection. You can do this by choosing a column for **from column** and **to column** in the **Projections** section, then clicking **Copy values**.



### Modifying a projection

You can use the **Modify selected cell** button to increase or decrease a column or some cells in a column by a certain percentage.

For example, you might have entered values for 2016, and then decide your 2017 values should be the 2016 values plus 8%. To do this

1. Fill in your 2016 column values
2. Add a column for 2017 if one doesn't already exist
3. Use the **Copy values** button to copy 2016 to 2017

4. Drag to highlight all rows in the 2017 column
5. Enter 8 in the percentage field, then use the **Modify selected cell** button to increase the 2017 values by 8%.

 If you are using projections for a particular order, you only need to fill in future values for the period to be covered by your ordering. **BUT** leaving future projections at zero could have serious consequences when you come to ordering later... 

## Where does mSupply use forecasts?

Any time mSupply produces a suggested order quantity, it will consider each item and use the forecast options for that item to produce a forecast. This includes:

- [Creating a new tender](#)
- [The suggested order report](#)
- [Creating a new purchase order](#)

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From:  
<https://docs.msupply.org.nz/> - **mSupply documentation wiki**

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Last update: **2022/11/13 22:38**

