



Singapore Healthcare Management 2018

# Re-design Pharmacy Monthly Drug Pricing Review Template

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## Background

Review of Pharmacy drug prices is required as and when there are changes in contract price. The current review is a very manual process which requires downloading the price changes from the inventory system, compile all information required into excel table for review and calculating the drug prices according to prescribed guidelines. Each review takes at least 8 hours and being manual in nature can lead to calculation errors and setting up wrong prices.

## Mission Statement

This project aims to customize a template to include a set of comprehensive material groups and minimum price which are required information for review to facilitate data compilation and thus reduce the time taken for overall price review process.

## Analysis

We reviewed the work processes and identified two main root causes for time consuming review in steps 2 and 3, figure 1; Data was compiled manually into one excel spreadsheet with minimal range of material groups and grouping is limited by existing material group naming (figure 2).

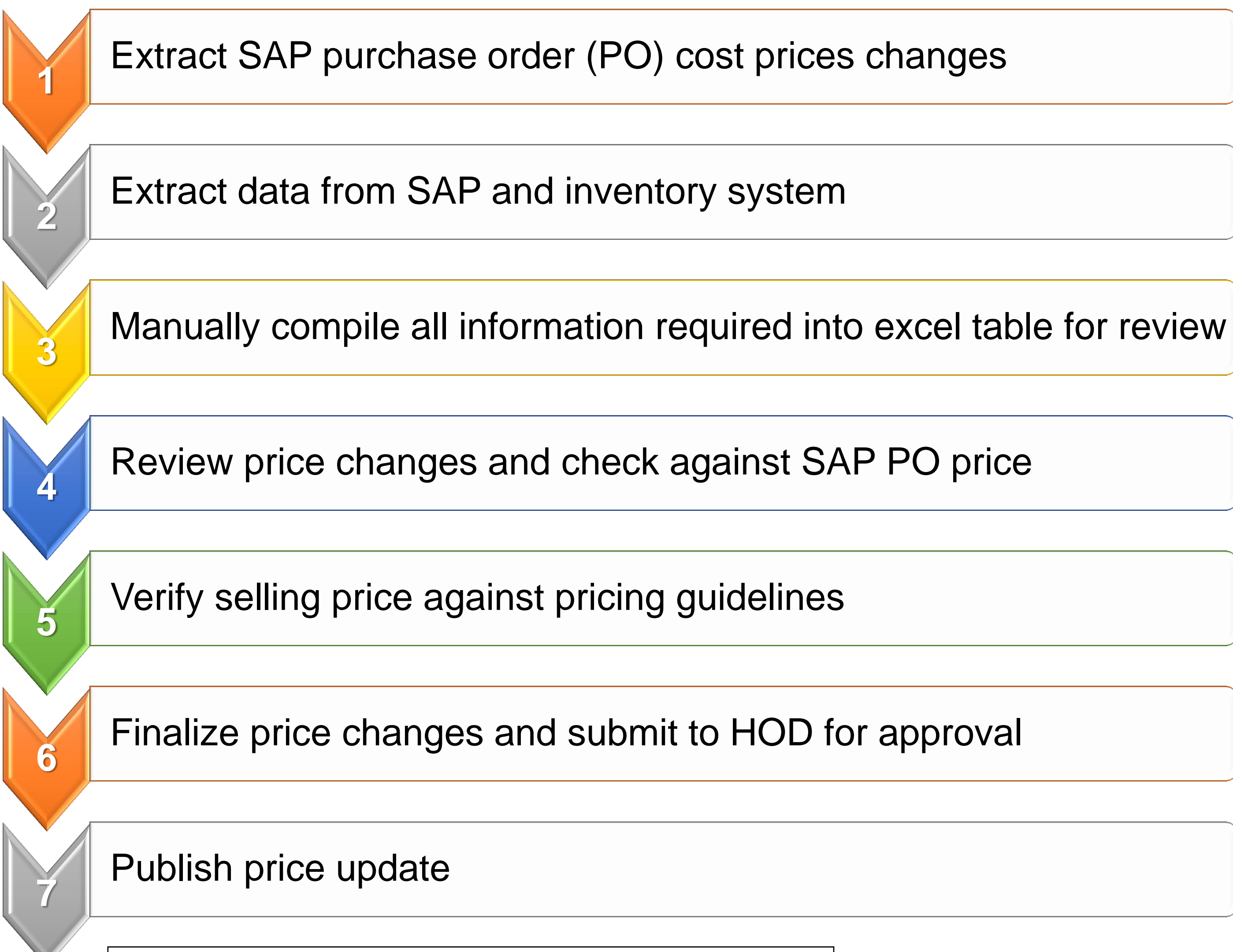


Figure 1: Process of reviewing drug prices

Figure 2: Material groups and minimum price in inventory system (before)

Group	Min Price
TAB	\$
EYE/EAR/NOSE DROP	\$
INH	\$
INSULIN	\$
INJ	\$
INF 100ML	\$
INF 500ML	\$
INF 1000ML	\$
CRM 15GM	\$
CRM 20GM	\$
CRM 30GM	\$
CRM 45GM	\$
CRM > 45GM	\$
SAC	\$
PWD 30GM	\$
LOT/MIX 50ML	\$
LOT/MIX 100ML	\$
LOT/MIX 200ML	\$
LOT/MIX 500ML	\$
NO GRP	\$

Figure 3: Material groups and minimum price in excel template (after)

## Initiatives

The concept of previous template was analysed and new requirements were incorporated. The new template was re-constructed using excel Visual Basic for Application (VBA) to include:

- A set of comprehensive material groups and minimum price by per unit
- Consolidation of previous and current month data
- Validation rules to handle error produced due to missing profile
- Formulas to automatically calculate the price based on price margin, material group and minimum price
- Standardize file naming conventions format to speed up the process of obtaining data from various files source

S/No	Implementation Plan	Date
1	Requirements gathering and setup of template data	Sep 2017
2	Create excel VBA and user acceptance test	Oct 2017
3	Implementation of new template	Nov 2017 onwards

Implementation timeline

## Results

All information required were auto-populated in the new template upon running excel macro and ready to be reviewed by pharmacist (figure 4). It auto-computes and recommend drug price based on rules set (under column **New SP**). This has helped to reduce error via manual calculation. A total reduction of 50% from 8 hours to 4 hours monthly time spent in process of compiling and reviewing compared to previous workflow, which was done manually.

Item Code	Desc	UoM	MAP	Group	Status	New CP	Old CP	Diff CP	New SP	Old SP	Formulary Price	Diff SP
1111-11-111-A	ABCDEFGF	EA	\$0.01	INJ	S1	\$0.04	\$0.04	\$0.00	\$0.20	\$0.20	Not Found	(null)
7777-77-777-1	ABCDEFGHJ	EA	\$0.03	INJ	NS1	\$0.03	\$0.03	\$0.00	\$0.20	\$0.20	\$0.30	\$0.00

Figure 4: Information auto-populated on template

S/No	Template Header Desc	Remarks
1	Item Code	
2	Description	
3	Unit Of Measurement	Data extracted from SAP (analysis figure 1, step 2)
4	Moving Average Price	
5	Drug Classification Status	
6	New Cost Price	
7	Material Group	Group setup changed from numeric to alpha-numeric to expand the range (analysis figure 3)
8	Previous Cost Price	
9	Previous Selling Price	Data auto-populated from existing files (analysis figure 1, step 3)
10	Formulary Price	
11	Difference Cost Price	Data auto-calculated based on new and previous price
12	Difference Selling Price	
13	New Selling Price	Price calculated based on new material group guideline (analysis figure 3)

Information compiled from various files

## Conclusion

The new template adopted has enabled pharmacy to achieve cost saving at approximately 50% reduction in time spent on reviewing drug price. In addition, no expenditure on IT cost was involved to the enhancement of current inventory system. The team will continue to work on further customization to improve the efficiency of drug prices review.