CASE STUDY
A Culture Change for Inventory Management

A Large city hospital moves from implements surgical procedures using Oracle Work-in-Process, with a big leg up from the More4Apps Bill of Materials Wizard.

Many hospitals overlook the importance of linking their supply chain and the many thousands of items used in surgical procedures to the actual operations performed on patients. In this case the hospital material management team would order the items required then place them in areas for the operating theatre admin staff to pick for the various surgical procedures. Materials management staff then verified the stock balances via different means, from scanners, min/max processing, two bin systems and even that failsafe method of simply ‘eyeballing of the stock’.

Although this worked to varying degrees in the past, they were struggling with fairly common issues in relation to stock management due to their growing size overall and the sheer volume of operations being performed.

These included:

• Being over stocked in many areas but understocked in others,
• Duplicate products from multiple suppliers,
• Expired stock,
• Stock in storage that was never recorded in Oracle.

This meant that at times they were forced to do emergency purchase orders and pay hefty amounts to expedite the goods, and in many cases they had to delay elective surgeries. This put further strain on the overall patient management system.

‘The lack of inventory control was significant and the need for improvement was a must given the build program and the new theatre footprint that was being introduced. We just had to find a way to get the clinical staff what they needed to operate.’
After a detailed look at the problems they came up with the following requirements:

1. They needed to change the culture from a go, get and grab to one of a service, where specialist product knowledge was no longer required.

2. All product in the theatre storage area was to be Asset Tracked and min/max planned.

3. All operations were automatically created as a Work in Process job in Oracle. This allowed items required to be picked for each operation, as well as the exact items that had been delivered to theatre to be tracked.

4. Ability to kit and store common procedure packs within inventory.

5. Cost of surgical jobs, as currently only estimates of actual costs were being collected.

6. Reduce stock-outs and expedite the ordering process.

7. Have all items available for all elective surgery and most emergency surgery at all times.

The key solution to the requirements was to implement Oracle Work in Process and connect the jobs in Oracle to the patient management system, so Oracle would know which items were in demand and when required.

To use Oracle Work in Process effectively the old surgical procedure notes for operation material requirements had to be translated into Oracle as Bills of Materials (BOMs). The first job in getting the BOMs sorted out was actually getting hold of the procedure notes. This wasn’t as easy as first anticipated. Each specialty had a different way of keeping the notes, and then even within the specialty the note-keeping quality varied.

The following issues were raised:

1. Over 1100 unique (2300 if alternates are included) BOMs across 13 specialities needed to be created in Oracle. Some of the data was no longer valid or was out of date, with contradictions, and some operations had more than one procedure sheet.

2. Not all surgeons used the same products. They needed to reduce the different products used but in a way that didn’t jeopardise the quality of the surgical procedure.

3. Catering for differences in material requirements by surgeons for an operation.

4. They were moving to a new building, consolidating all surgical procedures into one physical location and opening an additional 10 operating theatres. For the majority of surgical specialties, this meant not just new theatre spaces but also a new theatre store. BOMs maintenance had to be quick and easy.
‘Moving to BOMs for surgical procedures was a monumental change for the clinical staff and came at a time where everything else in their environment was changing, all at the same time. They had to be sure that the materials that they required for a procedure would be correct in the system – this was a huge leap of trust on their part! Using the Wizard we were able to validate, update and maintain the data with confidence and absolute accuracy meaning this part of the change programme was relatively painless. Ongoing maintenance using the tool is quick and easy and now a very efficient part of BAU.’

Prudently they decided the first thing to do was to get the Bills of Material collated by putting all the data into a spreadsheet.

The approach undertaken was to:

1. Obtain a list of all the procedures performed at the hospital, and verify that the operations were still being performed:
   - They took on three specialties at a time to avoid information overload,
   - Worked with the key nursing and theatre assistance personnel to confirm the details.

2. Create item numbers in Oracle for the operations:
   - Used the More4Apps Item Wizard to create the items in a fast and timely manner,
   - Set the items as Inactive, until each Bill of Material was validated.

3. For the procedure sheets material requirements:
   - Figure out the internal item numbers based on the procedure notes,
   - Ensure all materials existed in Oracle,
   - Confirm the quantities for the primary unit of measure,
   - If held in inventory, then find the supply subinventory and locator for the item.

In an iterative process, they entered the BOMs into Excel spreadsheets and sent them back to the specialty department managers for approval.

For this to work efficiently, they wanted to:

- Verify the BOMs would be valid in Oracle without having to create them first,
- Include a check that the BOM components were valid items in Oracle,
- Ensure the BOM components had valid supply subinventory and locator information,
- Be able to change the components and supply details to make the migration to the new theatre store area easy.
Since the BOMs were now in an Excel format, they decided to look at the **More4Apps Bill of Materials Wizard** to see if this could help them out.

_‘We needed a tool that would enable us to handle the massive amount of data required in the shortest space of time. We needed to have confidence in the accuracy of the data and speed of upload as timing was essential. The Wizard turned out to be a bit of a lifesaver for us! The tool itself was great and the support when we had questions was quick and helpful.’_

The Wizard was so easy to use, as it was Excel based, as was the data. What was really key for this project, was the way to upload the Bills of Materials in verify-only mode, that way they didn’t actually have to load them in Oracle to confirm the validity of the data.

**The Conversion Process**

Creating the BOMs took a lot of investigative work with the process taking over a 18 months to complete. The biggest constraint was getting hold of the right person with the knowledge to confirm the BOMs were correct. Getting the data into Oracle became the least of their worries.

They also found that as time went on some components were substituted out. By the time they came to load them into production, they could easily rectify issues of invalid components by simply doing a search and replace on the spreadsheet.

When it came time to move into the new building, it was a simple task to download the Bills of Material and update the supply subinventory information to the new subinventories. All of this was done in Excel, turning what would have been a difficult manual process into something that one person could control and work through in a timely manner.

**Post Go-Live**

Since Go-Live, they’ve also completed the integration to the Patient Management System, which allows them to automatically know what to pick from the confirmed jobs. It also allows them to run min/max planning taking Work in Process job demand requirements into account, something they could never do in the past.
The next step is to integrate some of the other functions such as:

- Load sets,
- Sterilisation services,
- Resource usage.

This will allow them to plan around constraints, provide suppliers with future demand requirements and to help gauge the true costs of the operations to improve their billing procedures.

Currently the More4Apps Bill of Materials Wizard is used as a maintenance tool, specifically around the setup of new procedures, changes to current ones including different items and alternative supply sources.

It is an indispensable tool for their day to day business processes which has saved them both time and money whilst providing the surgeons with the right items when they need them.

This has also reduced operation rescheduling.