JIRA®: A management tool for the complex process of electronic medication management quality assurance

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Introduction

An electronic medication catalogue was configured for a New South Wales (NSW) state-wide implementation of an Intensive Care Unit (ICU) Clinical Information System (CIS), including adult, neonatal and paediatric ICUs.

The catalogue included:
- >2000 generic medications
- >6000 brand products
- >10,000 medication order sentences
- Blood products
- Enteral feeds and total parenteral nutrition
- Fluids

The complex nature of the catalogue including:
- High-risk medications
- High-risk patient groups
- Large volume of medication parameters to configure

Required a robust and transparent Quality Assurance (QA) process to ensure accuracy, safety and quality prior to go-live.

Aim

To develop a robust, systematic and independent medication QA process to manage and track the progress of the medication catalogue QA.

Requirements

QA process requirements were gathered by mapping QA workflows and included:
- Establish an independent QA team of ICU experienced pharmacists
- Ensure consistent QA of all aspects of the medication build
- Enable access by multiple team members simultaneously
- Provide remote access to accommodate pharmacists working remotely
- Enable easy identification of medicines requiring QA and remediation
- Facilitate easy distribution of work and communication with QA team members
- Track all QA and remediation activities for accountability
- Reporting functionality to track progress of medication catalogue QA

Design and implementation

The ideal QA process was mapped to determine workflows (Figure 1). 2 part-time ICU experienced pharmacists recruited to QA each medication to ensure an independent, robust QA process.

JIRA®, an agile software development program, was considered suitable to manage the QA process as it is configurable to suit custom workflows.

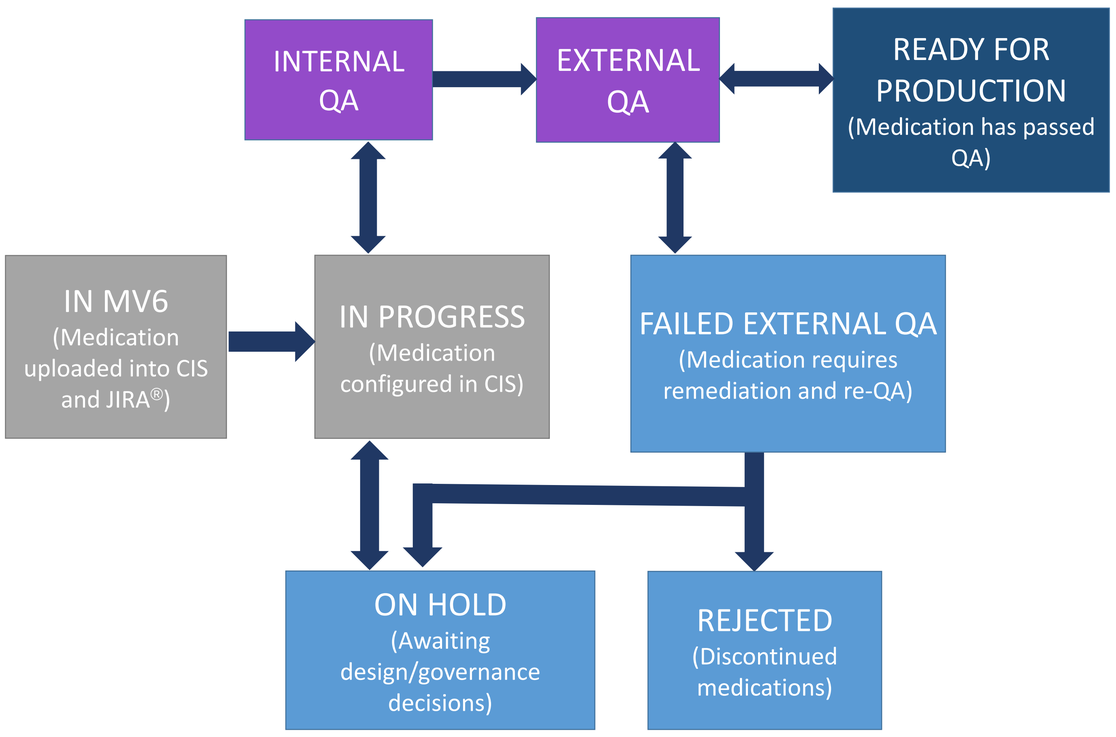

Figure 1. JIRA® QA workflow with applicable medication statuses

A QA spread sheet was used to ensure consistency of the QA and a copy attached to each JIRA® along with the references used. Comments could be added to the medication in JIRA®, visible to all (Figure 2). Users were notified via email of any changes, including status, comments, attachments or assigned pharmacist change. This enabled quick resolution of queries or medications that failed QA.

A QA dashboard was established in JIRA® to display and track QA progress (Figure 3). The dashboard displayed a graphical representation of the QA progress, providing visibility and making tracking of progress easy. Data was easily accessible and exported into Excel when required for reporting purposes.

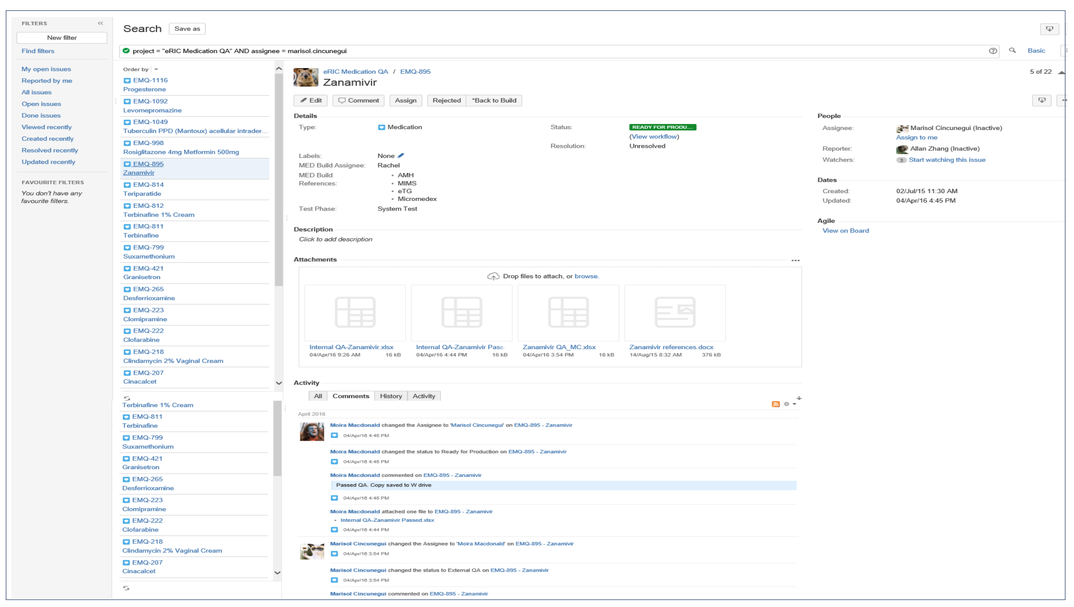

Figure 2: Example of a medication JIRA®. Assignees and status can be easily changed

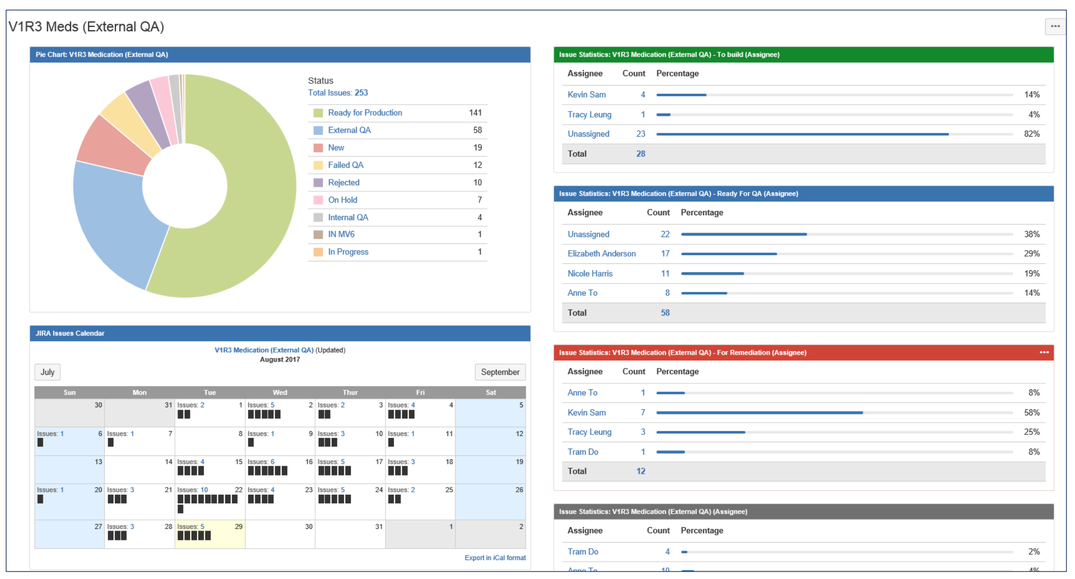

Figure 3: JIRA® medication dashboard. Users can see all medications assigned to them by clicking on their name

Conclusion

QA of an electronic medication management catalogue is a vital step to ensure safety and quality. Tracking and managing the large volume of medications, people and steps involved in the QA process was successfully facilitated using JIRA® whilst maintaining the accountability and transparency required of a robust QA process. Utilising JIRA® ensured all medications were accounted for and allowed for prompt notification and remediation of any issues. JIRA® is a flexible software product which may have many useful applications for pharmacists.