IMPROVING PATIENT SAFETY
WITH TEST PANEL CHANGE TO TEST ORDERSET

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INTRODUCTION

Prevailing Test Panels encompass a mixture of tests using different specimen types, of different specialty. With introduction of the new Computerized Physician Order Entry (CPOE) implemented in 2010, panel tests were split up and converted to test ordersets in the CPOE system. Ordersets are a set of individual tests grouped together to ease the clinician's ordering process.

The implementation fostered patient safety improvements in the clinical laboratory; analysers could perform direct-read of CPOE-ID labels for test analysis. However, due to historical billing regime, certain test panels were not converted to ordersets as they were restricted by its packaged billing format. Drawbacks for test panels involved relabelling of various specimens (types) within the test panels and presented chances for errors. Hence it was imperative to convert the six panels, namely the baseline and follow-up diabetic, hypertensive and lipids panel to ordersets – with a unique CPOE-ID label assigned to each specimen type; allowing subsequent direct-read by lab analysers and thereby improving patient safety.

METHODS & TIMELINE

Jan 2017
- Changes to **CPOE catalogue discussion** were refreshed with a new group of members

Mar 2017
- IHIS provided a mock up of proposed changes in SCM test environment for users

Jul 2017
- **Stakeholder raised concerns** arising from the proposed changes
  a) Conversion of test panels to ordersets would result in additional Result Acknowledgement workload
  b) Billing charges for the patient would be impacted

Oct 2017
- **Solutions were gathered** to mitigate impact
  a) Creation of a new CPOE Catalogue item; to group tests of the same specimen type under the orderset as a new test.
  b) Enhancement of i-Sync system so that the billing charges will not be impacted. Work was budgeted under Q1 FY18

Nov-May 2018
- IHIS proceeded to work on the solutions between Nov 2017 – May 2018.

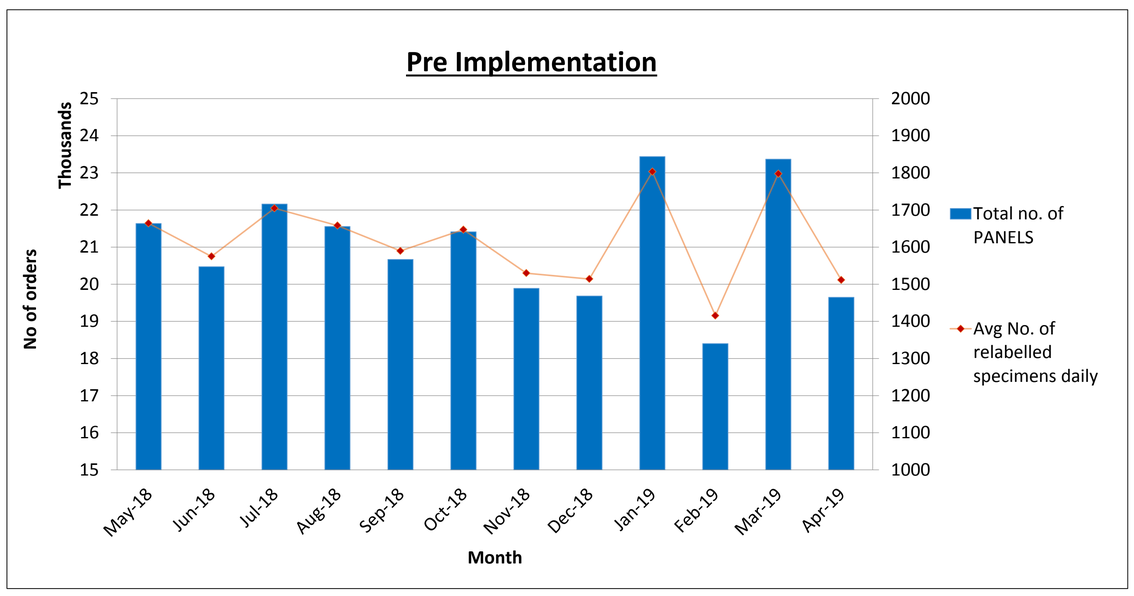
Jun 2018
- **Additional mitigation plan introduced** to reduce result acknowledgement workload - to set a cut-off reference interval for UACR test so that clinicians will be prompted only when there are abnormal results.

Jul-Dec 2018
- **Requirements were finalised**, ITSC approval sought, Development works, User Acceptance Testing in Test region.

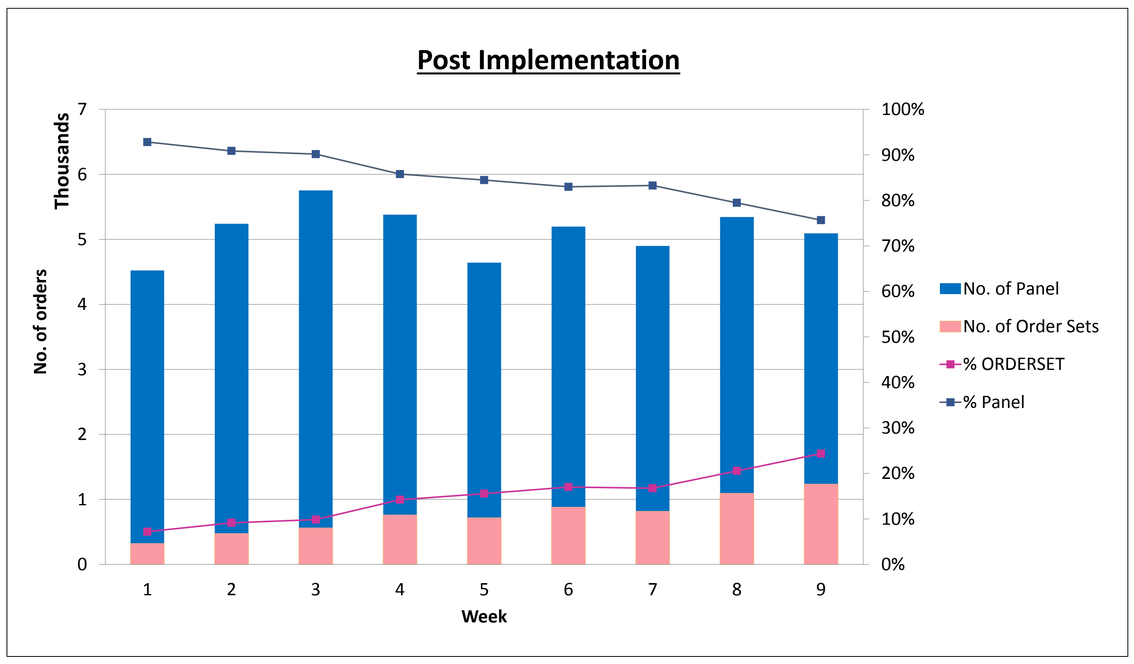
Jan-Feb 2019
- **Performed User Acceptance Testing** in Production region and **laboratory user training**. **Developed plans and new workflow** to handle transition period

Mar 2019
- Implemented auto-sorter rules for automated segregation of specimens and **GO LIVE Implementation**

RESULTS



Prior to the change, an average of 21000 panels were ordered monthly, translating to a daily average of 1600 specimen tubes collected that required relabelling. There were 6 near-misses incidence of wrongly pasted relabels out of 0.5 million tubes over past 12 months.



Since post implementation, there was 24% uptake rate by the 9th week. Following change to orderset, errors attributed to relabeling were removed.

The change has also enhanced patient safety and laboratory work processes in the following ways:
1. Test ordersets → unique CPOE-ID for each specimen type
2. Remove relabelling → eliminate error & attain seamless workflow
3. Seamless workflow → improve result reporting time

CONCLUSION

The orderset change uptake rate has been consistent for the first 9 weeks. There were no major adverse feedback with the implementation thus far and with the enhancement of the i-Sync system, the package billing format were not disrupted ultimately. Test panels are still received by the labotatory as these were previous orders made by the clinician. However looking at the average uptake rate of 2% per week, it is estimated that ordersets will be fully realised by Feb 2020 → achieving **zero relabelling of specimens**. This change paves a support path to 'Zero Harm'.

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