

Analysis of Issues Post Implementation of LIS for a US based client

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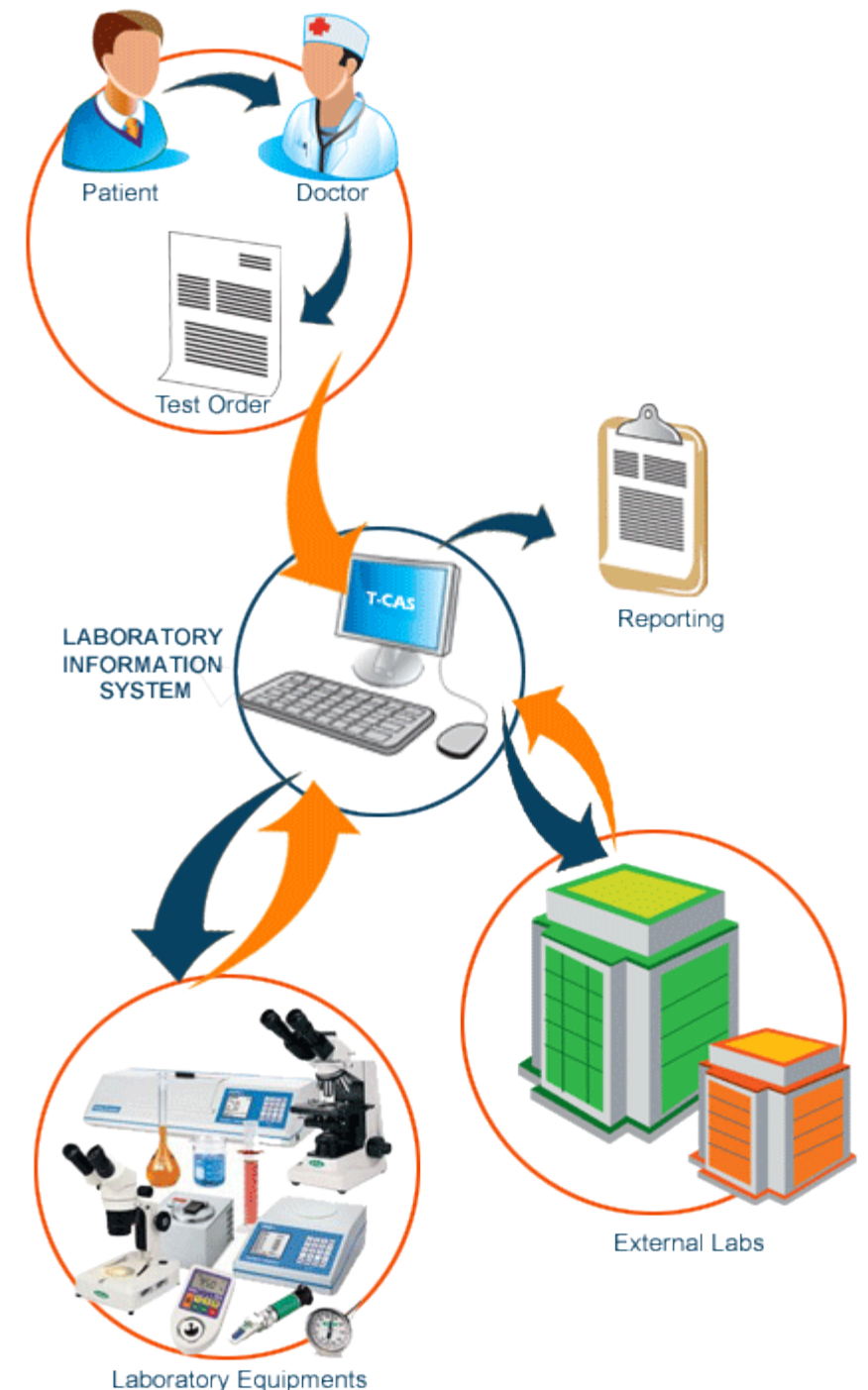
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What is LIS

- A **laboratory information system (LIS)** is a software system that records, manages and stores data for clinical laboratories
- The laboratory information system has been primarily segmented into two broad categories:
 - **Clinical Pathology:** the chemical, hormonal, and biochemical components of body fluids are analyzed and interpreted
 - **Anatomic Pathology:** tends to focus on the analysis and interpretation of a wide variety of tissue structures



Advantages of LIS

- Very fast report access
- Reduction in paperwork
- Improved data quality (reduction in errors)
- Improved operational efficiency
- Increased productivity
- Productivity gains (auto-reporting)
- Integration with other departments
- Reduces transcription errors
- Avoids duplication



OBJECTIVE

**To conduct root causes analysis
for laboratory procedures in
LIS for a US based clients**



METHODOLOGY

Sample Size: 259

Study Population: Users working in related diagnostic area of US Hospitals that are clients of Deloitte

Collection Tool: Secondary Data

Duration: 4 Months

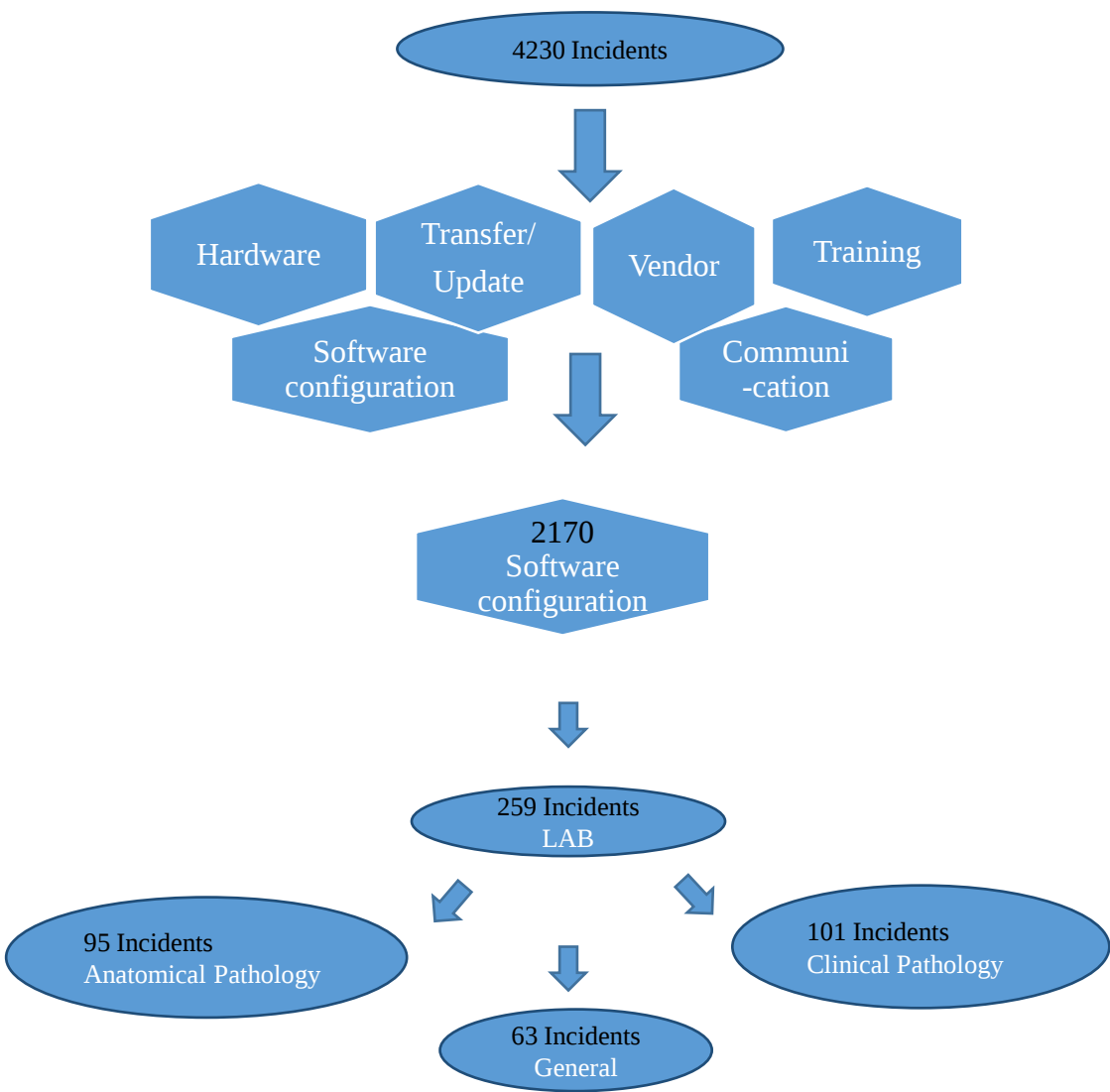
Technique: A six month retrospective study post implementation of LIS was carried out and the problems that arose were analyzed. Thereby identifying the root cause of incidents over a period of 6months (MAY 2014- OCTOBER 2014)

Study Type: Descriptive

RESULT AND DISCUSSION

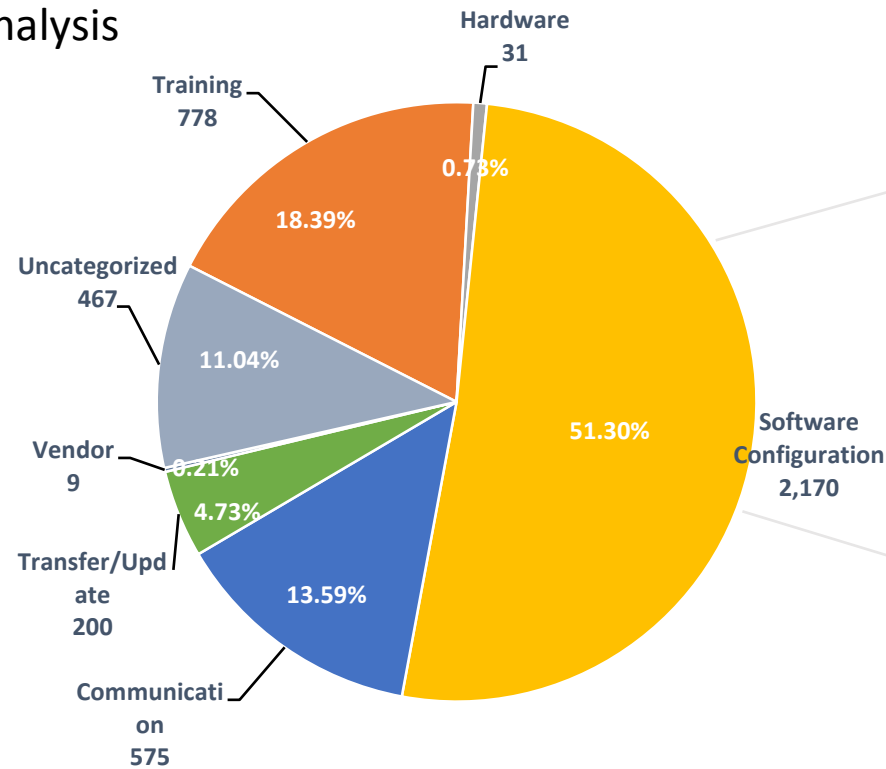
Result and Discussion

Analysis

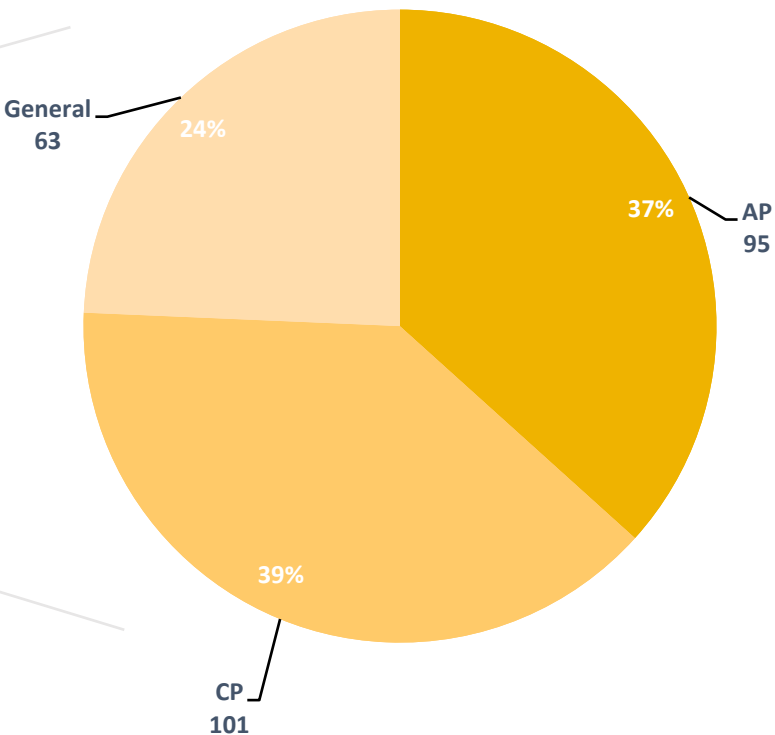


Result and Discussion

Analysis



Categorization of causes of incidents reported



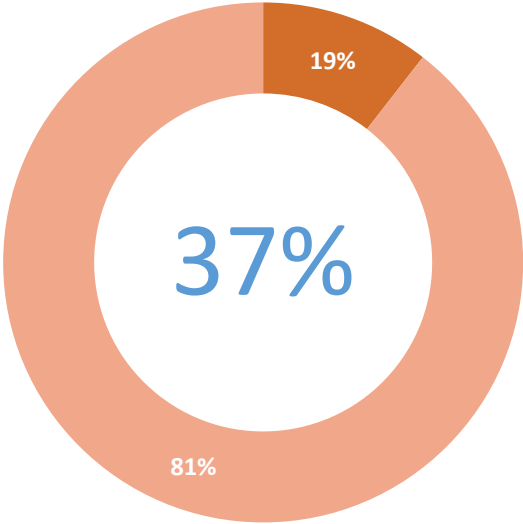
Categorization of laboratory incidents

*AP- Anatomical Pathology
CP- Clinical Pathology

Result and Discussion

Analysis

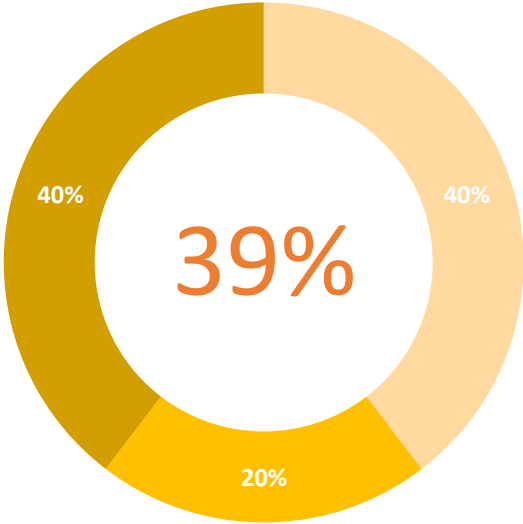
Anatomical Pathology



Cytology Histology

55 Break fix
40 Enhancement

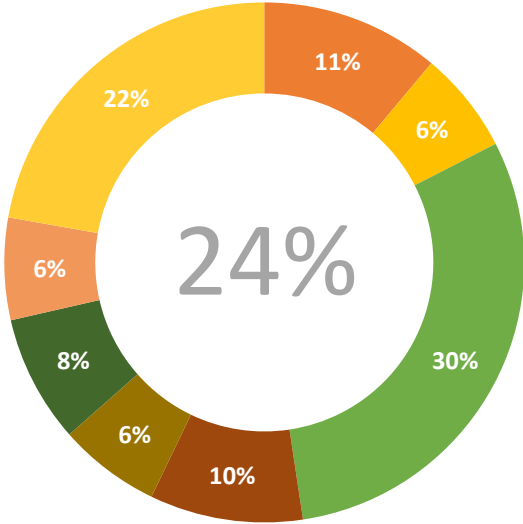
Clinical Pathology



Biochemistry Hematology
Microbiology

37 Break fix
64 Enhancement

General



External Lab Instrument
Miscellaneous Printer
Report Security
Sendout Trackboard

31 Break fix
32 Enhancement

Result and Discussion

SAMPLE INCIDENTS ANATOMICAL PATHOLOGY:

Histology:

- Transcriptionists (XYZ name) are unable to access the case for editing as the "Results" button is greyed out
- ABC person does not have the ability to advance the case status
- Add normal ranges for two AP tests
- When the Pathologist orders Special Stains, they are not crossing over worklist for the tech to see.

CYTOLOGY:

- Cytotech are not able to advance cases they are assigned to
- There is no way to add cytology slides to a packing list
- Unable to scan barcode on specimen submitted
- When we fax/print report an error message appeared that the report template is missing

Result and Discussion

SAMPLE INCIDENTS CLINICAL PATHOLOGY :

MICROBILOLOGY:

- XYZ placed by staff are not printing to lab printer
- User has issue when scanning Blood Culture order label

HEMATOLOGY:

- XYZ test is failing to auto- verify
- One or more components on ABC Test are missing in final auto verification range

BIOCHEMISTRY:

- Results from the instrument did not have the patient demographic information
- One of the tests for lactic acid is not reading the barcode

Result and Discussion

SAMPLE INCIDENTS GENERAL :

EXTERNAL LAB:

- The result from ABC lab did not cross the interface to complete the test
- ABC test does not result via interface, results have to be manually entered.

Instrument:

- The results from the instruments are not showing up correctly in the system
- Reports from XYZ test did not cross over from to instrument

TRACKBOARD:

- Track board is not updating
- Lab tracking board has wrong front size
- Track board is only showing overdue
- Xyz test is not transmitting to the tracker board

PRINTER:

- Printer is not printing labels

Result and Discussion

SAMPLE INCIDENTS GENERAL :

MISCELLANEOUS:

- The appearance of the worklist has changed
- The Pathologist order is not showing in worklist
- Unable to enter urine analysis
- Patient education is "grayed out"

Result and Discussion

SAMPLE INCIDENTS Training :

- Unable to Export and Save data from the Revenue and Usage report
- The blood culture test ordered at the ABC lab went into the wrong lab
- Unable to reprint label for CBC
- An error message is displayed that CBC with platelet count order has already been collected, but the order hasn't been collected
- User needs to print label for specimen in the ABC department but is unable to do so

CONCLUSION

Conclusion

The analysis of issues reported in **laboratory** specific to ***software configuration*** reveals that, the root cause of the major issues are:

- **User Access:** Most issues related to cancellation of order, update record, verification of order
- **Import and configuration process:** Issues related were reference range update, accession setup, antibiotic values, valid range for a test
- **Interface:** Issues related to data not crossing over from instrument, third party lab, hand held instrument, analyzer
- **Printer configuration and setup:** Most of the issues were related to wrong printer, workstation mapping

Conclusion

The analysis of issues reported in laboratory specific to ***training*** reveals that, the root cause of the major issues are:

User navigates into wrong screen, user places wrong orders, not aware of activities available in that screen, don't know how to verify the report, not able to complete order, printing multiple labels

RECOMMENDATION

Recommendation

- Assessing user roles, updating them on timely intervals and identifying key security points for them will help reduce the number of incidents for user access
- An effective and robust communication plan should be devised to maintain a timely and proper communication between the team that setups the printers and workstation physically and the end user

Thank You