Measuring the Impact of Digital Dashboards on IQC/ Maintenance Monitoring: Implementing Formstack & Tableau Data Systems

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The recording and monitoring of Internal Quality Control (IQC) and maintenance data in laboratories can be improved by implementing software combining electronic forms (Formstack) that transfer data to a digital dashboard (Tableau) in a streamlined paperless system. Digital dashboards facilitate continuous monitoring of compliance to IQC and maintenance procedures. This project aimed to assess if standardisation and implementation of a digital Internal Quality Control (IQC) and maintenance monitoring system improves compliance with Internal Quality Control (IQC) procedures and standards of ISO 15189 Medical laboratories requirements for quality and competence.

Introduction

The recording and monitoring of Internal Quality Control (IQC) and maintenance data in laboratories can be improved by implementing software combining electronic forms (Formstack) that transfer data to a digital dashboard (Tableau) in a streamlined paperless system. Digital dashboards facilitate continuous monitoring of compliance to IQC and maintenance procedures. This project aimed to assess if standardisation and implementation of a digital Internal Quality Control (IQC) and maintenance monitoring system improves compliance with Internal Quality Control (IQC) procedures and standards of ISO 15189 Medical laboratories requirements for quality and competence.

Method

Three representative laboratory sections were selected for implementation of digital dashboards including: MALDI-ToF MS (equipment), EliTech (equipment), and the Tissues and Fluids laboratory section. The level of compliance with Internal Quality Control (IQC) and maintenance procedures pre and post implementation of the digital dashboards was analysed statistically using “N-1” Chi-squared test by MedCalc statistical software to establish impact.

Results

A significant increase (p<0.05) in compliance with Internal Quality Control (IQC) procedures was observed across all three sections: MALDI-ToF MS from 50.0% (3/6) to 100.0% (6/6) compliance (see fig 2).

Conclusions

This project has demonstrated that implementing a standardised electronic system for recording and monitoring of Internal Quality Control (IQC) and maintenance activity in the laboratory has led to a significant improvement in compliance with procedures. Future work will focus on implementing the standardised electronic system across all sections in the laboratory which will inevitably lead to improved adherence to ISO 15189.

Pre & Post Implementation Compliance with Completions of IQC and Maintenance Records for the MALDI-ToF MS Platforms in Infection Sciences

Pre & Post Implementation Compliance with Completions of IQC and Maintenance Records for CL3 Tissues and Fluids Section

![Pre & Post Implementation Compliance with Completions of IQC and Maintenance Records for the MALDI-ToF MS Platforms in Infection Sciences](image1)

![Pre & Post Implementation Compliance with Completions of IQC and Maintenance Records for CL3 Tissues and Fluids Section](image2)

REFERENCES

2. Tableau.com. Tableau. Published online 2020. Available at: https://www.tableau.com/