



Getting the Message Right to Catch the Flu

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Point of Care Molecular Technology for Influenza A&B Testing

Introduction

Training is a key element of any laboratory process and even more important when getting clinical staff outside the laboratory to undertake diagnostic testing near the patient.

Translation of more complex point of care technologies, such as molecular testing, to the near patient arena is fraught with difficulties. This can be even more difficult when laboratory staff training non-laboratory staff fail to think about how new users understand the details of the testing process.

This can have significant effects on the outcome of near patient testing and getting the results right but can be resolved through understanding how users understand the technology.

Background

Over the last winter period in Derby, we introduced a pilot study at the acute front doors of the Trust, in the Emergency Department (ED) and the Medical Assessment Unit (MAU) of near patient Influenza A&B testing using the Abbott ID Now device and the new version 2 test.

Initial training with the device and analyser was presented by the company, using the training method developed over the past five or so years (including when the company was known as Alere and the analyser the Alere-i).

It became apparent early on that some users were not completing the transfer of sample correctly and that no test results were being generated. From a laboratory and company training perspective this appeared unusual as the methodology seemed straightforward and we had emphasised the transfer module steps during training.

This led to additional delays, increased costs and reduced confidence in the device by non-laboratory staff.

We investigated possible reasons for this by talking to users about how they understood how the technology worked in order to find a better way of getting the message across.

Methods

The Abbott ID Now analyser uses a molecular technique to detect influenza A or B in swab samples taken from the throat or nasopharyngeal tract.



A white transfer cartridge collects two aliquots of the buffer mixed with sample.



The user then transfers the white transfer cartridge to the orange test base, which consists of two cuvettes, one for Influenza A and the other for Influenza B. At the time of transfer to the test base the operator presses down on the white transfer cartridge to lock the cartridge onto the test base and to dispense the aliquots of the buffer-sample mixture.

The locking phase requires internal arms to move an click into place in the test base to form a hermetic seal and prevent leakage of materials which might otherwise contaminate the reading device underneath the test base. Once completed, the test cycle is initiated by closing the lid of the analyser and the test is measured over the next 10 minutes, followed by the results being displayed.

Results

We spoke to a wide range of clinical staff who had been carrying out the POCT Influenza testing to gain insights into their experience. We were particularly interested to find out how they found the test in their clinical practice and what problems they had experienced or had been told about by their colleagues.

The clear message we received from users was that they had carried out the testing as trained and the vast majority of tests were successful, but that a number of tests had failed, giving "Invalid" results. This was due to inadequate dispensing of the sample into the test base unit, i.e. the transfer cartridge failed to dispense the sample-buffer mixture despite the unit making the clicking noises.

Further discussion with staff who had experienced test dispensing failures showed that they did not really understand how the transfer cartridge worked and just listened for clicks. This is despite the orange indicator button which showed if the sample-buffer mixture had been aspirated, popped up, or had dispensed the sample-buffer mixture, popped down.



Aspiration of sample – Orange button pops UP

Dispensing of sample – Orange button pops DOWN

A solution was found which was based around how non-laboratory staff understood how the device worked using analogies to their normal daily work.

Clinical staff use and understand the use of syringes in their daily routines, so by using an analogy to syringes clinical users easily understood how the transfer cartridge worked and what the orange button indicated.



Unused Cartridge

Sample Aspirated

Sample Dispensed

Using this information and asking staff to ignore the clicking sounds made by the transfer cartridge, we managed to get a significant reduction in sample dispensing errors.

This also allowed staff to gain more confidence in the POCT Influenza testing process, following a series of update training events which delivered to new process understanding.

Conclusion

When introducing new technologies for clinical users at the point of care or near patient care it is essential to think about how you train staff, the messages you want to get across and how they might understand the processes involved.

A program to interview users who have recently started the new testing process to gain insights into *their* understanding of the process and technology is crucial to enable changes and improvements to training. This will engender better attitudes to the testing for clinical users and minimise problems and delays in the patient pathway.

Resources:

1. Abbott ID Now webpage - <https://www.alere.com/en/home/product-details/id-now-influenza-ab-2.html>
2. Video demonstration of ID Now Influenza testing - <https://alere.wistia.com/medias/eetr29tau5>