Keeping a tight lid on operator and competency management in point-of-care testing

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Point-of-care pathology testing is becoming increasingly common in hospitals, clinics and doctors' offices; anywhere where time is critical and results are required at the patient's side.

However, results must be accurate and reproducible to be meaningful, and it is imperative that a close eye is kept on point-of-care equipment and the competency of all operators, whatever their level of experience and knowledge.

Lynda Petley, Manager of the Point of Care Testing Team at Frimley Park Hospital, Surrey, UK, discusses the everyday challenges faced by point-of-care coordinators, and outlines measures and instrument features that might help to avoid the most common pitfalls.

Introduction

Point-of-care pathology testing at Surrey Pathology Services (Frimley Park, Royal Surrey County, Ashford and St Peter's Hospital Trusts) is overseen by a team of trained medical technical officers, who support over a thousand analyzers, comprising 27 different types of equipment.

The devices, which range from simple blood glucose meters to more complicated multi-analyte instruments, are placed in various locations in the hospitals, in several remote outpatient sites, and in general practices and pharmacies across Surrey.

Thanks to the meticulous maintenance and quality control protocols in place, it is comparatively rare that the devices themselves actually malfunction; invariably it is the users who pose the biggest challenge for a point-of-care coordinator. Training and competency checking of users, coupled with ongoing support help to develop user confidence in results generated from point-of-care equipment.

Effective management of point-of-care testing relies heavily on professional relationships, and it is important that the point-of-care team make every effort to facilitate contact with healthcare professionals interacting on a daily basis with clinicians, nursing staff and other healthcare professionals using the equipment.

Building up an understanding between all parties of why monitoring and training protocols are in place encourages individuals to cooperate and comply with good working practices.

Reinforcing access control

One of the first practical considerations for any point-of-care instrument is password protection. All devices should have password protection whereby every operator is identified using a unique identifier, and only those who have had the relevant training and reached acceptable competency levels are granted user access rights to the instrument.

The system most commonly used is barcode identifiers issued following training and competency testing, and enabled on devices as agreed with the POCT coordinator. In reality, barcode passwords are open to misuse; operators have been known on occasion to break trust policy and share them with their colleagues, seemingly without any consideration that they could be liable if a coworker acts on a "wrong" result produced in their name.

Biometric identification has been suggested by some as an option, but a more cost-effective and practical alternative may be to simply link instrument access with the tried and tested site identity (RIF) cards that gain entry into hospital buildings and car parks.

These cards are required throughout the working day by all personnel to gain access to restricted areas within a hospital, and individuals are less likely to "share" them with colleagues if they constantly need them to access their work areas.

This option is also not open to cloning, and ties into hospital management systems which, in turn, perhaps could be linked to training and competency, capturing all data onto one electronic database, rather than forming another layer of stand-alone records.

Ensuring continuing competence

Once an individual has been appropriately trained and is deemed competent, they are given access to a device, and the emphasis turns to monitoring. The competency of any operator should be directly linked to performance, with error rates and task frequency signalling a need for refresher training and competency testing.

The POCT team at Surrey Pathology Services perform daily checks on all analyzers, including error rates and check of the previous day's results to ensure that correct patient identification has been captured.

Where users are identified who are not following the Point of Care Testing Policy, either by generating errors or failing to enter correct patient information, they are contacted and offered update training.

Constant monitoring ensures that issues are actioned promptly and users become aware that poor performance is not tolerated. It can also be very useful to highlight barcode sharing early on, and reduce risk to the patient of mismanagement by untrained staff.

Task frequency

Competency can only be gained through task frequency and it is essential that the healthcare professional commences use of the point-of-care testing equipment directly following their training; otherwise their competency will diminish exponentially over time.

There are a number of IT solutions available that are customizable to enable user lockout within a given period following training and initial access to a point-of-care testing device. This functionality is extremely helpful in alerting the issue of time lag between training and use of a device. The point-of-care team can immediately offer retraining to the individual in question.

Monitoring frequency of use is also an invaluable tool when evaluating competency and it would be a useful tool if instruments issued automatic reminders to operators to access online refresher training if they had not logged onto a system within a time frame specified by the point-of-care team.

At present, monitoring of frequency of system use by individuals is a challenge too far at Surrey Pathology Services, and until IT systems provide a swift and simple solution to this problem, we have to settle for identifying issues retrospectively.

The significance of task frequency as an indicator for retraining does of course depend on the complexity of the assay in question. Urine dipsticks, for example, are simple, often with instructions written on the device, and many healthcare professionals will have performed this test on numerous occasions throughout their careers so annual online training and competency evidence may be sufficient to ensure optimal performance.

Where a device is more complex or a result open to subjectivity, more frequent training and evidence of in-depth knowledge may be required to achieve the required standards. Simplicity is key to successful outcomes; point-of-care instruments must be intuitive because they will primarily be operated by non-scientists, and even the simplest of devices can be misused if people are not correctly instructed on when and why, as well as how, to test.

Ideally, there should never be more than half a dozen steps required to perform a test using a point-of-care analyzer. Many manufacturers have kept this in mind and have developed particularly intuitive instruments, user-friendly wall charts or, better still, video diagrams explaining device use.

Contraindications, limitations of a method and in some instances explanations of error messages are often not clearly displayed, perhaps seen as "bad news" by the manufacturers, when this information is of paramount importance to the clinician managing a patient on the strength of a result which has not been officially validated by the laboratory.

It is essential that the "decision maker" is fully aware of the limitations of a point-of-care assay method and will request confirmation of a result from the laboratory where the result obtained does not match with patient signs and symptoms.

Improving error tracking

Most point-of-care devices have integral error logging systems, recording faults at different stages of the process, but not always from the point at which a user logs on to the system. As a result, relying on error rates to identify training issues can be misleading and a comprehensive understanding of device capability is paramount when designing a training and competency program.

Ideally, a point-of-care device should collate information from the moment a user logs on, stop the test as soon as a mistake is detected, and offer as much support and advice to the user as possible to facilitate a successful outcome by highlighting the correct procedure. Not only would this produce an accurate audit trail, but it would also instruct the operator in an interactive and educational way.

Suppression of results where error is suspected should be a mandatory feature for all point-of-care devices to protect the patient from mismanagement.

A role for management software

Point-of-care coordinators are challenged to efficiently monitor and train thousands of healthcare professionals, and IT systems should, in theory, be able to simplify the processes and improve their effectiveness.

Ideally, to facilitate operator training and competency point-of-care testing devices should connect to a software system that records operator identifiers, errors and task frequencies, bringing every aspect of competency management together into one cohesive database which could then feed into the electronic staff record. The error rate frequency would help to clarify whether a user actually has a competency issue, or has made an isolated mistake.

The ability to lock out passwords at the end of a shift is a useful tool to prevent password sharing or to alert the point-of-care testing coordinator of a prolonged password usage would also be a useful feature.

Connectivity will only increase in importance as point-of-care testing develops further into a stand-alone discipline in its own right, and manufacturers would do well to spend time "at the coal face" to learn exactly what healthcare professionals and coordinators really need from point-of-care instruments.