

# The challenges of point-of-care testing, mate

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Minimizing costs? Quality assurance? Training? Simpler devices? **acute**care**testing.org** asked four healthcare professionals in Australia and New Zealand what they saw as the main challenges of POCT.

Answers were broad in spectrum. Nevertheless, three challenges were (directly or indirectly) mentioned repeatedly: ensuring lab quality in point-of-care testing, information management and minimizing costs.

## Simple as the ubiquitous Coke machine

There is no better way to start a discussion about the challenges of POCT than to talk about the blood gas instruments used for testing at the point of care. Even though successful POCT transcends a single analyzer, ease of use is still a hot topic. It is no wonder.

Ongoing training of (sometimes hundreds of) ward personnel and ensuring lab quality at the point of care can become a sheer nightmare if instruments are, on top of it all, difficult to use.

“Ease of use remains a major problem for many POCT

devices,” says Dr Andrew St. John, medical consultant at ARC Consulting, based in Highgate, Australia. “If we are to effectively devolve testing to non-laboratory-trained users, we need to make blood gas instruments or any other POCT device as easy to use as the ubiquitous Coke machine.”

## More out of a single test

In the future, Dr Andrew St. John does not necessarily see POC devices evolving in the direction of offering users a wider test menu. “Rather than new tests we might see more of the existing tests being carried out on one sample,” he says.

“The utility of cardiac troponins in the Emergency Room means that one could make a sound case for them to be measured together with blood gases and electrolytes on the same sample, simultaneously.”

Dr Andrew St. John continues:

“Given the length of time it has taken for chemistry and immunochemistry to be integrated into a single platform

for central laboratory testing using serum or plasma, it will be interesting to see whether manufacturers can achieve simultaneous measurements any quicker. POCT requirements in Operating Rooms include blood gases and coagulation parameters. The question is: Can manufacturers overcome the different sample requirements and produce a device to measure all of these parameters on a single sample?"

### Training staff is crucial

The goal of POCT is to ensure the right result for the right patient at the right time. However, ensuring quality does not depend on intuitive devices and technology alone. User training is just as important.

In 1997, the Canberra Hospital, in Canberra, Australia decided to upgrade its POCT setup. Peter Talsma, Chief Hospital Scientist at the hospital's Pathology Department, was in charge of the project.

"Connectivity was important, so pathology would have some idea of what was going on at the point of care," Peter Talsma recalls. The other major issue was ensuring adequate training of all staff. "Or else, we would not harvest the expected results," he explains.

For Peter Talsma, carrying out POC staff training on the blood gas analyzers is not only about ensuring lab quality of all tests done at the point of care. "It is also an excellent way of maintaining communication between Pathology and the POC sites."

The provision of staff training was also considered high on the list of requirements to the supplier when Lab Plus, a hospital laboratory based in Auckland, New Zealand, went about upgrading its POCT setup.

"Each POCT instrument has numerous users, so time used on training and the ongoing annual reaccreditations required by IANZ (testing authority in New Zealand) seriously impacts staff availability," says Don Mikkelsen, Laboratory Manager at Lab Plus.

Therefore, it became a key criterion to implement a

supplier-based training program to help staff during the initial stages following implementation of the new setup.

### Using technology to improve workflow

As pressure for financial and resource management mounts, hospitals are increasingly turning to technology as a way to optimize workflow. Testing at the point of care is no exception.

Lab Plus is, according to Don Mikkelsen, increasingly relying on a data and analyzer management system to manage tasks such as analyzer maintenance and troubleshooting.

"With efficiencies required in staff time, it is important to manage the workload of POCT by having online access, so as many processes as possible can be viewed and managed from the laboratory," he says. According to Don, remote control and support of decentralized analyzers from a central location has meant that his staff no longer needs to visit remote analyzers frequently.

Nevertheless, connectivity creates another challenge for sites establishing or upgrading their POCT setup: ensuring that analyzers from different manufacturers can be linked to the same IT system. As Don Mikkelsen says, "it is imperative to have the ability to link both old and new analyzers into one analyzer and data management system."

### Meeting the requirements of traceability, accountability and billing maximization

As healthcare costs increase, hospitals are looking to capture all sources of income, including billing of tests taken at the point of care. However, correct billing can only take place by having a system in place that ensures traceability of results and accountability.

According to Brett Simm, IT Manager at the Hunter Area Pathology Service (HAPS) in Newcastle, Australia, patient billing was a primary requirement when the hospital recently upgraded its POCT setup.

“The primary goal of POCT is to deliver patient care benefits faster and more efficiently. However, the challenge is to maintain the quality standards that exist within the laboratory and to minimize costs as much as possible along the way,” Brett Simm explains.

HAPS met the challenge by linking all POC blood gas instruments to an analyzer and data management system that provides continuous feedback during analysis. These “checks” ensure a correct match between the correct patient and the correct result, enabling not only traceability and accountability (and thus lab quality at the point of care), but also effective billing of results.

## Showing cost-effective patient outcomes

Demonstrating cost-effective patient outcome is also a hot challenge ahead of POCT.

“Designing studies to determine the outcomes of diagnostic testing is not easy,” Dr Andrew St. John explains. “One common difficulty is to obtain ethical approval to determine the outcome of a test that is already well established, something that is particularly true for blood gas or critical care testing.”

He concludes: “The continuing crisis over how to fund the increasing cost of healthcare means that the demand to demonstrate cost-effective outcomes from point-of-care testing is another challenge for the next decade.”

## Interviewees

### **Andrew St. John**

ARC Consulting

### **Peter Talsma**

Pathology Department, Canberra Hospital

### **Don Mikkelsen**

Lab Plus

### **Brett Simm**

Hunter Area Pathology Service (HAPS)

## Interviewer

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