Training and Qualification Framework Paper: Questions

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Introduction:

Qualifications are usually obtained at the beginning of one's career, training continues throughout in both a formal and informal way. These activities are necessary to equip staff to work in the laboratory of the present and hopefully the future.

Whilst it is hard to be 100% certain of the future skills and knowledge required of the Lab workforce there are some trends within the workplace that are worth noting.

There is and will be a lessening requirement for:

- Transactional work, loading and unloading samples, storing and retrieving samples, centrifuging samples, aliquoting samples, retrieving and storing culture plates, inoculating media etc
- Computer database entry will continue to decrease: Registering patients, registering test requests, entering laboratory results, entering QC results
- Verification of test results and QC
- Making or reconstituting reagents
- Maintaining and repairing equipment

There is increasing need for:

- Clinical knowledge and the capability to apply the knowledge
- Managing and complying with regulation
- Root Cause Analysis skills
- Process design and redesign
- Data analysis skills
- IT networking skills
- Capability with rules based system design
- Communication skills with health professionals at all levels
- Teamwork skills, conflict resolution
- Finding and using new knowledge
- How to be a life long learner
- Deep science will increasingly be offered in only one or two places

What system of training and qualifications do we need for the workforce? What sort of workforce do we need?

The size of the Laboratory workforce is effectively static meaning we are seeking only to replace those that leave the profession. Growth in workload is handled through technology and technology has the potential to reduce the required workforce in the future.

To break the whole workforce training issues into manageable chunks, we suggest there are 4 broad areas under consideration:

1. Technicians training.

2. Scientist basic training.
3. Ongoing flexibility for deployment as needs change.
4. Post graduate scientists training.

All 4 chunks have synergies and must be viewed in the context of cohesion amongst skill sets and workforce resource to deliver to whole of service delivery.

1. **Technician Training**

   With the national trend towards tertiary training there are very few technician trainees entering directly from school.
   Is it time to rethink the training scheme for technicians?
   What will be the future demand for technicians given the expected demise of the mainly transactional work in laboratories?
   Do we reduce the Technician workforce or do we elevate the status of Technicians and train less scientists? The workforce size is effectively static so an increase in one component means a decrease in the others.

   Do we need a nationally consistent minimum standard and skill sets?
   Do we need more formalized (diploma?) level qualification framework that is entered into as a form of tertiary education?
   Will the technician training be technology driven (as opposed to scientific) and if so what impact on bridging will there be?
   Is it fair to continually take technicians down a qualification path that mostly does not count towards a scientist qualification should they desire to advance?

2. **Scientist basic training (MLS)**

   How long does the MLS need to be and how could the internship be better managed?
   What core competencies are required within scientific, technological and communication fields (and potentially others) and equally what should fit in the postgraduate space?
   Should the internship follow the medical provisional registration model?
   The current workforce split is roughly 50:50 in favour of Technicians now with the introduction of the MLPAT. Laboratories vary widely in the relative mix of the two groups. What separates the two roles?
3. **Ongoing flexibility for deployment as needs change.**

   What impact will (1) and (2) above have on Technician Bridging to Scientist qualifications? Will there be a need in the future for bridging if one group is technology driven and the other scientific?
   How to maintain flexibility to redeploy with changing service needs and technological change?
   What of synergies and opportunities to cross credit and retrain in both core (e.g. cytology to histology) and non-core medical laboratory fields (e.g. biomedical technicians).
   How can we deliver to small provincial laboratory capacity as well as large central laboratory capacity?
   Do we specifically provide for multiskilling (blood Sciences) etc

4. **Post graduate scientists training.**
   What fits into this space, for whom, when and how would it be delivered? ? Navigator/communication : ? Quality audit and safety : ? subspecialisation : ?IT : ?Management

Some comments from people on this topic to date include:

The scientific disciplines are an effective way of managing the volume of knowledge required to become a useful scientist of the now. In practice what has tended to happen is that this base level of knowledge is built upon so that in all aspects of a scientists practice their knowledge deepens and hopefully insight develops.

Insight can occur in terms of practical things such as the minutiae of how a test works.

- Why lab processes occur in particular ways.
- The relevance of tests in clinical terms.
- How best to communicate a patient's result.
- What other value(s) the data produced as a result of testing has when combined in different ways.

A key component for our scientist of the future is to provide the link between the open patient record that result portals deliver and the understanding of those results. Scientists of the future need to be able to create the metrics and tell compelling stories to non-scientists: demystifying the lab. This will be powerful, particularly with the non-scientific community.

Our experience with state of the art automation tells us that rather than dumbing down the input required that it adds a new complex skill set in running maintaining and optimising our laboratory process. Automation will also free up resource to enhance the laboratory service and add value to both patient and system as a whole.

The capability of our most recent and able graduates shows the importance of the knowledge base that an applicable degree course delivers. As well as the science papers we need:

1. Measuring differences between data sets and mathematical strategies.
   - Mathematics strategies for evaluating data, types of data, complex data sets
   - Population statistics, forecasting/predicting/ modelling, limitations etc.
   - Probability – different levels of papers
2. communication skills multiple levels
3. Investigate trends in diagnostic laboratory science
4. Critical evaluation, critical questioning
5. Quality assurance in all its facets particularly in being able to audit and maintain delivery across a service.

The issue of what degree of uncertainty of measurement or confidence in any given process can be only properly be known and understood by having a live reviewed data set on the many things that the laboratory needs to have a measure of whether it is turn-around-time, haemolysis rejection or any other aspect of the laboratory process.

The nature of clinical placement and the relationship between the laboratories and the universities is critical. Funding for guaranteed placement for graduates would go a long way to address supply issues and mean that overseas practitioners should generally not be necessary. It would also assist future proofing and succession planning for laboratories as the aging workforce leaves or reduces hours.