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New Zealand
Anaesthetic Technicians' Society

Future Training and Workforce Sustainability – Discussion Document

In 2014 the New Zealand Anaesthetic Technicians' Society (NZATS) Executive embarked on an action plan of research and consultation regarding the future direction of the Anaesthetic Technician workforce in New Zealand. The objective of this plan was to present the Medical Sciences Council of New Zealand (MSCNZ) with a submission on behalf of this workforce, outlining a training programme that would ensure the workforce requirements for anaesthetic assistants is met nationally whilst maintaining high standards of clinical practice and patient safety.

After comprehensive discussion with our education provider, Auckland University of Technology (AUT), regarding the structure and content of their current programme and potential viable future options, two sets of questions were formulated by the NZATS Executive Committee about training and workforce sustainability. In order to present these issues in an informed manner a power point presentation was shown and discussion held at Conference and in each of the five regions throughout the country. The Anaesthetic Technicians attending were then invited to give their feedback by filling in a survey questionnaire.

A total of 162 surveys were received from around the country. These included both NZATS members and non-members, and both trainee Anaesthetic Technicians and qualified Registered Anaesthetic Technicians (Reg. AT). These results were recorded and collated including feedback from three other technicians who were unable to attend these meetings but wished to provide their perspective.

A second survey was then conducted by the NZATS Executive members via telephone. This was for Charge Anaesthetic Technicians, Anaesthetic Technician Educators, and Theatre Managers - a total of 28 surveys were collated and recorded.

An email working party was formed to review this data and give feedback to contribute to this discussion document. This group consisted of all of the members of the NZATS Executive including our representatives from the NZ Society of Anaesthetists (NZSA), and the NZ National Committee of the Australian and NZ College of Anaesthetists (NZNC - ANZCA). Also in this working party was a representative from AUT, and a number of Anaesthetic Technicians which included representation from both the Private and Public sectors. This group also included a Trainee Anaesthetic Technician, Agency Anaesthetic Technician, Dual trained Registered Nurse/Anaesthetic Technicians, Anaesthetic Technician Educators, and Charge Anaesthetic Technicians. Through this process efforts were made to pinpoint, examine and record themes within the data. The reason for this discussion document is to summarise and communicate the feedback from the 193 individuals surveyed plus the 20 people on the working party and to raise ideas for the future which support these results.

This discussion document and associated survey is being distributed to interested parties. This includes trainee and qualified Reg. AT's, Charge Anaesthetic Technicians, Reg. AT Educators, Theatre Managers, Allied Health Directors, Anaesthetic Department Clinical Directors, NZSA, NZNC - ANZCA, the Perioperative Nurses College of the NZ Nurses Organisation, AUT and the NZATS website. The Ministry of Health - Health Workforce New Zealand (MOE - HWNZ) and the MSCNZ are being kept in the loop and offered the opportunity for input in assisting us to guide our proposal.

In April 2015, a survey through New Zealand's Charge Anaesthetic Technicians formally revealed what we all know to be true. There is a major skill shortage of qualified Reg. AT's, with up to 50 full time equivalent vacancies in New Zealand at present. All these vacancies place enormous stress on existing staff. Even with a number of Reg. AT's working as locums these positions cannot be covered. This shortage is in part due to some hospitals not future proofing their workforce by having an ongoing training scheme but also due to the rapid expansion of the number of theatres and procedure rooms in NZ requiring anaesthesia services. As grateful as we are for the support of our overseas trained colleagues, it was felt by many surveyed that we rely too heavily on them and need to have some home grown solutions to our skill shortage. Demand for Anaesthetic Technicians seems to exceed the ability of the current training scheme to supply. We need to consider all the potential reasons for why we have so many vacancies. Issues such as retaining Anaesthetic Technicians in the role need to be addressed. Diversifying our role should make it more desirable to remain in as well as keeping funders of training happy.

Results revealed that Biophysics is not supported in its current form, but acknowledged in part as valuable. Feedback indicated there needs to be some physics kept in the curriculum to have an understanding behind the way things work. Similarly the relevance of historical anaesthesia in our training was questioned by some in the survey. A curriculum review would be a good opportunity to ensure the course and exam content are current. It is envisaged that the anaesthetic technology qualification content could be reviewed in the medium to long term, where the suitability of a number of different papers could be explored. There is a perception of a limited scope of practice currently which many would like to see expanded. The surveys showed that role diversification is strongly supported. It is encouraged to be included in any future training model.

There is a strong desire for reduction in length of the level one supervision timeframe under the current training structure. Support for supervision levels to be competency based rather than time served aligns with the 2015 ANZCA PS08 - Statement on the Assistant to the Anaesthetist document; potentially providing a mandate for revisiting this. What also needs to be considered is whether this length of supervision produces a better quality of work from the Trainees when they move to level two and then three. If level one supervision time were to decrease we would need to decide which competencies in the current Technology 1 manual needed to be assessed before the student could progress to level two supervision.

The survey results raised the option of encouraging Registered Nurses to enrol in the Graduate Certificate in Applied Science (Anaesthetic Technology) as this course is only twelve to eighteen months and could go some way to easing our skill shortage. However concerns were also raised through the surveys that suggest retention of nurse graduates in the Anaesthetic Technician role has been historically poor. This may however improve if our role diversifies in time. There is also the issue of who would bear the cost of their dual registration.

The surveys showed feedback indicating that AUT may not be the preferred provider option for some. AUT's programme of Diploma in Applied Science (Anaesthetic Technology) and Graduate Certificate in Applied Science (Anaesthetic Technology) has recently undergone an accreditation review by the MSCNZ. During this process eighteen specific criteria were assessed. Of this number those which weren't considered by the MSCNZ to be being entirely met were reviewed and remedial action is being taken to address these issues. Due to this development we can feel confident in the robust reliability of AUT's processes and programmes going forward.

There is strong support for a hospital based, distance learning, two year anaesthesia focused Diploma as the qualification; with capacity to continue working toward a degree which encompasses extended scopes of practice and role diversification. In an ideal world it would seem this solution would keep the majority of people happy. On investigation into the logistics of this model however, it was found that this structure is not acceptable with respect to the funding streams with Ministry of Education (MOE) and Ministry of Health (MOH) so would therefore be unworkable. Certainly this is something which would be great to be proven wrong on. Currently our profession is strongly reliant on funding from MOE - HWNZ and support from hospital budgets.

Given the survey results this discussion document is proposing a two-step process to reforming our training:

Step one: A Two Year Diploma

A two year diploma in the short term with competency based assessments. This would be a hospital based, distance learning, anaesthesia focused Diploma with the clinical hours reduced to two years. The introduction of this two year Diploma would be considered to be an interim step to address skill shortage, in the move towards the best model of training which could be decided in step two (including a comprehensive curriculum review). It is proposed that individual hospitals could choose to hold candidates back in sitting the Registration Exam for up to a year – if it was felt they weren't ready due to the reduction in hours; i.e.: offer flexibility to work around competency based objectives consistent with the 2015 PS08 guidelines of at least twelve months full-time equivalent clinical experience. In the short term there aren't the numbers of qualified staff available to allow for incorporating role diversity. Yet, in the medium to long term this is a crucial issue to explore to promote staff retention.

AUT have demonstrated the current content can be accommodated into a two year Diploma and could be introduced as early as next year. This could produce a greater number of qualified anaesthetic technicians in the near future to fill the shortage within our workforce. AUT presented two possible models to encompass all required papers within two years of training. There would be many trainees who would be required to complete less than the eight papers shown here. A significant number of trainees are now appointed who currently hold a relevant Degree, or partially completed Degrees, and have gained credit for two or more papers. This currently often leaves them with semesters with no papers required.

The two proposed models are:

#2: The Diploma be completed in 2 years, including the same papers as the year model.

Course Outline for Diploma in Applied Science (Anaesthetic Technology) AK3750 in two years (4000 hours)

Model 1:

AK3750 Diploma in Applied Science - Anaesthetic Technology		
Summer School	**Semester 1 (Year 1)**	**Semester 2 (Year 1)**
Human Anatomy and Physiology I* (555201)	**Anaesthesia I** (775618)	**Anaesthesia II** (776523) *pre-requisites: 555201 & 775618*
	Anaesthetic Technology I (775619) *co –requisite : 775618*	
Summer School	**Semester 3 (Year 2)**	**Semester 4 (Year 2)**
Biophysics* (775611)	**Anaesthesia III** (777617) *Pre-requisites: 775611 & 775619*	**Anaesthesia IV** (777615) *Pre-requisites: 776523 & 776617*
	Anaesthetic Technology II (777616) *Pre –requisite : 775619*	

Advantages: One paper per semester in a three semester year
Technician qualified after 2 years, OR has to complete one year post qualification/pre-registration

Model 2:

AK3750 Diploma in Applied Science - Anaesthetic Technology	
Semester 1 (Year 1)	**Semester 2 (Year 1)**
Human Anatomy and Physiology I* (555201) **Anaesthesia I** (775618)	**Biophysics*** (775611) **Anaesthesia II** (776523) *pre-requisites: 555201 & 775618*
Anaesthetic Technology I (775619) *co –requisite : 775618*	
Semester 3 (Year 2)	**Semester 4 (Year 2)**
Anaesthesia III (777617) *Pre-requisites: 775611 & 775619*	**Anaesthesia IV** (777615) *Pre-requisites: 776523 & 776617*
Anaesthetic Technology II (777616) *Pre –requisite : 775619*	

***These could be pre-requisites to entering the course/training**
Advantage: Technician qualified after 2 years, OR has to complete one year post qualification/pre-registration

To provide model 1, AUT would need to confirm that it can or will deliver the two papers, HAP I and Biophysics as summer school distance learning papers.

Clinical competencies currently assessed over three years would be assessed over two. There is much anecdotal evidence that not only are most trainees ready to be assessed in Anaesthetic Technology II in their second year, but many third year trainees show the capability to function as fully trained Anaesthetic Technicians. As with any academic qualification, if a paper were failed, the programme would run into a third year for that trainee/student.

The next model, model 2, excludes the inclusion of summer school, hence would put more pressure on any trainee who does not have credit for HAP I and Biophysics. But as currently, in the first year of training, the trainee is supernumerary; they should therefore be able to manage more study/papers.

Both of these models would produce a trainee Anaesthetic Technician who has met the same learning outcomes and clinical competencies as the current trainee who completes the three year Diploma. If these models were adopted, the number of graduates would not only increase by one third each year (based on current numbers there would be 40 qualifying in comparison to 30), but it would be likely that the two year model would be more attractive to training hospitals who may with the cooperation of HWNZ increase the number of training positions annually. It is important to bear in mind that even if a two year Diploma were to be adopted the rate limiting factor would still be the training hospitals, some of whom currently only recruit to fill existing vacancies and not necessarily to future proof the workforce.

AUT supports this initiative and reports that the calibre of trainees employed by training hospitals has risen significantly over the past five years. The three year Diploma was established in times when many applicants had very little tertiary education, whereas the same programme is now catering for many applicants who have a strong academic background.

Step two: A Comprehensive Curriculum Review

This would be a medium to long term plan which proposes a comprehensive assessment of the curriculum content and competencies to evaluate the most appropriate shape of future training. We could explore our Diploma/Degree options once the number of vacancies was under control. The curriculum review would be driven by the current scope of practice and would explore extended scopes for role diversification and staff retention. This would take into consideration the results of these surveys, planning for future workforce requirements, and funding streams. If it remained a Diploma funding would probably be continued to be sought through MOE - HWNZ. A Degree programme would likely require the funding support of the MOE. The form of either Diploma or Degree would begin to reveal itself once the level of competencies and volume of content were settled on. Once the direction is known the curriculum review could devise a programme which meets the desired goals.

This review could explore other models which have been successful such as the Physician Assistant (http://www.health.govt.nz/our-work/health-workforce/new-roles-and-initiatives/current-projects/physician-associate-physician-assistant), Radiation Therapists Qualification http://www.otago.ac.nz/healthsciences/otago066666.pdf and the United Kingdom Operating Department Practitioner (http://www.nhscareers.nhs.uk/explore-by-career/operating-department-practice/) training models to see if they could be adapted for the NZ theatre environment. We could liaise with AUT Health Science – Paramedic Department with regard to the defence force medic training structure to see if a similar approach of work/study balance would suit for Anaesthetic Technician training. It is hoped we can propose a long term strategy which addresses the issues our workforce currently faces, and promote role diversity and staff retention. A long term goal is to save money and time whilst producing a more versatile and fit for purpose product.

Potentially multi-skilled practitioners could emerge which would likely be more efficient and manageable from a staffing point of view. With role diversity we should also have a good argument for higher remuneration. It would be expected to take in excess of two years to have a new course explored and approved. Discussions and wide consultation would continue regarding the best fit model of training. A well-researched and planned course could offer better career options; lead to post graduate study and research, and a model of training that is more attractive to students. A course could be designed for which the graduate profile would include critical thinking skills, adaptability, forward thinking, and intelligent progression; providing increased opportunities going onward. Such a course may be more acceptable overseas than the current qualification.

The survey results acknowledged the many ways our role has evolved and changed over the past few decades. A curriculum review would formalise the way forward; carefully factoring in what needs to stay or go and what new directions could be included to produce a versatile, work-ready graduate. The historic ways of working can be, but are not always, the best. Healthcare is forever changing in order to provide best safe practice for our patients. This is an ideal opportunity to embrace some changes within the specialised theatre environment and explore other areas where our skill set would be useful. Within our ranks there already exists a wealth of knowledge and connections to pave the way forward.

If it was decided to progress to a Degree programme, student numbers would be determined by available clinical placements, in discussion with providers. The current training structure is clinically rich. A Degree programme would likely reduce the clinical hours to around 1500. Some Degrees have one year of the programme as clinical placements, others intersperse these with blocks at university. The number of hours may not be as critical as assessment of work readiness via competencies. As this is a work based qualification the challenge with any future programme will be to produce work-ready graduates. As Degree students would be MOE/self-funded, they would be entirely supernumerary with 1:1 supervision throughout the majority of their training. A Degree model with clinical placements opens up opportunities for more remote, difficult to recruit hospitals.

There was however some concern expressed that Degrees may not attract the practical type of people required for Reg. AT role.

A first year health science type of Bachelor of Science or Bachelor of Health Science could be explored so that the Anaesthetic Technician profession can be on the radar of these students for their Degree specialty. This could potentially take the form of a full time study first year programme with clinically rich second and third years. The first year of such a Degree could be based in University and the second and third years in the work place. We would need to explore which papers already exist to support our extended scopes and consider education provider options. Some preliminary work has been completed on this and the options available are encouraging. Extensive positive promotion of our profession would be required to educate the general public of our role within the healthcare environment. This curriculum review process might result in a name change of our profession if the role evolves to reflect the need for this.

There are many factors which would need to be explored if a curriculum review resulted in the recommendation of a Degree. Having a Degree today is attractive to young people, having a Diploma can at times seem less attractive. A large number of applicants currently already have a Degree. With a well explained and promoted Degree pathway we could attract students in the first instance to our course rather than students doing Anaesthetic Technician training post graduate as many currently do. There could also be a post graduate programme developed. It would be imperative to attract the right sort of fit of individuals to best suit our role as Allied Health professionals. To change to a Degree, there would have to be approval by application to the MOE for funding. HWNZ could potentially act as a broker between the MOH and the MOE for funding for any prospective new pathway.

We are currently out of step with other Allied Health professions in that we are a Diploma based qualification; and singular amongst the registered professions. A Degree programme would ensure diversity, training larger volumes thus filling vacancies and retaining staff; whilst also offering those staff a more level platform with their peers in other professions for career progression opportunities such as management. With the creation of a Degree we would be able to lay the foundation for future expansion of the scope of practice through prudent selection of papers. This also may meet one of the desired outcomes for HWNZ in having ‘streamed’ Allied Health qualifications.

A Degree based qualification would allow for rapid expansion of class sizes by moving from a hospital based training system to a university based training system. Clinical placements tied to specific learning outcomes, much like the current scheme for Anaesthetic Registrars could be devised, allowing for a rotation policy – possibly organised through the relevant education person at each training hospital. This could also be similar to the Medical Radiation Technologists training model where block clinical placements relate to learning outcomes for a semester. This Degree would be in line with the ANZCA PS08 Document – Statement on the Assistant to the Anaesthetist, of at least 12 months full time equivalent over the Degree period.

This process of investigation has confirmed that there is no quick fix, easy answer option for the future of Anaesthetic Technician training; but instead a considered approach weighing up the pros and cons is needed going forward. Thank you for your time. We look forward to receiving your feedback through our survey.

Please follow the link below to the survey. Closing date for the survey is Friday 14th August 2015 at 1700. Please note there is a comments section at the end of the survey should you wish to provide more feedback:

https://www.surveymonkey.com/s/XLPJRWR