



International
Specialised
Skills
Institute



Department of
Education & Training

THE ROLE OF ACCREDITED HIGHER EDUCATION PROGRAMS

in the credentialing of
Veterinary Nurses

An International Specialised Skills Institute Fellowship.

ALANNA KIRLEY

Sponsored by the Higher Education and Skills Group, Department of Education and Training (Victorian Government)

© Copyright December 2018

Table of Contents

i. Executive Summary	3	6. Considerations and Recommendations	28
1. Fellowship Background	4	7. Knowledge Transfer, Application and Dissemination	30
2. Fellowship Learnings	8	8. References	31
3. International Experience and Discovery	11	9. Acknowledgements	34
4. Themed Findings from Knowledge Acquisition	13	10. Appendices	36
5. Personal, Professional and Sectorial Impact	26		

1. Executive Summary

Alanna Kirley was delighted to be awarded the ISS Institute Higher Education and Skills Group International Fellowship. The Fellowship was used to gain firsthand experience of international best practice in terms of veterinary nursing training. Particularly in relation to higher education models, accreditation and central registration of para-veterinary professionals. Clarification of the role of veterinary technologists/nurses in the USA and UK was also a key focus in order to better understand how the profession may evolve in Australia, especially in consideration of the recent introduction of veterinary nursing degree qualifications.

In Australia Veterinary Technology (VT) is an emerging profession, the current nationally accepted qualification for veterinary support staff is the Certificate IV in Veterinary Nursing. This vocational level of education is below the international standards (for veterinary paraprofessionals) of the United States of America (USA), Canada and the United Kingdom (UK). For example, in the USA an Australian qualified Veterinary Nurses would be ineligible to seek certification to work as a Veterinary Technician, unless they enrolled and successfully completed an accredited VT program and passed the credentialing examination. Similarly, if an Australian qualified Veterinary Nurse applied for Registration to work as a Veterinary Nurse (VN) in the UK, they would be ineligible without first passing the UK credentialing exams.

The recent development and delivery of higher education (HE) VN programs in Australia has been met with concern amongst the veterinary profession largely in part due to a lack of clarity around what clinical tasks Veterinary Technologists are trained and certified to perform. Both the USA and UK veterinary industries experienced similar resistance to the introduction of central registration and course accreditation for veterinary technician/nursing higher education training.

The UK and USA have adopted certification of their VN through a centralised accrediting body that ensures that HE programs meet minimum standards and their graduates meet essential day one competencies. They also utilize national assessment prior to credentialing to ensure the VN meets minimum theory requirements for registration and in the UK minimum practical skills (as assessed via the use of OSCE).

The introduction of certification/registration of the VT/VN in the UK and USA means that VT/VN are now accountable, will be held to account and can be disciplined, they are required to complete ongoing professional development and there is a professional code of conduct that they have to abide by. All training colleges visited shared a common approach of training their VT/VN students to be able to assess an animal and create an appropriate treatment plan focused on what a VT/VN can lawfully perform.

Kirley interviewed a number of leading Universities and Colleges in the UK and in various states of USA, including Florida and Indiana. She discussed UK accreditation procedures with the Victoria Hedges (External Qualifications Quality Manager Veterinary Nursing) of the Royal College of Veterinary Surgeons which is responsible for the accreditation of all VN programs and central registration of VN in the UK.

With each of the Universities/Colleges:

- » The Royal Veterinary College Hawkshead Campus Hertfordshire UK
- » Anglia Ruskin University Cambridge Campus, Cambridge UK
- » Eastern Florida State College Florida USA

- » St Petersburg College Florida USA
- » Purdue University College of Veterinary Medicine Indiana

She discussed the role of the VN/VT, the impact that the introduction of credentialing/registration had had on the veterinary industry, pedagogical design to meet accreditation requirements and the inclusion of e-learning in on campus programs and distance education VT programs offered at St Petersburg College, Florida and Purdue University, Indiana.

The aim of this Fellowship was to bring back specialised knowledge about higher education for Veterinary Nurses/Technologists, how these programs are accredited by the relevant governing bodies, how VN registration impacts on the role of the Veterinarian and the role higher education plays in Veterinary Nursing/Technologist registration in both the UK and USA respectively.

The Fellow believes that this report will inspire the beginnings of an understanding and appreciation within the Australian Veterinary Industry of the need for nationally certified/registered veterinary nurses and the role that Higher Education play in ensuring minimum standards of knowledge and skill. The UK and USA programs deliver graduates who are able to become Certified VT/VN, are recognised as highly skilled members of the veterinary team and contribute to improved patient outcomes, customer satisfaction and financial viability of veterinary businesses. They are also highly sought-after employees here in Australia.

In Australia, the USA and UK it is legislated that surgery, prognosis, prescribing and diagnosing are veterinary only tasks. In the UK and USA anything else is able to be performed legally by a Credentialed VT or Registered VN. Interestingly some procedures that are legislated and protected as “Veterinary Only” procedures in the UK and USA are already performed here in Australia by lay people for example manual pregnancy testing of cattle and equine dentistry. All the training colleges visited shared a common approach in training their VT/VN students to be able to assess an animal and create an appropriate treatment plan focused on what a VT/VN can lawfully perform.

To ensure a consistent standard of VT graduate, it is recommended that Australia implements its own central accrediting body for VN higher education programs, thus ensuring that all programs meet essential skills (day one competencies) and that this central body administers a national assessment for credentialing. It would be prudent for all future programs to consider at the outset of their development, discussions about program accreditation with the RCVS or AVMA so that in the future Australian VN graduates would be eligible to sit the credentialing exams and be well prepared to pass on their first attempt.

Based on the US model, it would be possible for each State Veterinary Board to maintain the register of credentialed VN, manage VN registration, professional development, code of conduct and disciplinary hearings.

2. Abbreviations/Acronyms/Definitions

Acronym Definition

AS	Applied Science	DE	Distance Education
ACOVENE	Accreditation Committee for Veterinary Nurse Education	DET	Department of Education and Training
ACRRM	Australian College of Rural and Remote Medicine	DVM	Doctor of Veterinary Medicine
ACT	American College Testing	EFSC	Eastern Florida State College
ACV	Australian Cattle Veterinarians Association	EMS	Extra mural studies
APV	Australian Pig Veterinarians	EVA	Equine Veterinarians Association
AVA	Australian Veterinary Association	GOTAFE	Goulburn Ovens Institute of TAFE
AVAPM	Australian Veterinary Association Practice Management	HE	Higher Education
AVMA	American Veterinary Medical Association	HEI	Higher Education Institution
AVPA	Australasian Veterinary Poultry Association	HESG	Higher Education and Skills Group
BAS	Bachelor of Applied Science	ISS	International Specialised Skills
CPD	Continuing professional development	LEARN	A learning management system which is part of Blackboard
CSU	Charles Sturt University	LMS	Learning Management System
CVT	Credentialed veterinary technician	MCQ	Multiple Choice Questions
		MRI	Magnetic resonance imaging

NPL	Nursing progress log	VNCA	Veterinary Nursing Council of Australia
NSW	New South Wales	VTNE	Veterinary Technician National Exam
NVTE	National Veterinary Technology Exam	VT	Veterinary Technician
OSCE	Objective structured clinical examination	WIFI	Wireless fidelity
QMH	Queen Mother Hospital		
RACGP	Royal Australian College of General Practitioners		
RANA	Registered animal nurse's assistant		
RCVS	Royal College of Veterinary Surgeons		
RPIFF	Regional Participation Facilitation Fund		
RSPCA	Royal Society for the Prevention of Cruelty to Animals		
RVC	Royal Veterinary College		
RVN	Registered Veterinary Nurse		
RVT	Registered Veterinary Technician		
SAT	Scholastic Assessment Test		
SPC	St Petersburg College		
SWOT	Strengths weakness opportunities threats		
TAFE	Tertiary and further education		
USA	United States of America		
VET	Vocational Education and Training		

3. The Fellowship Program

Aims of the Fellowship Program

In Australia Veterinary Technology is an emerging profession, the current nationally accepted qualification for veterinary support staff is the Certificate IV in Veterinary Nursing. This vocational level of education is below the international standards (for veterinary paraprofessionals) of the United States of America (USA), Canada and the United Kingdom (UK). In these countries veterinary paraprofessionals are required to obtain degree qualifications through externally accredited courses, and become registered once their degree is obtained.

The development of degree programs for veterinary nurses has been met with concern amongst the veterinary profession that the increased number of veterinary graduates (due to an increase in the number of veterinary schools) and the emergence of the role of veterinary technologists, may result in an excess of veterinary graduates that will exceed demand and that graduates may be forced to pursue other types of employment.

This concern is in part due to a lack of clarity around what clinical tasks Veterinary Technologists are trained to perform. Studies from the US suggest that a business strategy that includes the enhanced utilisation of veterinary support staff and efficient delegation of tasks to highly skilled veterinary support staff contribute to improved patient outcomes and leads to more cost effective veterinary care., Therefore providing a successful model for viability of veterinary practices in the current climate of rapid change in terms of technology, demographics, political and economic influences. Due to there being veterinary technology graduates from only one University they are not widespread throughout the industry and

so the potential benefits to the industry of these highly skilled and highly trained paraprofessionals is not yet fully understood in Australia.

This Higher Education and Skills Group International Fellowship enabled Kirley to gain an appreciation of international best practice in terms of veterinary nursing training and in particular higher education models, as well as gaining an understanding of the true nature of the role of veterinary technologists/nurses in the USA and UK to better understand how the profession may evolve in Australia with the introduction of veterinary nursing degree qualifications.

The specific aims of this Fellowship were to:

- » Learn how veterinary technologists and technicians are utilised in the USA and UK
- » Learn what skills they are trained in and expected to be competent in upon graduation
- » Learn about the role higher education (HE) has had on the professional standing of the veterinary technician or nurse in the USA and UK respectively
- » Learn about the accreditation and registration process for veterinary nurses and technologists in the UK and USA respectively
- » Learn about the employment outcomes for graduates in the UK and USA
- » Learn about the influence of technology, economy, environment and demographics on the role of the veterinary technologist/veterinary nurse internationally

- » Gain skills in curriculum design and delivery techniques from established and highly credentialed higher education providers
- » Gain skills in pedagogical design of distance education models of veterinary technology or nursing degrees
- » Gain an appreciation of international best practice in terms of veterinary nursing training and higher education models
- » Learn the skills required to develop and deliver higher education programs in veterinary technology/nursing
- » Establish links with training organisations and universities in the USA and UK that offer degree level veterinary technology/nursing courses including distance education models
- » Promote the role of paraprofessionals in veterinary practice and the animal care industry

- » Bachelor of Veterinary Science with First Class Honours, University of Melbourne 1999
- » TAA40104 Certificate IV Training and Assessment, The Centre Wangaratta 2007
- » TAE40110 Certificate IV Training and Assessment, Goulburn Ovens Institute of TAFE 2012

Professional Development

- » 2013 Annual Australian Veterinary Association Conference Cairns (2013)
- » Continuing Veterinary Education Webinar Series – Practice Management (2013)
- » Griffiths Leadership Program (2011)
- » The University of Sydney Postgraduate Foundation in Veterinary Science Diagnostic Imaging Course (2009)
- » Wodonga TAFE Computer Skills for Business (2006) ICAITU006C Operate computer packages
- » The University of Sydney Postgraduate Foundation in Veterinary Science: Cardio-respiratory medicine and surgery (2004)
- » The University of Sydney Postgraduate Foundation in Veterinary Science: Medical and Surgical Purrrfection (2003)
- » Countdown Downunder Mastitis Adviser Course (2002)
- » Delta Society Puppy & Kitten Socialization Course (2002)

Professional Memberships

- » Registration with Veterinary Practitioners Registration Board of Victoria
- » Australian Veterinary Association
- » Post Graduate Foundation in Veterinary Science, University of Sydney

About the Fellow

Registrar Training Coordinator, Remote Vocational Training Scheme

Current Responsibilities

- » Training coordinator for Registrars training to fellowship in either RACGP or ACRRM
- » Coordinator of Clinical Teaching Visits
- » Webinar administration

Qualifications

- » Bachelor of Science, University of Melbourne, Double Major: Zoology and Physiology 1995

Biography

Kirley is an experienced veterinarian who has worked in a variety of rural practices in North East Victoria and South Eastern NSW. She has a strong rural background particularly in dairy/cattle practice having worked for four years in a predominantly (65%) dairy practice and coming from a dairy/ beef farming background, with which she is still currently involved in North East Victoria.

She is also involved in the horse racing industry as an owner and breeder, and is a member of local race clubs and serves as an executive member on the Committee of Management of the Dederang Picnic Race Club.

In her previous role, Kirley was the Project Manager for a Regional Participation Facilitation Fund (RPFF) project that has provided seed funding for the development of a new degree, the Bachelor of Veterinary Technology which is a joint initiative between Goulburn Ovens Institute of TAFE (GOTAFE) and Charles Sturt University (CSU).

The development of this degree has been done in consultation with the Animal Care and Veterinary Industry. The new degree commenced in session one of 2015 and was offered both internally (on campus) and via distance education (DE) and will realise a long-held goal for degree level training for veterinary nurses with articulation pathways from Vocational Education and Training qualifications.

4. The Australian Context

Description of the Industry

There are currently 10,000 (1) veterinary nurses in Australia, with 14% working in Victoria (2). Australia is known to be one of the highest pet owning populations in the world, equal with the United States of America (3). The predictions in the USA are that the veterinary nursing profession will increase at a rate considerably higher than other professions (52%) over the next ten years (4). Given Australia's high level of pet ownership, which is equal to that of the USA, one can reasonably infer that if there will be significant growth in the demand for veterinary paraprofessionals in the USA, then we too should expect reasonable growth in this area in Australia over the next ten years.

There are a variety of reasons for this predicted demand:

- » Growing pet population;
- » Increased sense of pets being part of the family, so willingness to pay more for pet care than in the past;
- » Considerable advances occurring in veterinary medicine, so that the services are now comparable to health services to those offered for humans;
- » As veterinarians perform more specialised tasks there is a flow on effect requiring paraprofessional staff to perform and provide more of the general care. As the number of veterinary services increases, veterinarians will prefer higher skilled paraprofessionals to perform more complex work;
- » Continued support for public health, food safety, animal welfare, biosecurity and disease control programs and continued biomedical research using animals

to research human health problems will see further demand for veterinary technologists;

- » Rural veterinary skills shortages, as seen in New Zealand, has prompted a need for more highly trained paraprofessionals to meet the needs of regional areas.

The veterinary industry acknowledges that there is a confirmed shortage of veterinarians willing to work in regional and rural locations (1) although there is generally no shortage of veterinarians in Australia overall. One of the key contributors to this trend is inadequate professional support, which is due to a lack of employment of suitably skilled and qualified clinical and practice management staff in regional veterinary practices (1).

Whilst the veterinary nursing population in regional areas is more stable, and veterinary nurses remain employed for longer periods of time than their veterinary counterparts, there is an acknowledged lack of training of nurses to a level appropriate to provide basic diagnostics, surgical and emergency medicine without direct supervision (1).

In Australia veterinary nursing training is largely delivered at Certificate IV level, with a small percentage that continues on to Diploma level. Admission to the more reputable courses is usually dependent on the applicant having ongoing part time employment in a veterinary clinic as most registered training organisations (RTOs) rely on work place training to ensure the development of competency in the required skills for conferring of the qualification. There is currently no legislative requirement for veterinary nurses to undertake training in Australia, except in Western Australia where formal registration of veterinary nurses is required.

The Australian Veterinary Association (AVA) has the position that only qualified staff should be granted the title of veterinary nurse, other staff who are unqualified should be called attendants only (5). The AVA also states in its position statement that it "recognises the importance of the role of qualified veterinary nurses in the provision of veterinary services and encourages the continuing education of veterinary nurses" (5). One of the recommendations from the Review of Rural Veterinary Services report (1) was for the formal recognition of the professional qualifications of veterinary nurses and the range of veterinary tasks that can be appropriately delegated as occurs in Western Australia, the USA and UK (1).

In terms of educational pathways for veterinary nurses, Australia has not had degree programs, unlike the USA, New Zealand and the UK, all of whom have offered degree qualifications for veterinary nursing for many years. Until recently in Australia there has been only one provider of a degree level qualification which is a Bachelor of Applied Science (Veterinary Technician) offered by the University of Queensland. However, this course was offered full time on campus and did not easily allow for employed veterinary nurses to upskill their qualifications whilst remaining employed throughout Australia, nor did it offer formal articulation arrangements in recognition of the knowledge and skills gained through the nationally recognised standards of the Certificate IV in Veterinary Nursing. The GOTAFE-CSU Bachelor of Veterinary Technology joint program allows both flexible delivery modes and formal articulation pathways.

Some of the challenges facing the veterinary industry are directly related to the regional locations of rural based practices, and also the ability for industry learning and skills development to "keep pace" with new advances in medicine and surgery. The development of seamless education and training pathways for veterinary nurses is critical to the sustainability of regional and rural practices.

The veterinary services industry employs 20, 600 people nationally (6). In 2012-2013 the veterinary services industry is expected to generate revenue of \$2.55 billion and increase of 1.4% on 2011-2012 (6). Continued growth is expected

over the next five years despite a forecasted fall in pet numbers (per person) which is thought to be due to changes relating to suitable housing and council regulations which discourage pet ownership. With over 80% of Veterinary Industry revenue coming from companion animals, growth will continue as owners of pets place a high value on the wellbeing of their pets and are willing to spend more on veterinary services per pet (6).

The veterinary services industry also plays an important role in the social needs of regional Victoria providing medical and surgical services to companion and production animals, continued support for public health, food safety, animal welfare, biosecurity and disease control programs which are all critical for maintaining and meeting the increasing demands for Australia's domestic and export markets.

How the need for additional skills was recognised

There have been many anecdotal stories related to the Fellow from various people, including members of the public, veterinarians, animal welfare workers, students and teachers about the need for a higher education program for veterinary nurses. Many of our VET in Schools (VETiS) students have been unable to pursue a career in veterinary nursing as they have not been able to find ongoing employment in a veterinary practice in order to undertake the Certificate IV in Veterinary Nursing qualification. Practice Principals, Directors and Managers have expressed their concerns of not being able to recruit suitably qualified and trained support staff for senior roles within their practices and have had to resort to recruitment of USA or UK graduates to fill their skills shortage.

As part of the course approval process for the Bachelor of Veterinary Technology, GOTAFE and CSU undertook two scoping surveys of the animal care and veterinary services industries (which included private veterinary clinics, specialist veterinary clinics, horse studs, intensive animal industries and pharmaceutical companies), the second survey was past and present veterinary nurses. Overwhelmingly both surveys were positive with 80% of industry respondents (employers) indicating a

need for a professional veterinary technology qualification and 82% of veterinary nurses interested in studying a degree in veterinary technology.

Veterinarian workload relief and an increased standard of patient care/outcomes were strongly supported justifications from industry for a degree qualified veterinary technologist. Other rationale for support of a degree program included the standardisation and increased level of training and assessment of veterinary paraprofessionals and the creation of a professional career pathway for veterinary nurses.

Benefits of the Fellowship

- » Improved public awareness and positive public perception of the role of veterinary paraprofessionals
- » Improved awareness of curriculum design and use of distance education tools and pedagogy for delivery of highly practical and technical degree programs
- » Alignment of Australian curriculum with international standards to enable external accreditation of Australian Veterinary Technology degrees in the future
- » Establishment of external accreditation opportunities to enable standardisation and increased levels of veterinary technology training
- » Establishment of networking and communication with international experts and leaders in veterinary technology delivery
- » Improved patient outcomes, standards of care, customer satisfaction and financial viability of veterinary practice particularly in regional and rural areas
- » Improved career pathway opportunities for existing veterinary nurses and entrants to the industry
- » Enabling Australia to match world-class standards in veterinary technology delivery

SWOT Analysis

Strengths

- » Improved public awareness and positive public perception of the role of veterinary paraprofessionals
- » Improved patient outcomes, standards of care, customer satisfaction and financial viability of veterinary practice particularly in regional and rural areas
- » Enabling Australia to match world-class standards in veterinary technology delivery
- » Improved welfare of animals.
- » The Fellow's professionalism, experience and dedication.
- » Support from stakeholders and AgriFood Skills Australia.
- » Support from Goulburn Ovens TAFE
- » Support from CSU

Weaknesses

- » Lack of public and industry awareness of career pathway options
- » Cost of developing high quality, interactive distance education resources

Opportunities

- » Large potential market for student recruitment:
 - » veterinary practices
 - » Upskilling of existing veterinary nurses
 - » Career Changers
 - » Secondary students

- » To create broad employment opportunities in this field in a variety of industries:
 - » Private veterinary clinics
 - » Specialist veterinary clinics
 - » Horse studs
 - » Racing stables
 - » Intensive Industries including poultry and piggeries
 - » Pharmaceutical companies
 - » Diagnostic and research laboratories
 - » Welfare organisations
- » To build international ties and relationships.
- » To raise Australia to international standards.
- » To provide internationally externally accredited degree.

Threats

- » Different legislative requirements at a state level.
- » Lack of standardisation and registration of veterinary support staff across Australia
- » Lack of availability of external accreditation opportunities within Australia
- » Retraction of regional veterinary services due to an inability to provide adequate professional support to veterinarians

5. Identifying the required skills enhancement areas

1. Understanding of the contribution that is made by highly skilled technical support staff in terms of patient outcomes, customer satisfaction and financial viability:

- » The Australian engagement and utilisation of support staff is variable and is largely so because of the lack of registration of veterinary support staff and risk of liability to the registered veterinarian
- » Understanding the various skill levels within the UK and USA industry and what these are legally able to do in terms of supporting the veterinarian provides a significant insight as to how the international industry utilises highly skilled technical support staff to improve patient outcomes, customer satisfaction and financial viability
- » Identifying clear roles and the defined limitations of each skill level greatly enhances the Australian conversation around registration of support staff and its relevant legal implications
- » It will also allow the preparation of a recommended task/skill list that is known to meet legal requirements and is also beneficial to the industry
- » This recommendation can then be used in support of legislative changes to enable registration of veterinary nurses in Australia.

2. Selecting an appropriate pedagogical design for veterinary technology degree programs that will deliver quality learning outcomes for the Australian context particularly regional students:

- » In Australia the accepted qualification for Veterinary Nurses is a Certificate IV in Veterinary Nursing, which is a nationally accredited training package and yet

anecdotally the feedback from Industry is that there is very little standardisation of delivery and assessment of this qualification across the providers, even though all are required to teach to the same standards.

- » The delivery of degree level veterinary nursing is in the developmental phase in Australia, the ability to explore established programs and the pedagogy that is employed by these programs will help ensure that we provide best practice pedagogy in the Australian context and that the Australian graduate is able to meet the International standards.
- » The reasons as to why these pedagogies have been selected over time and how this may have changed with advances in technology will help to ensure that Australia is able to advance to the International standard in a condensed timeframe.

3. Understanding the requirements for International external accreditation:

- » Australia does not have an external accrediting body for degree level veterinary nursing/technology courses
- » The Australian University curriculum is based on its experience of the veterinary industry
- » The UK and USA have had significant changes in policy and have introduced registration and accreditation that ensures graduates meet minimum standards irrespective of which college or university they graduate from
- » Identifying any gaps between the Australian and internationally accredited courses provides the opportunity to address these before external accreditation is sought

» It also provides the opportunity to identify potential subject areas, not currently within Australian courses that would provide value to the Australian veterinary industry.

4. Capability to envisage the impact of future changes in technology, policy and economy on the role of the veterinary technologist:

» Veterinary technology is an emerging professional role in Australia; the true nature of the role as it exists in the International context is not well or widely understood

» The UK and USA have both had significant changes in policy, legislation, registration and accreditation that have impacted the role and as these changes are yet to be seen in Australia but are expected to be introduced in time

» Learning from the International experience will help to identify potential threats, weaknesses and strengths both in the current Australian context and its future with regards to the impact from changes in technology, policy, legislation, economy and environment.

5. Identify factual employment outcomes for degree qualified veterinary nursing/ technology graduates:

» In Australia there are few graduates of this type of degree and so there isn't an extensive database from which to draw factual data as to the potential job outcomes for this type of degree

» The USA and UK have a long history of degree qualified veterinary nurses/ technologists and their employment outcomes

» They have historical data on the employment outcomes of their graduates and any trends that may be emerging

» This knowledge will help to ensure that all potential employment outcomes for Australian graduates are identified

» It will also provide valuable information for course review processes so that

any skills or knowledge required to meet emerging or future trends can be incorporated into courses in a timely manner to equip graduates with industry relevant skills

» It will enable a comprehensive career pathway to be developed for these courses in Australia for prospective students.

6. The International Experience

Royal College of Veterinary Surgeons,

Horseferry Road London SW1P 2AF

Meeting with Victoria Hedges RVN External Qualifications Quality Manager
Veterinary Nursing

In the UK the title of veterinary nurse is both recognised and protected. As of February 2015, veterinary nursing was a recognised profession and every veterinary nurse will be required to be registered with the RCVS. The profession of veterinary nursing will have the same status as human nursing does in the UK. There is also a registered animal nurse's assistant (RANA). In the UK the title of Veterinary Nurse was first used in the 1980s and veterinary nursing education has already celebrated its 53rd year.

The recent change to the Royal Charter was the first significant change to veterinary nursing in the UK for many years and all veterinary nurses are now required to be registered to practice in the UK. A Registered Nurse (RN) has to hold an RCVS accredited qualification, have had no criminal convictions, and agree to ongoing continuing professional development (CPD) of 15 hours over a year, of which 5 hours can be self directed.

Prior to this change in the Charter, qualified veterinary nurses were only required to be listed. Up until 2003, the listed nurse held the same rights as a RN does now to perform Schedule 3 work. In the UK a registered nurse is able to provide medical treatments (such as administering medicines) and undertake minor surgical procedures (such as the suturing of a minor wound) for animals under a special

dispensation afforded to veterinary nurses under Schedule 3 of the Veterinary Surgeons Act 1966, this is commonly referred to as "Schedule 3 work". As of January 2015, there were 8000 veterinary nurses of which only 500 were listed only.

The Royal College of Veterinary Surgeons is the central accrediting body that holds the register of both qualified veterinary surgeons and veterinary nurses in the United Kingdom. In maintaining the List of Veterinary Nurses (now incorporating the Register), the RCVS is also responsible for the approval of qualifications that can lead to professional registration. Qualifications that lead to registration can be vocational or higher education courses. An approved qualification entitles the holder to enter the RCVS Register of Veterinary Nurses and hold a licence to practise in veterinary nursing. There are fifty colleges and 17 Universities in the UK offering accredited qualifications that are regulated by the RCVS.



Photo 1: Alanna Kirley at the Royal College of Veterinary Surgeons, note the coat of arms of all Colleges accredited by the RCVS



Photo 2: In the UK the disciplinary hearings of Veterinary Nurses alleged to have breached the conditions of their registration are heard here in the same room where Veterinarian hearings are heard.

In order for an organisation to be approved to deliver veterinary nursing licence to practice qualifications it must go through an accreditation process with the RCVS. This process ensures that the course, its content, delivery and assessment meet the regulatory standards and the current RCVS Day One Competences and Skills for veterinary nursing.

The accreditation of the qualifications is undertaken by the Veterinary Nursing Education Sub Committee on behalf of the Veterinary Nurses Council. It is important to note, that in the UK, no other qualification or course, regardless of its

title, leads to a qualification as a veterinary nurse or meets the eligibility to enter the RCVS Register of Veterinary Nursing unless it has been approved by the RCVS.

There is both a vocational pathway (Level 3 Diploma in Veterinary Nursing) and higher education pathway (degree) to gaining registration as a veterinary nurse in the UK. The level 3 diploma can include level 4 modules. A level 4 module is considered equivalent to a first-year subject of a degree.

In addition to achieving the qualification, the RCVS regulatory bye-laws also require a minimum training period as follows:

- a. Overall period of training. This must be a minimum of 94 weeks (3290 hours) which includes all elements training i.e. the educational programme and practical training but excludes all leave periods.
- b. Practical training. The overall period of training must include a minimum period of 60 weeks (2,100 hours) of employment or educational placement in an approved training practice.

The method of assessment is also standardised with approved methods including:

- » Oral
- » Exam
- » Assignment
- » Practical elements are assessed through the nursing progress log (NPL) an online tool hosted by the RCVS for students to log their practical experience during the practical training
- » Practical Exam (weighted) called Objective Structured Clinical Examination (OSCE)

There are fifty OSCE practical stations with their criteria published online. For each exam period a random 12 will be chosen from the 50. These are based on the Day

One Competences and Skills for Veterinary Nurses.

The RCVS also prescribes whether the assessments are done internally or externally and this is dependent on the pathway (vocational or HE).

The RCVS also checks whether the college can provide adequate access to facilities and time in practice as part of the accreditation. As part of the practical training the student veterinary nurses are required to work in “training practices”.

There are essentially only two ways to provide practical training:

1. The student gets employment and enrolls in a 3-year training program that has day release to a college. These students are paid as a student VN on minimum wages and have the terms and conditions of an employee.
2. Full time students which need to do placement in a training practice. It is not easy for the colleges to get a pool of training practices that will accept their students.

RCVS have criteria for the training practices. There are a lot of practices that are not “Training Practices” (TP) but this is changing. The introduction of the charter has seen the practices that have resisted becoming TP have been affected in that they can’t get qualified staff i.e they don’t get RVN. Many of the practices are starting to realise that to get the professional development and skills in their VNs they need to be a TP.

The RCVS provides a training practice manual that sets out the criteria including: staff, cases, case load, equipment, safety and contractual obligations e.g. training or employment. The TP has a clinical coach who is someone that is suitably skilled, qualified and experienced to supervise and train the student VN during their practical placements.

If a TP doesn’t have the equipment then the student/employee can be seconded

to a specialist practice to see it. At the end of the 60 weeks practical training, the TP Principal (a veterinarian) signs this off.

Where a course has provisional accreditation (not full accreditation) then the students must sit the RCVS exams the same as a non-UK trained VN seeking to register to work in the UK. They are given 4 attempts to pass the RCVS exams.

Once a centre has been accredited, then there is an ongoing quality monitoring process that covers every aspect of the eleven standards over a five-year period. The RCVS will visit the centres, review their training practices, review their examinations both theory and practical, audit assignments and progress logs. There is also a risk assessment done for each site. The quality monitoring process also includes interviewing staff and students, auditing their facilities, log of skills and auditing the training time.

Day one Competencies:

The day one competencies or skills is the minimum standard required for registration as a veterinary nurse with the RCVS. Day one competence is defined as a new veterinary nurse who has achieved day one competence should be capable and confident enough to practise veterinary nursing at a primary care level on their own (including simple calculations), under direction from a veterinary surgeon, while knowing when it is appropriate to refer the care to more experienced colleagues.

There are thirty three day one competences outlined by the RCVS and these are broadly divided into:

- » General professional skills and attributes expected of newly-qualified veterinary nurses (1 -13)
- » Practical and clinical competences expected of new veterinary nurses (13 – 33)

Registration of non-UK nurses post Charter:

To register non-UK trained nurses will be required to sit and pass an OSCE and theory exam. For UK trained students there is a 65 – 75% pass rate for the exams despite the exams being published. For overseas trained VN the pass rate is 58% and this result is improving. The USA trained VN tend to pass first time, whilst Australian trained nurses tend to pass on their second attempt.

The RCVS does allow overseas trained VN to enrol with the RCVS and elect to work under supervised practice for up to one year (same as a student doing their 60 weeks of practical training) so that they can prepare for the exams. This usually helps them gain work and better prepares them for the exams.

The Royal Veterinary College

Hawkshead Campus Hertfordshire

Meeting with key teaching staff and campus tour:

- » Hilary Orpet Course Director Foundation BSc and B Sc Veterinary Nursing
- » Sue Gregory Professor of Veterinary Nursing
- » Hayley Carne Assistant Lecturer in Veterinary Nursing
- » Purdi Welsh Course Director Graduate Diploma Professional and Clinical Veterinary Nursing
- » Rachel Lumbis Lecturer Veterinary Nursing
- » Sarah Admin Assistant

Student Numbers at September 2014 intake:

» Foundation Bachelor Science (Veterinary Nursing)	66
» Bachelor of Science (Veterinary Nursing)	93
» Graduate Diploma Professional and Clinical VN	31
» Total	190

Courses offered:

The RVC has been delivering veterinary nursing courses since 1998. It now has three programs that it delivers:

Foundation Bachelor of Science (Veterinary Nursing) – a three-year degree that leads to professional registration.

Bachelor of Science (Veterinary Nursing), a four-year degree. The first three years in common with the foundation BSc, in 4th year have additional assessment but in final year do a project, and are registered RVN at this stage of the degree.

Graduate Diploma Professional and Clinical Veterinary Nursing. Entry requirements must be registered RVN with RCVS. This course was set up for VN who have not done a degree but require a degree pathway for further study. Prior to the register for VN, they only needed to study a vocational pathway (a certificate or diploma) to be listed but these courses were not recognised by Universities. The Graduate Diploma is a recognised university qualification designed for the RVN coming through the different paths, it includes a bridging pathway to ensure they can meet the study requirements. This is a fully online course with a four-day face to face workshop at the start to build community between the participants. As a student of the RVC they can spend as much time in the clinical teaching hospital as they would like. The course is taught in modules, during which they have a new week open in the module each Friday which is likened to chapters in a book. As they are already qualified, registered veterinary nurses they don't have the same focus on practical training it is more about developing them professionally

to deal with their obligations as a RVN, teaching them how to apply a critical problem-solving approach and evidence-based medicine to cases in practices. In the surgical module there is a two-week practical component. This is assessed and these students are expected to perform these at a higher level than day one competence, assessed as an OSCE exam. In this module the pass criteria is higher than B Vet Med or BSc VN – as they will be teaching undergraduate veterinarians or VN in practice. This course has exams at end of each year, in addition at the end of each module (every 3 months) – they submit patient case reports that may be published in the UK's peer reviewed journal – The Veterinary Nurse.

In the Foundation and Bachelor programs:

The first unit they study is Clinical Nursing 1: which develops the fundamental skills e.g. handling restraint, husbandry, nutrition, accommodation, preparing for procedures e.g. blood, fluids so that they are prepared for when they go out on placement. As per the RCVS requirements all students in the Foundation and Bachelor of Veterinary Nursing programs are required to complete 60 weeks of practical training. In the degree, this is covered in the first three years. It is delivered in blocks, usually with a theory block then they are released for a practical block. They did originally try releasing them for a full year but found that too many of the practices offered the students ongoing paid employment and so they had student retention issues. The change to blocks of placement has resulted in greater retention and completion of the degree. First year commences in September, and then at Christmas they are on break and do placement until Easter before returning for another block of theory. Using this approach, they have also noticed that the students find it easier to apply the practical after learning the theory in smaller volumes. The students also bring experience back with them after placement and have a better understanding of what is being discussed during the theory sessions.

As part of their selection process, the RCV requires all applicants to have completed a minimum of two weeks placement in veterinary practice and two

weeks experience in non-veterinary business before applying.

In addition to the teaching staff, the RVC also relies heavily on their administration assistant. This person is involved in all aspects of the program – marketing, updating online material, registry, finance, exams and is an essential component to ensuring that the students have a positive student experience.

The integration of Veterinary Nursing delivery with the Veterinary Hospital:

Bristol and RVC are the only Veterinary Colleges offering a Veterinary Nursing degree. This is part of their competitive advantage in that their VN students are exposed to a referral practice on campus, the Queen Mother Hospital (QMH). The VN student can utilise the clinical teaching centre during theory blocks through a taster day one day per week. The teaching staff are aware that some of the student nurses can find doing placement in the QMH daunting because it is a referral practice with specialist clinicians and high-level care. However, once the VN overcome this fear, they do have a great experience.

In terms of the delivery, the module leaders for electives are vets, however the deputy leaders on all but two modules are VN. During the surgical nursing module that runs for 12 weeks, the VN students are given access to a different speciality each week.

Surgical nursing 12 weeks – a different speciality per week.

The RVC required all the veterinary nursing teachers to do a teaching qualification before they can teach in the veterinary nursing program. The teaching staff believe that this has been to the advantage of their program as it has taught them about teaching theory and curriculum design. However, it is noted that the vets who teach into the B Vet Med whilst being required to be registered specialists in their area are not required to complete a teaching qualification to teach into this

program. At RVC this has resulted in the veterinary nursing programs being taught in a different method compared to the B Vet Med course.

In terms of access to the facilities they are shared but the vet school has a larger cohort so for room bookings they get priority. The two cohorts have different practical skills learning needs in that the vet nurses are undertaking practical training within 6 months of commencement of their course, whereas the veterinary students don't do clinical placements until third year. This means that the students are at different stages of their academic development.

There is improvement in the understanding of what each role does, that they are doing different skills and that the focus should be on preparing both cohorts to work together as a team and moving away from focusing on the role of a vet and the role of a veterinary nurse, instead the focus should be about the team and how they work together to provide the care. If the education now focussed on where we want the industry to be in 20 years time, then what would the vets expect their vet nurses to do? That should be the focus of what is being taught so we have the industry that our clients and patients expect in the future.



Photo 3: Specialist wound management mannequins made in house by the College's own technical officer for the Veterinary Nurses to learn on.



Photo 4: The Veterinary Nursing Skills Lab which has OSCE like stations set up. Students can access these in their own time to practice their skills

Curriculum design:

Initially the curriculum was very prescriptive as it was taught according to the syllabus for the RCVS. The RCVS owned the syllabus and colleges were expected to teach to this. This has softened now, in that there is no longer a national syllabus. Whilst it is still available online a new course being set up would find it difficult to know that this exists and where to locate it on the RCVS website. The RCVS requires new degree courses to meet the day one competences so in terms of course design and content it is now possible to be less prescriptive. Initially the RVC was not accredited so its students had to sit the National Exams as well. Because of this they originally mapped what they taught to what was required to pass the RCVS assessments.

With the relaxation of a national syllabus, the teaching team have taken the approach of structuring the learning around what the want the VN to be able to do at the end of their training, what they need to be able to do in practice once they are qualified. For the Post Graduate Diploma one of the key learnings is how to be a critical thinker to identify a situation in their workplace, identify the issues, make recommendations and then be able to professionally communicate this to key stake holders e.g the vet, their colleagues, owners etc.

The teaching team at RVC believe that the biggest difference between degree courses is in regards to the depth that content is covered. In recent times a lot of universities have begun delivering Foundation (3 year) degrees in partnerships with colleges who do the delivery and it is at a vocational level rather than at a degree level. There is still a perception that the vocational trained VN have more practical experience than the degree trained VN however, to meet the RCVS regulatory requirements they must both do the same number of weeks of practical training. It is interesting to note that the same perception was experienced by the paramedical professions e.g human nurses when they moved from vocational training to degree training in the UK.

The practical component is vast for the veterinary nurses who are required to complete the regulatory requirement of 60 weeks practical training. This is compared to the veterinary students in the B Vet Med who are required to do only:

- » 12 weeks in first two years – animal husbandry
- » 26 weeks – clinical extra mural studies (EMS)

For the veterinary nursing students, they are doing unpaid work experience, many live 100 miles or more from home and so to stay on campus and complete their placement in the campus clinic is very expensive. They also do need a variety of small animal practice because the QMH is a referral clinic not a primary clinic.

It was noted that under the EU agreement that European qualified VN and Veterinarians who have not met this practical training requirement are able to seek registration which places them at an unfair advantage over the UK trained vets and VN.

The changes in Veterinary Nursing:

There have been significant changes in the last ten years. The development of veterinary nursing as a profession has been the key driver of this change and an increase in the standards. For example, there is now a peer reviewed journal for Veterinary Nursing. The development of veterinary nursing as a profession has also been assisted by the registration of veterinary nurses. This means that they are now accountable, will be held to account and can be disciplined, there is a professional code of conduct that VN have to abide by. Students are now made aware of these changes in their last module in Year 3 – Professional Practice. This module covers what the veterinary nurse needs to do, what legal aspects are required to be understood as a professional, conflict resolution and professional communication.

Only registered VN have to do continuing professional development (CPD), be accountable and can be disciplined if they do something wrong. To date, since the registration of VN in the UK, three VN have been disciplined and all VN are made aware of these cases as they are published. This is similar to the Vet Board Talk communications for vets in Victoria, where disciplinary matters heard by the Veterinary Board are published so that all vets can learn from these cases.

In the UK, prior to Veterinary Nursing registration, the veterinarian had overall responsibility and so VN did not need to be accountable and so did not have the same level of responsibility. Registration has increased the rights of veterinary nursing practising in the UK but has also increased their responsibility.

Anglia Ruskin University

Cambridge Campus, Cambridge

Meeting with Course Tutor Mrs A Santos, College of West Anglia and tour of campus

The College of West Anglia offers both a Diploma in Veterinary Nursing and a Bachelor of Veterinary Nursing. For the Diploma course, students can study part time and may already be in practice for several years before enrolling. The delivery of the Diploma concentrates on the theory. They attend one day per week and combine lectures with practical skills development. The campus has a working farm, equine centre and there is simulated veterinary clinic teaching space. Staff bring their animals in when the students are on campus to assist with their training.

The degree offered by Anglia Ruskin University is a relatively new course that is in the process of being fully accredited by the RCVS, it has provisional accreditation. The RCVS were impressed by the good relationship between the College of West Anglia (a vocational college) with the higher education institution (HEI), Anglia Ruskin University. Santos who I met with wrote the degree with Dr Marian Bond

of Anglia Ruskin University who is the HEI Liaison. The RCVS recommended this College as an example of how to meet their accreditation requirements when setting up a new degree.

As with all veterinary nursing qualifications, the College of West Anglia must ensure that its students meet the 60 weeks practical training component. To achieve this, they utilise a Placement Officer. This role is a critically important in getting Training Practices to agree to take the college's students and it really is a sales role that requires the right personality to be able to connect with the practices and get the doors to open for the students. Despite the fact that the training practices are required to meet minimum standards there are still good and bad practices in terms of what the student experience is in the practice during their practical training. Degree students commence in September, with their first official placement in June the following year so they must be enrolled with the RCVS before then so that they can do the online Nursing Progress Log (NPL) to log their practical training.

The College runs largely face to face training with some blended learning. For first year degree students, they may be required to attend 3 hours per week per module, then self guided study on top of that. Self guided study could be online, or it could be tutorial with a mentor



Photo 5: The purpose-built simulated reception area that provides a great training experience for veterinary reception skills – data entry (on veterinary software that is donated by the company), customer service, telephone skills etc



Photo 6: In its more rural setting and with a focus on Agriculture the West Anglia College has a teaching farm providing access to a range of species including birds, pocket pets such as rabbits and an equine therapy centre.

Historically when Veterinary Nursing degrees were first offered fifteen years ago, the universities offered them with a practical year in the middle of the three-year degree. As was recognised at RVC, this resulted in poor student retention as the practices would offer the students employment and they would defer their degree and complete a Diploma instead.

The College of West Anglia has recently made an adjustment to their delivery model.. The second-year degree students are required to complete an emergency and critical care module. In 2014 they were in practice and coming in one day per week but as there are only five veterinary clinics within a commutable distance of Cambridge this impacted the number of students who were able to successfully participate in and complete their practical training. Now students are released for placement but they are still required to do modules so for these a blended approach with on campus attendance for a 2-day session and a 3-day session and then the rest of the learning resources are online via LEARN and they use Skype for their tutorials.

Santos experience with online and blended learning is that despite having all the technology to do it the difficulty is getting the students to engage with it adequately to pass their exams and complete their training.

As the UK is not geographically dispersed compared to Australia, Santos does not believe that their colleges or universities are particularly good at online delivery. They have found that even though they offer many additional resources online to assist the students e.g reading, practice exams etc they don't get consistently good engagement with these materials. Santos recommends looking at RVC online CPD courses as in her opinion these are done very well and set the standard for what online learning should be.

Exam Preparation:

The College does spend a lot of time and resources on preparing their students for the OSCE. This is being seen in their pass rate with a pass rate of 85% first time

and a 100% pass rate second time.

Most modules in the degree will have an OSCE assessment component to ensure that before the student sits their final OSCE in third year they are well practiced in this examination style and technique. The OSCE in their modules are not a deciding element for the pass or fail module, they are a learning experience in preparation for the final OSCEs. It was fortuitous that the College chose OSCE as part of its assessment method as the Veterinary Nursing Council passed a by law that mandated that all Veterinary Nurses must be assessed by an OSCE.

For a module OSCE, Santos will create a six-station mock OSCE with six examiners and a senior examiner. The senior examiner is external to the College so that the students learn that this examiner has the final say on borderline students. It also helps that Santos is an examiner for RCVS and writes RCVS exams which helps with teaching the students how to pass the exams.

At other colleges where Santos reciprocates and provides examiner services, they have OSCE that are a story board that the student follows around. Each station is 10 steps, they need 8 steps to pass. However, in the RCVS OSCE for example, the Gowning and gloving is a 35 step OSCE and there are "killer" steps that must be demonstrated or the student immediately fails. This story board method, although approved by the RCVS is not reflective of the RCVS OSCEs that must be passed to gain registration to practice.

The College is in the final process of getting approval for their OSCE. Normally the RCVS pass mark is set by border line regression –but to use this method you need a minimum of 100 students. As the college has 20 -25 students per year, they have to use the Angoff Method which uses a committee of examiners to determine for border line candidates the number of border line students out of 100 that would be expected to pass each step of the OSCE. So long as the committee of examiners can arrive at a standard deviation of less than 10% then the pass rate is determined using a formula.

The College already uses external examiners to meet the RCVS requirements, there is always an external Senior Examiner and all external are either RCVS examiners or City and Guilds Examiners. All the RCVS OSCEs are available online through City and Guilds via a subscription

For an international course seeking to have a course accredited in the UK, Santos suggests looking at the Accreditation Committee for Veterinary Nurse Education (ACOVENE) standards. ACOVENE is a voluntary organisation that was founded in 2007 to accredit veterinary nurse education programmes in the EU. ACOVENE standards are easier to address and straight forward. If a course meets these then the RCVS has to register their graduates under the EU agreement. The RCVS currently has a working party looking at how international nurses can be registered.

Impacts of Veterinary Nursing Registration and the new Charter on Practices:

The register has been around for a long time, the new Royal Charter introduced on the 5th of November 2014, means there is no list of nurses only a register of nurses. Listed nurses were nurses who were not professionally accountable. Despite this change, even now, it is hard to get practices to check the registration status of a locum VN before they engage them.

When the online NPL was first introduced and replaced the Green Book for logging of skills some of the Training Practices withdrew from the scheme. But over time, they have realised that need to train and be a training practice if they wish to recruit and retain highly skilled veterinary nurses.

In the UK there is a shortage of qualified Veterinary Nurses, with the estimate being that about 3000 more nurses are required to meet the needs of practices. Contributing to this skills shortage has been a lack of suitable part time work for mothers and the salary. The salary for a part time VN and the cost of child care

prevents many VN who leave practice to start a family, returning to work after having children. The industry hasn't focussed on how it could get those nurses back onto the register. There has also more recently been a cultural change where part time nurses are now more accepted.

About 10 years ago, every practice was expected to do their own on call and nurses were expected to stay overnight in the practice. Now there are after hours clinics that do this so VN don't have to stay in the practice overnight.

The nature of practice has also changed following the outbreak of foot and mouth disease. There are now fewer large animal practices, and there is low demand for equine veterinary nurses. Streams in both equine and production animal veterinary nursing are available but Anglia Ruskin doesn't offer these pathways despite the College of West Anglia having access to great training facilities such as the equine centre and farm as there are not the job outcomes for these graduates and gaining the practical training in an appropriate practice would be difficult. Despite the College being within 40 -50 miles of seven large equine practices, of the 20 -25 students per year, only one is interested in equine nursing typically. The college can accommodate them for the first two years and then they must transfer to a different college for their final year.

USA

In the USA, the term "nurse" is a protected title meaning that veterinary nurses must be called a veterinary technician or technologist (VT). The difference between a technician and a technologist is the qualification they hold. A technician will have graduated from an approved American Veterinary Medical Association (AVMA) accredited two-year applied science (AS) degree whereas a veterinary technologist will have completed an AVMA accredited three-year degree either a Bachelor of Applied Science or a Bachelor of Science. Some veterinary technology schools have a general education curriculum for the first year, with an additional two years of applied science (AS) to graduate as a veterinary technologist.

All AVMA accredited VT programs require essential skills to be completed in the following areas: small animal, large animal, laboratory animals (minimum of three species including rabbits, mice and rats) and practice management. AVMA requirement is that only faculty members can sign off on the practical skills of their students. A clinical placement site is not able to sign off on the students. Many of the Colleges have interpreted this requirement to mean that all practical skills must be taught and assessed on campus. It is this interpretation of the AVMA accreditation which has created barriers to Colleges and Universities offering distance education (DE) VT programs. In my visit to Purdue, they have overcome this barrier by creating assessment tools that enable faculty staff members to sign off the practical skills whilst still seeking verification from clinical placement staff that the student has performed these tasks under workplace conditions and to the expected standard.

Only graduates from an accredited VT program are able to apply to sit the Veterinary Technician National Examination (VTNE). The vast majority of US states require completion of an accredited course and passing of the VTNE to register and work as a credentialed VT (CVT or RVT). In these states if a VT is not credentialed then anything they do must be under the direct supervision of a veterinarian to perform these tasks. The advantage of being a credentialed VT is their ability to work unsupervised which makes them a valuable asset to the practice. The pay levels for VT are not dictated by their qualifications and like Australia it is a low paid profession. The starting salary for a VT graduate is about US\$20,00 compared to a human nursing graduate which would start on a salary of US\$40,000. For comparison, the average graduate salary for a veterinarian (DVM) is US\$61,000 per year.

The veterinary profession in the USA is conservative and there has been resistance to change and the adoption of registration/credentialing of VTs, however, the VT profession have easily demonstrated their value to a practice, as their skills and knowledge, allow the DVM to do what they were educated to do.

In common with the UK, the USA also legislates that surgery, prognosis, prescribing and diagnosing are veterinary only tasks, anything else is able to be performed by a VT. The colleges shared a common approach of training their VT students to be able to assess an animal and create an appropriate treatment plan focused on what a VT can lawfully perform.

Course Accreditation:

The accreditation process is rigorous and the policies and procedures of the AVMA are available online. The AVMA prefers to be consulted during the planning of the course to ensure that accreditation requirements are planned for and can be met.

Initially a College starting a veterinary technician program will commence training once they have the following in place:

- » curriculum
- » suitably qualified faculty staff with the AVMA required credentials
- » appropriate training facilities
- » advisory committee. This committee is required to meet several times per year, and includes student membership. It is responsible for reviewing curriculum changes.

During the first year of the program the AVMA performs a site visit to perform an initial evaluation against the basic accreditation requirements including verification that students are being taught by appropriately qualified faculty, the facilities meet minimum standards and will enable the development of essential skills and there is adequate support from the College or University for the VT program. If this initial assessment is favourable then the program is awarded provisional accreditation.

The program will not receive full accreditation status until there are graduates from the program that are employed in the veterinary industry whose performance can be analysed. The AVMA then requires analytics of the statistics of graduates,

their course marks, VTNE results and percentage of graduates that have gained employment in the industry. If the outcome of this review is favourable then the AVMA will grant full accreditation to the program. After initial full accreditation is granted, annual reports must be submitted to the AVMA accrediting body. Every seven years there is a site visit which is a stringent audit of the program, faculty, facilities, student performance on credentialing exams, curriculum, funding etc. Once this has been passed successfully, a College may then be granted permission to submit written reports every 2 years but the site visits will occur every seven years to retain accreditation status.

Recognition of Prior Learning or International Qualifications:

In the USA there is no reciprocity or recognition of international veterinary nursing qualifications. The VTNE is owned by the AVMA state boards and their policy is that to be eligible to sit the VTNE the candidate must be a graduate of an AVMA accredited program. For veterinary nurses coming from the UK, Australia or Europe, they would be required to complete an AVMA accredited course in the USA before they can sit the VTNE and become an accredited VT. If they don't wish to follow this pathway then they enter the USA and can work as veterinary assistants. Canada has some reciprocity with the USA as they sit on the VT accrediting body. However, no other countries have applied for accreditation of their programs through the AVMA. Qualified veterinary nurses from the UK, Australia or Europe seeking to work as a VT in the USA must enrol in an accredited VT program, complete this and then pass the VTNE or seek work as a veterinary assistant. There is no state recognition for veterinary assistants and these staff must work under veterinary supervision.

Florida:

There are only thirteen US states in which VTs remain unregulated. Florida is one such state and it has been working on the registration for veterinary technicians for the past 10 years. It is hoped that by 2020 registration will be required to practice

as a veterinary technician or technologist in the state.

Despite the fact that there is no requirement for credentialing, both the Colleges visited offer AVMA accredited programs as they are reliant on students who travel from interstate and abroad to participate in their programs, and so their graduates must be able to apply to sit the VTNE and register to work in the other states that require registration of VTs.

In Florida, there are 3500 veterinary practices with only 850 VTs meaning that there is a skills shortage in VT and the industry is under served. In terms of employment, there is no difference in the employment outcomes for graduates of the Applied Science (AS) program (technician) or the Degree program (technologist) due to the state being unregulated.

Eastern Florida State College (EFSC) 1519 Clearlake Road Cocoa Florida 32922

Laura D. Earle, DVM, MPH, CPH, CAC Veterinary Technology Program Manager

This college began its VT program in 1987. It is a two year AS degree offering a pathway for their students to continue onto the BAS at St Petersburg College to complete a further two years there and graduate as a veterinary technologist. After completion of the program at Eastern Florida State College (EFSC) they graduate as a veterinary technician.

Each year the College receives 40 -50 applications but only admits 24 students. The majority of students are female, there are currently three males in the entire program which totals 43 students across all years. The College's EFSC VT pass rate is 95%. The attrition rate is 30% over the two years of the program (average attrition rate is 44% nationally). Attrition is usually due to barriers to continuing with study such a financial hardship, family, the inability to complete course work or the student determining that this field of study is not suitable for them.

The student demographic is very broad, some already have Bachelor or Masters degrees, others come straight out of high school. The minimum age is 18 years, so that they can work with radiographic equipment. The current age range is 19 – 58 years. Being a small cohort, the broad demographic helps as they are very close and they support each other, the program includes team projects which fosters a culture of them supporting each other through their learning.

Most EFSC graduates are successful in gaining post graduate employment as VTs and the majority move interstate. The College has a number of graduates working in specialty practice such as emergency, equine, rehabilitation, surgical and internal medicine. Four of their graduates are continuing their studies and are enrolled in the baccalaureate degree at St Petersburg.

Admission Requirements:

The college requires the following of their applicants:

- » Completion of a minimum of 20 hours in veterinary practice which must be signed off by a veterinarian
- » Completion of 20 hours in an animal shelter.
- » Letters of recommendation (which can be from anyone they know)
- » Successful completion a placement test for nursing which includes basic math, reading, writing and clinical component
- » Pass a police/background check. The College prepares their graduates to be able to sit and pass the VTNE and be eligible to register as a VT.
- » A credentialing requirement is that they have no criminal record. The College uses this as part of their selection process. An applicant with a misdemeanour is able to be considered, unless it is abuse related (including drugs) in which case they would be ineligible for entry into the program.

EFSC students are expected to take out liability and accident insurance which is

offered at minimal cost (US\$26.50/year) through the College. The College works with 4H a US Agricultural Society to provide cover for applicants who are required to do placement to meet application criteria. The College has found that being able to ensure that the potential applicants have adequate insurance, means that veterinarians are more likely to take them to do placement so that they meet the entry criteria.

It is highly recommended that VT students are vaccinated for Rabies but because it is so expensive (US \$250/vaccination, total of US\$750 for a complete course) it is not enforced and remains voluntary. The College has formed a partnership with Novartis to get subsidised vaccinations (at cost) for high risk students. This is assessed on a financial need. The students are exposed to animals that come from Humane Society so are at risk, if they elect not to be vaccinated against rabies, the student signs a declaration form.

The academic year consists of two 16-week semesters plus a summer session. Full time attendance is 4 days per week 8 – 3pm or 9 – 4 pm depending on the classes. The summer session is for remediation and for electives – Introduction to VT, small animal behaviour and special topics focused on increasing clinical skills.

The campus has a purpose fitted teaching building with a simulated reception area, small animal ward area and surgical area. Live animal recovery surgeries are performed on site but the animals must be volunteered by staff or students.



Photo 7: The dedicated Veterinary Technology teaching laboratory at EFSC



Photo 8: Radiography equipment for teaching radiographic positioning and techniques



Photo 9: The simulated reception area that doubles as both teaching department reception and training VT students in veterinary reception skills



Photo 10: Teaching surgery where College staff and students can have their pets desexed, the VT students provide the anaesthetic and surgical preparation support under the supervision of Veterinarians who perform the surgeries.

For tutorials or lecture-based classes the teacher: student ratio is 1: 24. For practical classes the teacher: student ration is smaller and varies depending on the nature of the practical class. For surgical or large animal practical classes, the ratio is 1 teacher per 8 students. For non-animal practical class e.g. clinical pathology, there is 1 teacher per 12 students

The program employs a full time Clinical Coordinator who is responsible for organising the practical placements for all students. They are also responsible for setting up the equipment for the lab-based classes on campus. Placements are assigned by the College and are focused on general practice. The first one is front office, the second one is clinical pathology and surgery, the fourth one is an emergency rotation in an emergency clinic.

The placements commence in third semester and students choose from a list of practices supplied by the College. If they want to do placement in a practice that is not on the list, then this must be approved by the College.

In US programs, a subject is referred to as a course. In this VT program, there are 4 work experience courses of 96 hours, of this one third of the time is lecture and two thirds is placement. At the end of their program the graduates will have done a total of 255 hours in placements.

Key Skills/Learning Outcomes for the EFSC program:

- » Perform a physical exam, perform clinical pathological testing, pharmacological and fluid therapy calculations, support anaesthesia and support surgery
- » For anaesthesia students are required to induce, intubate and recover animals from anaesthetic
- » Scrub in and assist, prepare for surgery, perform retraction and superficial surgical sutures. In the USA, VT can't perform surgical procedures but in 6 USA states can perform a dental extraction. In the state of Florida, the extraction of a tooth (even if a single rooted tooth) is considered a surgical procedure so VT

are not able to do extractions but can chart, clean, scale and polish for a dental.

- » Office procedures: filing, invoicing, data entry
- » All VT in the USA have to do large animal training as part of the accreditation of the programs requires them to have perform skills on all species. In cattle VT are taught to do rectal palpation, semen collection (bulls and stallions) but they not required to learn insemination (in the USA this is considered a veterinary only task)

Assessment:

Assessment is in house and part of the academic freedom under the USA accreditation systems. Students complete assessment at the College and then apply to sit the VTNE, the EFSC has 100% of its students sit the VTNE. The VTNE is a standard exam – it is a theory only exam with practical application assessed through case based questions. The VTNE assumes practical skills e.g. bandaging etc. have been signed off at the College. State boards have practical exams. Florida is in transit, so their VT don't have to sit a state board exam.

EFSC performs the majority of its assessment of students face to face during labs etc. Students are also required to complete theory and practical exams. Assessment methods also include assignments, discussion boards, case presentations, posting cases and commenting on them in a professional forum.

The advantages of VT registration:

The ability for a VT to be accredited/registered brings with it: respect, higher financial compensation, the ability to hold their own indemnity insurance and take pressure off the veterinarian. In Florida, as current law stands, the onus is entirely on the vet. Despite these advantages to having accredited VTs, the vets in Florida feel threatened by the prospect of VT registration. The thought behind this as they fear that it will remove the option of hiring a lay person off the street and will force them to employ certified VT.

Impacts of technology on the profession:

The advances in technology are ahead of the accreditation process meaning that EFSC trains their students in current technologies and those that meet the accreditation requirements. An example of this is that they train the VT students in three different methods of performing radiography: digital, automatic processing and manual processing so that the students meet the accreditation requirements but also meet industry expectations and are familiar with common workplace innovations such as digital radiography.

The EFSC also train their students in the use of lots of software, they use multimedia and software for competing their assessments such as presentations. Earle's experience has been similar to Kirley's in that the students are not a technically competent with IT as society believes them to be and the College spends time to ensure that they are trained in PC skills and using simple packages such as Word and PowerPoint. EFSC uses Canvass as its learning management system (LMS) and it is used to store lecture presentations, games, quizzes, assessments, weblinks, links to Idexx folders, extra credit items and discussion boards for case analysis. All courses (subjects) have a companion in the online LMS – this is so that students can watch videos, complete quizzes or do activities to gain extra credit.

St Petersburg College Florida

Dr Richard Flora DVM, MSBA

Dean School of Veterinary Technology

Veterinary Technology Centre 12376 Ulmerton Road Largo USA

St Petersburg College (SPC) has 33,000 students across its five campuses scattered across the County. In addition, there are another 4 sites where classes are offered but are not a campus. The College started in vocational education as

a community college. It still offers a lot of continuing education (CE) certificate courses for professions that require these to advance. The aim of the College is to make learning accessible which is why they have a number of campuses as many of their students don't have access to transportation and therefore either ride the bus or walk to campus.

The SPC VT program commenced in 1975 and gained accreditation in 1978. It offers an on campus and distance education program. Current numbers include:

- » 120 students on campus doing associate degree
- » 180 students on line in associate degree program
- » 150 online in the bachelor program (this program is done after the associate). All students are required to transition from on campus to online as the bachelor degree is only offered online.
- » Students are not only from USA but international – South Africa, Canada

SPC requires the associate degree to be completed first before they can gain entry into the bachelor, the bachelor then focuses on advanced classes in animal and hospital management.

The SPC associate degree is a three-year program which includes a first year of general education that must be completed before they gain entry in the VT associate degree. Students can combine on campus and online.

Those working choose this to do this as they can fit work in around their study. The Bachelor Program is a four-year program – which again includes the one-year general education and then three years for the Bachelor.

SPC places 98% of graduates in the veterinary profession, those without jobs either don't want them or continue with study. All students required to be in practice for 2- 4 years during their training. Flora notes that the burn out rate is very quick for VT graduates with 7 years considered a long time in the industry

this is due to a combination of low pay and that females leave the industry to start families.

Current demographics for SPC are 96% of students are female which is reflective of the entire veterinary profession. The current salary for a VT does not support a family so the uptake by males is low because of this. The demographic for DVM has changed considerably, in 1986 the ratio was 50:50 male to female in the graduating veterinary class with an average debt \$175,000 after 7-9 years of College. Jobs are becoming more difficult for vets as there is an oversupply depending on the type of practice. Food animal and regulatory positions are undersubscribed. Graduates are looking for 9-5 practice since the advent of emergency practice. In the USA, it is becoming increasingly rare for practices to do their own emergency medicine. Some practices use different shift structure to staff their own emergency clinic but essentially have two sets of staff.

SPC's youngest students are 19, with the oldest being 60. The older students are career changers – either forced into it or lost job, some are now secure enough financially so that they can pursue their passion. With older students there is a noticeable difference in attitude where it is all about the learning not about the marks. Older students get enthusiasm from the younger ones whilst the older one's help provide a more holistic view of work, life and study.

There is some interaction between the on campus and the online students. SPC separate the online and on campus cohorts but they may be on campus at the one time. There is no noticeable rivalry as they don't tend to meet. Flora notes that it takes twice the time to teach online well and this is figured into the teacher's academic load.

Staff are 3 full time (FT) vets, 4 FT technicians, 4 adjunct vets and 20 adjunct technicians.

The facility:

SPC is unique in that it has built a purpose-built facility that has been custom designed for VT only. This is compared to other Colleges/Universities that have a vet school that run a VT and DVM course in parallel. In these Colleges the facility has been built for the DVM course and secondary preference is given to the VT program for scheduling of practical classes etc. in the Clinics etc. The SPC facility has been open for 3.5 years and whilst other programs may use the space but preference is given to the VT.

The SPC facilities include:

- » 3 lecture rooms – 45 student stations in each room, one with breakout sessions. Each station wired for internet and electricity. Each has overhead projectors, document cameras etc. The building has wireless internet as well
- » Clinical pathology lab – used every day during second year, here VT students learn how to do haematology manually, then learn using blood analyser so that familiar with it. Most clinics are now outsourcing laboratory testing but the accreditation still requires that VT programs teach manual haematology.
- » Anatomy lab – specimens are preserved cats.
- » Surgery area – scrub, prepare packs, cap, gown, glove.
- » Theatre – The College has licensing registered with state as a teaching institution so it is able to perform live recovery surgery in the building. All surgery performed by licensed veterinarians who are on staff. As a teaching institution they are considered as a research facility so animals owned by the program only are to be used in the building, this precludes them being able to provide veterinary care to the general public. Teaching procedures with live animals with recovery and then rehomed. Animal ethics committee approve designated types of procedures and how often they are performed.
- » Radiology – digital and analogue radiography. The accreditation training program still requires analogue training as well as manual and automatic film processing. Flora noted that with the widespread use of digital radiography

this skill either needs to be removed from the essential skill or have it as an OR option. Students must learn analogue first before they can do digital.

- » Kennel room – 24 indoor/outdoor runs with a big exercise area outside. Group play is permitted.
- » Isolation ward
- » Aviary
- » Laundry with industrial washer and dryer
- » All students get a locker.



Photo 11: One of the teaching labs in St Petersburg's state of the art, purpose built, dedicated veterinary technology teaching campus.



Photo 12. Dedicated cat ward where animals are housed for an 8-week period during which the VT students are responsible for their primary care and the animal receives full worming, vaccination, blood testing, dental and is desexed.

Teaching Animals:

The campus is situated next door to a county animal control who screens the animals to ensure that the behaviour of the animals is appropriate to use with students who are developing their animal handling and behaviour skills. This facility provides dogs of various sizes and breeds making it a better learning experience for the students.

The behaviourist on staff will assess the animal, and if it is not suitable it is returned. The animals that are accepted are then owned by the College with the aim to keep them for a period of 8 weeks and then adopt them out to homes.

Cattle and horses are on local farms with agreements. Rabbits and other rodents are owned by the College. Anything more exotic is brought in for demonstration.

Birds: budgies, 5 chickens and 2 ducks that have been rescued and used for teaching purposes.

The on-campus students are required to check the animals. Each student is assigned an animal and they have to check it each day and report any abnormalities to the Kennel Manager. If required the animal is then assessed by one of the veterinarians. On weekends SPC employs its own VTs to take care of the animals, not the students. It is a considerable expense to own, house and care of the programs own animals. Hills donates all food for the animals for all VT programs and veterinary programs in the USA.

During the animal's tenure with SPC they are tested, vaccinated, de-wormed, radiographed, desexed, microchipped, trained, handled and have a full dental before they are re-homed. Veterinarians on staff do the surgery such as the speys etc., VT students do anaesthesia, preparation, assist with surgery and do the dental all under the guidance of a veterinarian. Students assigned an animal have to get them out once per day on a leash, take them for a walk, do social interaction so can help with determining the best placement for them when adopted out. Many students adopt their own animal.

Additional procedures may be done for Animal Control such as the desexing for any animals to be re-homed. They are brought to SPC and housed for 1-2 days whilst they are recovering etc.

On Campus Program

On campus students attend 3 days per week for first semester and then 2 days per week after that. This allows them to gain practical experience. In addition to their on-campus attendance, they are required to complete a minimum of 100 hours per semester of work experience. They do a subject each semester which is a work practicum class with a task list which reflects what they are learning in the practical classes. On campus they do combination of lectures and lab classes each day. They do 12-16 hours practical face to face training per week, this varies by semester. The ratio of teacher to students 10 students per instructor with lecture ratio being 1 lecturer to 30-40 students. The ratio doesn't change for large animal classes. It is acknowledged that most of their on-campus cohort are urban based and the large animal practical classes are used to familiarize them with large animals and get them comfortable being around them as prior to these classes the largest animal any will have been around would be a large dog. The primary objective is that no one gets hurt in the large animal practical.

Distance Education (DE) Program:

Many of the DE students are either: living in areas where there is not an on-campus program nearby, working full time or have families and so would not have the opportunity to enter the profession without the DE pathway to complete their degree. To gain entry into the SPC DE program students must be engaged for 20 hours per week in a veterinary clinic. This may be a paid or unpaid position it is for the student and the clinic to negotiate. Within the clinic a credential technician, licensed veterinarian or both agree to be the mentor to help the DE student achieve their clinical skills. Once the student has found their 20 hours per week, the College then completes an Affiliation agreement with the clinic which outlines the student's, clinic's and College's responsibilities. The student submits their skills list to the instructor for the class instructor to review, they will contact the mentor in the clinic to discuss if required. The program's accreditation requires

faculty to sign off on practical skills. Flora noted that their DE students learn all of their practical skills on the job, immersed in the practice and in the credentialing exams, the online students perform better than the on-campus students.

Online classes require multiple times per week activity through assignment submission, forums, drop boxes forced to collaborate. Online orientation is used to familiarize students with the course delivery system, the expectations of the student and the College.

Technology:

SPC tries to have access to all the equipment that will be used in practice so that the VT students can become familiar with it. Both the on-campus and online programs have an online presence meaning that students are required to develop their IT skills as they are all required to use technology as they study. Printed material is not handed out in class, each teaching space has WIFI or data points so that students can log in to the LMS. Assignments are submitted online.

The LMS used by SPC is Desire to Learn. SPC has just spent the past 4 years studying the various LMS once they were advised that BlackBoard who bought out Angel (their previous LMS) would not continue to support it. Desire to Learn had the best historical information and for a large-scale user such as SPC (20,000 online classes) it has nice student analytics and early alerts for students at risk, instructors can use video feedback, built in portfolio systems, e.g. for the online students who require to submit videos can do this in the portfolio. Online students have to photo document or provide video evidence for essential skills. There are also certain pieces of work that go into the portfolio and they can continue to access this when applying for jobs after graduation.

Purdue University

College of Veterinary Medicine

625 Harrison Street West Lafayette Indiana

Dr Christina Tran DVM

Director Veterinary Technology Program

Professor Robert (Peter) Bill DVM, Ph.D.

Assistant Dean for Academic Affairs, Teaching and Learning

Pam Phegley BS, RVT

Veterinary Technology Clinical Coordinator

Josh Clark MS, RVT

Distance Learning Instructional Technologist

Purdue University offers an on-campus program and a DE VT program. The University also offers a DVM The Veterinary School opened in 1959 and the VT program commenced in 1975. As Purdue offers both the DVM and VT, their on-campus students train side by side in the teaching veterinary hospital. Incoming numbers of DVM is 84 compared to maximum of 30 in the on-campus VT program. The DE program has 145 students (150 -225 typical).

At Purdue the VT program is so engrained in the culture that it is part of the teaching load for all faculty members.

The on-campus 10-year average pass rate (98.7%) on first time taking the VTNE exam is 98.7% whilst the DE students was 96%. Only 1 in 10 students make it to

the end of the DE program, these students are highly self-directed, self-motivated and self-organized students, which is reflected in their exam results for when they sit the VTNE they take it seriously and put in the study time required to pass it. The DE students are also older and working in a clinic at the time that they are studying so they are putting it into practice every day.

Purdue's philosophy with the development of their DE program was that it would not degrade the nature of the program just because there was a DE version of the program. For the DE program the retention rate is low, 1 in 10, and it is expected that they will lose 30% of DE students in the first year. This is usually because the student realises that there is more work than they expected or they can't make the time to do the course. By the time a student is in third year of the DE program, attrition is due to unexpected life events as by now the DE students study skills have improved and they are now focuses on the more clinically relevant programs (subjects).

Teaching staff include both technicians and technologists who teach and instruct in the hospital. Faculty members such as Professors are also used to deliver lectures or coordinate labs. The day to day tends to be taught by technologists rather than faculty staff but the AVMA does require certain courses are taught by veterinarians within the program as part of the accreditation.

In the teaching hospital, the VT students are at an advantage as they have their own clinical rotation supervisors who are VT themselves, who know the expectations and curriculum well and they advocate for the VT students when there are issues with DVM students. Some services e.g. oncology are team orientated, the VT and DVM students run the service, but as the VT students are onboard from day one of clinics, they often take the lead in this area and provide support to the DVM students when they start their rotation in this service. Surgery and anaesthesia are areas that are a struggle in terms of getting access for the VT as there are competing demands with the DVM students. Responsibility lies ultimately with

the veterinarian but in private practice the VT will be adjusting the monitoring equipment, inducing the anaesthetic, monitoring and recovering the patient. The other issue is because if the hospital is a referral practice, a standard general anaesthetic (GA) is not the normal so it is not always appropriate to assign a 3rd year VT to do the anaesthetic to these higher risk cases. This often means that a staff member may be the one assigned to do the anaesthetic rather than a student.



Photo 13: The equine radiography suite in the teaching hospital that is used jointly to train veterinary and veterinary technology students alongside one another.



Photo 14: The clinical pathology teaching lab with a range of in-house diagnostic machines so that vet tech students gain confidence in running internal clinical pathology samples.

The current curriculum has just had its first graduates. The curriculum requires all students to study large animal, small animal, lab animal and management courses. Dentistry is small animal. VT students can learn to float in their equine rotation, but they are not required to learn how to do this.

First academic year is general education – mathematics, English, biology, chemistry etc., have to be in the major to take the introduction to veterinary technology course.

At Purdue after three years student can graduate with Associate Degree which is the entry point for attempting the credentialing exams with the AVMA.

Some of Purdue's students already have bachelor degrees, so these will exit after the 3-year program. Whereas the on-campus cohort will mostly stay on and complete the 4-year bachelor degree program.

At Purdue 1 credit hour = 1 lecture per week for 15 weeks, similar in most colleges. A 3-credit course would have 3 lectures per week. Labs are different – 2-4 hours once per week but because not as intensive it is usually 1 credit for a lab. Labs are determined by the course. Anatomy, physiology all have lecture and lab as part of the course

Entry requirements:

On campus:

This program has a competitive admission process and accepts a maximum of 30 students. The on-campus cohort is from two main categories – school leavers (high school seniors) and those changing their major to VT. These have some level of College experience and apply to gain entry into Year 2 as they have already completed a lot of the required general education courses. They both complete the same admission process: online application process, demonstration of leadership, honours or awards in the past 2-3 years and 3 specific VT questions to gain understanding of experience and exposure to the industry. There is a big difference between a veterinarian and a VT so Purdue try to identify this by asking these questions. Based on these three pieces of information the applicants receive initial scoring – includes high school grades, test scores – ACT and SAT scores, with the top candidates invited for interview. Additional points are assessed based on the interview, along with any prior experience.

An offer of admission is made to 16 -20 high school seniors, with the remaining vacancies then filled by those seeking entry with a change in their major.

Purdue have noticed a downward trend for the on-campus positions, in their last intake 80 -84 started the application process as high school seniors, of these only 35 – 40 completed the application process and then the application process

vetted these out to who were VT specific that met the VT standards. Typically, the second-year population is much smaller 15-20 applications, took only 5-6 from this application cohort.

DE:

The DE program doesn't have competitive admissions, there is also no requirement for them to be employed in a veterinary practice to gain entry. To gain their practical skills the DE students do what is called a mentorship. They can only commence their mentorship (our equivalent to a practical placement) after they have completed: Introduction to VT, anatomy and physiology subjects.

The 17 mentorships for DE students are based on the AVMA essential skills. Each mentorship outlines which skills the student is required to video tape and submit to prove that they meet the requirements. These practical skills videos are then assessed and evaluated by faculty staff. This was a significant mindset change to accredit the DE program. The online materials are designed to give them the tools to develop the skills, but they have to meet the same standard as on campus students have which is the criteria for successful completion, this is then heavily documented through videos. DE learning is outcome based rather than process based. There is no requirement for DE students to document how many hours they have done in practice, they are only required to document the essential skills and demonstrate each of the required criteria. Once every year the DE students are offered to come onto campus based on mentorships (workshops) that are difficult for them to achieve in practice e.g. large animal, equine anaesthesia, imaging, lab animal, surgical OR, some are offered each year or every other year.

The DE program doesn't have years, they work through the curriculum and a total of 12 credits equals a semester. It takes DE students longer to complete their course, most graduate within 4-5 years. The fastest was a DVM student who failed, and so had a lot of courses and was able to complete in 3.5 years. Not sure what this means?

The DE program has been set up to be flexible as most students already have jobs or family and so they need to be able to study at their own pace. To enable greater flexibility, the University moved to the credit system to determine when a semester was finished, it then created curriculum so that the student can choose smaller parts of the curriculum to fit around their life.

On campus and DE are learning materials are identical but the material has been split differently. For example, Anatomy is delivered over one semester to the on-campus students but the content has been split into two courses for the DE and is taught over two consecutive semesters so that it is easier for them to achieve completion of the content because studying part time.

Practical Skills:

On campus students complete a skills book which contains all of their essential skills checklists from day one of clinics, any DVM or staff technician employed by Purdue can sign off on those tasks. They hand this in as part of their final clinical course. These are checked periodically to make sure that they are getting things signed off. These students will have done these tasks in the teaching lab before going into the teaching hospital so it is not as critical that they get signed off on a number of different occasions like the DE students must, but it is a Purdue Staff member who signs off and some are signed off in the labs but sign off when proficient.

DE students – complete 17 mentorships and each have a clinical log book which is available at all times online. The Introductory pages list the task and, due dates for groups of tasks, allowing the student to forward plan these with their DVM. Each task has its own page with a goal, description, very specific criteria, how many times they have to complete the task and what they need to submit as evidence e.g. a video, a slide, a radiograph. Their supervisor then completes and signs off on the task with the dates of when the task was done. The number of tasks depends on the mentorship. DE students can simulate e.g. taking a history and a physical exam on their own cat. On the video they are required to talk through

what they are doing. It is very unusual for them to get through a clinical mentorship without a redo so they usually start with pharmacy because very little animal work is required so that if they need to redo this because of technical issues e.g. sound or vision this is easier to repeat.

The assessor has to be able to see what they are doing. The mentorship evidence is required to be kept until graduated but University policy is that student records are to be kept for 2 years from the time that the task was completed. Blackboard archives the videos but if they upload through drop box or you tube these are forwarded to the school secretary who archives them so they are retained.

The DE students are encouraged to submit their videos on the media gallery on BlackBoard, or they can submit through drop box or you tube, some will send a disc or flash drive.

Assessment:

Exams were once sent out as paper exams to proctors (invigilators) for the DE students to sit the exam. Purdue now use online exams in BlackBoard to offer MCQ, True/False and short answer exam questions. The student has a proctor who verifies that they are the correct student sitting the exam. The proctor enters the password not the student so that the student can't access the exam except in the presence of the proctor. Time limits now apply to curb them from using the internet to search. The proctor is not required to sit in the same room, but they are required to periodically check on the student but not required to fully supervise. Purdue has found that sometimes the proctor is a DVM or VT in a clinic and having a requirement for full supervision was a huge impost. Purdue uses the technology in BlackBoard to tell if a student is in an exam, and track what the student looks at in blackboard during the exam, it won't track what they look at outside. There is a lot of trust in the proctor, both they and the student sign an honour code

If there are allegations of cheating, Purdue will interview both the proctor and the student for their version of what has happened. Whilst it is possible for the student

to cheat, Purdue is reliant on the professionalism of the proctor and the fact that the students need to sit the national exam to qualify to discourage cheating. It is impossible for a DE student to cheat on the mentorships as they have to be able to prove that it is them in the video even if it is a close up of their hands, they need to pan out so that their face is visible and then pan in.

Technology:

Technology is provided largely in the hospital, both CT and MRI are on site and the VT students are exposed to it as they are there providing anaesthesia support whilst patients are being imaged. All VT students rotate through all the specialty areas – oncology, ophthalmology, cardiology, neurology, critical care, SA and LA so they are exposed to the latest technology in each of these departments/services. The DE students are not in the specialist environment, so their course instructors provide the back ground on the technology for the DE students e.g. the imaging tech teaches this course.

Purdue's LMS is Blackboard and even the on-campus students don't get a formal orientation to it, the on campus use it to access content and view their grade book. Purdue staff find this LMS intuitive and so don't find that students require an online orientation. Staff also noted that they don't many technology related questions unless they have incompatibility issues with their device. The VT program has been offered via DE since 1999 and when they first started 50% of questions were IT related.

Purdue used to employ one full time tech person, now have zero. Use is made of Purdue IT support or Blackboard support for any questions so staff are not spending the time on resolving IT issues as they did in the past.

Social Media skills are taught in practice management. They spend a whole class session on SM and using it to market the practice, the difference between social interactions and using it as a business tool. How to handle negative online reviews or posts rather than the how to use the software itself.

Teaching Animals:

The animals that are used are Purdue owned cattle and horses – students are assigned to clean up after them. Sheep and swine done on farm or if needed can be brought on campus

Cats and dogs are pet professors – owned by staff. These animals undergo behaviour testing to make sure that OK to use and have a pet tag with “Pet Professor”. When the “pet professors’ are required it is the student’s responsibility to communicate with the owners, get a history, check what treats they can give them, walk the animal throughout the day. The pet professors are used for minimally invasive procedures and in exchange for the use of their pet, the staff member gets a free yearly wellness exam with heartworm prevention etc.

For more invasive procedures or practicals e.g. venepuncture, animals from the local Humane Society are used. they provide dogs and cats for physicals, venepuncture – testing for HW, vaccinations etc which is the trade off with the Humane Society for providing the animals. The animals are only on campus for a single day. The DVM program uses these dogs and cats for surgery and anaesthesia practicals but not the VT program. The DVM program has a colony of Labradors, which are used for anaesthesia and dentals. The students work in a group of 3, one is the anaesthetist, the other 2 do the dental. Teaching dogs get their teeth done once per year, each student is anaesthetist twice on these dogs. These animals are supplemented with Humane Society cats to do feline dentals, as Purdue doesn’t keep any cats on campus so the only way to get exposure for feline anaesthesia is by doing dentals for the Humane Society.

Purdue purchases rabbits, rats, mice, gerbils, hamsters and these are used in labs, these are then adopted out to the students except for the mice. The lab animals have anaesthesia, venepuncture, oral gavage, catheters, injections, handling and restraint performed on them before they are adopted out.

Only do horse GA in rotation.

Anaesthesia course – 1 instructor per animal with 3 students assigned. Must be a DVM present

For other courses – if using large animals such as horse or cows, then 1 instructor per animal and divide the class. Large animals are not temperament tested before use but if not tractable will not be retained as part of the farm.

DE Practical Skills Workshops:

The DE students find some areas of mentorship more difficult to complete in their work place. To assist them Purdue has developed on campus workshops that are held once per year, between spring semester and summer semester. This is the only time that the faculty staff see their DE students face to face.

The workshop program is:

Saturday:

Morning: Cattle nursing on campus

Afternoon: Sheep and swine restraint (with Purdue owned herds)

Sunday:

Morning: equine nursing techniques – handling, restraint, injections, catheters,

Afternoon: LA imaging with teaching horses

Monday:

Field trip to a local mixed practice that they take the students to, the owner of this practice schedules 2-3 gelds and they take out 8 students to do the anaesthesia for the gelds.

Physically need to see them do it to the standard and then need to be signed off within this 3-day workshop. There is no other opportunity for repetition. Phegley explains that the DE students who attend the on-campus workshop are a completely different group of students because they are focused, it is an opportunity to participate in the tasks, they have done their pre-reading and are prepared for it. To date, they have only had one student graduate who did not have to attend the 3-day workshop as she was already working in a LA clinic.

Students pay to do the workshop above their course, they are also required to pay travel, accommodation and their own dinner. Purdue provides breakfast and lunch.

7. Knowledge Transfer: Applying the Outcomes

Immediate Plans:

- » Assessment methods similar to those used at Purdue to assess their DE students were introduced as part of the assessment methods used in the integrated subjects of the CSU Bachelor of Veterinary Technology program in the first year of the program. The Purdue mentorships and the skills videos provided clear instructions to the student and their work placement supervisor of the skills that were expected and the level to which they needed to be demonstrated. It also provided the means ensuring that students were learning and demonstrating best practice techniques for skill sets.
- » Review work placement requirements of CSU's Bachelor of Veterinary degree to see if it is possible to meet UK practical placement duration requirements. The UK has a minimum duration of 60 weeks practical placement before a VN can be registered. Any course seeking to become accredited by the RCVS is required to meet this minimum requirement of 60 weeks. A goal of the CSU Bachelor of Veterinary Technology program was to become accredited by the RCVS or AVMA so that its graduates could seek registration in either the UK or USA.

Future Plans:

- » Address the lack of ability for Australian trained veterinary nurses to currently meet credentialing requirements in both the UK and USA despite being qualified and experienced VN in Australia. In both the UK and the USA, a qualified Australian VN would not be able to be employed as a VT/VN in either of these countries. In the UK, she would have to do a supervised practice position for

up to 12 months (thereby meeting the 60-week practical placement required) and pass the national theory and OSCE exams, currently this takes 2 attempts on average for an Australian VN to pass the exams. In the USA, the only way that she would be able to gain work as a CVT would be to return to study in an accredited USA VT program and then sit the VTNE.

- » Working with peak industry bodies such as the AVA and VNCA to explore the means for veterinary nurses in Australia to be centrally registered and carry their own professional liability. This will enable them to work under the direction of a veterinarian but no longer require them to be under the direct supervision of a veterinarian. They would then be able to be disciplined by a centrally governing body such as the Veterinary Board.
- » Establishment of a centralised accrediting body either through the AVA or VNCA to accredit higher education programs so that minimum essential skills are delivered to ensure graduates of these courses meet the requirements for Veterinary Nursing registration into the future.
- » Explore the option of a centralised examination process for the granting of credentialing to graduates of accredited program. The USA has a National theory exam, the Colleges are responsible for ensuring that essential skills have been assessed whilst the UK has both a theory exam and the OSCE to assess practical competency in a simulated environment.
- » Encourage Australian Universities seeking to establish HE programs for VN training to consult with either the RCVS in the UK or the AVMA in USA to ensure that their program design meets their accreditation standards so that Australian graduates can obtain international registration.

8. Recommendations

Certified VT/VN be recognised as highly skilled members of the veterinary team and contribute to improved patient outcomes, customer satisfaction and financial viability

- » Both the UK and USA have adopted certification of their VN through a centralised accrediting body that ensures that HE programs meet minimum standards and their graduates meet essential day one competencies.
- » The use of a national assessment prior to being credentialed ensures that the VN meets minimum theory requirements for registration and in the UK via the use of OSCE minimum practical skills as well.
- » Australia, USA and UK all legislate that surgery, prognosis, prescribing and diagnosing are veterinary only tasks, in the UK and USA anything else is able to be performed by a CVT/RVN.
- » The certification/registration of the VT/VN in the UK and USA means that they are now accountable, will be held to account and can be disciplined, they are required to complete professional development and there is a professional code of conduct that VN have to abide by.
- » All training colleges visited shared a common approach of training their VT/VN students to be able to assess an animal and create an appropriate treatment plan focused on what a VT/VN can lawfully perform.
- » Australia was unique in that it has already lost some of what are “Veterinary Only” procedures in the UK and USA to lay people for example manual pregnancy testing of cattle, equine dentistry.
- » Australia needs to have its own central accrediting body for VN higher education programs to ensure that programs meet essential skills (day one competencies)

and administer the national assessment for credentialing.

- » The State Veterinary Boards in Australia could, as they do in each USA state, keep the register of credentialed VN and manage their registration, professional development, code of conduct and disciplinary hearings.

Design veterinary technology degree programs that will deliver quality learning outcomes for the Australian context particularly regional students

- » A range of approaches are able to deliver quality learning outcomes as witnessed in both the UK and USA.
- » If a VN program was delivered on campus, it was either delivered in parallel to a Veterinary Science degree in a veterinary teaching hospital or it was delivered in a College that had a simulated veterinary hospital environment that taught only VT and utilized rescue animals to provide the hands on practical experience.
- » Only one program, Purdue’s DE degree, did not require students to attend on campus to gain practical skills. However, there is high attrition from this course, with only 10% of students expected to complete and graduate. Purdue did provide this cohort with non-compulsory residential schools for essentials skills that students find difficult to gain placement in to complete their skills videos e.g. Large Animal.
- » Both the UK and USA curriculums require VN to be trained in small animal, large animal, laboratory animals (minimum of three species including rabbits, mice and rats) and practice management.
- » Both the UK and USA train and expect their graduates to be able to pass nationally set exams

Understand the requirements for International external accreditation for new VN

programs so that graduates can gain employment as a CVT or RVN overseas

- » Australia does not have an external accrediting body for degree level veterinary nursing/technology courses
- » The UK and USA have had significant changes in policy and have introduced registration and accreditation that ensures graduates meet minimum standards irrespective of which college or university they graduate from
- » Australian graduates would not currently be able to become certified in the USA, as only graduates of AVMA accredited programs are permitted to sit the VTNE and then apply for registration.
- » This can only be addressed by an Australian program seeking to be accredited by the AVMA. In order to do this the curriculum would need to ensure that all students are trained in small animal, large animal, laboratory animals (minimum of three species including rabbits, mice and rats) and practice management as a minimum.
- » The facilities, faculty and assessment method would also need to meet minimum standards.
- » The UK also has curriculum, faculty, facility and assessment method considerations for accreditation, however, one of the obvious barriers to an Australian program receiving RCVS accreditation is the minimum requirement for 60 weeks of practical placement within the program.
- » As with all accreditation processes it is best to consult with the accrediting body at the initial development of the program.

Employment outcomes for degree qualified veterinary nursing/technology graduates

- » Both the USA and UK report a skills shortage in certified/registered VN.
- » Only graduates of AVMA accredited programs in the USA can sit the VTNE, become credentialed and gain employment in the majority of states where

credentialing is required to work as a VN.

- » Upon graduation, those that seek employment as a CVT or RVN are successful.
- » A number of graduates enter into specialty practice such as emergency, equine, rehabilitation, surgical and internal medicine.
- » A lack of suitable part time work for mothers and the low salary contributes to the skills shortage as the high cost of child care prevents many VN who leave practice to start a family, returning to work after having children.
- » In the UK, USA and Australia the VN profession is low paid compared to other qualifications.
- » As the wage does not support a family, it is not a viable career for males if they are the sole earner in the family, therefore it is predominantly females who train and work as CVT or RVN.
- » Introducing a degree level qualification does not attract more males to the industry due to the low wages.
- » At all Colleges, male students were the minority.
- » The advent of afterhours clinics has brought about a cultural change in veterinary practice and VN are no longer required to stay in practice overnight.
- » Prior to the afterhours clinic, UK RVN were expected to stay overnight in the practice as the practices did their own on call. This made working once you started a family extremely difficult and many VN would leave the profession because of this.

9. Acknowledgements

Alanna Kirley would like to thank the following individuals and organisations who gave generously of their time and expertise to assist, advise and guide her throughout the Fellowship programme.

Awarding Body – International Specialised Skills Institute (ISS Institute)

The ISS Institute exists to foster an aspirational, skilled and smart Australia by cultivating the mastery and knowledge of talented Australians through international research Fellowships.

The International Specialised Skills Institute (ISS Institute) is proud of its heritage. The organisation was founded over 25 years ago by Sir James Gobbo AC CVO QC, former Governor of Victoria, to encourage investment in the development of Australia's specialised skills. Its international Fellowship program supports many Australians and international leaders across a broad cross-section of industries to undertake applied research that will benefit economic development through vocational training, industry innovation and advancement. To date, over 350 Australian and international Fellows have undertaken Fellowships facilitated through ISS Institute. The program encourages mutual and shared learning, leadership and communities of practice.

At the heart of the ISS Institute are our individual Fellows. Under the International Applied Research Fellowship Program, the Fellows travel overseas and upon their return, they are required to pass on what they have learnt by:

- » Preparing a detailed report for distribution to government departments, industry and educational institutions
- » Recommending improvements to accredited educational courses
- » Delivering training activities including workshops, conferences and forums.

The organisation plays a pivotal role in creating value and opportunity, encouraging new thinking and early adoption of ideas and practice. By working with others, ISS Institute invests in individuals who wish to create an aspirational, skilled and smart Australia through innovation, mastery and knowledge cultivation.

For further information on ISS Institute Fellows, refer to www.issinstitute.org.au

Governance and Management

Patron in Chief: Lady Primrose Potter AC

Patrons: Mr Tony Schiavello AO and Mr James MacKenzie

Founder/Board Member: Sir James Gobbo AC, CVO

Board Chair: Professor Amalia Di Iorio

Board Deputy Chair: Katrina Efthim

Board Treasurer: Jack O'Connell AO

Board Secretary: Alisia Romanin

Board Members: John Baker, Bella Irlicht AM, Maria Peters, Camilla Roberts and Mark Kerr.

CEO: Wendy Draayers

Fellowship Sponsor - The Higher Education and Skills Group

The Victorian Government, through the Higher Education and Skills Group (HESG) of the Department of Education and Training, is responsible for the administration and coordination of programs for the provision of training and further education, adult education and employment services in Victoria and is a valued sponsor of the ISS Institute. The Fellow would like to thank them for providing funding for this Fellowship.

Kirley would like to thank HESG for providing funding support for this Fellowship.

Supporters

- » Sandy Powell, Executive Manager, Rural and Manufacturing Industries Division, Goulburn Ovens Institute of TAFE
- » Paul Culpan, Chief Executive Officer, Goulburn Ovens Institute of TAFE
- » Gaye Krebs, Co Course Director, Senior Lecturer Animal Metabolism and Nutrition, Charles Sturt University
- » Robyn Farley, Centre Manager Wangaratta, Charles Sturt University
- » Gavin Ramsay Associate Professor School of Animal and Veterinary Sciences, Charles Sturt University
- » Lauren Lacorcia, Lecturer and Registered Specialist Small Animal Internal Medicine, University of Melbourne

Individuals and Organisations Involved in the Fellowship Programme

USA

- » Richard Flora, St Petersburg College, St Petersburg, Florida, USA
- » Laura Earle, Veterinary Technology Program Manager, Eastern Florida State College, Cocoa, Florida, USA
- » Vince Centonze, Director of Veterinary Technology, Hillsborough Community College, Plant City, Florida, USA
- » Christina Tran, Director of Veterinary Technology, Purdue University, West Lafayette, Indiana, USA

United Kingdom

- » Victoria Hedges, External Qualifications Quality Manager Veterinary Nursing, Royal College of Veterinary Surgeons, London, UK
- » Hilary Orpet Course Director Foundation and BSc Veterinary Nursing, Royal Veterinary College, London, UK
- » A Santos, Course Tutor College of West Anglia, Milton, Cambridge, UK

Individuals and Organisations Involved in the Fellowship submission

- » Arthur Blewitt, Chief Executive Officer AgriFood Skills Australia
- » Paul Dempsey, Chief Operating Officer Ballarat Veterinary Practice
- » Greg Hallihan, Executive Officer Primary Skills Victoria

Australian Organisations Impacted by Veterinary Technology

Government

- » Agriculture Victoria
- » Department of Education and Training
- » Local council animal control departments
- » Higher Education and Skills Group (Victoria)
- » Department of Education and Early Childhood Development
- » Veterinary Registrations Boards (Victoria, NSW, Qld)

Industries

- » Animal Care and Veterinary Industries
- » Primary Industries and Agriculture
- » Horse Racing Industry
- » Livestock Industries
- » Intensive Animal Industries including pig and poultry
- » Pharmaceutical
- » Diagnostic and research laboratories
- » Zoos and wildlife parks
- » Pleasure Horse and Equestrian Industry

Professional Associations

- » Australian Veterinary Association (AVA)
- » Veterinary Nursing Council of Australia (VNCA)
- » Equine Veterinary Association (EVA) Australian Cattle Veterinarians
Association (ACV)

- » Australian Veterinary Association Practice Management (AVAPM)
- » Commercial Poultry Veterinarians (CP)
- » Australasian Veterinary Poultry Association (AVPA)
- » Australian Pig Veterinarians (APV)

Education and Training Organisations

- » Goulburn Ovens Institute of TAFE (GOTAFE)
- » Charles Sturt University
- » Other Registered Training Organisations delivering Veterinary Nursing qualifications

Community

- » Animal welfare and rescue groups
- » Royal Society for Prevention of Cruelty to Animals (RSPCA)
- » Wildlife rescue groups

Others

- » Individual animal owners

10. References

1. Department of Education, Employment and Workplace Relations. (2001). Veterinary Nurses. Retrieved October 1, 2012, from Job Outlook: <http://joboutlook.gov.au/pages/occupation.aspx?search=alpha&code=3613>
2. Primary Skills Victoria. (2009). Veterinary Nursing. Retrieved October 3, 2012, from Primary Skills Victoria: <http://www.psv.com.au/careers-training/animal-care/veterinary-nursing>
3. Chaseling, S. (2001). Pet Ownership. Retrieved October 1, 2012, from Centre for Companion Animals in the Community: http://www.ccac.net.au/files/Pet_pops_in_Aust_UAM01Chaseling_0.pdf
4. United States Department of Labor. (2012, March 29th). Bureau of Labor Statistics. Retrieved October 3, 2012, from Occupational Outlook Handbook: <http://www.bls.gov/ooh/healthcare/veterinary-technologists-and-technicians.htm>
5. Australian Veterinary Association. (2012). 19.9 Veterinary Nursing Position Statement. Retrieved October 2, 2012, from Australian Veterinary Association: <http://www.ava.com.au/policy/199-veterinary-nursing>
6. The Australian Companion Animal Council (2010). The Contribution of the Pet Care Industry to the Australian Economy, 7th Edition. Rockwell Communications, Australia http://www.ccac.net.au/files/Pet_pops_in_Aust_UAM01Chaseling_0.pdf



ISS Institute
Level 1, 189 Faraday Street
Carlton VIC 3053

T 03 9347 4583
E info@issinstitute.org.au
W www.issinstitute.org.au

Published by International Specialised Skills Institute, Melbourne | www.issinstitute.org.au

© Copyright ISS Institute December 2018

This publication is copyright. No part may be reproduced by any process except in accordance with the provisions of the Copyright Act 1968.

Whilst this report has been accepted by ISS Institute, ISS Institute cannot provide expert peer review of the report, and except as may be required by law no responsibility can be accepted by ISS Institute for the content of the report or any links therein, or omissions, typographical, print or photographic errors, or inaccuracies that may occur after publication or otherwise. ISS Institute do not accept responsibility for the consequences of any action taken or omitted to be taken by any person as a consequence of anything contained in, or omitted from, this report.