

Veterinary continuing professional development in a changing world

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Summary

The veterinary profession has time and again successfully adapted to new challenges and developments with considerable evolution of skills needed. Different contexts, production systems and societal requirements continue to shape the veterinary profession resulting in an increasing demand for specialism, interdisciplinary collaborations along value chains, and preparedness for the omnipresent risk of emerging diseases.

To keep up with changes, new insights, research advancements and novel ways to address challenges, continuing professional development (CPD) and adaptation and updating of veterinary curriculum have been essential to maintaining and enhancing the quality and performance of Veterinary Services.

This paper reviews actors involved in veterinary service provision and how, focusing on the veterinarians and allied veterinary professionals, CPD is critical to address current and future challenges. We examine how providers of CPD contribute to the system and how internal and external factors of a cohort or individual affects the quality and impact of capacity development. This paper further examines the landscape of veterinary CPD in terms of organisational structures, pedagogical approaches, the transition from input to outcome-based learning, modern delivery tools, and the demands on the different actors involved in the delivery of animal health services in a changing world.

We conclude that undertaking CPD is critically important if the quality of veterinary services being delivered is to keep up with the ever increasing and evolving demands the 21st century is bringing. A programme of CPD should therefore be constructed that is tailored to needs of veterinary professionals and allied veterinary professionals within the context of their competency to serve the requirements of their workplace, be that for animal keepers, livestock value chains, national governments or international regulatory bodies. An optimised and successful veterinary sector requires an evidence based CPD programme that keeps veterinarians and other actors involved in animal health service delivery both competent and relevant to the evolving demands by a changing world.

Keywords

Allied veterinary professionals – CPD – Education – Veterinary continuing professional development – Veterinary paraprofessionals.

Introduction

History shows that the veterinary profession has progressively evolved with time and has successfully adapted to new challenges and developments. Transformations in production systems and related value chains, increased regulation linked to the growth in cross-border trade of livestock and their products, evolving societal and ethical values, new diseases and globalisation have led to the need for specialisation, collaboration across different disciplines and professionalisation of Veterinary Services. Adjustments in veterinary curricula have been necessary to address the need for new knowledge and skills, but often take time to materialise. Continuing professional development (CPD), ‘the systematic maintenance, improvement and broadening of knowledge and skills, and the development of personal qualities necessary for execution of professional and technical duties throughout the individual’s working life’ (1), for veterinarians and allied veterinary professionals (also referred to as paraprofessionals), provides for a more rapid route towards updating the knowledge and skills required to address the demands for new competencies.

As outlined in **Figure 1**, the veterinary professional is positioned between demands from its customers for quality veterinary inputs and services, the need to address current and future challenges, regulations that oversee quality of veterinary services, education providers and is influenced by intrinsic and extrinsic factors affecting career-long learning. Building on evidence and examples from Organisation for Economic Co-operation and Development (OECD) countries and low- and middle-income countries (LMICs), the authors discuss possible CPD

structures and approaches to address the linkages presented in Figure 1 and to move from input-to outcome-based learning.

Veterinary service delivery actors and skills required

In accordance with World Organisation for Animal Health (OIE) standards, areas considered within the veterinary domain include clinical services, herd health management, food safety of animal-derived foods and meat inspection, prevention, control and eradication of infectious diseases, and animal welfare. Identification, traceability, and implementation and oversight of animal health related regulations linked to livestock production and trade in livestock and livestock products is another essential area of the veterinary domain.

Whilst veterinarians from countries in the OECD are largely engaged in the private sector for the purposes of delivering private good clinical services, veterinarians in LMICs are mostly engaged in the public sector administering public good services addressing a broader mix of areas in the veterinary domain. This diversity is not reflected in the current pool of available CPD learning resources which are market driven and massively skewed in favour of clinical skills targeted at OECD veterinarians. While playing a central role in providing veterinary services, the veterinarian is not the only player and interacts with other service providers in formal or informal ways with responsibilities that vary in different systems. This reality is of particular importance in LMICs where veterinary professionals have team leadership responsibilities requiring training skills to cascade their technical knowledge and skills to other livestock value chain actors if an integrated and quality controlled veterinary service delivery system is to be achieved. Examining livestock production value chains helps to illustrate the variety of actors involved. These actors play different roles and require specific skills to support the system. The actors and their roles at different nodes of a value chain as illustrated by the examples of poultry production in Bangladesh and extensive livestock production in Kenya (Table 1).

The poultry value chain in Bangladesh is characterised by different levels of complexities, which mainly depends on how many brokers, middlemen and traders are involved (2). Key veterinary challenges in these systems are infectious diseases, biosecurity, and scheduling of vaccinations. Further along the value chain, food safety risks are the main concern.

Veterinary services are also essential for the extensive systems of livestock production as practised in the arid and semi-arid lands of Africa. The multiplicity of environmental constraints coupled with zoonotic and endemic livestock diseases cause high levels of morbidity and mortality, particularly in young stock, inhibiting growth rates, creating trade barriers and posing risks to human health. These systems require a combination of sanitary and production-

orientated skills with a focus on the importance of adopting a multidisciplinary interprofessional approach to enhance market access.

Value chains evolve over time and are a reflection of a changing social and economic environment. These changes also require adaptation of veterinary inputs and services along the value chain, with responsibilities shifting between actors or requiring new skills. It is thus important to constantly monitor these changes in order for the veterinary system of a country to respond and adjust services and training provided.

Current and future challenges facing veterinary professionals

In the discussion of current and future challenges for the veterinary profession, issues outside the direct actions of the veterinarian or allied veterinary professional are becoming increasingly important. Veterinary professionals through their work play an important role in development through contributing to food security, income generation of livestock keepers and protection of public health through zoonoses control. Besides adaptation to changing livestock production systems, which will bring a change in animal health and welfare priorities, veterinary professionals also need to take on board technological advances. All these transitions make a clear case for the importance of undertaking CPD by veterinary and allied veterinary professionals.

The technical item presented at the 87th OIE General Session in 2019 investigated how external factors, such as climate change, affect Veterinary Services and provided a good indication of future challenges for the profession. The study combined expert opinion and views of OIE Members with a high agreement that the main challenges the veterinary profession will face are livestock pandemics, antimicrobial resistance, and zoonoses. Also considered important were issues related to intensifying livestock production, foodborne diseases and animal welfare (3). Other areas that need attention are wildlife diseases and aquatic medicine, given the growth of the aquatic sector as food provider. As seen in OECD countries, with development also comes a shift in pet keeping, which in turn requires new veterinary skills in emerging economies.

To address these challenges, an increasing level of specialisation, interdisciplinary collaborations along value chains, and climate-smart practices are needed. Continuing professional development and adaptation and updating of veterinary curricula are key interventions needed for keeping up with changes, new insights, research advancements and novel ways to address challenges.

Structures of continuing professional development programmes

As outlined above, the different contexts, production systems and resources demand different skills of veterinary professionals. The content and organisational framework of the CPD undertaken in a given country must reflect this diversity meaning that there is no 'one size fits all' solution. The obligation on a veterinary professional to undertake CPD, as is seen in an increasing number of countries, has developed over time. Initially, it was often simply noted within professional codes of conduct as an expected activity, while nowadays it has evolved into formalised and mandatory systems where the quantity and quality of CPD to undertake is a stated requirement, especially for veterinarians, less so for allied veterinary professionals. Mechanisms of assessment and monitoring of the programme in most cases is administered by a Veterinary Board or Council. While improvement in some CPD programmes has been shown, such as in a large-scale comparative study in the United Kingdom (UK), where mandatory CPD was considered as more effective by graduates in the 2000s compared to those of the 1960s (4), at a global scale challenges remain.

An independent review of OIE Performance of Veterinary Services (PVS) assessments found that continuing education training and staff development programmes for all technical staff, inclusive of veterinarians, allied veterinary professionals and community-based animal health workers, were almost universally poor, with 84% of the countries assessed scoring level 1 or level 2 on a scale of 1 to 5 for this critical competency (CC) (5). The review noted that CPD was mandatory in only a few countries and that most of the continuing education provided was through *ad hoc* training provided by international agencies, non-governmental organisations and donors who tended to focus on their priorities and not necessarily those of the country or the livestock producers. Follow-on PVS assessments showed a marginal improvement in continuing education CC scores, but still fell short of the ideal level 4 of achievement.

The OIE PVS assessments conducted globally show that different modalities of CPD programmes have been set up in different countries with varying success. A considerable amount of evidence from the health professional sector suggests that commonly used 'input-based' CPD activities are ineffective to improve practitioner performance and health service outcomes (6, 7, 8). Traditional input-based teaching for CPD includes lectures that are episodic and non-reinforcing, with minimal interaction between learners and providers, and with too much emphasis on the acquisition of CPD point targets or certificates. Recent developments in CPD emphasise an outcome-based model of learning and consider novel or improved competencies as favourable outcomes (9). This is increasingly being recognised in newly developed CPD programmes which use assessments and longer-term study projects to ensure quality and use the

traditional credit points to monitor if sufficient training has been completed. **Table II** provides some examples of old and newly developed CPD programmes.

Modern CPD programmes including models of the European Board of Veterinary Specialisation or the UK Certificate in Advanced Veterinary Practice (CertAVP) can serve as examples to produce the veterinary specialists needed to economically important livestock value chains outside OECD countries. Twinning programmes offer an opportunity to share such experiences with LMICs. The OIE veterinary education twinning programme established in 2013 (10) within the wider OIE initiative to improve the capacity of Veterinary Services in LMICs has led to 12 veterinary education twinning projects between a parent establishment (developed – accredited and established) and a candidate establishment (developing – aspiring for international accreditation) with success becoming evident (11).

A weakness in some of the CPD systems adopted is that the learning programme is not focused on an individual practitioner's personal development needs/desired career path, but is simply a points gathering exercise from attendance at charged, input-based 'CPD Events' such as conferences. Likewise, whilst there are often penalties in place, such as deregistration, for non-compliance, there are rarely positive incentives such as salary increments or preferential selection for further training or promotion based on CPD performance. In addition, CPD in some instances is not a requirement for public sector veterinary personnel, with consequent impact on competencies and readiness to consider and adopt new ideas, while in other countries, such as Bangladesh, CPD is only mandatory for government veterinarians.

What counts as CPD varies from country to country, trending towards a more expansive attitude as evidenced by the latest Royal College of Veterinary Surgeons (RCVS) guidance that states, 'Anything that is relevant to you, as a veterinary professional, can be counted as CPD so it does not have to be clinically related or formal learning.' Equally variable is the method of undertaking CPD, ranging from face-to-face tuition to remote online e-learning, with the latter very much in the ascendancy for relevance, affordability and convenience reasons. Whilst internet accessibility and speeds can still be challenging in both OECD and LMICs, the majority of users in both economies enjoy a rapidly improving online experience opening the door for increased use of digital tools and platforms for information searches, knowledge transfer, ideas exchange and communication in general.

Good CPD practice is embodied in formal CPD frameworks that offer CPD credit hours towards postgraduate certificates and/or diplomas, setting the individual learner on a pathway towards recognition and qualification as a specialist in a chosen area of the veterinary domain. There are several countries which offer pathways towards specialisation in selected subjects open to

veterinarians and these tend to be linked to professional postgraduate programmes offered by veterinary schools, such as the programmes offered in Nigeria leading to the award of a fellowship of the College of Veterinary Surgeons (www.lasu-info.com/2019/06/cvsn-postgraduate-admission-form.html) or fulfil given criteria for recognition as a specialist as listed by the South African Veterinary Council (www.savc.org.za/). Similarly, in Asia, the newly established Bangladesh College of Veterinary Surgeons offers fellowship status through a board examination process (bcvsbd.org).

Apart from the introduction of systems to monitor and assess compliance with CPD requirements, some countries appraise the quality of a given CPD programme, where delivered by a CPD provider, and certify that it is current and meets fundamental quality and relevance standards (Table II). This can be the function of a given country's Veterinary Board or Council, as is the case in Kenya where the Kenya Veterinary Board requires that every continuous professional development provider must be registered with the board and apply for approval and determination of credit point worth of the intended activity (kenyavetboard.or.ke/continuous-professional-development-cpd/). Elsewhere this process is coordinated through an independent regional authority, as in the case of the Veterinary Continuous Education in Europe (VETCEE), which runs an accreditation scheme for structured CPD for veterinarians (www.fve.org/vetcee/).

Enablers for continuing professional development

The CPD programmes that focus on the individual learner need to take into consideration other factors that are essential for making a change. Veterinary services are social acts that take place in highly complex systems comprising different actors and thus require a team approach to training (12).

When considering CPD for different actors in the value chain, different skills and competences must be identified. The underlying pedagogical approaches should also reflect these differences. Although all the actors in the value chain can be considered as adult learners, the same andragogical assumptions and principles of the adult learner (13, 14) cannot be applied given likely differences in the level of academic development and working perspectives of different actors. Some veterinary professionals in the value chain may have an interest in their own development and an ability to develop self-directed learning (15). They may also be more experienced in learning and assessment. The same cannot be assumed for some other actors in the value chain, for example farmers or community animal health workers. They may have a wealth of experience and are looking for CPD training appropriate to help solve immediate and practical problems. All actors, however, have the common need to balance the demands of work with CPD. They require bespoke training that is directly related to their individual and employer

needs. Designing and delivering effective CPD requires an in-depth understanding of the *in situ* problems and the social and economic barriers facing potential trainees (16, 17). Arguably the most effective form of CPD is through a system of ‘learning by doing’ where an applied study is undertaken to enhance knowledge and skills in the work being performed or subject area of intended specialisation. Ideally, this form of learning should be mentored by an appropriate expert and work assignments assessed and formally reviewed. There is a win-win opportunity for such expertise, resident in academic and research institutions, to become actively engaged and updating their own knowledge base in mentoring practitioners towards acquiring expertise in their chosen field of study.

Another model for the delivery of CPD to other actors involved in providing veterinary services can be built around a system of recognition and support for cascading new skills and knowledge from veterinarians to allied veterinary professionals to community-based personnel. This approach has both practical and cost-efficient benefits and merits being widely adopted as the CPD method of choice for livestock value chains and extensive livestock production systems. Inherent in this approach is the need for ‘Training of Trainer’ skills and an understanding of the pedagogical approaches appropriate for and sensitive to language barriers and illiteracy, for adult learning and the environment in which these are best imparted. This can, for example, be integrated into CPD programmes for veterinarians. This model can be practiced across various systems of delivery inclusive of face-to-face, online and workplace environments. Peer guidance for ‘on the job training’ and ‘learning by doing’ has the added value of strengthening interprofessional working relationships enhancing complementarity and reducing conflicts over roles and responsibilities.

It is well established that reflection is an important component in learning for personal and professional development (18, 19, 20). In addition, it is sometimes necessary to ‘unlearn’ some behaviours and beliefs in order to develop and improve (21). Reflections by the student on their assumptions and practice are therefore essential in CPD. Developing reflective practitioners is the central philosophy of the new approach proposed for CPD by the RCVS in the UK, which builds on the four-stage model of self-assessment, career exploration, decision-making and implementation planning, is used in training medical graduates (22). Under this framework, the way CPD compliance for veterinarians and veterinary nurses is assessed has changed with the introduction of a new outcome-based learning model comprising four components – ‘plan, do, record and reflect’, with a focus on the quality, impact and relevance of the CPD being undertaken (www.rcvs.org.uk/lifelong-learning/continuing-professional-development-cpd/). Setting out a CPD plan and, once undertaken, providing a written or oral reflection on the learning impact are key innovations introduced by the new assessment model. The latter seeks

information on how the CPD related to given learning needs and plan, what were the key things learned and what impact has the CPD had in terms of professional development or work performed. Evidence from other health professionals also provides support for this approach (23).

Novel CPD structures also allow different delivery modalities such face-to-face workshops, online courses (24), webinars combined with discussions, recorded lectures, podcasts, audio-based radio programmes, and blended learning approaches based on face-to-face workshops and hands-on training. Mobile phones or web-based platforms offer new opportunities to avoid heavy bureaucracy in monitoring progress of registered veterinarians in their CPD. Such an example is the '1CPD' recoding platform in the UK (www.rcvs.org.uk/lifelong-learning/continuing-professional-development-cpd/access-1cpd/).

Successful models using participatory approaches have also been described from the health sector (16, 25). CPD for the veterinary sector is designed and delivered by private corporations, universities, international organisations and relevant government departments (see Table II for examples). The trainers who develop CPD for field veterinarians are often university-based educators and researchers and they often lack the same in-depth understanding of *in situ* issues. They are, however, well placed to develop the confidence and skills in field veterinarians to construct their own knowledge that can influence practice (26).

A cost-efficient method for face-to-face workshops was found in Bangladesh in the form of a conference bringing together hundreds of veterinarians with different job descriptions (27). The conference consisted of plenary sessions and specialised lectures on relevant topics for the evolving veterinary sector in the country (reference to newsletter). Although hands-on practice based, interactive face-to-face workshops are considered more effective in CPD delivery, distance learning as a delivery mode has been evaluated as satisfactory for health professions (28) and offers opportunities to access training materials from different countries and allows more flexibility. The benefits of veterinary CPD distance learning have been recognised at societal and personal levels (29). There is a wealth of information available to support self-study accessed by online search engines. These channels are conditioned by the speed, distribution and affordability of internet services available, which can be variable and challenging in both OECD countries and LMICs though, as noted above, to a diminishing amount as the technology driving these services continues to rapidly improve. The Commonwealth Veterinary Association provides a comprehensive list of online self-learning sites (www.commonwealthvetassoc.com/links/). Other CPD opportunities are provided by over 60 OIE Collaborating Centres which offer scientific expertise and training opportunities either

within countries or globally on a variety of topics relevant for the veterinary sector (www.oie.int/en/what-we-offer/expertise-network/collaborating-centres/).

In the planning and running of CPD programmes, it is important to understand the motivation of trainees to participate in the programme. These factors can be classified as extrinsic and intrinsic motivators (4, 30). Intrinsic motivators relate to the self-motivation for professional development and improving one's skills and knowledge. Programmes that allow individual preferences to be addressed positively impact on the motivation of the trainee. Recent advances in veterinary curricula focus on fostering skills related to lifelong learning with the aim of strengthening the motivation of the individual to seek CPD and not having to rely on external motivating factors.

External motivators include penalties or deregistration if CPD targets are not met. Positive external factors could be the prospect of promotion, increased recognition of clients, or receiving payments for participating and concluding trainings. Certification and diplomas for specialisation are routes by which veterinary professionals can focus their CPD towards gaining specialist status and further their careers.

Perceived barriers to participation in CPD among veterinarians include the timing and relevance of events, traveling distance, money, workload, stage of career, family demands, lack of information about available courses, and poor previous experiences (31, 32, 33).

Also important to note are efforts of the OIE in supporting CPD for veterinary and veterinary paraprofessionals by providing guidelines and recommended competencies to prioritise. This has also helped to focus investments from funders to strengthen such systems in LMICs.

Conclusions

An optimised and successful veterinary sector requires an evidence-based programme of CPD that fulfils the needs of all actors involved. The CPD being undertaken should update, strengthen and be highly relevant for the knowledge and skills required by veterinary professional and allied professional engaged in the delivery of private and/or public good services. Market forces should drive the motivation to use CPD to improve service supply to the private sector whilst incentives by way of promotion, salary increases and further training are needed to motivate improvement in supplying services to the public sector, Whilst it is valuable for CPD to be used to achieve set professional and allied professional standards of competency in the workplace, practitioners should be actively encouraged to build on these basic competencies into given fields of specialisation as dictated by market needs. All actors in livestock value chains must be trained and identifying and monitoring this training is part of the responsibility of veterinary service

providers. Advances in digital tools offer opportunities to access high quality training, even in remote areas, both in OECD countries and LMICs but such training will need to undergo regular reappraisal to ensure that it is up-to-date and relevant for a given setting or country, and continues to address the specific needs of a changing world.

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Table I

Simplified livestock value chains with involved actors related to animal health and needed veterinary inputs and services from point of production through to consumption

Value chain	Inputs for production	Production/Farm	Trading/markets	Processing	Retail	
Intensive poultry production, Bangladesh	Actors involved in veterinary service provision	Feed providers Drug sellers Health advisor Research	Farmer Private Veterinarian Official veterinarian Health advisor Research	Middlemen and traders at different levels Truck drivers	Slaughterhouse workers Veterinary inspectors	Sales personnel Food safety inspectors
	Veterinary challenges	Veterinary drugs Vaccines Medical feed Knowledge	Neonatal mortality Nutrition Water Husbandry Welfare Epidemics Endemics Zoonoses Metabolic diseases Stock losses Infertility Breeding Biosecurity	Identification and traceability Movement controls Welfare standards Nutrition Water Transport Check-points Biosecurity Markets Quarantine Export regulations	Welfare standards Pre-mortem Humane slaughter Bleed out Traceability Post-mortem Sanitary standards Carcass quality Primal cuts Labelling Cold storage	Sanitary standards Butchery skills Packaging Labelling Marketing/promotion Cold storage
	Veterinary skills and roles	Oversight medical feed Drug quality and drug dispensing Vaccine provision Coordination surveillance and control programmes	Clinical and herd health services Surveillance and control programmes Outbreak investigation Diagnostics Animal welfare	Health check Certification Market inspection Animal welfare	Animal welfare Meat inspection Food safety diagnostics	Manage food safety risks
Extensive beef production, Kenya	Actors involved in veterinary service provision	Drug sellers Community animal health workers Private and public vets Research	Disease reporters Private and public vets Research	Traders Holding ground / Quarantine personnel Veterinary Inspectors	Slaughterhouse workers Veterinary inspectors	Butchers Sales personnel Food safety inspectors
	Veterinary challenges	Veterinary drugs Vaccines Medical feed Knowledge	DOC mortality Nutrition and water Husbandry Bird density Welfare	Mixing multiple species Transport Bird density/ heat stress Feed/Water	Humane slaughter Slaughtering skills Structural & Halal Cold chain	Hygiene Cold chain Post-mortem aging

		Epidemics Endemics Zoonoses Metabolic disease Stock losses Infertility Breeding	Biosecurity Export regulations	Contamination Sanitary standards Carcass quality Post-mortem aging	
Veterinary skills and roles	Disease diagnosis Treatment Prophylaxis. Production advice	Clinical and herd health services Disease prevention Managing zoonotic risks Advanced production practice	Market information Disease recognition Health examination, Sanitary certification Animal welfare	Pre and post - mortem inspection skills Carcase grading	Butchery skills Sanitary/hygiene standards

Table II

Characteristics of examples of veterinary continuing professional development programmes

Country	Name and role of regulatory body	Who provides CPD	CPD structure (CP = credit points)	Targeted service providers
UK	Royal College of Veterinary Surgeons www.rcvs.org.uk/lifelong-learning/continuing-professional-development-cpd/	Universities, digital recording platform (1CPD) , Cert (AVP) assessment providers	VS - 35 hrs/ year VN - 15 hrs/year	Veterinary Surgeons (VS) Veterinary Nurses (VN)
South Africa	South African Veterinary Council savc.org.za Accreditation and monitoring of CPD activities	Universities, veterinary professional associations, regulatory bodies and accredited service providers	60 CP points per three-year cycle, of which twenty (20) points have to be structured activities	Veterinarians Veterinary Specialists Compulsory Veterinary Community Service Animal Health Technicians Laboratory Animal Technologists Veterinary Nurses Veterinary Technologists Veterinary Physiotherapists
Bangladesh	Bangladesh Veterinary Council bvc.gov.bd	Bangladesh College Veterinary Surgeon bcvsbd.org/	Board examinations Public veterinarians 60 hrs/years	Public sector veterinarians Board examinations for Member and Fellow of the College of Veterinary Surgeons
USA	Association of American Veterinary Medical Colleges www.aavmc.org continuing education (CE) credits as mandated by the state	Universities, veterinary professional associations, regulatory bodies and accredited service providers	Examples Indiana - 40 hours of CE points/ two-year Idaho - 20 hours of CE points/ two years	Veterinarians
Australia	Australian Veterinary Association www.ava.com.au CPD accreditation and monitoring done by individual state veterinary boards	Universities, veterinary professional associations, accredited service providers and Accreditation Program of Australian Veterinarians (APAV)	Queensland 60 units/ three years with at least 15 units to be structured activity	
Kenya	Kenya Veterinary Board kenyavetboard.or.ke/cpd/ CPD Accreditation and monitoring of CPD activities	Universities, veterinary professional associations, regulatory bodies and accredited service providers	VS – twenty (20) CP per year VP- min of fourteen (14) CP per year <i>maximum number of CPD hours that can be accredited for a one (1) day is eight (8) hours.</i>	Veterinary Surgeons (VS) Veterinary Para-Professionals (VP) Formal study for additional qualifications – Short training and organisational activities – Professional involvement in professional associations, committees etc – Publication of scholarly articles in journals and book chapters. – Mentorship of students and interns. – Community service e.g. extension activities among others.

Namibia	National Veterinary Council	CPD in Namibia mainly organised by the Veterinary Association.	VS – 60 points / 3 years VP – 30 points / 3 years	Structured activities: courses, conferences, preparing and monitoring exams, review articles, giving lectures, developing curricula, promoting theses, online activities with written assessment
Tanzania	Veterinary Council of Tanzania	CPD courses organised by the Tanzania Veterinary Association [TVA] and in association with Zoetis and WSAVA	VS – 30 points / 3 years VP – 15 points / 3 years	CPD categories include: formal studies, short training and organisational activities, professional involvement, Authorship, Mentoring, Community involvement,
Mexico	National Council for Veterinary Medicine Education (CONEVET)	accredits colleges and certifies professionals (there are 40 Vet Schools)		
		No details regarding CPD Accreditation and monitoring of CPD activities		

APAV: Accreditation Program of Australian Veterinarians
 AVP: Advanced Veterinary Practice
 CE: continuing education
 CONEVET: National Council for Veterinary Medicine Education
 CP: credit points
 CPD: continuing professional development
 TVA: Tanzania Veterinary Association
 VN: Veterinary Nurse
 VP: Veterinary Para-Professional
 VS: Veterinary Surgeon
 WSAVA: World Small Animal Veterinary Association

Fig. 1

Context of veterinary continuing professional development

