



## Competencies for government veterinary services of the future: Summary of ISVEE 14 Yucatan 2015 roundtable discussion



Katharina D.C. Stärk<sup>a,b,\*</sup>, Vitor S.P. Goncalves<sup>c</sup>, Brian J. McCluskey<sup>d</sup>, Julio Pinto<sup>e</sup>, Toshiyuki Tsutsui<sup>f</sup>, Jane Gibbens<sup>g</sup>

<sup>a</sup> Royal Veterinary College, London, UK

<sup>b</sup> SAFOSO AG, Bern-Liebefeld, Switzerland

<sup>c</sup> EpiPlan, FAV, University of Brasilia, DF, Brazil

<sup>d</sup> USDA, APHIS, Veterinary Services, Fort Collins, CO, USA

<sup>e</sup> Animal Production and Health Division, Food and Agriculture Organization of the United Nations (FAO), Viale delle Terme di Caracalla, 00153 Rome, Italy

<sup>f</sup> National Institute of Animal Health, NARO, Japan

<sup>g</sup> Animal and Plant Health Agency, Defra, Dept. of Epidemiological Sciences, New Haw, Addlestone, UK

### ARTICLE INFO

#### Article history:

Received 15 July 2016

Accepted 30 November 2016

#### Keywords:

National veterinary services

### ABSTRACT

This short communication summarizes the strengths and weaknesses of current organisational structures in government veterinary services, as well as future technical, financial and societal challenges and related necessary competencies for government veterinary services of the future as discussed by an expert panel at ISVEE2015. First, participating representatives of veterinary services of diverse geographical backgrounds and statements from the audience confirmed that non-technical skills such as ability to work in teams, adaptability to new environments and situations, social and communication skills are increasingly seen as important. The second challenge faced by veterinary services is related to capacity issues, i.e. to have enough manpower to plan and deliver according to legislation in a period of shrinking budgets. New and emerging diseases can result in sudden, massive increases in the workload of veterinary services. Technical complexity has also increased for some hazards. Staff skills in veterinary services therefore need to be continuously updated, and it is essential to establish cross technical collaboration with other sectors including food safety, public health and environment. ISVEE conferences were seen as an opportunity to provide a global platform to develop skills needed by veterinary services, now and in the future.

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National Veterinary Services can be defined as organisations that regulate and implement animal disease surveillance and control activities in livestock and sometimes wildlife, aquatic and pet animal populations in pursuit of national objectives. While specific responsibilities will vary between countries and regions, these typically include objectives that the animal keeper of an individual holding is unable to achieve on his/her own and therefore have to be delivered by either private sector groups (e.g. a group of farmers together or farmer organisations) or by the public sector (i.e. government veterinary services). Over the last decade, the extent of division of responsibilities between the private and public

sector has evolved, depending on an individual country's policies or the regional trends among trade partners such as, for example, the European Community. This broad definition of veterinary services was specified for the purpose of the round table discussion held at ISVEE2015 to focus only on the role of Government Veterinary Services (GVS). The discussion panel members jointly represented veterinary services, academia and international organisations across all continents and therefore were able to reflect on the strengths and weaknesses of current organisational structures as well as to consider future technical, natural and societal challenges.

The challenges faced by veterinary services can be divided between capacity issues, i.e. to have enough manpower to plan and deliver according to legislation (Berger et al., 2009) and expectations, and capability issues, i.e. to have staff with the right competencies (Alonso et al., 2013). Across the world, the resources available to government veterinary services for the delivery of their activities are increasingly limited. For example, the budget of the

\* Corresponding author at: Royal Veterinary College, London, UK.  
E-mail addresses: [katharina.staerk@safoso.ch](mailto:katharina.staerk@safoso.ch), [kstaerk@rvc.ac.uk](mailto:kstaerk@rvc.ac.uk) (K.D.C. Stärk), [vitorspg@unb.br](mailto:vitorspg@unb.br) (V.S.P. Goncalves), [brian.j.mccluskey@aphis.usda.gov](mailto:brian.j.mccluskey@aphis.usda.gov) (B.J. McCluskey), [julio.pinto@fao.org](mailto:julio.pinto@fao.org) (J. Pinto), [tsutsui@affrc.go.jp](mailto:tsutsui@affrc.go.jp) (T. Tsutsui), [jane.gibbens@apha.gsi.gov.uk](mailto:jane.gibbens@apha.gsi.gov.uk) (J. Gibbens).

UK Department for Environment, Food and Rural Affairs (Defra) was reported to face cuts by 25–40% over four years. Such reduced resources mean that technical advice needs to adjust to economic constraints. At the same time, the tasks that need to be covered by GVS appear to be constantly increasing as the size and diversity of animal agriculture expands, consumers are more aware of food safety issues and new hazards emerge. One solution could be to establish novel partnerships. For example, in England, Defra aims to develop the GVS into a cadre of expert leaders and specialists who can work with the private and third sector bodies who share their goals, and can contribute resources such as manpower or diagnostic capability. Surveillance is a specific example of an essential activity where a key contribution can be made by farmers and animal keepers in general (Willeberg, 2012). This is recognised to be particularly important in the context of novel hazards. So-called “passive” surveillance provides an opportunity in this context. It is based on animal keepers and other key stakeholders such as hunters being observant and reporting unusual events for investigation. Syndromic surveillance is a relatively new approach for the design of surveillance programmes that is based on non-specific disease manifestations (Dórea et al., 2011). These are collected and analysed to provide early warning when unusual patterns and signals are observed.

A further challenge for veterinary services is related to changes in social norms and behaviour, resulting in changed expectations from the wider public, and more specifically consumers, regarding what are acceptable disease management policies and what are not (Christensen, 2012). For example, burning of suspect or infected carcasses during a Foot and Mouth Disease outbreak was an accepted approach up to 2001, however the public outcry at that time has led to this being abandoned as a method of carcass disposal in the UK contingency plan, despite its efficacy (Donaldson, 2016). These wider considerations that are needed in the development and implementation of disease surveillance and control mean that GVS increasingly struggle to recruit individuals that have not only the technical skills but are also able and willing to adapt what is shown to be the most effective solution under research conditions to what is feasible in the field and acceptable for society.

Non-technical skills such as ability to work in teams, adaptability to new environments and situations, social and communication skills are increasingly seen as important. This was emphasised by the general call for more leadership. Leadership skills are not commonly taught explicitly as part of the veterinary curriculum, yet are seen as essential success factors to build trust between livestock industry partners and the public. Communication was identified as a key requirement in this context. This includes transparency regarding disease information as well as the ability to communicate with farmers, consumers and the media to achieve a proactive, open relationship. A gap was therefore identified between current veterinary curricula and the requirements of future employers in government veterinary services (Bok et al., 2014; Bachynsky et al., 2013; Mellanby et al., 2011).

New and emerging diseases can result in sudden, massive increases in the workload of veterinary services. For example, at the peak of the outbreak of highly pathogenic avian influenza in the US poultry sector, over 300 federal government staff, 180 state government staff and 3000 federal government contract employees specifically hired for HPAI response were deployed to the field (USDA, 2016). A significant challenge identified in post-outbreak reviews was a scarcity of veterinarians with management and leadership skills to oversee the work of the contractors (Willeberg, 2012; Bok et al., 2014). In general, it is no longer sufficient to understand disease control measures and the epidemiological nature of a pathogen, but also to take into account market reactions, trade agreements and consumer perception. Expectations regarding communication during an outbreak have also changed

massively with the advent of social media including Twitter and similar channels that demand immediate response (Dale et al., 2011; Charles-Smith et al., 2015). If not managed carefully, communication can rapidly absorb substantial parts of GVS capacity during an outbreak.

Technical complexity has also increased for some hazards. For example, antimicrobial resistance is a hazard that reaches across animal species, industries and even ecosystems. We are no longer fighting against pathogens, but try to control the spread of specific genes that can be present in a range of bacteria and their host animals (Muellner et al., 2015). Staff skills in veterinary services therefore also need to be updated to reflect and keep up with the emergence of new threats and establish cross technical collaboration with other sectors including food safety, public health and environment.

The value of a forum like ISVEE was seen in the sharing of experience from the successful implementation of methods and approaches. This is of benefit to veterinary services, particularly also for transboundary diseases (TADs) where field expertise remains limited to affected countries, in particular in developing countries where TADs are endemic. As well as sharing ‘best practice’, failures should be communicated openly as they are likely to provide essential lessons. Future organisers of ISVEE conferences should not only include presentations of technically complex studies, but also to report on their practical applications and how effective these were. Outbreaks and other issues emerging between ISVEE conferences could be identified and used as session themes to encourage presentations addressing practical challenges for veterinary services. Also, sessions that would illustrate how scientific findings were translated into progress in disease control would be welcome. It could be useful to use these to create links between ISVEE conferences, with encouragement for presenters who described new methodologies in one conference to return to the next and describe how they worked in practice.

In summary, the forum concluded that although veterinary services tend to be strong technically, they need to remain committed to continuing education particularly in fields that interface with social sciences. Competencies related to communication, behaviour science and economics are particularly needed. At the same time, also technical knowledge in technical areas is needed, such as novel diagnostic techniques and epidemiology of emerging diseases. As all of this should be achieved in a situation of shrinking budgets, cross-national collaboration offers an essential opportunity to share knowledge and experience. An opportunity was therefore identified for ISVEE to provide a global platform to develop skills needed by veterinary services, both governmental and private. For example, keynote speakers or session leads could be provided by non-veterinary experts such as journalists or social science professionals. Competencies in risk communication were seen as essential for GVS to fulfil their mandate in the future.

## References

- Alonso, S., Dürr, S., Fahrion, A., Harisberger, M., Papadopoulou, C., Zimmerli, U., 2013. European veterinary public health specialization: post-graduate training and expectations of potential employers. *J. Vet. Med. Educ.* 40, 76–83 (University of Toronto press).
- Bachynsky, E.A., Dale, V.H.M., Kinnison, T., Gazzard, J., Baillie, S., 2013. A survey of the opinions of recent veterinary graduates and employers regarding early career business skills. *Vet. Rec.* 172, 604, <http://dx.doi.org/10.1136/vr.101376>.
- Berger, K.M., Pinard, W., Frankel, M.S., Lee, E.C., 2009. Workforce development: preparing the next generation for infectious disease threats. *Rep. Am. Assoc. Adv. Sci.* (26 pp).
- Bok, H.G.J., Teunissen, P.W., Boerboom, T.B.B., Rhind, S.M., Baillie, S., Tegzes, J., Annandale, H., Matthew, S., Torgersen, A., Hecker, K.G., Härdi-Landerer, C.M., Gomez-Lucia, E., Ahmad, B., Muijtjens, A.M.M., Jaarsma, D.A.D.C., van der Beukelen, P., 2014. International survey of veterinarians to assess the importance of competencies in professional practice and education. *J. Am. Vet. Med. Assoc.* 245, 906–913, <http://dx.doi.org/10.2460/javma.245.8.906>.

- Charles-Smith, L.E., Reynolds, T.L., Cameron, M.A., et al., 2015. Using social media for actionable disease surveillance and outbreak management: a systematic literature review. *PLoS One* 10, e0139701, <http://dx.doi.org/10.1371/journal.pone.0139701>.
- Christensen, J., 2012. A practical framework for conducting Foreign Animal Disease surveillance. *Prev. Vet. Med.* 105, 271–279, <http://dx.doi.org/10.1016/j.prevetmed.2012.01.008>.
- Dórea, F.C., Sanchez, J., Revie, C.W., 2011. Veterinary syndromic surveillance: current initiatives and potential for development. *Prev. Vet. Med.* 101, 1–17, <http://dx.doi.org/10.1016/j.prevetmed.2011.05.004>.
- Dale, V.H., Kinnison, T., Short, N., May, S.A., Baillie, S., 2011. Web 2.0 and the veterinary profession: current trends and future implications for lifelong learning. *Vet. Rec.* 169, 467 <http://dx.doi.org/10.1136/vr.d4897>.
- Donaldson, A.I., 2016. Lessons to be learned from foot-and-mouth outbreaks. *Vet. Times*, 4–9.
- Mellanby, R., Rhind, S., Bell, C., Shaw, D., Gifford, J., Fennell, D., Manser, C., Spratt, D., Wright, M., Zago, S., Hudson, N., 2011. Perceptions of clients and veterinarians on what attributes constitute a good vet. *Vet. Rec.* 168, 616, <http://dx.doi.org/10.1136/vr.d925>.
- Muellner, P., Stärk, K.D.C., Dufour, S., Zadoks, R.N., 2015. Next-generation surveillance: an epidemiologists' perspective on the use of molecular information in food safety and animal health decision-making. *Zoon. Publ. Hlth*, <http://dx.doi.org/10.1111/zph.12230>.
- USDA, 2016. *Final Report for the 2014- Outbreak of Highly Pathogenic Avian Influenza (HPAI) in the United States (56 pp)*.
- Willeberg, P., 2012. Animal health surveillance applications: the interaction of science and management. *Prev. Vet. Med.* 105, 287–296, <http://dx.doi.org/10.1016/j.prevetmed.2012.01.010>.