Empowering Data Management and Spatial Analysis for Enhanced Practice Training

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1. Executive Summary

The South African Society for Veterinary Epidemiology and Preventive Medicine (SASVEPM), in collaboration with the South African Veterinary Association (SAVA), successfully implemented a series of online training programmes in March 2025. The initiative was funded by the Health and Welfare Sector Education and Training Authority (HWSETA), with funds administered through SAVA and executed jointly with SASVEPM.

The training programme focused on three critical areas:

- Veterinary data management
- Geographic Information Systems (GIS) in disease surveillance
- Veterinary outbreak investigations

A total of over 117 veterinary professionals from government and academic institutions participated, benefiting from expert-led, practical training sessions designed to strengthen epidemiological capacity in South Africa.

2. Background and Context

Veterinary epidemiology plays a crucial role in disease surveillance, prevention, and control, particularly in developing economies where resource constraints require efficient, data-driven approaches. Recognizing these needs, HWSETA funded a targeted capacity-building initiative aimed at improving veterinary public health competencies.

SAVA served as the funding recipient and coordinating body, working in partnership with SASVEPM to design and deliver the training programmes. The collaboration

leveraged SASVEPM's technical expertise and SAVA's institutional reach to ensure broad participation and impact.

3. Objectives of the Training Programme

The training programme aimed to:

- Strengthen data management capabilities in veterinary laboratory and field settings
- Enhance the use of GIS tools for disease surveillance and control
- Improve competencies in outbreak investigation and response
- Promote evidence-based decision-making in animal health
- Build capacity within provincial veterinary services and academic institutions

4. Training Programme Structure and Delivery

The training was delivered through **online interactive sessions**, combining:

- Live expert-led presentations
- Practical demonstrations and case studies
- Hands-on exercises
- Participant engagement and feedback

The programme was delivered over three modules in March 2025.

5. Training Modules

5.1 Veterinary Data Management in Laboratory and Field Settings

- **Dates:** 3–5 March 2025
- **Facilitator:** Dr. John Grewar

This module focused on equipping participants with both basic and advanced data management skills.

Key content included:

- Data collection, cleaning, and validation techniques
- Design and use of data collection tools
- Introduction to EpiConnect for field and laboratory data systems
- Data analysis using statistical tools such as R

Participants gained hands-on experience in designing customized data collection forms and applying data management tools in real-world veterinary contexts.

5.2 Use of Geographic Information Systems (GIS) in Disease Surveillance and Control

- **Dates:** 10–12 March 2025
- **Facilitator:** Dr. John Grewar

This module emphasized the importance of spatial data in modern disease surveillance systems.

Key content included:

- GIS fundamentals and spatial data management
- Mapping disease occurrence and distribution
- Spatial analysis for identifying disease hotspots
- Visualization of epidemiological data for decision-making

Participants developed practical GIS skills to generate actionable insights for disease control and surveillance programmes.

5.3 Veterinary Outbreak Investigations in Developing Economies

- **Dates:** 24–26 March 2025

- **Facilitators:**
    - Dr. Elizabeth Chimera
    - Dr. Mohamed Sirdar
    - Dr. Oonagh Pretorius

This module addressed outbreak investigation challenges in resource-constrained settings.

Key content included:

- Principles and steps of outbreak investigation
- Epidemiological methods and tools
- Case studies of real outbreaks in developing contexts
- Practical approaches to outbreak response and control

The use of real-life case studies provided participants with contextually relevant insights and strengthened their problem-solving skills.

6. Participation

- **Total participants:** Over 117 veterinary professionals
- **Participant profile:**
    - Provincial government veterinary staff
    - Academic and research professionals
    - Epidemiologists and animal health practitioners

The high level of participation reflects strong demand for capacity-building initiatives in veterinary epidemiology.

7. Outcomes and Impact

The training programme achieved several key outcomes:

7.1 Skills Development

Participants:

- Improved their ability to manage and analyse veterinary data
- Acquired practical GIS skills for surveillance and mapping
- Strengthened outbreak investigation and response capabilities

7.2 Application of Knowledge

- Participants applied tools such as EpiConnect and R for data analysis
- GIS techniques enabled better visualization of disease trends
- Case study learning enhanced real-world problem-solving

7.3 Institutional Impact

- Strengthened capacity within provincial veterinary services
- Supported evidence-based policy and decision-making
- Enhanced collaboration between academic and government sectors

7.4 Participant Feedback

Feedback from participants was overwhelmingly positive, highlighting:

- Relevance of content
- Practical applicability
- High quality of facilitation
- Value of interactive and case-based learning

8. Role of Stakeholders

8.1 HWSETA

- Provided financial support for the training programme

- Enabled capacity-building in the veterinary and public health sector

8.2 South African Veterinary Association (SAVA)

- Received and managed funding from HWSETA
- Coordinated training logistics and delivery

8.3 SASVEPM

- Provided technical leadership and expertise training
- Designed training package
- Facilitated and delivered training sessions

9. Challenges Encountered

Despite overall success, some challenges were noted:

- Limited time for deeper engagement with advanced topics
- Connectivity issues for some participants in remote areas
- High demand exceeding initial capacity

10. Lessons Learned

- Blended online learning is effective for professional training
- Practical, hands-on exercises significantly enhance learning outcomes
- Collaboration between professional bodies strengthens programme delivery
- Continued investment in digital tools and platforms is essential

11. Conclusion

The HWSETA-funded training programme, implemented through the partnership between SAVA and SASVEPM, was highly successful in achieving its objectives. It significantly enhanced the knowledge and practical skills of veterinary professionals in

South Africa, particularly in critical areas of epidemiology, surveillance, and outbreak response.

The programme represents a valuable model for future capacity-building initiatives and demonstrates the importance of collaborative efforts in strengthening veterinary public health systems.