Strengthening the contributions of veterinarians to public health and food safety

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Traditional Veterinary Role

• Veterinarian as ‘animal doctor’
• Initial focus for veterinary public health:
  – Rabies control
  – Meat and poultry inspection
  – Bovine brucellosis and tuberculosis
  – Support increased animal production
VPH Evolution in 20th Century

• Veterinarian as adviser
• Broader veterinary public health role:
  – Affordable, safe and nutritious food
  – Prevention/control of zoonotic diseases
  – Support of psychological well-being of people thru care of companion animals
  – Advancement of medical research
Expanding role in 21st Century

• Veterinarian as leader
• VPH role as investigator, policy analyst:
  – Emerging/re-emerging infectious diseases
  – Bioterrorism using zoonotic agents
  – Global food security (including food safety)
  – Risk analysis, modeling, simulation
Why are veterinarians needed in public health now?

- Issues more complex with global reach
- Growing public impatience with lack of progress in addressing these issues
- Increased recognition of linkages among people, animals, environment
Food crisis feared as El Nino rains delayed

Met experts insist heavy downpours could still come but add: don’t count on it

I am not shaken by Raila’s rally, says Ruto

Agriculture minister William Ruto partly dismissed a highly successful rally by Prime Minister Raila Odinga yesterday.

Mr Ruto (Kipkelion) was in Kericho yesterday to launch a campaign rally.

People can have as many rallies as they feel fit for. We are not afraid and we will continue to do our job, he said.

The Prime Minister led his Cabinet ministers and more than 100,000 of his supporters to a rally at the exhibition ground in Kericho.

Mr Ruto, however, said they were not moved by big rallies, saying they do not translate to votes.

Cheruonyo MP Rachel Korile, a vocal ally of Mr Odinga, said they were happy they had posters and banners in the main streets but it was not in their agenda of working in 2012.

Mr Odinga and his group are expected to campaign in Nyahururu today.

Government acquiring land near the Naro Morro forest will be done after the rainy season, Mr Ruto said.

The failure of the short rains will cause maize production deficit of up to 16 million bags by next year.

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Consequences if El Nino doesn’t arrive
Lost wealth, Reduced electricity, Increased illness… And food insecurity All interdependent!
Why is expanding VPH proving to be so difficult?

• Training increasingly specialized
  – Narrow and deep (disciplinary ‘silos’)
• Paradigm paralysis
  – Thinking constrained by vet education
• Lack of rewards for thinking differently
  – Focus on individual rather than team
• Discomfort
  – Lack the skills to assume leadership
Strengthening the contributions of Veterinarians

1. Leverage unique qualifications
2. Embrace broad definition of health
3. Understand complex problems
4. Use systems thinking
5. Enhance interpersonal skills
6. Demonstrate shared leadership
1. Unique education

- Veterinary education combines aspects of agriculture, medicine, public health
- Stresses basic sciences along with applied problem-solving
- Considers social and economic determinants of health as well as infectious diseases
Leverage qualifications

- Comparative medicine approach
- Individual and population skills
- Work across species
- Prevention as well as treatment
- Health promotion in animals and people
- Adapts to situation and context
Veterinarians uniquely suited for:

- Epidemiology
  - Population, prevention, health promotion
- Outbreak investigation and response
  - Comfort gathering data
  - Focus on solving problem
- Deal with incomplete data, uncertainty
- Practical risk management
2. Broad definition of health

• Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity
  – WHO 1946
Therefore “Health” includes:

- Individual health
- Population health
- Societal health
- Economic health
- Ecosystem health

All are interdependent
Putting Health in Context

- Health is an outcome shaped by a wide range of social, economic, natural, built, and political environments that form a complex and ever-changing dynamic. Because of this broad perspective, public health teams themselves also need to reflect this reality.

Slide prepared by Lonnie King
Veterinarians can balance multiple aspects of health

- Medical condition of animals
- Economic situation of producers/owners and country
- Societal norms and expectations
  - Husbandry practices
  - Animal welfare
  - Legal responsibilities (regulatory)
3. Global health issues are increasingly complex

- Climate change and ecosystem health
- Biodiversity and conservation
- Global trade, complicated supply chains
- Sustainable economic development
- Rapid movement of people and translocation of populations
Complex problems represent “Grand Challenges”

- No simple technical “solution”
- Can’t be fully understood
- Compelling and demand action
- Actions precipitate unanticipated and unintended consequences
- Require innovative approaches
Strategies to deal with complex problems

– Create interdisciplinary teams
– Use systems thinking
– Collaborate and form partnerships
– Embrace ‘One Health’ perspective
Complex problems require multi-faceted response

- Policy-making and regulation
- Public awareness campaigns
- Quality assurance and compliance
- Human resources and funding
- Education and training
- Preparedness and response capacity
Food Security is a Grand Challenge

“Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (World Food Summit, 1996)
Food security complexity

• Population increase
• Rapid growth of mega-cities
• Increased demand for animal protein
• Fewer people working in agriculture
• Finite amount of arable land
• Climate change
• And many more…
Addressing global food security

• Enhance agricultural productivity
• Innovation in food processing/preservation
• International standards food safety
• Improvements in food safety protections
• Educational campaigns for consumers
• And more…
4. Systems thinking

• Complex issues best understood in context of relationships to larger reality
• Systems thinking is a holistic approach bringing together multiple perspectives
• Considers interdependency of multiple contributing factors (inputs), processes and resulting outputs
Emerging Infectious Diseases

Wildlife EID

Translocation

Encroachment
Introduction
“Spill over” &
“Spill back”

Human
encroachment
Ex situ contact
Ecological
manipulation

Human EID

Global travel
Urbanization
Biomedical
manipulation

Domestic Animal EID

Agricultural
Intensification

Technology and
Industry

Dasazak P. et al.
Science 2000 287:443
Example: What caused BSE?

- Prions?
- Post WWII search for alternative proteins?
- Changes in calf feeding practices?
- Pressure for higher milk production?
- Consolidation of feed industry?
- European Community Ag policy?
- Genetically susceptible humans?
- All of the above (and more!)
5. Enhance interpersonal skills

- Technology is not the limiting factor for most of today’s grand challenges
- Our ways of thinking and performing present the greatest barriers
- Need to enhance interpersonal skills to enhance role of veterinarian in public health
Key interpersonal skills for success

• Communication
• Strategic thinking and vision
• Working across boundaries
• Influence
• Getting results and leading change
6. Demonstrate shared leadership

- Leadership as a collective action rather than an individual position or title
- Incorporates resources and initiative from many perspectives, disciplines, sectors
- Through active engagement, able to motivate people and organizations towards desired results
Why do complex problems demand ‘shared leadership’?

• No “one” is in charge!
• Hierarchical leadership not applicable
• Shared responsibility but no overall authority
Progress Strengthening VPH Contributions - Government

- Italy – VPH part of the Department of Health rather than Department of Agriculture
- Canada – Chief Veterinary Official also is the Chief Food Safety Official
- US – Air Force veterinary corps became part of Biomedical Service Corps
Progress Strengthening VPH Contributions - Academia

• Switzerland – Veterinary Public Health Institute created as a partnership between Federal veterinary office and University of Berne veterinary faculty

• US/Thailand/Uganda – post-graduate public health residency program created by universities to provide professional training and experience in public health
Strengthening the contributions of Veterinarians

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2. Embrace broad definition of health
3. Understand complex problems
4. Use systems thinking
5. Enhance interpersonal skills
6. Exemplify the ‘One Health’ professional
Veterinarians exemplify the ‘One Health’ professional

- Embracing a broad, trans-disciplinary approach
- Using systems thinking to address complex issues
- Considering human, animal and environmental health together