2ND GRF ONE HEALTH SUMMIT 2013

Sessions Outcomes

Reporters

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WEB Statements on One Health

• “The One Health concept is a worldwide strategy for expanding interdisciplinary collaborations and communications in all aspects of health care for humans, animals and the environment.”

• “The One Health Initiative is a movement to forge co-equal, all inclusive collaborations between physicians, osteopaths, veterinarians, dentists, nurses and other scientific-health and environmentally related disciplines.”

• “…integration of human medicine, veterinary medicine and environmental science.”

• One health has moved from a concept to an approach.
Snapshot ideas from the Summit

• “Animal health - human health - ecosystem health”
• Intercepts amongst animals, humans, and ecosystem/environment: Ecological Factors, Genetic and Biological Factors, Physical Environmental Factors, Social, Political and Economic Factors.
• “The collaborative multidisciplinary effort working locally nationally and globally to attain optimal health for people animals and the environment.”
• “The interactions between human health, animal health, and ecosystems health.”

• Educational Practices
  • Case based training, real life work and field based training, student business ideas, One Health student clubs.
Ideas generated from the Summit leads to three possible dimensions of the One Health approach

• The linkages amongst humans, animals, and the ecosystem/environment.
• The need for scientists, engineers, health professionals, government and public agencies, and the general public to work together to solve problems.
• The use of the systems approach to solve issues.
Summary Questions

1. What is (are) the added value (opportunities) of a One Health approach from the perspective of our session?
2. What are the main obstacles to follow a One Health approach?
3. Critical research needed within the One Health approach.
4. How to strengthen the One Health approach in education.
5. How to strengthen the implementation process or translation to practice of the One Health approach?
Answers to these questions came from

- Panel chair’s forms
- Session chair’s forms
- Participant’s forms
  - (thank you Andrea Roth 😊 for compiling)
Don’t shoot the messengers

1. This document is an attempt to capture the essence of ideas from the summit.
2. It does not suggest specific areas for research/education focus.
3. Hopefully this summary can be used to set targets in research and education for the future.
4. Here we looked at patterns of ideas expressed and grouped them accordingly.
5. Of course others might group them differently, but they would be wrong*.

*kidding, all is open to discussion which is the fun of what we do!
1. What is (are) the added value (opportunities) of a One Health approach from the perspective of our session?
The One Health concept/approach

• helps to understand and integrate the roles that different areas of study can play (e.g., ethics, sanitation, social sciences) in One Health,

• helps to identify, understand, solve, and anticipate, health problems,

• has the ability to bring science down to the community, and

• can identify priority areas for interventions and facilitate interventions by agencies (public and private) on leaders to invoke changes in human behavior to better protect human and animal health.
The One Health concept/approach

• helps to manage risk and develop early warning and detection system technology,
• provides a framework for integrated participatory approaches to solve problems at the watershed to regional scales,
• is critical in making schools healthier and thus facilitating better education,
• provides assistance and a framework for integrating research and measurements at the intellectual “interfaces” (e.g., the environmental and health sciences, and
• affords conducting, implementing, and monitoring projects that cross-health sectors through the engineering, environmental sciences and social science lenses.
Importance of being multidisciplinary, interdisciplinary, etc.

- Facilitates information transfer among agricultural research, nutrition research and health research. Expand to information transfer amongst all “parties.”
- Ability to bring together appropriate multi-disciplinary teams (e.g., scientists, community) to solve problems.
- Demonstrates the importance of evidence-based multidisciplinary studies in One Health.
2. What are the main obstacles to follow a One Health approach?
Problems with funding

• Need cross-agency funding to study interfaces (e.g., medicine, science, social science) and encourage multi-sectoral (multi-disciplinary) collaboration.
• Disparities in funding and reduced funding in general.
• Critical factor is gaining support of decision makers.

Problems with data

• Sources (e.g., district offices, governmental agencies).
• Reliability, availability (lack of, turf wars, cost).
• Lack of base-line health data (human and animals).
Problems with communication & cooperation

- Lack of … amongst scientists & professionals, universities, governmental agencies, NGOs, human/animal/health specialists, and stakeholder. *The One Health approach is not owned by anyone.*
- Confusion on terminology across disciplines can limit communication.
- Entrenched approaches of single disciplines and public health sectors, thus few work at the interfaces, least between medical and environmental sciences.
- Lack of openness to local habits and solutions.
- Western dominance on the right solution.
Problems within the One Health concept/approach

- Difficulties in moving from a framework/concept to the practical application of the One Health approach.
- Lack of incorporating the One Health approach earlier in the development of the research endeavor.
- Lack of integrated surveillance systems for diseases.
- Lack of One Health professionals (short def. has expertise, is holistic, is a team player).

2. Non-existent or differing diagnostic techniques.
Problems with the lack of awareness in

• the significance of good animal welfare can play in safeguarding public health,

• the lack of development of a public understanding of the One Health “issues,” and

• health policy makers about non “killer” diseases.

Problems with education

• Can be overly specialized limiting understanding of the "big picture."

• Potential lack of rewards for young faculty that work in One Health multi-disciplinary teams.
Problems with attitudes and beliefs

• Cultural (e.g., differential treatment of male versus female), behaviors (e.g., corruption).
• Perceptions that One Health “behaviors and practices” may be detrimental to existing established interests *even though these detrimental effects are not well identified.*
• Differences in the definition/perception of the One Health “concept/approach.”
  • Pieces of the puzzle (e.g., animals or soil) versus the complete puzzle, (i.e. animals, humans, envirnment/ecosystem)
3. Critical research needed within the One Health approach.
Research for One Health

- Need for practical, applied research.
- Need for interdisciplinary approaches especially linkages between policy, economics, and other social science approaches and hard sciences/technology.
- Study on the benefits (cost, effectiveness, etc.) of using the One Health approach, perhaps through case studies.
Research for One Health

- Research is not the issue but rather the global coordination of One Health initiatives that provide a strategic, long-term direction.
- New kinds of methodology for evaluation of One Health activities.
- Identifying facilitation methods which accept differences of opinion while continuing to guide the discussion to conclusion.
Techniques/development/approaches:

- using analogies to solve problems (e.g., food safety),
- integrating “new” areas (e.g., soils),
- developing harmonized diagnostic, prevention, and treatment protocols, and
- developing easily available, easy to use, cost effective technologies/approaches for environmental assessment (physical, chemical, biological).
Techniques/development/approaches:

- developing cost effective One Health disease surveillance systems.
- using the One Health approach to develop early warning and detection system technology.
- increasing human/animal behavior studies in overall studies.
- working at the interface between environmental science and the medical science.
Example research targets

• Social determinates of human behavior in relation to animal production and consumer requirements.

• Studies on suitable indictors and models for elderly health-risk assessment based on social-ecological systems.

• Need for better understanding of the mutual interaction between health (animal, human, ecosystem) and environmental factors and processes, both in time and space, and in both “natural” and perturbed systems.
Example research targets

• How traditional medicine (e.g., medicinal plants) be promoted to prevent/cure diseases, particularly in disadvantaged regions.
• Food safety risk assessment for the whole food supply chain.
• Nutritional benefits of higher welfare animal products.
• Long term economic benefits of including good animal welfare measures in risk preparedness plans that mitigates the effects of disasters.
• Novel technologies on remote sensing for assessment of soil health.
• More work on non-communicable diseases.
4. How to strengthen the One Health approach in education (and training)
Models to

• conduct a comprehensive needs assessment for education and training,
• explore different education and training models – degrees, specializations, certificates, continuing education, workplace training…, – for different constituencies, and see what works,
• explore different approaches for integrating the One Health approach with existing models/frameworks/paradigms for education and training, and
• One Health education should complement, not supplant, disciplinary education and training
Pedagogical approaches to

• train people to work in interdisciplinary teams, at the interfaces or gaps between disciplines, with a problem-solving approach to real-world problems,

• develop an international pedagogical framework for One Health education and training, in collaboration with government, business, and non-governmental organizations, and

• develop a One Health culture in education
Implementation considerations are to

- coordinate and integrate One Health initiatives with existing programs and cultures,
- complement curricula with practical workshops and seminars, interactions with practitioners,
- include student organizations,
- develop and disseminate teaching materials and case studies, and incorporate them into courses, and
- fund One Health fellowship/scholarship/internship programs

Other

- create programs for public/community education
5. How to strengthen the implementation process or translation to practice of the One Health approach?
Strategies:
• more fully integrate business, law, engineering the environmental sciences and the social sciences in One Health,
• focus on early detection/rapid response and the associated benefits, and
• identify and quantify long-term costs and benefits
• build and disseminate the economic argument
Actions to

• develop mechanisms and a common language for interdisciplinary communication, coordination and collaboration leading toward trans-disciplinarily,
• develop research strategies that align with grand challenges (per question 3),
• develop education and training strategies that align with grand challenges (per question 4), and
• promote, develop and harmonize platforms for open access to data and information, but also consider the need for indicators of data quality and intelligent filtering.
Actions to

• identify and support existing programs that work,
• evaluate the costs and benefits of how funds are allocated across research/demonstration/implementation/enforcement programs and re-balance as appropriate,
• identify publically-funded projects where the One Health approach should clearly be used and develop requirements to do so,
• foster public-private partnerships, and
• improve research dissemination and knowledge/technology transfer.
Actions to

• change standards that don’t adequately reflect/support important health endpoints,

• promote greater emphasis on and develop mechanisms for researchers to participate in applied research, demonstration projects, and implementation programs,

• Improved local/regional/national/international coordination, perhaps through organizations or networks, and

• strengthen advocacy.
Messaging to

• clarify the One Health vision,
• inform and advocate to decision-makers and politicians on benefits of the One Health approach and involve them within the context of their mandates,
• inform and involve/engage the general public on the need for action, and
• develop and publicize success stories.
Epilog

We have summarized this document to the best of our ability to capture the diversity and essence of the ideas presented at the Summit. We did a lot of listening, heard many things and it was an important learning experience for us on One Health.

From this listening we would like to add two perspectives to the mix; systems thinking and listening.
Systems

• We teach various courses at MSU and in all the courses the concept of systems thinking is integral.
• Many statements during Summit about the One Health Concept/Approach included the idea of systems.
• Here we briefly outline the meaning of the systems thinking that might be helpful in One Health thinking.
Systems thinking can provide a framework for the One Health approach

Define internal components and relationships that reflect the key scientific processes, social functionalities, and information flow

- Systems thinking is the process of understanding how things influence one another within a whole – building a conceptual model
All models are wrong, but some are useful (Box and Draper, 1987)

- Models are constructs designed to answer questions
- Questions related to One Health generally involve risk (which must be viewed in context)
- The systems thinking approach helps define what is needed to address the problem – data, skills, context, resources
- It also provides a map for what constitutes evidence in support of answers to the questions
- Disciplines have established models (paradigms) that often work, but systems thinking can help identify their limitations and suggest alternatives/improvements
So what cross-disciplinary expertise is needed to further the One Health Approach?

- Complementing disciplinary training with exposure to key concepts and paradigms that define the One Health approach:
  - risk
  - systems thinking
  - human and animal health sciences
  - environmental/earth sciences and engineering
  - social sciences
  - metrology and data analysis
  - open-mindedness and critical thinking
- Applies to all of us – students, researchers, practitioners
The problems with listening

• Many students have passed through our courses. We listen to them and learn.

• We have learned that each of us filter what we hear. What happened in the morning, experiences in high school, early years, etc. prepares us to listen in different ways in class. One Health involves many dimensions and an important dimension is the appreciation of its concept and approach it light of Earth Processes.

• Various statements related to Earth process were expressed during the Summit. Here we use bullets to summarize these Earth processes (with an added few), ideas that many filter in listening, that we need to be aware of as we look to One Health and our future.

• Climate change hangs over all of this.
Related Earth Science perspectives

- Humans are animals.
- The Earth is about 5 billion years old and we have 4ish billion to go.
- The biosphere is old (3.8 billion ish) and has interacted with the hydrosphere, atmosphere, and lithosphere over a very long period of time.
- Interactions among humans and animals have occurred over a long time (millions of years).
Related Earth Science perspectives

• Evolution has and will continue to happen.
• Fixes to disturbed interactions amongst
  • hydrosphere, atmosphere, and lithosphere and
  • animals, humans, and the ecosystem/environment
  can take a long time, hundreds to thousands of years (or longer).

Environmental science is not the study of the environment

• Religion and science and co-exist.