



One Health: A Ray of Hope for the Future

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With the 21st Century came a nagging awareness: 1) untoward side effects of human progress are threatening the health of our planet and all life that it supports and 2) we have lost an ancient holistic wisdom of the interconnectedness of all life. A global call arose to reconnect our wells of knowledge to jointly address our global challenges and the concept now known as One Health slowly began to take root. It has become a movement that is viewed by many as a 'Ray of Hope' for the future.

In the late 1990's / early 2000's, before it was called One Health, the resurrection of this ancient concept began among ecologists and wildlife conservationists. It was picked up by the veterinary profession and catapulted into the awareness of human health domain as humankind was beset with Avian Influenza, BSE, SARS, Nipah Virus, Ebola, etc. Our understanding of the need for One Health thinking expanded further with realizations that climate can impact human and animal health (for example via vector-borne diseases), that great knowledge can be acquired via animal/human comparative medicine and translational research, that food / water safety and security for all living things depends on climate stability and soil health, that antimicrobial resistance has an unavoidable environmental component, that we cannot have human health and welfare without animal/ecological/environmental health and welfare. Indeed, every profession is needed to achieve the overlapping long-term goals of ecohealth, global health, planetary health, and public health etc. to collectively contribute ultimately to global security.

But it isn't easy. There are significant barriers to making One Health the default way of doing business at all levels of academia, research, policy and government. We are stuck in the *systems* that have forced us apart. Examples: To survive in educational and for-profit research *systems*, dedicated professionals are obliged to work in narrow networks and to publish in the most elite journals of their specialty. Then, in today's publishing *systems*, their reports are not widely accessible to those outside their profession or professional associations. The recent advent of open science and open publishing is beginning to help but it will take decades to re-instill needed interactions across disciplines. Our *systems* of proprietary corporate research prevent sharing of information. The human and animal divisions of large corporate pharmaceutical companies 'never' talk to each other. Our agricultural and natural resources extraction *systems* are destructive and unsustainable. Professional continuing education *systems* do not allow us to come together in direct discussions about our overlaps and synergies. And competition for financial resources, across siloed government agencies and academic arenas, further alienates and divides us. These *systems* prevent us from working together to overcome today's most 'wicked' problems.

How can we overcome these deeply entrenched systems? What can a One Health approach offer?

When we deliberately engage all sectors, from anthropologists, architects, behaviorists, chemists, clinical psychologists, ecologists, economists, educators, endocrinologists, engineers, environmental, human and animal health professionals, social scientists, etc., we will be more able to proactively and pre-emptively prevent health challenges and crises rather than reactively responding.

Several core competency domains for guiding One Health curriculum development and continuing professional education have been defined (management; communication and informatics; values and ethics; leadership; teams and collaboration; roles and responsibilities; and systems thinking). However, their realization is dependent on addressing the lack of communication and collaboration among different professions and the public and private sectors. How can this be achieved?

First, for established professionals, it must start with relationships! In today's systems, the collaborations needed to understand and address our most 'wicked' problems won't just magically happen on their own. They'll start with personal relationships that also will not just spontaneously happen. We must *create* the opportunities to come together, to meet each other, find common ground, discover our strengths, overlaps, and synergies, share information and collectively educate each other, the public, lawmakers and governmental policy makers. We must develop strong new trans-professional networks and involve those who have not traditionally been a part of global/national decision-making such as civil society, youth educators and students. We must incorporate the One Health paradigm into governments. It is starting to happen. For example, recently the InterAction Council released its Dublin One Health Charter and is working to implement it. The Global Health Security Agenda initiated by the U. S. embraces and advocates for One Health in all the participating countries.

Second, we must reframe not only behaviors but global attitudes about our human place in the ecological continuum of the planet, about working with individuals from diverse educational / cultural / professional backgrounds, about the value and need for all life from soil fungi and earthworms to the most complex and intelligent creatures. We must instill, early in life, the One Health skills and mindsets needed.



The One Health Commission (OHC), a 501c3 non-profit, non-governmental organization (NGO), was organized in the U.S. in 2009 as the result of a partnership between the American Veterinary Medical Association (AVMA) and the American Medical Association (AMA). The resulting 'One Health Initiative Task Force' recommended creation of an organization that would actively promote One Health and the OHC was formed. Today the Commission works to enhance

collaborations among all professionals and to increase awareness at all levels of society of the interconnectedness of people, animals and the environment. Through One Health Action Teams made up of individuals from diverse backgrounds, the OHC identifies gaps and works to address them. Examples include the OHC Bat Rabies Education Team, the One Health Education Task Force (see below) and two newly forming teams, the One Health-Social Sciences Team and the One Health-Ecology / Environment Team. Yet to be formed are teams to address: One Health-Comparative Research/Medicine, One Health-Food Safety/Security, One Health Advocacy / Public Policy and others.

What are the OHC strategic priorities and how are they significant?

1) Connecting Stakeholders working in the One Health space. We can do more *together*!

The OHC has held two international Who's Who in One Health webinars to meet the One Health community's insatiable appetite to know who is doing what for One Health and to connect them all to work together. It provides a Who's Who in One Health webpage and maintains a Global One Health Community listserv sharing information in a One Health Happenings newsletter. The long-term goal is to facilitate interactions of organizations working in parallel paths, each with its unique strengths, toward a common endpoint of human, animal and planetary health and well-being; to form a synergistic, global (One Health) Alliance. Toward that end the OHC partnered in 2016 with the One Health Platform and the One Health Initiative to create an annual, global One Health Day celebrated each year on November 3. The inaugural One Health Day saw over 155 global events in over 35 countries.

- 2) **Educating about One Health and One Health Issues.** The OHC identifies gaps and issues that need more attention and hosts global educational webinars. It also provides its online webinar platform for unincorporated One Health groups that do not otherwise have a means to share their One Health educational actions with a larger global audience.
- 3) **Nurturing the Next Generation of One Health leaders.** This priority takes two forms.
 - Primary / Secondary Education. The Commission believes very strongly that humanity will never overcome many of its global ‘wicked’ problems without reframing its attitudes about our human place in the ecological continuum on the earth. A One Health Education Task Force (OHETF) formed in late 2015 to discover how to educate about One Health and One Health issues starting very early in children’s lives through adulthood. In 2016 the OHC created an ongoing initiative, ‘Preparing Society to Create the World We Need through One Health Education’ and is actively seeking funding to develop teacher workshops and team-developed OH curricula. This is another reason that the OHC advocates so strongly for involvement of social scientists. We’ll never get anywhere without them.
 - Nurturing undergraduate, graduate and professional students working for One Health. In 2015 the OHC brought student representatives from animal, environmental/ecology and human health domains onto its Board of Directors as full voting Board members. (A position is being held for a student from the plant domain when such a student emerges). The OHC provides these students with an online meeting platform, webpages, a student listserv and encouragement for student-led One Health projects with the intention of facilitating formation of relationships across professions very early in their careers. Those student representatives have now formed an independent Students for One Health (SOH) organization for which the OHC will serve as a parent organization. The first SOH Executive Council has recently been selected by students. These are our future global leaders.



The One Health concept is not owned by any profession or country or region. “It is an all-inclusive, co-equal endeavor that belongs to all of humanity.” (Mary Echols, 2009, http://www.izs.it/vet_italiana/2009/45_3/377.htm). The OHC leads with passion and conviction in partnership with all One Health advocates on what we believe is a path to achieving the UN Sustainable Development Goals, to Planetary Health and to Global Security. One Health truly is a ‘Ray of Hope’ for the future.

Cheryl Stroud, DVM, PhD
Executive Director
One Health Commission
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