

# “ONE HEALTH”

## New Global Concept

Health for People, Animals, Plants and Environment

Joint effort for a safe and comfortable life



### „ONE HEALTH” CONCEPT

- Definition. Areas. potential results
- Romanian contributions to the Concept development
- Concept launching. Worldwide development
- „ONE HEALTH” concept, operational tool for UN, WHO, FAO, OECD, EU Commission ...

### „ONE HEALTH New Medical Concept”, Romania

- Association „ONE HEALTH” Romania, unique platform
- Internal and internationally activities
- One Health research projects.
- Logistic and financial support

### Association

#### “ONE HEALTH - New Medical Concept”

[www.onehealth.ro](http://www.onehealth.ro)

Collaborator of Federation of European Academies of Medicine

## **“ONE HEALTH” – The New Global Concept**

- Health for People, Animals, Plants and Environment
- Effective cooperation of specialists in all areas that condition the health, too of all advanced technologies
- For a safe and comfortable life
- Three main action directions: Primary Prophylaxis of Life, New Procedures of Treatment, Life After Treatment

### **I. DEFINITION. AREAS. POTENTIAL RESULTS**

**Definition, scope and potential results were formulated and advanced in the US in 2008, since the establishment of the "One Health Commission", became coordinator to promote the Concept "One Health" as follows:**

#### Definition of One Health

One Health is the collaborative effort of multiple health science professions, together with their related disciplines and institutions – working locally, nationally, and globally – to attain optimal health for people, domestic animals, wildlife, plants, and our environment.

#### Scope of One Health

- Convergence of human, animal, and plant health and the health of the environment
- Human-animal bond
- Professional education and training
- Research, both basic and translational
- Ensuring a safe food and water supply that is high quality, available and affordable
- Agricultural production and land use
- Natural resources and conservation
- Disease surveillance, prevention and response, both infectious and chronic diseases
- Comparative Medicine: commonality of diseases among people and animals, such as cancer, obesity, and diabetes
- Clinical medicine demand for interrelationship between the health professions
- Environmental agent detection and response
- Disaster preparedness and response
- Public policy and regulation
- Global trade and commerce
- Communications and outreach

#### Potential Outcomes from the One Health Approach

- More interdisciplinary programs in education, training, research, and established policy
- More information sharing related to disease detection and diagnosis as well as education and research
- More prevention of diseases, both infectious and chronic diseases
- New therapies and approaches to treatment for unmet needs

**Worldwide**, the Concept "One Health" was undertaken in many countries, notably the contribution to enriching the concept in countries like Sweden, the Netherlands, Spain, Canada, Australia ....

## II. ROMANIAN CONTRIBUTIONS TO THE CONCEPT DEVELOPMENT

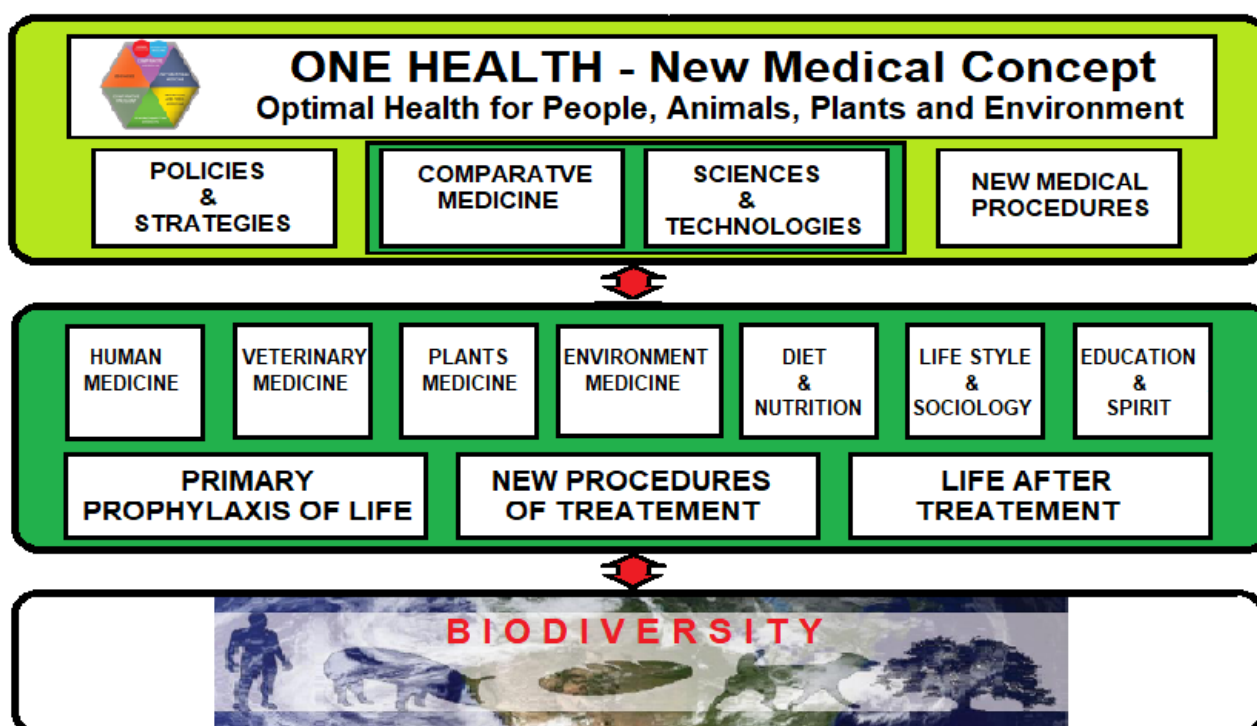
In Romania Concept "One Health" receives new values, broadening the areas of action, focusing on the role of organizing and promoting research projects.

### Definition

A broader definition which promotes "One Health" from Romania seeks implementation:

"One Health" - Health for people, animals, plants and the environment - is the new global concept advertising effective cooperation of specialists that condition health and of advanced technical domains in order to find the best solutions for a secure and comfortable future in a biodiversity ever transformation.

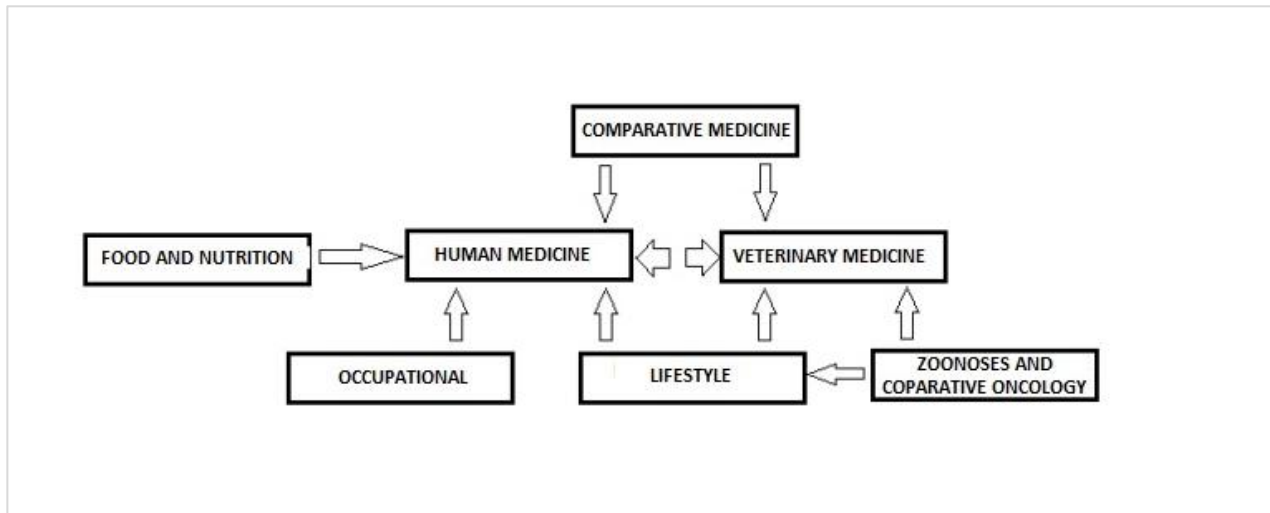
Main areas: Primary Prophylaxis of Life, New Procedures for Treatment and Life After Treatment.



The **One Health** concept implies the synergy of Human Health, Veterinary Medicine, Environmental Medicine, Food and Nutrition Medicine, Occupational Medicine, Comparative Medicine (zoonoses and Comparative Oncology), aiming to promote PRIMARY LIFE PROFILAXY as a major vector, and putting health care in the service of desideratum as healthier as possible with lower costs.

In essence, this concept involves two essential issues:

1. it organizes, for the first time, the primary prophylaxis of life within the biodiversity on Earth and regards various human and animal diseases by means of taking into account the living environment;
2. considering that international specialists today agree upon the fact that more than 75% of the diseases originate in the animals around us, as well as in the surrounding living environment, it is necessary that each and every patient be should examined not as it has been done until now, in strict relationship to his illness, but within a large framework that requires applying the diagram below:



This new mode of thinking and interpretation cannot be immediately implemented, but society, as a whole, and specialists, in particular, must be constantly informed on and trained in this new field, which addresses each and every citizen of the human community. It must be gradually introduced from kindergarten, and then continued throughout elementary school, gymnasium, high school and post-high school education, college and post-college education, including doctoral and post-doctoral studies.

The research will go hand in hand with the most subtle paths of microbiotechnology and genetics, alongside the domain of informatics.

Medical procedures based on evidence from complementary medicine (Chinese traditional medicine, phytotherapy, gemmotherapy, etc.) should be integrated to serve the same purpose, a healthy person through the most efficient techniques and the most reduced costs.

To all these, have to add all aspects connected to food safety, the manufacturing of medicines and pharmaceuticals, including bioproducts (vaccines)

### **The main objectives of the “One Health” Concept implementation**

- ❖ Healthy human does not get sick and enjoy a fully life;
- ❖ The suffering human has to restore his potential and comfort as much as possible;
- ❖ Reduce "per capita" costs for Health, in contrast to aggression increased by factors such as: climate change, population movements ...
- ❖ Increasing the performance and balance of the individual in general and in particular in the work and daily life.

### **Directions of action**

- ❖ Creating a collaborative platform for all professional sectors and actors in those activities may have an impact on health;
- ❖ The education of the individual who must come to a new consciousness about his life and relationship with everything that surrounds him;
- ❖ Elaboration and implementation of new National, European and Worldwide Regulations and Normative that must be effective in supporting the implementation of the Concept.

## Challenges

The major challenges that stand in front of the promotions and implementations of the concept are, as follows:

- ❖ The realization, in a very short time, the element neglected today in Romania and internationally, namely the general prophylaxis of diseases in humans, animals and the environment, of food and occupation security, through appropriate structures and legislation;
- ❖ Developing and promoting licensing Technics and Procedures which rallies synergies of the founding Concept areas;
- ❖ Information and public education, adequate academic curriculum to the Concept and additional qualifications of medical staff.

## III. CONCEPT LAUNCHING. WORLDWIDE DEVELOPMENT

### 1. Reply to health challenges.

Worldwide, remarkable progress of health care coupled with ever better living conditions lead to continuous increase in life expectancy of man almost everywhere.

In contrast to this positive development, disease human health are growing in volume, diversify appear more and more challenges to health, more and more diseases uncontrolled developments and bacteria super-intelligent bio-resistant antibiotic caused by:

- climate change accelerated
- movements population due to globalization and military conflicts,
- population growth, insufficient caution in the use of harmful technologies
- unhealthy diets and overuse medication

Default costs and effort to preserve a health condition continuously grow and consume vast resources, hardly sustainable.

In response to these challenges and their consequences was formalized and entered the action of Concept "One Health" which involves subsuming the efforts and achievements of specialists in all areas which determine health due to interactions within biodiversity and putting them into clinical practice in the service of desire a solid health with costs as low as possible.

### 2. One Health Concept precursors

The concept, under various forms, dates back to antiquity.

The Greek physician Hippocrates (460 BC - 370 BC) acknowledged *the fact* that environmental factors may have an impact on health and promoted the concept that *public health depends on a clean environment*.

Later on, the Italian physician Giovanni Maria Lancisi (1654-1720), a pioneer in the field epidemiology and a veterinarian, laid emphasis on the role played by the physical environment in spreading diseases to humans and animals.

The usage of *One Health* concept, in its full form, was recently established in connection with Ebola, the haemorrhagic fever, by William Karesh in 2003, who claimed that: *"Human, domestic animal or wildlife health can no longer be discussed in isolation. There is only one health. And solutions require that everyone should work together at all different levels."*

Together with two colleagues, W. Karesh subsequently held a series of conferences around the world on the theme of One World - One Health.

In Romania, there are institutional concerns, some priorities in the European Union in treatment interactions between animals, humans, plants and various environments, with particular reference to environmental medicine compared human and veterinary

Stated meaning the above statement:

- Romanian Society of Comparative Oncology (1991)
- Committee on Comparative Medicine of the Romanian Academy (1995)
- Institute of Comparative Medicine (1999) with branches in Cluj and Timisoara, University of Agricultural Sciences and Veterinary Medicine Bucharest

### **3. Launch the One Health Concept and formalization. Merit launch and official formalization of One Health Concept returns to the United States of America.**

In 2008, the *American Medical Association* (AMA) and the *American Veterinary Medical Association* (AVMA) agreed to merge into **One Health Commission**.

On the other hand, **One Health Initiative** is the website that stores news and information regarding *One Health*.

The promotion agencies, namely, *American Medical Association, American Veterinary Medical Association, The American Society of Tropical Medicine and Hygiene, The American Association of Public Health Physicians, The Centers for Disease Control and Prevention* (CDC), *The United States Department of Agriculture* (USDA), and the *U.S. National Environmental Health Association* (NEHA) and more than 800 prominent scientists, human doctors and veterinarians from around the world (from about 90 countries, including Romania) have joined the initiative.

In fact, in the United States, a coordinating *One Health* Coordinating Organization will soon be established, as a recognition of the importance and breadth of the initiative.

### **4. One Health Concept Development.**

#### **In the world**

Some of the highlights in promoting and worldwide application of the "One Health" Concept.

In 2011, *the first International One Health Congress* was held in Australia,  
In 2013, *the second International One Health Congress* was held in Thailand.  
In 2015, *the first Global One Health Congress* was held in Madrid,  
In 2016 in Australia, held the fourth One Health Congress  
in 2018 in Canada, held the fifth One Health Congress

Further events follow each other with increasing frequency, the Concept of "One Health" is the favorite topic in the scientists, development and sectoral debates is: environmental influences, nutrition, infectious diseases ...

#### **European Union.**

Two major events are noteworthy:

In the month of May 2014 "One Health" is found as a topic important work of the annual session of the European Federation of Academies of Medical Sciences (FEAM) session that was organized in Bucharest by the Academy of Medical Sciences of Romania (ASM) where decrees "One Health" as a major objective.

In December 2018, too in Europe, 10 years ago in the US, there is an overall arrangement of specialists proclaiming the need to implement the Concept of "One Health" in education and

practice.

Subscribe: Federation of Veterinarians of Europe, International Student Association of Veterinary Dental Council Europe, the European Association of Dental Students, Standing Committee of European Doctors, the European Medical Students

## **Romania**

Remarkably, in Romania, components of the concept, with special reference to the comparative medicine of the human and veterinary environment, have developed as European priorities.

In 2010, the National Forum for Comparative Oncology (2010), a branch of the Mediterranean Forum for Comparative Oncology (2009)

In 2014 - Department of Comparative Medicine of Academy of Medical Sciences of Romania  
- National Forum of Comparative Medicine  
- Post-graduate course in the USAMVB Comparative Medicine and Pharmacy Cluj.

In 2015 ,, under the direction of Academy of Medical Sciences, it created the "One Health - New Medical Concept" which is a major vector of promoting and applying the Concept "One Health" rally specialists from all areas which determine health, academia, the research from research institutes, hospitals, private companies, etc.

In 2016 One Health Association organized in Bucharest together with Spiru Haret University (USH) and Academy of Medical Sciences (ASM), coordinated by the Federation of European Academies of Medicine (FEAM) the "First European Conference Interregional One Health"

In 2017 One Health Association organized in Targu Mures, along with USH and the University of Medicine and Pharmacy Mures the "National Conference One Health"

In 2018 at Budapest it was established the first cluster One Health in Central and Eastern Europe for the promotion the high education and research.

Initialed the agreement: One Health Association, University of Veterinary Medicine, Budapest, University of Medicine and Pharmacy Mures, University of Veterinary Medicine Cluj-Napoca and Spiru Haret University Bucharest.

In 2019, in the first months, was created the National One Health Network with "nodes" in large academic centers as follows:

In 2019, in June, will take place in Bucharest "Second European Conference One Health" in organizing the One Health Association, the USH, ASM - Institute of Comparative Medicine One Health, FEAM and a special mention UNGSII Foundation.

UNGSII under UN auspices is the foundation which promotes and develops projects in 17 areas of the UN Sustainable Development Strategy 2030, Strategy, joined by 110 countries, including Romania.

Will be the most important event in the field of health will meet in Bucharest to major scientific personalities, academicians, professors, researchers in all fields founder of One Health Concept.

AS an appreciation of activity and Romanian initiatives, FEAM empowered One Health Association Romania regarding the promotion of One Health Concept in Central and Eastern Europe and the creation of a European One Health Network.

The action will be pursued at European level based on finding the necessary financial resources.

#### **IV. „ONE HEALTH” CONCEPT, OPERATIONAL TOOL FOR UN, WHO, FAO, OECD, EU COMMISSION ...**

Formalized and launched in the US in 2008, the "One Health" concept was adopted as a programmatic directive and an operational tool by global and regional institutions.

A good example is the guideline that call for the "One Health" concept in solving the most serious problem affecting health, and this is the antimicrobial resistance in the plan of interaction between human-animal-environmental (it is estimated that in the coming years AMR will become a greater threat than the cancer or the 2008 financial crisis ).

- 2015 U.S. National Action Plan (2015) for Combating Antibiotic Resistant Bacteria
- 2015 AMR Surveillance within the U.S. Military
- 2015: The global plan of action of WHO (OMS ) for antimicrobial resistance (AMR),
- 2016: UN Declaration on Antimicrobial Resistance (AMR)
- 2017: "One Health" European Action Plan against antimicrobial resistance, EU Commission

A statement,

The “One Health” European action Plan against antimicrobial resistance (AMR) " is built on three main pillars and requires to countries, authorities and competent and responsible to have measures mainly as follows:

1. making the EU a best practice region, this plan will require better evidence, better coordination and surveillance, and better control measures.  
EU action will focus on key areas and help Member States in establishing, Implementing and monitoring their own national One Health action plans on AMR,
2. boosting research, development and innovation by closing current knowledge gaps, providing novel solutions and tools to prevent and treat infectious diseases, and improving diagnosis in order to control the spread of AMR;
3. intensifying EU efforts worldwide to shape the global agenda on AMR and the related risks in an increasingly interconnected world.

In Annex 1 take place only Cap.3 Stimulation Research, Development and Innovation on AMR



## **„ONE HEALTH New Medical Concept”, Romania**

- Association „ONE HEALTH” Romania, unique platform
- Internal and internationally activities
- One Health research projects.
- Logistic and financial support

### **I. ASSOCIATION OF "ONE HEALTH - NEW MEDICAL CONCEPT" ROMANIA, UNIQUE SCIENTIFIC PLATFORMA BY MULTIPLE EXPERTISE OF MEMBERS AND ASSOCIATED INSTITUTIONS.**

Established in May 2015, the Association "One Health Concept Medical -New" managed in four years to put together in the service of Concept implementation specialists and institutions who have enormous scientific potential, which must be redeemed.

Over 500 members and over 25 institutions (universities, research institutes, hospitals and various entities) in the country and abroad, subscribe to approach the Association, [Annex 2](#).

Projects of national interest, some world first, are working to capitalize on a platform of expertise unique in Romania to solve problems acute for society health: antibiotic resistance (the great challenge of medicine today), alarming incidence of zoonoses (infectious diseases transmitted on path animal-human), almost uncontrolled growth and diversification of many diseases caused by climate change and population movements.

### **II. INTERNAL ACTIVITY**

Internally Association has focused attention following master plans:

- Receiving members and organizing branches in territory
- Conclusion of cooperation agreements with institutions working in areas of interest to health including public authorities, central or local
- Launch projects research and development in the spirit of One Health Concept with involvement of multidisciplinary collaborations with universities, research institutes, hospital units, public or private
- Promoting and implementing One Health Concept to population including educational activities and organizing postgraduate courses One Health

Following as the national and even European important actions, Association has in view and proposes for all to join Platform One Health Romania to increase more and more the impact of the New Concept, that is certainly the most effective way to give new opportunities to Health and certainly to life:

1. Adoption of the "National One Health Plan Action Against Resistance Antimicrobial (AMR) according to EU Directive, but also, as a new European and world even, a "National Plan One Health for a sustainable life ", with the proposal to be adopted and a General " European One Health Plan"
2. Sustained collaboration in research projects with "One Health Institute of Comparative Medicine of the Academy of Medical Sciences, newly established.
3. Achieving a comprehensive program to promote One Health Concept and action in his spirit in the newly established "National One Health Network "

4. Establishment of "National Agency One Health" to ensure regulatory role and guidance in field
5. Adoption of the Romanian Parliament "One Health Law" to ensure the regulation and involvement of institutions with a role in supporting health in relationship between man, animal, plant and environment
6. Establish "European Institute of Comparative Medicine One Health" sustained action by the Federation of European Academies of Medicine seeking Romanian Government for providing for the necessary support establishment and functioning the institute as a European center of excellence.
7. Establishment in Romania of "NATO Center One Health", need of NATO authorities that have secured this position to "Biosecurity NATO Forum in Kiev from 10 to 12 May 2018" where the delegation led by President of the Association One Health, Professor Nicolae Manolescu, revealed consistently opportunity in the spirit of One Health Concept, approach in the context of conflicts globalization.

### III. INTERNATIONAL ACTIVITY

In international plan, One Health New Medical Concept Association represents Romania at international congresses on international agreements in Brussels at the European Federation of Academies of Medicine (FEAM) and does so with responsibility and success.

Association "New Medical One Health Concept" has gained recognition and appreciation coordinating international fora Concept One Health, One Health Commission that One Health Initiative and the US

In European plan, Association received from the Federation of European Academies of Medicine (FEAM), task to promote the Concept in countries of Central and South-Eastern Europe and in research for One Health coordination, responsibility that can be single for an entity in Romania.

In just this last context, I mentioned two events:

- Association signed a partnership agreement with Budapest University of Veterinary Medicine in Budapest (ranked 6 in the world!) for the organization of European Conferences One Health 2019 in Bucharest and 2020 in Budapest.
- In month of January 2018 at the Veterinary Medicine University Cluj Napoca has signed the Agreement Establishing the European Academic One Health Cluster involving VMU Cluj-Napoca, VMU Budapest, University of Medicine and Pharmacy Tg. Mures, University Spiru Haret University and One Health Association

Cluster aims:

- Organization of postgraduate courses One Health
- Promoting the concept of One Health in society
- Research in the spirit of One Health Concept, Development and Innovation

#### European Conferences

Association successfully organized widely recognized "European Conference Interregional One Health 2016 'Bucharest" in joint with Spiru Haret University and coordinated by ASM and FEAM, under the Romanian Presidency.

One Health European Conference 2019 to be held in Bucharest from 21 to 22 June 2019, at the complex Spiru Haret University, with the organizers operative Spiru Haret University, One Health Association, and the Institute of Comparative Medicine of the Academy of Medical Sciences Romania Conference will conduct its work under the direction of Academy of Medical Sciences of Romania (ASM) and the Federation of European Academies of Medicine (FEAM). It noted that FEAM will have of biannual meeting in Bucharest on 20 June 2019 somehow in opening of conference.

The conference will be held under the aegis of the Romanian Government

### **One Health International Journal**

Association publishes the magazine "ONE HEALTH INTERNATIONAL JOURNAL" currently scheduled in four annual appearances in English.

The magazine is aimed at specialists and brings together scientific articles, many of which contain mainly scientific papers from conventions One Health.

A high-level scientific journal shortly and will get international accreditation.

## **IV. ONE HEALTH RESEARCH PROJECTS**

Scientific potential that it holds Association and primary objective of Concept, respectively the coagulation of specialists efforts to ensure priority and sustainability of life is reflected in a number of major One Health projects.

Some of these projects are in world premiere and they aim to:

- promote One Health Concept
- to respond effectively to serious challenges affecting health

In Annex 3 are presented the main One Health projects promoted up to the present.

## **V. LOGISTIC AND FINANCIAL SUPPORT. THE PRESENT SITUATION.**

One Health New Medical Concept Association is a private legal person, nonprofit, apolitical, established under the laws on associations and foundations.

Revenue Association may come from donations, sponsorships and carrying out projects.

A very important source projects could be financed from European funds, unfortunately, projects prepared thoroughly, have not been able to work since 2014-2020 European funds were blocked for about two years and acceptance criteria for research projects "Horizon 2020" are excessive.

There have also failed sponsoring significant except Spiru Haret University, which is conducting a partnership program including: support current activity, substantial support for the European Conference One Health 2016, launch European Cluster, postgraduate courses One Health, hosting and organization of the Conference One European Health 2019

Actions and major projects are affected:

- Implementing One Health Projects, aimed at providing only the antibiotic resistance and zoonoses and One Health Center of Excellence.
- Editing and including the international dissemination of magazine One Health International Journal
- Update and functioning interactive Association website
- Traveling in the country for the establishment of clusters and finalization of documents for research and / or implementation Concept, through funding from the central budget,

- local budgets or EU funds
- Attending conferences / international One Health Congress
  - Organizing national and international conferences
  - Traveling abroad to international partnership agreements in the spirit of promoting the One Health Concept in Central and South-East Europe.

The importance of promoting and implementing the concept is a certainty and, on the other hand in many, many of the actions and projects referred, Association represents Romania.

**Association "ONE HEALTH - New Medical Concept»**

**Chairman**

Corresponding Member of the Academy of Romania,  
Corresponding Member of the French Academy of Medicine  
Professor Emeritus HC, HC Doctor

**Nicolae Manolescu**

## **E.U COMMISSION One Health Action Plan against Antimicrobial Resistance (AMR)**

(Extract from the E.U. Commission document)

### **1. THE NEED FOR EU ACTION AGAINST ANTIMICROBIAL RESISTANCE (AMR) 1**

AMR is a serious challenge, in the EU and globally. According to the World Health Organization (WHO)<sup>1</sup>, AMR has already reached alarming levels in many parts of the world. High levels of AMR in bacteria linked to numerous common infections (e.g. urinary tract infections, pneumonia, tuberculosis and gonorrhoea) have been observed in all WHO regions. Resistance to antivirals, such as those used to treat HIV, is also increasing. between humans and animals and likewise a potential source of new resistant microorganisms. This term is globally recognised, having been widely used in the EU and in the 2016 United Nations Political Declaration on AMR.

#### **Definitions:**

**Antimicrobial** include antibiotics, antivirals, antifungals and antiprotozoals. They are active substances of synthetic or natural origin which kill or inhibit the growth of microorganisms. Used in every-day medicine (e.g. urinary tract infections, surgery and care of premature babies), they are vital to preventing and treating infections in humans and animals.

**Antimicrobial resistance (AMR)** is the ability of microorganisms, such as bacteria, to become increasingly resistant to an antimicrobial to which they were previously susceptible. AMR is a consequence of natural selection and genetic mutation. Such mutation is then passed on conferring resistance. This natural selection process is exacerbated by human factors such as inappropriate use of antimicrobials in human and veterinary medicine, poor hygiene conditions and practices in healthcare settings or in the food chain facilitating the transmission of resistant microorganisms. Over time, this makes antimicrobials less effective and ultimately useless.

**One Health** is a term used to describe a principle which recognises that human and animal health are interconnected, that diseases are transmitted from humans to animals and vice versa and must therefore be tackled in both. The One Health approach also encompasses the environment, another link

### **OBJECTIVES OF EU COMMISSION**

The key objectives of this new plan are built on three main pillars:

1. making the EU a best practice region: as the evaluation of the 2011 action plan highlighted, this will require better evidence, better coordination and surveillance, and better control measures. EU action will focus on key areas and help Member States in establishing, implementing and monitoring their own national One Health action plans on AMR, which they agreed to develop at the 2015 World Health Assembly<sup>20</sup>;
2. boosting research, development and innovation by closing current knowledge gaps, providing novel solutions and tools to prevent and treat infectious diseases, and improving diagnosis in order to control the spread of AMR;

3. intensifying EU efforts worldwide to shape the global agenda on AMR and the related risks in an increasingly interconnected world.

The new plan contains concrete actions with EU added value that the Commission will develop and strengthen as appropriate in the coming years. All these actions are important in themselves, but they are also interdependent and need to be implemented in parallel in order to achieve the best outcome.

### **3. BOOSTING RESEARCH, DEVELOPMENT AND INNOVATION ON AMR**

Research, development (R&D) and innovation can provide novel solutions and tools to prevent and treat infectious diseases, improve diagnosis and control the spread of AMR. This One Health action plan not only aims to boost research, but also to further incentivise innovation, provide valuable input into science-based policies and legal measures to combat AMR and address knowledge gaps such as the role of AMR in the environment.

The proposed AMR research strategy covers the full One Health spectrum, addressing human and animal health as well as the role of the environment. It takes into account the priorities set out in the WHO Global Action Plan on AMR, the JPIAMR and national action plans. The Commission will work in partnerships with Member States and industry, including small and medium-sized enterprises (SMEs) and the IMI, to tackle AMR in bacteria, viruses, fungi and parasites. Special attention will be given to the WHO priority list of pathogens as well as to tuberculosis, HIV/AIDS, malaria and neglected infectious diseases. Using different funding instruments and partnerships under its current and future framework programmes for research and innovation, the Commission will focus on the following actions.

#### **3.1 IMPROVE KNOWLEDGE ON DETECTION, EFFECTIVE INFECTION CONTROL AND SURVEILLANCE**

Greater efforts are needed to better understand the epidemiology, emergence, prevalence and burden of infectious diseases, to further investigate how resistance develops and spreads, to improve early detection; and to better understand AMR-related challenges in the European healthcare, animal husbandry and food production sectors.

Technology today enables to collect and use data from the healthcare (hospitals, health centres, laboratories, etc.) and agri-food sectors but also from society in general (the internet of Things, social networks, etc.). Combining these data makes it possible to detect disease outbreaks much earlier and helps to understand how infectious diseases are transmitted.

The development of IT solutions for such operations has great potential to improve surveillance, prescription practices, self-management of health, care solutions, and awareness of AMR.

▶ support research into the development and assessment of interventions that prevent the development and spread of AMR in different settings such as hospitals, communities and animal husbandry;

▶ support research into understanding the epidemiology of AMR, in particular the pathways of transmission between animals and humans, and their impact;

▶ support research into the development of new tools for early (real-time) detection of resistant pathogens in humans and animals, taking account of advances in IT solutions;

▶ support research into new eHealth solutions to improve prescription practices, selfmanagement of health, care solutions, and improve awareness of AMR.

#### **3.2 DEVELOP NEW THERAPEUTICS AND ALTERNATIVES**

Despite great efforts made in the past years, including through public-private partnerships, there are not enough antimicrobials in the pipeline to meet expected needs. The spread of AMR has also contributed to the declining effectiveness of existing antimicrobials. More research is needed to develop new medicinal products, therapeutics and alternative

treatments, as well as innovative anti-infective approaches and products for humans and animals. More research is also needed to advance the repurposing of old antimicrobials, improving their activity and to develop new combination therapies, including those to treat multidrug resistant tuberculosis (MDR-TB). Digital technologies for testing biomedical products and innovation in eHealth should also be scaled up, e.g. by supporting innovation procurement<sup>36</sup> as well as supporting SMEs.

- ▶ support research into the development of new antimicrobials and alternative products for humans and animals as well as the repurposing of old antimicrobials or the development of new combination therapies;
- ▶ support SMEs in their R&D efforts towards innovative and/or alternative therapeutic approaches for the treatment or prevention of bacterial infections, together with the EMA;
- ▶ facilitate sharing of antimicrobial research data among relevant stakeholders<sup>37</sup> to guide future antimicrobial medicinal product discovery and development;
- ▶ support the establishment of a European-wide sustainable clinical research network, which should speed up clinical studies on medicinal products, lower their costs, and improve coordination of clinical research;
- ▶ support research and innovation to promote the use of digital technologies supporting the development of new therapeutics and alternatives.

### **3.3 DEVELOP NEW PREVENTIVE VACCINES**

Vaccines have proven to be crucial and very cost-effective in preventing the onset and spread of infectious diseases. They also have great potential to reduce the incidence of AMR. For example universal coverage by a pneumococcal vaccine could not only save many of the estimated 800,000 children who die each year of pneumonia, it would also reduce by an estimated 47% the use of antimicrobials, counteracting the development of AMR. Vaccines already play an important role in preventing disease in farm animals and aquaculture. This should be boosted even further to decrease the use of antimicrobials in those sectors.

- ▶ continue to support research into the development of new effective preventive vaccines for humans and animals;
- ▶ support increasing the knowledge base concerning the barriers that influence the wider use of vaccination in medical and veterinary practice.

### **3.4 DEVELOP NOVEL DIAGNOSTICS**

Novel, rapid and reliable diagnostics are crucial for differentiating between bacterial and viral infections and identifying AMR, so that the most appropriate treatment can be given in a timely manner. By tailoring the treatment to the nature of the infectious pathogen and its resistance pattern, diagnostics help reduce the unnecessary use of antimicrobials in humans and animals.

Such novel diagnostics are in the process of entering the market but more tests are needed to guide a more efficient use of existing antimicrobials in the human and animal health sectors.

Novel diagnostics will also make it possible to recruit the right patients in clinical trials for new treatments, making the trials more efficient.

- ▶ support research into the development of new diagnostic tools in particular on-site tests in humans and animals to guide practitioners regarding the use of antimicrobials;
- ▶ support the use of IT solutions in developing tools for diagnosing human and animal infections;
- ▶ encourage the uptake of diagnostics in medical and veterinary practice, e.g. through innovation procurement.

## Annex 2

### **„ONE HEALTH – NEW MEDICAL CONCEPT” ROMANIA ASSOCIATION. A UNIQUE PLATFORM OF MULTIPLE SCIENTIFIC EXPERTISE MEMBERS AND ASSOCIATED INSTITUTIONS**

Association "One Health - New Medical Concept", was formally established in 2005 by court order dated May 26, 2015, registered at the Special Registry of Associations and Foundations no. 65PJ / 26.05.2015

Association "One Health - New Medical Concept", is part of the realization of primary prevention of diseases in humans, animals, plants and the environment through research, monitoring, surveillance and dissemination of information on aspects of the global pathology in medium-plants-animals -man chain.

The word “animals” includes farm animals, wild animals and pets.

To this is added first, all aspects of food safety, development of drugs and pharmaceutical products, including bio (vaccines). These are the basics of the new concept of "One Health".

To promote and implement the concept of One Health, the Association granted in addition to directions generally accepted, special emphasis to comparative medicine and comparative oncology, occupational medicine and lifestyle, food and nutrition, with the main action of Primary Prevention of Life and Life Post-Therapy.

Association „One Health - New Medical Concept” is certainly the only entity in Romania which brings together the expertise at this level and broad coverage: human medicine, veterinary medicine, environmental medicine, food and nutrition, occupational and lifestyle, chemistry, biophysics, agricultural sciences. ..

#### **I. STRUCTURE OF THE ASSOCIATION**

Association "One Health - New Medical Concept" has over 500 members. The Association has a central structure in Bucharest and branches in the main universities in Romania. Association activity takes place in the framework of specialized departments.

#### **MEMBERS**

Association members are specialists from the founding domains of the concept, academicians, academics, researchers and professionals, working in human medicine, veterinary medicine, environmental medicine, food and nutrition, agriculture, ICT, chemistry, physics .... Association brings together prominent experts also from Italy and the US.

**Here are nominated several personalities which honors the Association with their activity:**

**MANOLESCU NICOLAE** m.c. Acad. Rom. Prof. Univ. Emerit h.c. Dr. h.c.  
m. c. Acad. Franceză de Medicină  
Presedinte al Asociației One Health

**POPESCU IRINEL** m.c. Acad. Rom. Prof. Univ. Dr. Institutul Clinic Fundeni  
membru coresp. Acad. Franceză de Medicină  
Președinte Academia de Științe Medicale  
Co-Președinte Asociația One Health



<b>CEPOI VASILE</b>	Dr, Președintele Agenției Naționale de Management a Calității în Sănătate Vicepreședinte al Asociației One Health
<b>CONSTANTINESCU STEFAN</b>	Dr. Prof. Univ. Decan Facultatea de Medicina, Universitatea Leuven, Belgia Vicepreședinte al Federației Europene a Academiiilor de Medicina (FEAM) Vicepreședinte Asociația One Health
<b>BOGDAN MIRON AI.</b>	Dr., Prof. Univ. Institutul de Pneumoftiziologie Marius Nasta Vicepreședinte Asociația One Health
<b>CEAUSU EMANOIL</b>	Dr., Prof. Univ, Academician ASM Spitalul Clinic de Boli Infecțioase si Tropicale “Dr. Victor Babeș” Secretar General Asociația One Health
<b>DIANA PAUN</b>	Conf. Univ. Dr. Consilier de stat – Departamentul Sănătate Publica Manager al Institutului National de Endocrinologie “C.I.Parhon” Director- Departamentul de Medicina Umana, AOH
<b>IACOBESCU FANEL</b>	Prof. Univ. dr. Președinte RENAR Sef Departament Acreditare
<b>CINCA SABIN IOAN</b>	CS 1 Șef Secție Institutul Oncologic “Prof. Dr. A. Trestioreanu” București Șef Departament Publicații si Manifestări Științifice
<b>PREDOI GABRIEL</b>	Prof. Univ. Dr. Decan - Facultatea de Medicina Veterinara București
<b>CATOI CORNEL</b>	Prof. Univ. Dr. Decan - Facultatea de Medicina Veterinara Cluj
<b>IFRIM MIRCEA</b>	Prof. Univ. Dr. Secretar General Academia de Științe Medicale din Romania
<b>JELEV IOAN</b>	Dr. Ing. Secretar general Academia de Științe Agricole si Silvice Romania Sef Departament de Fitopatologie, AOH
<b>SUCIU NICOLAE</b>	Prof. Univ. Dr. Director Institut National pentru Sanatatea Mamei si Copilului (IOMC) Manager General Maternitatea Polizu
<b>COSMA VASILE</b>	Prof. Univ. Dr. Facultatea de Medicina Veterinara Cluj Președinte Filiala Cluj Napoca, AOH
<b>URSU IOAN</b>	Director Științific Institutul „Horia Hulubei” Măgurele Șef Departamentul de Radiații cu Mediul, AOH
<b>NASTASIA BELC</b>	Director General Institutul pentru Bioresurse Alimentare București

Şef Departamentul de Siguranța Alimentelor, AOH

**FLORESCU SIMIN**

Dr, Director Medical Spitalul Victor Babeş  
Şef Departamentul de Zoonoze si Rezistenta Microbiana, AOH

**GROZA IOAN**

Prof. Univ. Dr.  
Director General Ministerul Educației si Cercetării  
Şef Departamentul de Învățământ, AOH

**CONSTANTIN  
CROITORU**

Cercetător Ştiințific grad I  
Membru Secretar Ştiințific al Secției de Industrie Alimentara a ASAS  
Correspondent al ASAS  
Profesor de tehnologie si științe alimentare  
Şef Departament de Siguranța Alimentara, AOH

**THE DEPARTMENTS OF THE ASSOCIATION**

The Association has a number of 20 departments, organized on the domains and strategic action directions of the One Health Concept.

**SUBSIDIARIES**

Till now there are 5 subsidiaries of the Association in the academic centers of Brasov, Tg. Mures, Cluj, Craiova and Constanta.

**ONE HEALTH NETWORK**

This year it was made up the National One Health Network, with knots in the academic centers of Bucuresti, Brasov, Cluj, Arad, Slatina, Galati, Iasi and Timisoara.

**COOPERATION AGREEMENTS AND PARTNERSHIPS**

Association has partnership and cooperation agreements with institutions and organizations representing all areas of the founding concepts.

**FEAM**

Association has partnership agreement and collaboration with ASM, under which they agreed:  
- Foundation of "One Health" in FEAM consists of 4 members of the association and four members of the FEAM plus group coordinator in the person of Academician Andre Laurent Parodi.  
- Monitoring and support from FEAM the Association's activity.

Following the report presented to FEAM in May 2017, in recognition of activity, the Association has received from the Federation of European Academies of Medicine (FEAM), the task of promoting the concept in Central and South-Eastern Europe and of the Directive One Health in research areas, responsibility - which was given—probably- only to this entity in Romania.

**Academy of Medical Sciences of Romania**

The Association has a special partnership and cooperation agreement with ASM; based on this partnership, in ASM has been formed the “One Health” Center of Excellence and several major projects are ongoing.

**Universities**

The Association has partnership and cooperation agreements with six universities in major academic centers in Romania, public and private profile, human and veterinary medicine.

**Research Institutions**

Association has partnership agreements and collaboration with fundamental and applied research institutes, public - interest national- and private

### **Institutions and national regulatory coordination and professional**

Association has partnership agreements and cooperation with ANSVSA, REAR, Danube Delta Biosphere Reserve, College of Physicians, College of Veterinarians ...

#### The Association has concluded cooperation agreements dealing with universities and institutions such as:

- Academia de Stiinte Medicale – Sectia de Medicina Comparata
- Agentia Nationala Sanitar Veterinara si pentru Siguranta Alimentelor
- Institutul National de Sanatate
- Universitatea Spiru Haret
- USAMV Iasi
- Universitatea Ovidiu Constanta
- Universitatea de Medicina si Farmacie Tg. Mures
- Universitatea Dunarea de Jos Galati
- Institutul de Medicina Comparata
- Forumul Mediteranean de Oncologie Comparata
- ROMVAC
- SANIMED
- ACTIVEIMMUNITY
- Institutul de Bioresurse Alimentare
- Colegiul Medicilor Veterinari
- Biosfera Delta Dunarii
- Colegiul Medicilor
- Spitalul de Boli Infectioase si Tropicale Bucuresti Victor Babes
- Institutul National de Cercetare Cantacuzino

#### The international agreements were concluded the following:

- Acord de colaborare cu Federatia Europeana a Academiiilor de Medicina (FEAM)
- Acord de colaborare cu Ordinul Militar si Ospitalier Sf. Lazarus din Israel
- Acord cu Asociatia Europeana de Biotehnologie
- Acord cu Universitatea de Medicina Veterinara din Budapesta

**„ONE HEALTH” PRIORITY PROJECTS  
2018 - 2020**

**1. Active Immune Proteins. Study of Proteins of bird nature in the pathology of human infection produced by bacteria resistant to antibiotics.**

Premise

The Romanian product "IMUNOINSTANT" based on the immunogenic I-PC2 created to ROMVAC SA by a team led by Dr. I.V. Patrascu marks an important first step in the face of antibiotic resistance.

Preliminary preclinical and clinical results in collaboration with Carol Davila Hospital and Infectious and Tropical Diseases Hospital Victor Babes shows an exceptional effectiveness of active immunologically protein in front of antibiotic resistance.

Dr. I.V. Patrascu is working to Activeimmunity SRL on a new product based immunogenic I-SPGA, named IMUNOVIP, higher multiple valence and for the treatment of many diseases.

Antibiotics crisis. WHO call

WHO emergency call about the therapeutic of many hospital acquired infections and various gastrointestinal disorders, bladder, lung caused by bacteria resistant to antibiotics.

The crisis of antibiotic resistance tends to overcome the impact of cancer.

Result

The project can become support for the launch of a national program of prevention and treatment of infections with antibiotic-resistant, nosocomial infections, immune deficiencies and infections caused by bacteria such as Helicobacter, Candida albicans ...

Applicant:

Activeimmunity SRL  
ASM - Institute of Comparative Medicine One Health  
Association One Health New Medical Concept  
The Nephrology Carol Davila Hospital  
The of Infectious and Tropical Diseases Victor Babes Hospital  
National Institute of Food Bioresources (IBA)

## **2. Identification and quantification, monitoring and alerting oncogene chemicals in Danube water and the main Danube tributaries**

### Current situation

The Cancer Incidence in Romania, became critical, registering now a number over 600,000 cases. Food quality, water and environment are the main causes, why is needed concerted action to reduce the negative impact.

It is necessary to identify oncogenic substances, to limit their intake as much as possible in serving a Danube waters of southern Romania, in agricultural work and ensure fishing in the area.

### Result

Determination of critical level of oncogenic substances, identification and quantification based on a national standard.

A set of measures and procedures to avoid exceeding the alarm level on the content of oncogene substances.

Emergency medical procedures.

National pilot project further development.

### Applicant:

National Institute for Research and Development Danube Delta, Tulcea  
ASM - Institute of Comparative Medicine One Health  
One Health New Medical Concept Association  
Institute of Oncology, Bucharest  
University Dunarea de Jos Galati  
National Institute of Food Bioresources (IBA)

## **3. Identification, quantification and monitoring measures needed to large cities that are serious zoonoses reservoir from the vectors (mosquitoes, ticks, rats and pigeons). Service contract.**

### The current situation

Uncontrolled urban development without adequate sanitary measures, at the moment leading to an alarming incidence of disease, often fatal, caused by vectors such as rats, birds including birds, mosquitoes, ticks.

Climate change accentuates this situation.

### Result

A set of measures and procedures for the prevention and treatment of diseases of animals including vectors such as rats, birds including birds, mosquitoes, ticks.

Pilot project in three regions, rural and urban, reproducible in the country.

### Applicant:

I.D.S.A  
ASM - Institute of Comparative Medicine One Health

Association One Health New Medical Concept  
The of Infectious and Tropical Diseases Victor Babes Hospital  
USAMV Cluj  
University Spiru Haret  
UMF Tg. Mures

**4. National Center of Excellence "One Health". Health for man and all that surrounds it, animals, plants and the environment, and everything that condition him, diet and nutrition and occupational.**

European Federation of Academies of Medicine gives great importance to the Center, the desire to play the role of coordinator of research in the field of One Health.

The Center is established at the Academy of Medical Sciences of Romania, Department of Comparative Medicine.

Participating in the consortium:

- Mediterranean Forum of Comparative Medicine
- ASM - Institute of Comparative Medicine One Health
- Association One Health New Medical Concept
- The Nephrology Carol Davila Hospital
- The of Infectious and Tropical Diseases Victor Babes Hospital
- National Institute of Food Bioresources (IBA)
- USAMV Cluj
- University Spiru Haret
- UMF Tg. Mures
- Institute of Oncology, Bucharest
- University Dunarea de Jos Galati
- University of Agricole Sciences and Veterinary Medicine, Bucharest
- Institute of Diagnose and Health for Animals, Bucharest
- Center of Diabetology I Pavel, Bucharest
- ROMVAC
- SANIMED
- Activeimmunity SRL

**5. Implementation of Global Concept in Romania. A Health for People, animals, plants and the environment and everything that condition the life, Food, Nutrition and Occupational.**

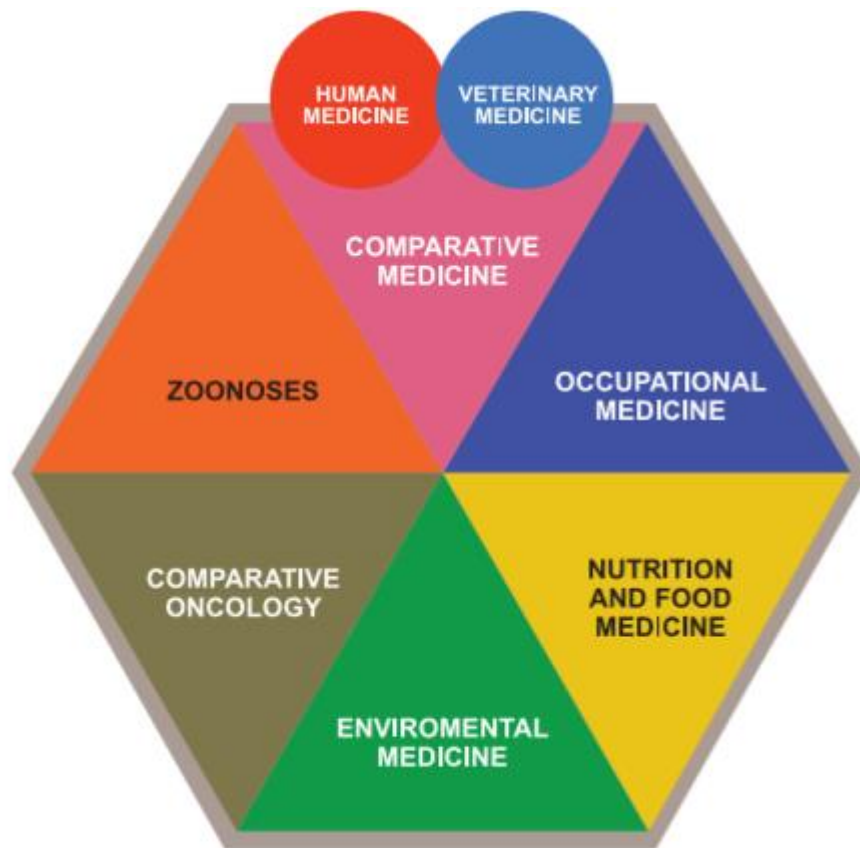
The project aims to:

- a) Acquiring specialized field of "One Health" is aimed at all professionals who determines through their health doctors, veterinarians, specialists in environmental protection, biochemists, biophysicists, sociologists, psychologists, agricultural engineers, system engineer IT & C, biotechnologists and bioeconomists.  
Courses, 10,000 professionals (doctors, veterinarians, biologists, specialists in environmental medicine ...)

- b) Promoting primary prevention is done by Medical Assistance and Screening on national samples represent the major classes of pathologies: oncology, hypertension, diabetes, perinatal, zoonoses.  
Caravans equipped with appropriate facilities perform specific tests for each pathology, samples every 2,000 people uniformly distributed in the country, the sample was considered sufficient to properly evaluate these health related pathology.
- c) Education in the spirit of "One Health" and open interest in applying the generator principles and recommendations "One Health", a healthy lifestyle, a healthy environment and a healthy diet for the entire country.  
Dissemination of leaflets in specific schools, family doctors offices, clinics and popularizing the Internet, TV, Radio documentaries, interactive website ...

Coordinated Academy of Medical Sciences are associated in the project:

- ASM - Institute of Comparative Medicine One Health
- Association One Health New Medical Concept
- The Nephrology Carol Davila Hospital
- The of Infectious and Tropical Diseases Victor Babes Hospital
- National Institute of Food Bioresources (IBA)
- Institute of Oncology, Bucharest
- Center of Diabetology I Pavel, Bucharest
- ROMVAC
- Activeimmunity SRL
- Universities of Medicine and Farmacie
- Universities of Agricole Sciences and Veterinary Medicine



**ONE HEALTH-NEW MEDICAL CONCEPT, ROMANIA**

Nicolae Iorga Street, No 34-36, District 1, Bucharest, 010436 Romania,

Tel: +40 734.577.377; +40 740.114.402

E-mail: [contact@onehealth.ro](mailto:contact@onehealth.ro); [manolescunicolae@gmail.com](mailto:manolescunicolae@gmail.com)

[www.onehealth.ro](http://www.onehealth.ro)