

From Four-Way Linking to a One Health Platform in Egypt: institutionalisation of a multidisciplinary and multisectoral One Health system

L. Allal ^{(1)*, **}, H. Mahrous ^{(1)**}, A. Saad ^{(1)**}, S. Refaei ⁽²⁾, M. Attia ⁽³⁾,
I. Mahrous ⁽³⁾, M. Fahim ⁽²⁾, S. Elfadaly ⁽²⁾ & A. Abdelnabi ^{(1)**}

(1) Food and Agriculture Organization of the United Nations (FAO), 11 El-Eslah El-Zeraei Street, Dokki, Giza, Egypt

(2) Ministry of Health and Population (MOHP), 1 Magles El Shaab Street, Garden City, Cairo, Egypt

(3) General Organisation for Veterinary Services (GOVS), Ministry of Agriculture and Land Reclamation (MOALR), 1 Nady El Seid Street, Dokki, Giza, Egypt

*Corresponding author: lotfi.allal@fao.org

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Summary

The convergence of humans, animals and our shared environment results in a dynamic in which the health of each group is inextricably linked. Taking into account the fact that the majority of emerging pathogens (e.g. highly pathogenic avian influenza [HPAI], severe acute respiratory syndrome coronavirus, Nipah virus, Middle East respiratory syndrome coronavirus) are zoonotic diseases, Egypt has established a national One Health coordination mechanism. The primary purpose of this mechanism is to provide a comprehensive, strategic approach to concurrent and future health challenges that are facing public and animal health, including environmental impacts. In this way, the public health, animal health and environment sectors can improve disease mitigation measures, develop stronger and more stable public and animal health services, promote effective national communication strategies and improve One Health collaboration among all relevant sectors.

In Egypt, the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) currently assist in hosting the country's Four-Way Linking Task Force with the participation of the convening Ministries (Ministry of Health and Population, Ministry of Environment, and Ministry of Agriculture and Land Reclamation [MOALR] – through the General Organisation for Veterinary Services and the MOALR's laboratories). In the context of the Emerging Pandemic Threats 2 Program, funded by the United States Agency for International Development (USAID), FAO plans to assist Egypt in establishing a robust, multidisciplinary and multisectoral One Health system. This system is based on the solid foundation of the Four-Way Linking Platform, which combines information from four functional streams – epidemiology, laboratories, and animal and human health. Egypt's platform will involve all sectors concerned with HPAI control and combine all stakeholders in an integrated, holistic approach to improve the detection of, response to and control of any threats at the human–animal–environment interface in Egypt.

Keywords

Control – Detection – Egypt – Four-way linking – Human–animal–environment interface – Multisectoral collaboration – One Health – Response – Zoonotic disease.

Introduction

The value of the One Health approach is increasingly recognised around the world and has the support of many international organisations, including the Food and Agricultural Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE) and the World Health Organization (WHO), which are known as the Tripartite. The FAO–OIE–WHO launched their Tripartite concept note in April 2010 at the International Ministerial Conference on Animal and Pandemic Influenza (IMCAPI) held in Hanoi, Vietnam, from 19 to 21 April 2010 (1). The Tripartite recognised the need for a supportive environment in which the relevant Ministers from different governments, together with stakeholders from professional associations, regional organisations, donor agencies and other partners, could establish a consensus on the most suitable ways of working on health risks at the human–animal–environment interface.

The Four-Way Linking (4WL) Framework is a collaborative effort between WHO, FAO, the OIE, the joint worldwide network of expertise on avian influenza (OFFLU) and the Global Early Warning System (GLEWS) to improve national, regional and global qualitative risk assessments for animal and zoonotic influenza (2). This framework seeks to establish a national mechanism for routine, integrated and qualitative assessments of virological and epidemiological influenza data from humans and animals. Decision-makers can use the information retrieved through the risk assessments to develop and implement new scientifically based measures for prioritising and managing the risks identified, and for evaluating the effects of the measures already in place. The 4WL Framework has been tested in three countries: Egypt, Indonesia and Vietnam.

The Four-Way Linking Framework in Egypt

In November 2010, WHO, FAO and the OIE carried out a joint assessment mission to Egypt to identify key partners, national initiatives, current efforts, and existing operational tools and systems for the epidemiological and virological surveillance of influenza in both the public and animal health sectors. The team assessed the existing systems of data collection, traceability and exchange, and the reporting of influenza within the public and animal health sectors. Major gaps and constraints were identified within these systems, and this mission was the first step towards initiating the 4WL Framework in Egypt. The mission identified the major partners that should be included in a 4WL Framework, including epidemiology and laboratory departments in the Ministry of Health and Population (MOHP) and the Ministry of Agriculture and Land Reclamation (MOALR).

The first 4WL workshop was held in Ain Sokhna, Egypt, from 26 to 28 September 2011. Participants included representatives of the four main sectors and disciplines involved in the control of highly pathogenic avian influenza (HPAI) in Egypt – public health epidemiology (Epidemiology Unit, MOHP); public health virology (Central Public Health Laboratory [CPHL]); animal health epidemiology (General Organisation for Veterinary Services [GOVS]); and animal health virology (Central Laboratory for Quality Control of Poultry Production [CLQP]) – in addition to academia (two professors from Cairo University).

The workshop focused on:

- a) risk assessment
- b) the importance to individual institutions as well as overall national efforts of the following:
 - i) data collection
 - ii) data linkage
 - iii) joint risk assessment (JRA).

The objectives of the workshop included the following:

- a) drafting a template for a national avian influenza technical committee report
- b) developing a list of gaps and challenges related to the collection, sharing and communication of data, as well as a list of proposed solutions to these gaps and challenges
- c) identifying an action plan with a timeline and practical key next steps.

Representatives of both the animal and human health sectors in Egypt acknowledged the importance of collaboration in the 4WL Framework. Such cooperation will help to fill the gaps evident in data sharing and will improve communications and the flow of information necessary for an informed national risk assessment. The participants developed an action plan and next steps, including:

- a) the convening of a national joint task force (the inaugural members of which, from each sector/discipline, were identified during the meeting)
- b) the establishment of a mechanism for JRA and reporting, along with solving data-sharing and communication issues.

Following the workshop, action was taken to establish the 4WL Task Force (4WLTF) and regular meetings have subsequently been conducted. This task force was the first technical One Health committee established in Egypt. The 4WLTF meetings had the dual purpose of data sharing and performing a risk assessment of the HPAI situation. The

members of the 4WLTF worked in the epidemiology and surveillance administrations of the MOHP and the GOVS, the CPHL, the CLQP, WHO–Egypt and the FAO Emergency Centre for Transboundary Animal Diseases–Egypt (FAO–ECTAD–Egypt).

Since 2011, the 4WLTF has been working efficiently. Despite the political instability resulting from changes in the political situation in Egypt, the 4WLTF serves as an official technical wing for policy decision-making processes on zoonotic influenza viruses. The 4WLTF's role is critical in the absence of any One Health structure that could combine the efforts of the Ministries in charge of controlling avian influenza. From 2006 to 2011, a committee was in place at the Ministerial level called the Ministerial National Supreme Committee for Control of Avian Influenza. This committee was responsible for harmonising activities between the different Ministries in charge of HPAI and with issuing executive legislation as required. Currently, the committee meets for emergency situations only, such as the HPAI upsurge in 2014–2015, and only met once in 2018.

The FAO–ECTAD–Egypt has taken the lead in encouraging the continuance of 4WLTF meetings and has assisted in expanding the 4WLTF's remit beyond influenza to include other emerging diseases, such as Middle East respiratory syndrome coronavirus (MERS–CoV) and other zoonotic diseases of importance in the country. In addition, other partners from technical institutions have been added to the task force, including the following:

- Ministry of Environment (MOE)
- United States Naval Medical Research Unit (NAMRU-3)
- United States Centers for Disease Control and Prevention (CDC)
- zoonotic disease departments in both the Ministry of Health and Population and the Ministry of Agriculture and Land Reclamation
- Animal Health Research Institute
- Veterinary Vaccine and Serum Production Institute
- Vaccine and Serum Research Agency (VACSERA)
- Central Laboratory for Evaluation of Veterinary Biologics.

The 4WLTF has been approved by the Egyptian Government but has not been formally institutionalised. However, it does provide regular science-based recommendations for aligned and/or joint risk management and risk communication to government decision-makers. Decision-makers consider these recommendations in making routine adjustments to avian influenza surveillance and control plans. Currently, the Government of Egypt is working to use the existing 4WLTF as the basis for establishing a One Health

coordinating mechanism within the country. This effort will start by institutionalising the 4WLTF's function within the government as a One Health Technical Advisory Group (OH-TAG). This group would serve as a technical wing for the Ministerial National Supreme Committee for Control of Avian Influenza (3). The OH-TAG would be an expansion of the 4WLTF, with the addition of members with expertise in other zoonotic diseases from both public and animal health sectors.

The 4WL Framework targeted the following two aspects in understanding health threats at the human–animal interface:

- a) information sharing and linkage among governmental public health and animal health sectors
- b) JRA.

At the 4WL Framework meetings, the following actions were discussed, implemented or facilitated:

- The CPHL (the laboratory responsible for avian influenza diagnosis in humans) was identified as lacking the capacity to perform the genomic sequencing of the influenza virus. To mitigate this, the CLQP (the laboratory responsible for the diagnosis and sequencing of influenza in poultry in animal health), whose staff have avian influenza genomic sequencing experience, has conducted practical training on such techniques with CPHL staff at the human health side. In addition, the CLQP has conducted training with relevant CPHL staff on its testing protocol, with the aim of improving CPHL's capacity in this area.
- Data sharing and the joint conduct of situational assessments and risk discussions within a package of field and desktop containment measures were facilitated. These activities assisted in controlling the unprecedented upsurge in human cases of HPAI virus in 2014–2015.
- A task group responsible for JRA involving the MOHP and MOALR was established. This task group was created by the 4WLTF, demonstrating the commitment of both Ministries to conducting regular JRAs. Several influenza pandemic JRA exercises in Egypt were conducted by this group.
- Collaboration between human and animal health sectors and the MOE was supported and facilitated at the national and sub-national (governorate and district) levels.
- The possible provisioning of avian influenza H9 primers and the upgrading of the gene-sequencing protocol was explored.
- Responses to newly emerged diseases in other countries, such as avian influenza A (H7N9) virus in the People's Republic of China, were discussed.

- Joint surveillance of MERS–CoV was established, and laboratory results and response actions were discussed.
- The opportunity to develop a joint zoonotic disease strategy and action plan to assist in framing joint activities between the Ministry of Agriculture (Veterinary Services) and the Ministry of Health for the control of zoonotic disease in a scientific and standard way was explored.

Although tangible success has been achieved through the establishment of the 4WL platform, it is an *ad hoc* arrangement confined to information sharing and has only ever been hosted by FAO–ECTAD–Egypt. Moreover, while other partners actively participated in the meetings, they never tried to develop the 4WL platform as an institutionalised body. Despite developing terms of reference for Focal Points from different parties/entities for operationalising the 4WL platform, a meeting of these parties/entities has not yet taken place.

Thus, the suggested National One Health Platform has to be institutionalised and incorporated into the governmental organisational chart to be sustained and functional, and to enable it to serve as an official technical branch of the policy-making processes for zoonotic diseases in Egypt.

Operationalisation of the National One Health Platform in Egypt

When operationalising a new system, it is often difficult to know where to start and how to prioritise the necessary actions. Many options on how to proceed arise from analyses of problems, and solutions tend to be highly context specific. In order for the National One Health Platform in Egypt to function, the overall roles and responsibilities of those involved should be agreed upon and committed to by all participating entities. Moreover, all such entities will need to identify and prioritise their areas of work. This platform's aim is to provide a comprehensive, strategic approach to concurrent and future health challenges involving those facing public and animal health, and environmental impacts. National authorities play a key role in devising, financing and implementing planned interventions. The successful establishment and operationalisation of the National One Health Platform in Egypt will therefore contribute significantly to the overall goal of improving public health, food safety and security, and the livelihoods of poor farming communities.

The National One Health Platform in Egypt could assist in the mitigation of disease risks. This mitigation could be achieved through enhanced collaboration among all

the relevant sectors, especially between the veterinary, environment and human medical professionals focused on addressing critical needs. The platform will improve the sharing of information and data, knowledge exchange and collaboration among all sectors, and will increase efficiency in the use of resources through better multisectoral, One Health coordination, collaboration and communication. Harmonisation among sectors can result in coherence in communication approaches, and integrated messages, specifically supporting faster and better coordination during crises. The outcomes of collaboration will lead to a reduction in the likelihood of zoonotic disease emergence, decreased uncertainty in disease mitigation decisions and increased accuracy in the measurement of societal benefits through the integrated valuation of the impact of disease mitigation on human and animal health.

The National One Health Platform in Egypt could assist in developing centres of excellence for education and training in specific areas through enhanced collaboration among colleges of veterinary medicine and human medicine. The platform could also provide training for multidisciplinary and multisectoral professionals in the One Health workforce. In addition, the presence of this platform could provide an opportunity to communicate and exchange scientific knowledge through organised meetings with scientists, experts and professionals. At these meetings, experiences could be shared in order to create innovative programmes to improve health.

In the past, stakeholder meetings have been held to clarify One Health objectives and to collect all required information from each entity in order to identify its roles and responsibilities within the platform. Subsequent to these activities, a central One Health platform was mapped. Accordingly, the roles for the One Health platform were developed and shared among partners, as part of this effort to operationalise the platform in Egypt in 2017 (Box 1).

However, the following series of actions still needs to be undertaken to advance the implementation of the One Health concept in Egypt:

- Bring together a wide range of stakeholders from different disciplines and sectors, pooling their efforts and resources in promoting support and political will for the One Health approach.
- Establish a strong focus on constructive partnerships and educating political leaders and the public about One Health to gain widespread support for its adoption.
- Identify a common problem and specify an area of work across the animal, human and environment health systems as well as actions needed, as agreed by all partners.

Box 1**Role of the National One Health Platform in Egypt**

- To provide technical assistance in all human–animal–environment health-related issues, guiding decision-makers in issuing policies.
- To refine strategies and interventions related to disease mitigation and control measures.
- To facilitate and harmonise preparedness and response plans among all partners across all relevant sectors.
- To work with various projects' technical groups on specific activities.
- To assist in finding solutions to overcome the challenges facing disease control strategies and to communicate these solutions to more senior decision-makers in related Ministries.
- To identify ways to leverage existing programmes and capacity-building efforts to have a major impact at a minimal cost.
- To ensure regular data collection and information sharing by facilitating effective communication and coordination between all stakeholders.
- To devise adaptive, holistic and forward-looking approaches to the prevention, surveillance, monitoring, control and mitigation of endemic and emerging diseases that fully account for the complex interconnections among species.

– Improve synergy between different institutional perspectives and experiences, while maximising resources to address shared health threats at the human–animal–environment interface.

In developing the National One Health Platform in Egypt, a series of interviews were conducted by FAO and GOVS with various sectors to assess the status of their actions in relation to One Health activities and policy. The interviews showed that all the platform stakeholders have at least partially institutionalised One Health. The use and institutionalisation of One Health does not only depend upon international public health processes but can also be influenced by national country characteristics. Each country has found its own approach to institutionalising One Health according to its specific domestic circumstances.

The institutionalisation of One Health for the purposes of this paper is defined as the systematic integration of One Health into the decision-making process and the creation of a 'permanent demand' for One Health use. There are different degrees to which One Health can become institutionalised (e.g. accepted as a social norm, formalised as part of the policy process, undertaken on a voluntary basis, mandated or undertaken as a social responsibility) and a number of mechanisms to achieve this institutionalisation (e.g. guidelines, legislation, regulation, policy and administrative frameworks).

The draft National One Health Platform in Egypt using the existing structure, as shared among all partners for approval, consists of the following:

– A technical One Health group called the One Health Technical Advisory Group (OH-TAG, previously 4WLTF). As a technical group, the OH-TAG will *a)* develop new tools and strategies for controlling zoonotic diseases, *b)* review and approve JRAs, *c)* ensure a system for information sharing, and *d)* supervise and review joint epidemiological reports. The group's duties will be performed through sub-groups of technical personnel within the relevant Ministries. Facilitators of the OH-TAG have an important role in ensuring that the collaboration is fruitful and results in joint actions, drafting the agenda for meetings, recording the minutes of those meetings, and providing technical support when needed.

– The Ministerial National Supreme Committee for Control of Avian Influenza is to have its remit extended to cover all zoonotic diseases/One Health issues, and its membership will include representatives of all relevant Ministries. This Supreme Committee is the highest level in the One Health platform and its role will relate to policy and endorsement of actions among all relevant Ministries. Currently, resources are not targeted towards a One Health platform since no actual working structure exists. The mechanism of resource mobilisation for the implementation of One Health policies will be guided by the Ministerial National Supreme Committee, which will include a representative of the Ministry of Finance.

The transformation of the 4WLTF to the OH-TAG is the first action that has been taken towards institutionalising One Health in Egypt. The novel group will comprise Focal Points (i.e. One Health Officers) from all concerned entities, with the objective of facilitating collaboration and cooperation among governmental agencies, academic institutions, health science professions and industries (private sector). The aim is to help with the assessment, treatment and the prevention of zoonotic disease transmission. The OH-TAG differs from the 4WLTF in that the goal is to institutionalise the OH-TAG. Also, the OH-TAG's scope of collaboration could be expanded to encompass all zoonotic and emerging diseases of concern in Egypt in addition to other One Health issues, such as antimicrobial resistance and food safety.

Since the government approved the terms of reference for the OH-TAG in May 2017, the process is currently under way. In addition, a proposal on the establishment of the whole platform was drafted and sent to the relevant Ministers, as suggested. This group should be linked to the political authority represented by the Ministerial National Supreme Committee for Control of Avian Influenza (Boxes 2 and 3, Fig. 1).

Box 2**Suggested members of the One Health Technical Advisory Group (OH-TAG)**

The group could consist of representatives of the Ministries engaged in One Health (Ministry of Health and Population [MOHP], Ministry of Agriculture and Land Reclamation [MOALR], Ministry of Environment [MOE]), with the possibility of other Ministries being added, upon request, as needed.

The OH-TAG could be co-chaired by representatives of the MOHP and the MOALR as the main responsible Ministries.

Official/government members:

- Representatives of the MOHP (preventive [Epidemiology and Disease Surveillance Unit, zoonotic diseases administration], Central Public Health Laboratory)
- Representatives of the MOALR (preventive, zoonotic diseases [General Organization for Veterinary Services], Animal Health Research Institute [National Laboratory for Quality Control on Poultry Production, Virology Department, others], Central Laboratory for Evaluation of Veterinary Biologics, the Veterinary Serum and Vaccine Research Institute)
- Representatives of the MOE (relevant departments)
- Representatives of other entities, such as universities/research organisations, the private sector, etc.

Observers (international support):

- Representatives of the United States Agency for International Development (USAID)
- Representatives of the Centers for Disease Control and Prevention (CDC)
- Representatives of the other development partners

Facilitators:

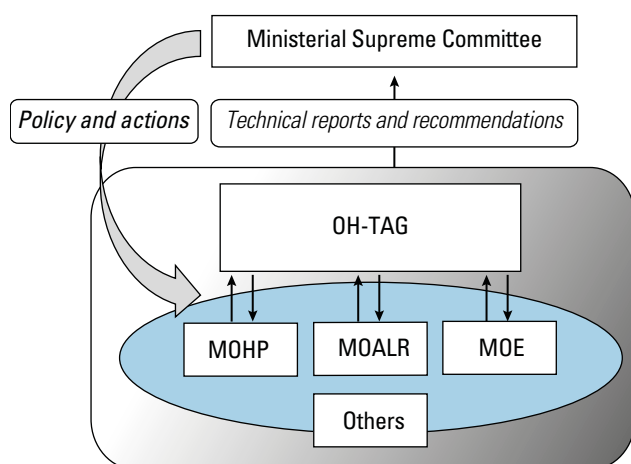
- Representatives of the Food and Agriculture Organization of the United Nations Emergency Centre for Transboundary Animal Diseases–Egypt (FAO–ECTAD–Egypt)
- Representatives of the World Health Organization Country Office, Egypt (WHO Egypt)
- Representatives of other organisations

Box 3**Terms of reference for the One Health Technical Advisory Group (OH-TAG)**

- Sustain a mechanism for coordination and regular information sharing among partners to facilitate preparedness and/or response to potential diseases of public health or animal health concern, and keep monitoring to ensure that a One Health coordination mechanism is in place.
- Ensure mutual collaboration and cooperation between all Ministries involved at all levels.
- Identify priority zoonotic diseases for the country and update the list based on changes in the epidemiological situation.
- Provide technical recommendations related to One Health activities (zoonotic diseases, antimicrobial resistance, etc.) to the Ministerial National Supreme Committee for Control of Avian Influenza.
- Provide technical assistance in reviewing, developing and regularly updating joint strategies for zoonotic diseases control.
- Provide technical recommendations for Ministries on zoonotic disease surveillance, prevention and response.
- Provide technical assistance to implement collaborative research on zoonotic diseases in order to provide evidence for intervention and policy formulation.
- Design the scope of the risk assessment for zoonotic diseases of concern (e.g. highly pathogenic avian influenza, Middle East respiratory syndrome coronavirus [MERS–CoV], any other emerging diseases) and guide its development.
- Issue a quarterly epidemiological report on major zoonotic diseases with epidemic potential (avian influenza, MERS–CoV, any other emerging or re-emerging disease).

Firstly, the current plan is to revise each entity's organisational chart to incorporate the National One Health Platform in Egypt by dedicating at least one staff member to One Health and designating this person as a One Health Officer. Terms of reference are to be prepared for this designated officer to describe tasks that will need to be performed for the organisation and for the platform. One of the Officer's tasks will be to represent his or her organisation, sharing its opinion and discussing the actions that the organisation can most likely deliver to the platform.

Secondly, the One Health Officer will need to communicate all findings, discussions, next steps and what is agreed upon by the parties to the National One Health Platform in Egypt. The One Health Officer should also support the platform and elaborate what his or her organisation can provide towards each area of work. In addition, the One Health Officer should monitor his or her organisation's progress in executing pre-agreed actions that will serve to operationalise the One Health platform.



MOALR: Ministry of Agriculture and Land Reclamation
 MOE: Ministry of Environment
 MOHP: Ministry of Health and Population
 OH-TAG: One Health Technical Advisory Group

Fig. 1
Structure of the National One Health Platform in Egypt

Discussion

To establish a sustainable National One Health Platform in Egypt, the following two key issues should be considered:

- identification of critical One Health workforce shortages in all sectors and the development of solutions in collaboration with key stakeholders;
- aim to ensure that the country has the infrastructure and resources necessary to anticipate and respond to public health and animal health emergencies or disasters.

Regular monthly or bimonthly meetings were conducted by the OH-TAG to discuss and undertake the tasks required to establish the functional National One Health Platform in Egypt, and other tasks related to One Health activities. Several concerns were expressed by participants at these meetings, including the following:

- The sustainability of the One Health platform needs to be ensured. To help with this, personnel from different sectors need to be brought together for dialogue, peer-to-peer learning, knowledge transfer, and cooperation on the promotion and implementation of One Health.
- Ownership of the process needs to be granted to stakeholders, synergies need to be created, and insights need to be offered into the type of institutional support required to improve the implementation of the action for control of zoonotic diseases.

– To begin implementation at the national level, a stronger multisectoral, One Health collaboration and commitment is required, and communication among sectors needs to be improved.

– Sustainable coordination on several matters needs to be ensured, such as on effective early warning systems, a rapid response to outbreaks and a reduction in long-term risks. This will maintain the flexibility of joint actions that may result from evolving institutional mechanisms.

The main challenges that will be faced in the adoption and potential longevity of the One Health initiative, including potential gaps that have yet to be addressed, can be summarised as follows:

- the need for key leadership to embrace the concept of One Health, to obtain buy-in from the human, animal and environment health sectors and other relevant partners, including human and veterinary medical providers and the private sector, and to execute a change programme in Egypt, as well as globally;
- differences in organisational cultures, competing priorities, and a lack of equitable resources to promote and further develop One Health;
- the need for a communication and advocacy plan to effectively influence public awareness and motivate a campaign to help to influence key policy-makers;
- the lack of support from various stakeholders to help to evolve a national One Health programme for Egypt.

There also may be cultural and perception issues to overcome. It can be difficult, for example, to get political support for holistic, complex solutions, which are not easy to explain. To combat this, clear and consistent messaging needs to be forthcoming from all sectors involved. Moreover, adopting this approach would involve changes within large bureaucratic organisations. Such change is often resisted and can in some instances take years to achieve. It frequently requires cultural shifts within agencies, and new systems and capacities to be built (also with associated costs), and it may even require changes in attitudes and relationships among professions (veterinarians, physicians, communication officers, biologists, workers in the area of the environment and natural resources, and others). Efforts should be made to communicate and advocate One Health successes and challenges in Egypt through the National One Health Platform and OH-TAG as well as all participating Ministries and partners.

Conclusions

The National One Health Platform in Egypt is essential in addressing health risks at the human–animal–environment interface in the country. Enhancing collaboration among all the health sciences to address critical needs is essential. One Health will improve information and data sharing, knowledge transfer and collaboration between all sectors, thereby increasing efficiency in the use of resources through better multisectoral, One Health coordination, collaboration and communication. Harmonisation among sectors can improve coherence in communication approaches, and unify communication messages that can subsequently support faster and better coordination in crises. The ultimate outcome of the collaboration will be a reduction in the likelihood of zoonotic disease emergence. In addition, when disease mitigation decisions are being taken, the One Health approach will lead to a more accurate

measurement of the societal benefits because the impact of disease mitigation on both human and animal health will have been taken into account. Decision-makers in Egypt need to advocate for the One Health concept to ensure the sustainability of the suggested platform.

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Du maillage quadri-directionnel à la Plateforme Une seule santé en Égypte : institutionnalisation d'un système multidisciplinaire et multisectoriel Une seule santé

L. Allal, H. Mahrous, A. Saad, S. Refaei, M. Attia, I. Mahrous, M. Fahim, S. Elfadaly & A. Abdelnabi

Résumé

La coexistence des humains, des animaux et d'un environnement partagé crée une dynamique au sein de laquelle la santé de chaque groupe est inextricablement liée à celle des autres. Confrontée au caractère zoonotique de la majorité des agents pathogènes émergents (par exemple le virus de l'influenza aviaire hautement pathogène [IAHP], le coronavirus responsable du syndrome respiratoire aigu sévère, le virus Nipah, le coronavirus responsable du syndrome respiratoire du Moyen-Orient), l'Égypte a mis en place un mécanisme de coordination Une seule santé. Les objectifs en sont les suivants : *a)* mieux comprendre l'interaction des facteurs intervenant à l'interface homme–animal–environnement, *b)* améliorer les mesures d'atténuation de l'impact des maladies, *c)* œuvrer en faveur de services de santé publique et de santé animale performants et stables, *d)* promouvoir des stratégies nationales de communication efficaces et une collaboration multisectorielle Une seule santé entre toutes les entités concernées.

En Égypte, l'Organisation des Nations Unies pour l'alimentation et l'agriculture (FAO) et l'Organisation mondiale de la santé (OMS) contribuent à cette démarche en accueillant le Groupe de travail quadri-directionnel (*Four-Way Linking*) qui réunit les ministères concernés (ministère de la Santé et de la population, ministère de l'Environnement et ministère de l'Agriculture et de la revalorisation des terres [MOALR], à travers l'Organisation générale des Services vétérinaires et les laboratoires du MOALR). La FAO prévoit de fournir à l'Égypte une assistance visant à mettre en place un système robuste, multisectoriel et multidisciplinaire Une seule santé, dans le cadre de la deuxième phase du Programme sur les

menaces pandémiques émergentes financé par l'Agence des États-Unis pour le développement international (USAID). Ce système est basé sur les bases solides déjà posées par la plateforme quadri-directionnelle en place, qui fait converger les informations émanant de quatre circuits opérationnels : l'épidémiologie, les laboratoires, la santé animale et la santé publique. La Plateforme égyptienne fera participer tous les secteurs impliqués dans la lutte contre l'IAHP et réunira les parties prenantes dans une démarche intégrée et holistique visant à améliorer la détection des menaces à l'interface homme-animal-environnement en Égypte ainsi que la réponse qui leur est apportée et leur contrôle.

Mots-clés

Collaboration multisectorielle – Détection – Égypte – Interface homme-animal-environnement – Lutte contre les maladies – Maillage quadri-directionnel – Réponse – Une seule santé – Zoonose.



El paso de la conexión cuatridimensional al dispositivo de Una sola salud, o la institucionalización de un sistema pluridisciplinar y multisectorial de Una sola salud en Egipto

L. Allal, H. Mahrous, A. Saad, S. Refaei, M. Attia, I. Mahrous, M. Fahim, S. Elfadaly & A. Abdelnabi

Resumen

La confluencia de personas y animales en el medio común a todos nosotros da lugar a una dinámica en la que la salud de cada parte está inextricablemente ligada a la de las demás. Teniendo en cuenta que la mayoría de los patógenos emergentes (influenza aviar altamente patógena [IAAP], coronavirus del síndrome respiratorio agudo severo, virus Nipah, coronavirus del síndrome respiratorio de Oriente Medio, etc.) son zoonóticos, Egipto ha establecido un mecanismo nacional de coordinación en clave de Una sola salud con los siguientes objetivos: *a)* entender mejor la interrelación de distintos factores en la interfaz de personas, animales y medio ambiente; *b)* mejorar las medidas de mitigación de enfermedades; *c)* instituir servicios sólidos y estables de salud pública y sanidad animal; y *d)* promover dispositivos nacionales de comunicación eficaces y una colaboración multisectorial entre todas las entidades interesadas que se inscriba en los postulados de Una sola salud.

En Egipto, la Organización de las Naciones Unidas para la Alimentación y la Agricultura (FAO) y la Organización Mundial de la Salud (OMS) prestan apoyo actualmente albergando al grupo de trabajo que en el país se dedica a la conexión cuatridimensional (*Four-Way Linking*) con participación de los ministerios convocantes (Ministerio de Salud y Población, Ministerio de Medio Ambiente y Ministerio de Agricultura y Recuperación de Tierras y por conducto de la Organización General de Servicios Veterinarios y los laboratorios del Ministerio de Agricultura). Como parte de la segunda fase del programa contra las amenazas pandémicas emergentes que financia la Agencia de los Estados Unidos para el Desarrollo Internacional (USAID), la FAO tiene previsto ayudar a Egipto a instituir un robusto sistema pluridisciplinar y multisectorial de Una sola salud partiendo de las sólidas bases que ha sentado el dispositivo de conexión cuatridimensional, que centraliza información procedente de cuatro grandes ámbitos de trabajo: epidemiología, laboratorios, sanidad animal y salud humana.

El dispositivo egipcio federará a todos los sectores que intervienen en la lucha contra la IAAP y combinará, desde un planteamiento integrado y holístico, la labor de todos los interlocutores para detectar, controlar y combatir más eficazmente cuantas amenazas surjan en Egipto en la interfaz de personas, animales y medio ambiente.

Palabras clave

Colaboración multisectorial – Conexión cuatridimensional – Control – Detección – Egipto – Interfaz de personas, animales y medio ambiente – Respuesta – Una sola salud – Zoonosis.



References

1. Food and Agriculture Organization of the United Nations (FAO), World Organisation for Animal Health (OIE) & World Health Organization (WHO) (2010). – The FAO–OIE–WHO collaboration. Sharing responsibilities and coordinating global activities to address health risks at the animal–human–ecosystems interfaces. A Tripartite Concept Note. FAO, Rome, Italy; OIE, Paris, France; & WHO, Geneva, Switzerland, 8 pp. Available at: www.who.int/foodsafety/zoonoses/final_concept_note_Hanoi.pdf (accessed on 29 January 2019).
2. World Health Organization (WHO) (2013). – Four-Way Linking Project for Assessing Health Risks at the Human–Animal Interface. Project description. WHO, Geneva, Switzerland, 7 pp. Available at: www.who.int/influenza/human_animal_interface/EN_GIP_FourWay_HAI_2013.pdf (accessed on 29 January 2019).
3. Forcella S., El-din El Tantawi N., Yilma J., AbdelNabi A., Claes F, Dauphin G. & Mumford E. (2015). – The development of a four-way linking framework in Egypt: an example of FAO, OIE and WHO joint activities to facilitate national risk assessment. *Vet. Ital.*, **51** (1), 45–50. doi:10.12834/VetIt.220.680.1.

