National public health institutes in the Eastern Mediterranean Region: Insights from experts in the field

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ABSTRACT
National public health institutes (NPHIs) are crucial to the effectiveness of public health systems, including delivering essential public health functions and generating evidence for national health policies, strategies and plans. Currently, there is a significant lack of information regarding NPHI or NPHI-like organisations in Eastern Mediterranean Region (EMR) countries, including how they fit into their broader health systems governance landscape. NPHIs exist in 12 out of 22 EMR countries, yet there is no official International Association of National Public Health Institutes (IANPHI) regional network for the EMR, despite established IANPHI networks in four other regions. In 2022, the WHO’s Eastern Mediterranean Regional Office led a study comprising an online survey and key informant interviews, which synthesised expert insights and summarised recommendations to strengthen the health systems governance-related role of NPHIs in EMR countries. Study participants included current and former high-level representatives of NPHIs, the government (eg, Ministries of Health, health regulatory authorities), multilateral organisations or non-governmental organisations focusing on health, and others identified as senior health systems governance experts from EMR. Insights and recommendations from experts varied widely, but there were also many common elements and overlaps. These included the need for enhancing NPHI functionalities and collaborative efforts with the public health sector (eg, Ministry of Health, Health Council) in health policy and decision-making formulation and implementation. This, in turn, requires advancing NPHI’s fit-for-purpose and sustainable governance and financing arrangements, improving the accessibility and transparency of health data for NPHIs, strengthening engagement and collaboration between NPHIs and other health system actors (including the private sector), and promoting a more prominent role for NPHIs in the development and implementation of public health-related policies and legislation. While many excellent insights and thoughtful strategic guidance are provided, further adaptation may be needed to implement the proposed recommendations in different EMR country contexts going forward.

Introduction
The COVID-19 pandemic has heavily burdened the health systems worldwide and placed many national institutions responsible for public health under severe stress.1-3 In many countries, this is the national public health institute (NPHI), which is defined by the International Association of National Public Health Institutes (IANPHI) as ‘a government agency or closely networked group of agencies that provides science-based leadership, expertise and coordination for a country’s public health activities’.4 5 NPHIs are a central component of strong public health systems, crucial in delivering essential public health functions (EPHFs) and generating evidence for health policies, strategies and plans.6

The Eastern Mediterranean Region (EMR) comprises 22 countries (ie, 21 Member States and the occupied Palestinian territory) and is home to approximately 9% of the world
population. Prior to the outbreak of COVID-19, many EMR countries were already experiencing protracted humanitarian crises leading to the forced displacement of millions, and the reemergence of vaccine-preventable diseases resulting in further weakening of health systems. According to the IANPHI, there are official NPHIs (referred to as members) in 12 of the 22 EMR countries (ie, Afghanistan, Islamic Republic of Iran, Jordan, Libya, Morocco, occupied Palestinian territory, Pakistan, Saudi Arabia, Somalia, Sudan, Syria and Tunisia), including 3 in Morocco. IANPHI has four regional networks (ie, Africa, Asia, Europe, and Latin America and the Caribbean), but there is no IANPHI regional network for the EMR. Despite basic information about the official NPHIs in EMR countries being available on the IANPHI’s website, there is no information on their mandates, roles and responsibilities and governance arrangements. Moreover, current empirical evidence suggests a significant lack of knowledge regarding the governance arrangements of official NPHIs or NPHI-like organisations in EMR countries and how they fit into the broader health systems governance landscape. For the purpose of this study, NPHIs are classified by their IANPHI membership, while NPHI-like organisations are those that closely align with the IANPHI’s standardised NPHI definition and core attributions and functions, without having official IANPHI membership.

In 2022, the WHO’s Regional Office for the Eastern Mediterranean (WHO/EMRO) finalised a regional health systems governance mapping exercise: ‘Health Systems Governance Regional Review: Identifying Gaps, Bottlenecks and Suggested Way Forward in the Eastern Mediterranean Region’. The review highlighted that more detailed information is needed about the health systems governance environments in EMR countries, including whether there is an official NPHI or NPHI-like organisation, as well as their related health governance arrangements, core functions and roles and responsibilities during the COVID-19 pandemic. Accordingly, an online survey and key informant interviews were conducted to explore options for strengthening the health systems governance-related role of NPHIs in EMR countries. Study participants included current and former high-level representatives of NPHIs, the government (eg, Ministries of Health, health regulatory authorities), multilateral organisations or non-governmental organisations focusing on health, and others identified as senior health systems governance experts from EMR.

The findings and the proposed strategic directions (online supplemental appendix 1) were shared and discussed at a WHO/EMRO-hosted Health Systems Governance Regional Technical Consultation on 25-28 October 2021; and an Inter-country Meeting on Strengthening Health Systems Governance to Advance Universal Health Coverage and Health Security in the Eastern Mediterranean Region on 28-30 November 2022. A review of WHO/EMRO’s EPHF list was also completed in 2022 to analyse gaps in alignment with key global health priorities, and account for country experiences during the COVID-19 pandemic.

This paper summarises the governance arrangements, core functions and roles and responsibilities (including during the COVID-19 pandemic) for NPHIs in EMR countries. It provides expert insights and summary recommendations to strengthen NPHIs’ role in health systems governance in EMR countries, including the delivery of EPHFs and the generation of evidence for health policies, strategies and plans going forward.

**METHODS**

The study includes a survey and key informant interviews. The survey questions were based on the IANPHI’s NPHI Core Functions and Attributes, adapted from the Staged Development Tool, and applied a COVID-19 lens. This was meant to identify and fill gaps in the WHO/EMRO’s understanding of the health systems governance landscape, specifically the governance arrangements, functions, and roles and responsibilities of NPHIs in EMR countries. In addition, representatives from the IANPHI and Eastern Mediterranean Public Health Network (EMPHNET) were consulted and involved in peer-reviewing the survey.

The analysed survey data were then used to inform the key informant interviews. The survey participants were NPHI representatives and other relevant EMR country health systems experts identified by WHO/EMRO, WHO Country Offices and the EMPHNET. The interviews’ key informants included a core group of NPHI representatives and other senior health systems experts from the survey participants. The key informant interviews aimed to validate the data collected in the survey, as well as provide additional understanding of the country contexts and NPHI-relevant governance arrangements, functions, and roles and responsibilities during the COVID-19 pandemic.

The survey (online supplemental appendix 2) was uploaded to the SurveyMonkey platform for participants’ convenience. Key informant interviews were conducted by the WHO/EMRO Governance of Health Systems (GHS) team via Microsoft Teams using a semi-structured interview guide (online supplemental appendix 3).

The following steps were completed for this NPHI study:

1. Based on the preliminary NPHI-relevant evidence review, a detailed research protocol (including a survey and an interview guide) was prepared and submitted to the WHO/EMRO Ethical Review Committee in November 2021. Full ethical clearance was received in December 2021.
2. The survey was based on the NPHI Core Functions and Attributes and adapted from the Staged Development Tool, using a COVID-19 lens.
3. Survey participants were identified by the WHO/EMRO GHS team, in collaboration with the IANPHI.
and EMPHNET (selection process and criteria are detailed below).

3. The survey was shared virtually via SurveyMonkey with selected participants. Participants were required to sign an informed consent (online supplemental appendix 4) before completing the survey.

4. Collected survey data were analysed and organised into pivot tables using Microsoft Excel. The results of the data analysis were also used to inform and adapt the key informant interviews.

3. Key informant interviews

1. The interview guide was developed as part of the detailed research protocol. It was adapted from survey questions to further investigate and get additional insights into the country contexts, as well as NPHI-relevant governance arrangements, functions, and roles and responsibilities during the COVID-19 pandemic.

2. Key informants for the interviews were identified and contacted through WHO/EMRO GHS team head (the selection process and criteria are detailed below). Key informants were provided with a participant information sheet explaining the study objectives, scope, methodology and time frame, and the implication for the informant (ie, what is expected of them). Informed consent was required to participate in the interview.

3. Interview data were coded and analysed using thematic analysis to identify patterns in the data, draw the most useful information and increase the study’s generalisability. This was ultimately summarised in an Excel document.

4. Summarised survey and key informant data were consolidated and further analysed.

5. Draft findings were shared with relevant health systems experts, WHO/EMRO technical units and WHO Country Office focal points to validate and endorse.

Patient and public involvement

No patients were involved in this study. Study participants were identified health systems experts and key informants residing, working or having previously worked in EMR countries. More information about the study participants, including the selection process, is described below.

Study participant selection criteria

Individuals were invited to participate in the survey and/or key informant interviews if they reside, work or have worked in EMR countries, including for a NPHI, the government (eg, ministries of health, health regulatory authorities), multilateral organisations or NGOs focusing on health, or are identified as senior health systems governance experts. These individuals had proven experiential knowledge, through their positions, of the health systems governance environments in EMR countries, especially during the COVID-19 pandemic. In addition, all study participants had to have the ability to speak English, Arabic or French. Lastly, all participants had to give informed consent to have the information they provided included in the study.

RESULTS

Survey

Overall, the online survey link was shared with 55 EMR health systems experts from 12 January 2022 to 17 February 2022. 29 experts completed the survey, from 10 of the 22 EMR countries. All completed surveys were analysed using Excel, and responses were organised into pivot tables where possible. Below is a summary of the synthesised results, arranged in following key thematic areas.

Mandate, core functions and attributes

The mandates of NPHIs in EMR countries vary widely according to respondents, ranging from being responsible for the coordinated efforts in responding to all public health issues in a country to simply advising the government and the health sector on public health issues. However, in a general sense, all NPHIs are mandated to be engaged in and contribute to the public health activities in their country in some form or another. Given the varied nature of the reported NPHIs mandates, the NPHI core functions and attributes are also quite mixed. Figures 1 and 2 provide an overview of the survey findings related to NPHI’s core functions and relevant attributes in the EMR.

Governance arrangements and financing

The NPHI-related governance arrangements are quite diverse across the EMR. For example, 12/29 expert respondents from this study classified the NPHI in their country as having an autonomous government structure; 2/29 described their NPHI as having an autonomous non-governmental structure that either is transitioning to be managed by the government or is operating closely with the government/MOH. In comparison, 15/29 described the NPHI in their country as ‘other’, while specifying it is part of the MOH. For the NPHI’s official affiliation to the MOH in their country, 18/29 respondents reported the NPHI’s functions are completely within the MOH governance structure, 6/29 reported its functions and structure are independent of the MOH, while 4/29 reported its structure is within the MOH governance structure but it functions independently (1 respondent reported none of the above and did not specify). See figure 3 for an overview. For NPHI financing arrangements, only 15/29 respondents reported that NPHIs in their countries are funded adequately through sustainable domestic financing sources to fulfil their mandate.

Health data/information and collaboration

From a health data and information access perspective, 18/29 respondents reported that NPHIs have the authority to access all relevant health information and data collected outside of their institute. Regarding the authority to share analysed public health information...
and data with different stakeholders, respondents reported the NPHI can share with other government agencies (23/29), parliamentarians (12/29), academia (21/29) and the general public (19/29). Four respondents reported that the NPHI in their country cannot share information with any of the aforementioned stakeholders. In terms of NPHI collaboration with the private sector, 15/29 respondent experts reported that NPHIs in their countries engage with the private health sector (including profit or non-profit).

Health policy and legislation
Only 8/29 survey respondents reported that the NPHI in their country have the authority to contribute to and/or enforce public health-related legislation related to issues such as COVID-19 mask-wearing, smoke-free public places and more. Respondents from some EMR countries added that the NPHI does not directly propose or enforce policies or legislation, but rather they contribute to legislation and/or policies through participation on committees or in an advisory capacity to the MOH.

Role during the COVID-19 pandemic
Survey participants described various roles regarding the NPHI in their country during the COVID-19 pandemic. However, public health research, surveillance and laboratory activities, risk communications and education, and the provision of technical support and advice to inform public health guidance in their countries are the most described roles for NPHIs during COVID-19. Moreover, most survey respondents from the participating EMR countries also reported the inclusion of the NPHI in high-level committees aimed at guiding and coordinating the COVID-19 response in their countries.

Key informant interviews
35 health systems experts were invited to participate in key informant interviews from 23 February 2022 to 3 April 2022. Ultimately, 20 key informants from 12 EMR countries took part in the interviews. All key informant interviews were recorded and transcribed, and the data were analysed through thematic analysis. In line with the survey results, interview data was analysed and organised in similar subcategories as above to ensure consistency. Themes in each subsection are introduced below and further distilled in the discussion.

Mandate, core functions and attributes
The interviews with experts yielded similar results to that of the survey with regard to the varying mandates of NPHIs in the region. Experts from all 12 participating EMR countries reported various mandates, including, but not limited to, the generation of public health research, provision of training for human resources development, public health surveillance, and health promotion and prevention. For example, the most common mandates identified are ‘conducting of public health research’ and the ‘provision of training.
for human resources development’, as experts in 9/12 EMR countries have identified either both or one function(s) as the primary mandate(s) of the NPHIs in their countries. In comparison, the NPHI in Iraq is reported to have an overarching mandate of governing and coordinating action on all public health activities in the country. In addition, in the Jordanian context, the MOH is registered as an NPHI.

The mandate (of the NPHI in the occupied Palestinian territory) is to provide evidence-based support...for policymakers. Since the area of focus (of the NPHI) is health, the main partner is MOH...the NPHI is also hosted by MOH physically. The role (of the NPHI) is to provide evidence supporting national registries, and surveillance systems for national health information, as well as providing applied research.

Figure 2  NPHI core attributes: roles and responsibilities. NPHI, national public health institute.

Figure 3  NPHI affiliation with the Ministry of Health (MOH). NPHI, national public health institute.
Governance arrangements and financing
The experts interviewed delineated similar NPHIs governance arrangements to that of the survey findings. For instance, experts in 9/12 EMR countries classified NPHIs as part of the organisational structure of the MOH, while experts in 1/12 EMR countries classified NPHI as an independent government structure that is affiliated with the MOH. However, in the context of the occupied Palestinian territory, NPHI is classified as an independent non-governmental structure operated by WHO on a temporary basis until national capacities are built. However, the institute’s leadership is planned to be transferred to the government (ie, the director of the NPHI will be the Prime Minister, whereas the Minister of Health will be the Director of the Board). The NPHI-like organisation in Egypt also has a different affiliation since it is classified as part of the Ministry of Higher Education (MOHE). As for the NPHIs’ official affiliation to the MOH in their countries, experts in 9/12 countries reported that the NPHI’s functions are completely within the MOH governance structure, whereas expert(s) in 1/12 EMR countries reported that some of the typical NPHI’s functions are divided between the MOH (conducting of public health research and delivery of training for human resources development) and the MOHE (setting training curriculum).

The NIHR is affiliated to the MOH, but it is not part of the MOH. It is an independent body that carries out activities which are dictated from the MOH. In terms of functions, mission and activities carried out by the institute, they are totally dependent on MOH. All funds for the NIHR come from MOH and all activities are conducted at the request of MOH. However, as for the structure of NIHR, it is somehow an independent body. It has an independent board, and it has independent authority to make contracts, etc.

- Key informant from Islamic Republic of Iran

Regarding financing arrangements, experts from 6/12 EMR countries reported that their NPHI funding is not sustainable or enough to fulfil its mandate, roles and responsibilities. Included among these EMR countries are those in conflict, such as Yemen and Sudan, where it was reported that there is little to no available national funding to support public health programmes. In addition, two countries facing major economic issues (ie, Lebanon and Afghanistan) report extreme scarcity of sustainable funds for their NPHIs. On the other hand, experts from 6 of the 12 EMR countries report they have sufficient funding to fulfil their mandate; however, a mal-distribution and misuse of some funds are reported for two of these countries. Key informants reported in 9/12 EMR countries that their funds come directly from the MOH or the MOF (via the MOH). Nearly all EMR countries were reported to have received supplementary funding from international organisations (ie, World Bank, WHO, UNICEF, European Investment Bank), NGOs, other international donors (ie, Norwegian Government) or international and national grants.

There is a high level of scarcity of funds right now. Sometimes there is no water in the building (where the NPHI is located), sometimes no electricity, and other things. Especially in the last 7 months issues have been piling up. So, yes, financing is critical issue for (the) NPHI both nationally and internationally.

- Key informant from Afghanistan

Health data/information
In terms of access to health data and information, experts in 8/12 EMR countries reported that NPHIs have the authority to access all relevant health information and data collected outside of their institute. In comparison, experts in 2/12 EMR countries delineated that NPHIs in their countries are required to submit official requests to the MOH to access relevant health information and data collected outside of their institute. As for the authority to share public health information and data collected within their institute with relevant stakeholders, experts in 3/12 EMR countries elaborated that NPHIs share their information and data with stakeholders on receiving official requests, whereas experts in 5/12 EMR countries reported that NPHIs share some of their information and data on online dashboards or in published reports for public access, but require official requests by relevant stakeholders to access more in-depth data and information. It is worth mentioning that in the Moroccan context, experts outlined that the NPHI shares all its information and data with relevant stakeholders but did not identify the modalities for data sharing. Also, in the Yemeni context, experts elaborated that the NPHI shares its information and data with an existing health surveillance system which decides the modalities of data sharing and usage.

Our institution has accessibility to all data, even if they are confidential because we are part of the Ministry of Health. We use this data to provide evidence, and decision makers can make a decision based on evidence.

- Key Informant from Morocco

Collaboration
The delegation of authority from the federal/national level to the governorate/province level varied across the 12 EMR countries participating in the in-depth interviews. Experts in 3/12 EMR countries revealed that NPHIs have no direct relations to subnational health units/departments in the different governorates/provinces; instead, central-local relations are coordinated through a directorate/department at the MOH or a provincial coordination unit/department. In comparison, experts in 6/12 EMR countries elaborated that NPHIs have subnational offices or focal points at the governorate/province level to facilitate the coordination of national-level activities. Nevertheless, in the context of countries affected by war.
and humanitarian crises like the occupied Palestinian territory and Yemen, NPHIs’ delegation of authority from central to local levels is limited due to political fragmentation and internal divisions. The NPHI in Yemen, being affiliated with the MOH in Sana’a, has focal points only within public health departments in the country’s northern governorates. As for the NPHI in the occupied Palestinian territory, it is located within WHO offices in the West Bank and the Gaza Strip in unit-like structures, with each setting having its own priorities based on the area’s specific challenges. It is not clear, however, whether these two-unit structures will be governed as separate entities or as one on the planned transition in NPHI leadership to the government. Moreover, in describing NPHIs’ multisectoral efforts, experts in 1/12 EMR countries reported that the NPHI’s collaboration with other ministries is coordinated by the MOH, while experts in 8/12 EMR countries reported that NPHIs directly collaborate with other ministries, and experts in 2/12 EMR countries outlined that NPHIs’ collaboration with other ministries is limited/constrained. With regard to NPHI collaboration with the private sector (profit or non-profit) in their countries, experts in 8/12 EMR countries reported that NPHIs engage with the private health sector. In comparison, experts in 4/12 EMR countries delineated that NPHIs do not engage with the private health sector. However, experts in three out of the aforementioned four EMR countries with NHPIs, that reportedly do not engage with the private health sector, demonstrated increased engagement of NPHIs in their countries with the private health sector (for profit) during the COVID-19 pandemic.

The Public Health Institute was working on a micro policy for health financing and family medicine, and they were pretty much championing and leading on the efforts, so they would reach out to, for example the Ministry of Social Development, the National Health Insurance Fund, and the Ministry of Education. So, they would actually reach out to these different ministries or entities or stakeholders independent of the Federal Minister of Health.

- Key Informant from Sudan

Experts from 11 EMR countries reported that the NPHI, or NPHI-like organisation contributes to public health policy formulation in their countries. This included in an advisory/support role to the MOH in 9/11 EMR countries, which, in turn, would propose the legislation more formally, or a leadership role (no information for Yemen on this question), or a higher-level role in 2/11 countries, which includes proposing legislation and policies directly and/or directly led ministerial committees for the formulation of public health policies. Key informants from 5/11 EMR countries reported that the NPHI played a more significant role in policy formulation during COVID-19, while 1/11 reported their role was non-existent. Overall, little information was known and subsequently provided by key informants regarding the monitoring or enforcement of public health legislation/policies.

NHI (National Institute for Health) does have power to propose policies and legislations, especially during COVID-19, but also for antimicrobial resistance (AMR). Proposals are dependent on data, and this is a huge gap, not just from the health sector but from other related sectors as well. The process is that the Head of NHI meets with MOH (officially known as the Ministry of National Health Services Regulations and Coordination) and other ministers every month; he is assigned a health priority, or he proposes one (both ways) …therefore advise national MOH and the provinces for policies and legislation, not as implementers.

- Key Informant from Pakistan

Role during COVID-19 pandemic

Key informants in nearly every participating EMR countries reported that, during the COVID-19 pandemic, their NPHIs were involved in at least some health promotion and risk communications, public health surveillance (ie, supporting laboratories, disease testing, vaccines) and epidemiological data analysis, health policy and intervention research (including health technology assessment), and health workforce training. Most key informants reported that the NPHI in their country was part of a high-level public health-related committee specifically set up to coordinate COVID-19 public health activities and/or analyse and make recommendations (nationally and subnationally). At the very least, key informants from all 12 participating EMR countries reported the NPHI in their country was engaged during the decision-making process to contribute their technical expertise. However, key informants from at least four EMR countries (i.e., Afghanistan, Morocco, Pakistan and Sudan) reported that the NPHI could have been better used to further support and guide the public health response to COVID-19. Interestingly, most EMR countries were forced into a closer working relationship with the private sector. This has helped many NPHIs recognise their value and even stated the intention to engage the private sector more regularly in the future beyond COVID-19.

One of the main institutes (referring to the NPHI) involved in the public health surveillance and response to COVID-19. It supported the preparation of the COVID-19 response plan and guided related public health strategies, such as testing strategies. In collaboration with surveillance units at governorate levels, it collected nationwide data on COVID-19, and pursued contact tracing. It implemented activities to strengthen COVID-19 surveillance including capacity building activities of staff. It implemented the first national household survey on COVID-19 infections. It was part of the nationwide COVID-19 response mechanism, which included all the different departments of MOH. It also played a role in the COVID-19 vaccination.

- Key Informant from Tunisia

Role going forward

While recommendations going forward for NPHIs or NPHI-like organisations did vary widely, several criteria
are consistent throughout nearly all key informant responses (see table 1 below for summary recommendations). These included that the NPHI should be providing science-based guidance and support for the coordination of countries’ public health activities; fully assigned, empowered and legally supported to deliver all the NPHI core functions as outlined by the IANPHI; adequately and sustainably financed domestically, directly from Ministries of Finance (MOF); assigned a more considerable leadership and partnership management role for health-related stakeholders, particularly for health policy and legislation processes; designated a larger implementation and monitoring and evaluation role for public health activities; represented on all public health-related ministerial and parliamentary committees; and appointed additional responsibilities in regard to public health training and capacity-building of health professionals. Overall, there was general agreement that the NPHI should be autonomous, with key informants from 10/12 EMR countries expressing that the NPHI should be either fully autonomous or semiautonomous. Ultimately, key informants from nearly all EMR countries reported that there is considerable interest and political appetite to officially establish a NPHI or strengthen the role of existing NPHIs in their country.

**DISCUSSION**

Overall, the survey and key informant interviews provided many interesting expert insights into the NPHIs and NPHI-like organisations across the EMR, including their governance arrangements, functions, roles and responsibilities during the COVID-19 pandemic, and recommendations going forward. Using similar questions and well-aligned methods for the survey and key informant interviews allowed us to consistently identify a number of central themes to consider when establishing NPHIs or strengthening the role of existing NPHIs in EMR countries. In addition, having the key informant interviews

| Table 1 NPHI summary recommendations from key informant interviews |
|-----------------|---------------------------------------------------------------|
| **Key area**    | **Summary recommendations**                                    |
| Mandate and    | ► NPHIs should be responsible for providing science-based     |
| functions      | guidance and support for the coordination of countries’       |
|                | public health activities.                                     |
|                | ► NPHIs’ roles need to be clearly defined and assigned,       |
|                | authorised and provided with required resources to effectively |
|                | deliver all suggested IANPHI-NPHI Core Functions.            |
|                | ► NPHIs’ contributions to public health activity implementation |
|                | and monitoring and evaluation should be enhanced.            |
|                | ► NPHIs can be assigned a larger leadership and partnership    |
|                | management role for health-related stakeholders.             |
|                | ► NPHIs should contribute more to public health workforce     |
|                | capacity building and training.                               |
| Governance      | ► NPHIs should be either fully autonomous or semi-autonomous   |
| and financing   | from Ministries of Health.                                    |
|                | ► Fit-for-purpose governance arrangements are needed for       |
|                | NPHIs to ensure their most effective contribution to health   |
|                | systems’ performance and sustainability.                      |
|                | ► NPHI funding must be adequate to fulfil the proposed        |
|                | mandate.                                                     |
|                | ► Domestic NPHIs’ financing arrangements should be directly   |
|                | from Ministries of Finance to enhance sustainability.        |
| Collaboration   | ► NPHI collaboration and engagement with relevant health      |
| and data       | systems’ stakeholders need to be strengthened overall,        |
|                | including the private health sector.                         |
|                | ► An EMR network of NPHIs should be established, supported by |
|                | the IANPHI, to foster collaboration across the region and     |
|                | share expertise, experiences and best practices.              |
|                | ► Public health data and information should be transparent    |
|                | and readily available for health stakeholders, including      |
|                | NPHIs.                                                       |
| Policy and     | ► NPHIs should play a more prominent advisory role in the     |
| legislation    | health policy and legislation processes.                      |
|                | ► NPHIs should be represented on all public health-related    |
|                | ministerial and parliamentary committees.                     |
|                | ► NPHIs should be active contributors in the implementation   |
|                | and monitoring and evaluation of public health activities.    |

EMR, Eastern Mediterranean Region; IANPHI, International Association of National Public Health Institute; NPHIs, national public health institutes.
allowed us to probe further and for EMR health systems governance experts from the field to provide deeper insights. Below we further discuss these expert insights and central themes for consideration, as well as the broader limitations of this study.

In both the survey and key informant interviews, it was found that the mandates of NPHIs in EMR countries varied significantly. The political contexts in different countries in the region, particularly those in emergencies, cause limitations regarding what the NPHI mandate can entail. While all NPHIs or NPHI-like organisations in the EMR contribute to the public health activities in their country, few, if any, meet all the NPHI core functions and attributes outlined by the IANPHI. A growing body of evidence also suggests the MOH’s assumed roles and responsibilities in EMR countries continue to expand. Hence, it makes the NPHI’s support of roles and responsibilities related to public health activities even more important. Furthermore, many countries worldwide are transitioning to more of a participatory health systems governance approach, where the MOH engages and empowers more relevant stakeholders to contribute to health policy and decision-making.

The study participants clarified that many governance and financing arrangements are not fit for purpose for NPHIs, or NPHI-like organisations, to fulfil their mandate. This was particularly true during the COVID-19 pandemic, and also more generally when comparing the existing arrangements to the IANPHI definition of an NPHI. Moreover, serious infrastructure and unsustainable funding issues also persist for NPHIs and NPHI-like organisations in many EMR countries, causing additional risks and potential threats to public health going forward. Having fit-for-purpose governance and financing arrangements for health system actors, including NPHIs, is crucial to ensure their most effective performance and sustainability. Additionally, in this study, some subgroups emerged with similar NPHI internal governance arrangements, including emergency countries such as Yemen and the occupied Palestinian territory, where there are essentially distinct NPHI units for different parts of the country due to geopolitical contexts. The situation in the occupied Palestinian territory is compounded by the fact that their NPHI is currently led by WHO, despite being intended to become a governmental organisation by law. However, by 1 January 2025, full leadership of the NPHI in the occupied Palestinian territory will ultimately transition to the government.

Study participants often described relevant health data and information as not accessible or freely shared. Experts also reported considerable data fragmentation regarding where health data and information is stored (ie, among several different public sector entities, within the private health sector in some EMR countries). In addition, public health data and information need to be more transparent and readily available for stakeholders, including the general public. Data and information are essential to evidence-based health decision-making and building stronger stakeholder partnerships, particularly in emergencies. Furthermore, access to official information is critical for combating misinformation and disinformation, as exemplified in the COVID-19 pandemic and related infodemic.

Collaboration and meaningful engagement with relevant health systems stakeholders, including the private health sector, need to be strengthened overall. Experts reported the private sector was a key stakeholder contributing to the COVID-19 response, despite some reporting no private sector engagement prior to the pandemic. However, this enhanced collaboration needs to also ensure that all health system actors, including the private sector, are held accountable for their actions to protect citizens and advance the public–private sector relationship going forward. Institutionalising the participation of all relevant stakeholders, including the private sector, is essential to building stronger partnerships and enhancing the sustainability of the health decision-making process overall. Moreover, there could also be more collaboration between the NPHIs within the region. The establishment of an Eastern Mediterranean regional network of NPHIs, supported by the IANPHI, could foster NPHI collaboration across the EMR to share expertise, experiences and best practices.

Experts from most EMR countries reported NPHIs as playing either advisory or support roles for the MOH in the proposal of health policies and legislation. NPHIs in two countries are even reported to have a direct role in proposing legislation and policies and/or directly leading ministerial committees for the formulation of public health policies (ie, Iraq and Pakistan). As NPHIs should be mandated to provide science-based leadership, expertise and coordination for a country’s public health activities, they ought to be engaged and contribute to the health policy and legislative process. Furthermore, evidence shows that NPHIs are key in generating evidence for health policies, which are central to national health and socioeconomic development.

The COVID-19 pandemic overwhelmed even the most mature health systems. In 2021, The Independent Panel for Pandemic Preparedness and Response found that countries with the most success in managing the disease have strong governance systems, employed whole-of-government and whole-of-society approaches, and ensured to include active cooperation of the experts and expert organisations. Survey and key informant interview participants from most EMR countries report that the NPHI or NPHI-like organisation in their countries played a contributing role during COVID-19. Nevertheless, they also stated that these organisations were not used well enough during the pandemic and that they could have played more of a technical leadership role. These insights are great lessons learnt, and further show the way forward in many countries is to ensure that roles and responsibilities are assigned to appropriate actors, who are in turn empowered to fulfil these roles.
Recommendations from key informant experts had a lot of variation, but there were also a lot of common themes which aligned well with the IANPHI’s NPHI core functions and attributes. These commonalities include the NPHI being a fully empowered, autonomous and sustainably funded provider of science-based guidance and support for countries’ public health activities. This also included an expanded NPHI leadership and partnership management role in engaging health-related stakeholders. Experts envisioned NPHIs in the EMR would also be more prominently engaged in an advisory role for the health policy and legislation processes, represented on all public health-relevant ministerial and parliamentary committees, and actively involved in the implementation and monitoring and evaluation of public health activities. Additional recommended responsibilities for NPHIs in the EMR included a more prominent role in the provision of public health training and capacity-building of their country’s health workforce. The need for an NPHI with these aforementioned functions is crucial for effective public health system performance. In line with this, key informants from nearly all participating EMR countries felt strongly that there is significant interest and political support to establish a NPHI or enhance the role of the existing NPHI in their country. This political will is essential for the success of any proposed governance reforms and to improve public health outcomes in EMR countries.

While this study produced many expert insights for NPHIs in the EMR, there were some limitations. Some survey respondents and key informants from EMR countries reported on more than one NPHI or NPHI-like organisations (ie, Morocco and Tunisia). Differences were tracked, but in some instances, it was difficult to conclude on a particular NPHI focus area for that country. Some survey respondents and key informants were from countries without an official NPHI and were asked to give their insights on the entity most closely resembling an NPHI (based on the IANPHI’s NPHI definition). Similarly, not all participating health systems governance experts worked directly for or with the NPHI or NPHI-like organisation they were providing insights on. In line with this, experts did not answer some questions fully or adequately, limiting the pool of responses for analysis. Lastly, there was a possibility for study participant selection bias as all survey and key informant interview invitees were identified by WHO/EMRO GHS team members, in collaboration with the IANPHI and EMPHNET. Despite these limitations, these study findings may provide a useful entry point to support the establishment and strengthening of NPHIs or NPHI-like organisations and networks in the EMR, as well as other countries and regions with similar contexts.

**CONCLUSION**

Understanding a country’s health systems governance environment, including how the public health activities are coordinated, is crucial when establishing or strengthening an existing NPHI. This study provides expert insights about existing NPHIs, or NPHI-like organisations, in EMR countries, including their governance arrangements, functions, roles and responsibilities during the COVID-19 pandemic and specific recommendations going forward. These include enhancing NPHI utilisation by MOHs to bolster support for public health activities, advancing fit-for-purpose and sustainable governance and financing arrangements, improving accessible and transparent health data, strengthening engagement and collaboration with all health system actors (including the private sector), as well as ensuring a more prominent role in the development and implementation of public health-related policies and legislation. Ultimately, most experts independently recommend NPHIs be an autonomous or semiautonomous governmental organisation, fully empowered to provide evidence-based guidance and support for public health activities in EMR countries.

More specific research examining the effectiveness of the different arrangements for each individual NPHI core function and attribute could be useful going forward (eg, which arrangements is most effective for data sharing in EMR countries?). Another key area for future research could be examining and identifying arrangements for the public sector which effectively engage and mobilise the private sector for strengthening universal health coverage and health security in countries. Furthermore, the links between this paper’s recommendations and health systems efficiencies and population health outcomes could also be researched further.

While the health system experts participating in this study provided many insights and thoughtful strategic guidance, some additional consultation is needed to reinforce the proposed recommendations informing WHO/EMRO NPHI strategic guidance and to strengthen its eventual implementation in different EMR country contexts. With a reportedly supportive political environment in most participating EMR countries, further technical consultation and operationalisation of strategic guidance have a strong possibility of being prioritised. Going forward, WHO/EMRO recognises the vital importance of NPHIs to provide evidence-based guidance and support for the delivery of EPHFs. Moreover, WHO/EMRO is committed to comprehensively working with EMR countries to help establish and strengthen existing NPHIs or NPHI-like organisations and networks, with a view to enhancing health systems governance and population health more broadly in their countries and at a regional level.
Acknowledgements  We are very grateful for the contributions and candor of all survey and key informant interview participants. We would like to specifically recognise Soheli Siaqat, Ahmed Mandili and Neil Squires for their comments and guidance on the research protocol and article. Lastly, we would like to thank colleagues from WHO Eastern Mediterranean Region Country Offices, the Eastern Mediterranean Public Health Network and the International Association of National Public Health Institutes for their coordination efforts throughout.

Contributors  The research protocol was designed and c*cowritten by SvG and HA-T. All interviews were conducted by SvG and HA-T. All survey data collection and analysis was completed by SvG and reviewed by HA-T. All interview analysis was completed by SvG and NM under the supervision and guidance of HA-T. The paper was prepared and written by HA-T, SvG and NM collaboratively. AM made significant contributions to the paper’s conception, design, and review process, offering valuable insights on data analysis and interpretation. HA-T is the guarantor of this work and, as such, accepts responsibility for the overall content and conduct of the study, had access to the data, and controlled the decision to publish.

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Competing interests  None declared.

Patient and public involvement  Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication  Consent obtained directly from patient(s).

Ethics approval  This study involves human participants and was approved by WHO’s Eastern Mediterranean Regional Office Ethical Review Committee. Research protocol submitted in November 2021, with full ethical clearance received in December 2021. Participants gave informed consent to participate in the study before taking part.

Provenance and peer review  Not commissioned; externally peer reviewed.

Data availability statement  Data are available on reasonable request. All data from the survey and key informant interviews is available on reasonable request. As per the research protocol, any organisations or individuals named in interview or survey data, will be removed and replaced with an anonymised term.

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Awad Mataria http://orcid.org/0000-0001-5499-3667

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Appendix 1: Survey

**INFORMED CONSENT TO BE COMPLETED PRIOR TO SURVEY QUESTIONS**

According to the International Association of National Public Health Institutes (IANPHI), these national public health institutes (NPHI) are a government agency, or closely networked group of agencies, that provides science-based leadership, expertise, and coordination for a country’s public health activities.

1. According to IANPHI’s definition above, is there a national public health institute (NPHI)\(^1\) in your country?
   - [ ] Yes, please provide information below, including name, mandate, and link to its website. Please also indicate if there is more than one body responsible
   - [ ] No, please provide information below on which organization, agency or institute(s) is responsible for development, coordination, and oversight of public health policies and actions in your country (If more than one is responsible, please complete a box for each organization/agency/institute)

   Name:
   Mandate:
   Link:

2. Is the NPHI(s) or organization/agency/institute(s) identified in Q1:
   - [ ] An independent governmental structure/network
   - [ ] An independent non-governmental structure/network, operating as part of the government or in concurrence with the government

   [ ] Other, please describe below

3. What is the NPHI(s) or organization/agency/institute(s) identified in Q1 affiliation to the Ministry of Health (MOH) in your country?
   - [ ] Its functions are completely within the MOH governance structure
   - [ ] Its structure is within the MOH governance structure, but functions independently
   - [ ] Its functions and structure are independent from the MOH

   [ ] None of the above, please describe below
4. We recognize that core NPHI functions help countries organize and conduct their public health services\(^2\), and are based on the Essential Public Health Functions framework.\(^1\)

Does the NPHI(s) or organization/agency/institute(s) identified in Q1 have clear roles and responsibilities concerning the core functions listed below? Kindly check one or more answers for each of the core functions (core functions definitions)

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<tr>
<th>Core function</th>
<th>Directly responsible</th>
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<th>Not part of mandate</th>
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5. We recognize that core NPHI attributes are qualities and characteristics which define an NPHI’s infrastructure and operations.\(^2\)

Does the NPHI(s) or organization/agency/institute(s) identified in Q1 have clear roles and responsibilities concerning the core attributes listed below? Kindly check one or more answers for each of the core attributes (core attribute definitions)

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6. Referring to management of strategic health information and data necessary for public health priority setting and evidence-based decision-making, does the NPHI(s) or organization/agency/institute(s) identified in Q1 in your country have:
   a) Authority to access all relevant information and data
      ☐ Yes
      ☐ No

   b) Authority to share analyzed public health information and data with (select all that apply):
      ☐ Other government agencies
      ☐ Parliament
      ☐ Academia
      ☐ General Public
      ☐ None

7. Does the NPHI(s) or organization/agency/institute(s) identified in Q1 have the authority to pass and enforce public health-related legislations (e.g., COVID-19 mask wearing mandates, smoke free public places, etc.) in your country?
   ☐ No
   ☐ Yes, please provide more information

8. Please describe the role of the NPHI(s) or organization/agency/institute(s) identified in Q1 during the COVID-19 pandemic in your country.

9. Is the NPHI(s) or organization/agency/institute(s) identified in Q1 funded through sustainable domestic financing sources to fulfill its mandate in your country?
   ☐ Yes, please provide more information
   ☐ No, please provide more information
10. Does the NPHI(s) or organization/agency/institute(s) identified in Q1, engage with the private health sector (profit or non-profit) in your country?
   - Yes, please provide more information
   - No, please provide more information
Appendix 2: Survey

**INFORMED CONSENT TO BE COMPLETED PRIOR TO SURVEY QUESTIONS**

According to the International Association of National Public Health Institutes (IANPHI), these national public health institutes (NPHI) are a government agency, or closely networked group of agencies, that provides science-based leadership, expertise, and coordination for a country’s public health activities.

1. According to IANPHI’s definition above, is there a national public health institute (NPHI)\(^1\) in your country?
   - Yes, please provide information below, including name, mandate, and link to its website. Please also indicate if there is more than one body responsible
   - No, please provide information below on which organization, agency or institute(s) is responsible for development, coordination, and oversight of public health policies and actions in your country (If more than one is responsible, please complete a box for each organization/agency/institute)

   Name:
   Mandate:
   Link:

2. Is the NPHI(s) or organization/agency/institute(s) identified in Q1:
   - An independent governmental structure/network
   - An independent non-governmental structure/network, operating as part of the government or in concurrence with the government

   Other, please describe below

3. What is the NPHI(s) or organization/agency/institute(s) identified in Q1 affiliation to the Ministry of Health (MOH) in your country?
   - Its functions are completely within the MOH governance structure
   - Its structure is within the MOH governance structure, but functions independently
   - Its functions and structure are independent from the MOH

   None of the above, please describe below
4. We recognize that core NPHI functions help countries organize and conduct their public health services\(^2\), and are based on the Essential Public Health Functions framework.\(^1\)

Does the NPHI(s) or organization/agency/institute(s) identified in Q1 have clear roles and responsibilities concerning the core functions listed below? Kindly check one or more answers for each of the core functions (core functions definitions)

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5. We recognize that core NPHI attributes are qualities and characteristics which define an NPHI’s infrastructure and operations.\(^2\)

Does the NPHI(s) or organization/agency/institute(s) identified in Q1 have clear roles and responsibilities concerning the core attributes listed below? Kindly check one or more answers for each of the core attributes (core attribute definitions)

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\(^2\) We recognize that core NPHI functions help countries organize and conduct their public health services\(^2\), and are based on the Essential Public Health Functions framework.\(^1\)
6. Referring to management of strategic health information and data necessary for public health priority setting and evidence-based decision-making, does the NPHI(s) or organization/agency/institute(s) identified in Q1 in your country have:
   a) Authority to access all relevant information and data
      □ Yes  □ No

   b) Authority to share analyzed public health information and data with (select all that apply):
      □ Other government agencies
      □ Parliament
      □ Academia
      □ General Public
      □ None

7. Does the NPHI(s) or organization/agency/institute(s) identified in Q1 have the authority to pass and enforce public health-related legislations (e.g., COVID-19 mask wearing mandates, smoke free public places, etc.) in your country?
   □ No  □ Yes, please provide more information

8. Please describe the role of the NPHI(s) or organization/agency/institute(s) identified in Q1 during the COVID-19 pandemic in your country.

9. Is the NPHI(s) or organization/agency/institute(s) identified in Q1 funded through sustainable domestic financing sources to fulfill its mandate in your country?
   □ Yes, please provide more information
   □ No, please provide more information
10. Does the NPHI(s) or organization/agency/institute(s) identified in Q1, engage with the private health sector (profit or non-profit) in your country?

☐ Yes, please provide more information
☐ No, please provide more information
Appendix 3: Interview guide

According to the International Association of National Public Health Institutes (IANPHI), these national public health institutes (NPHI) are a government agency, or closely networked group of agencies, that provides science-based leadership, expertise, and coordination for a country’s public health activities.

**Topic guide**

1. According to the IANPHI’s definition above, is there a national public health institute (NPHI) in your country? Please elaborate as much as possible.
   - If so, please provide their name and describe their mandate?

2. Please describe the governance arrangements (internal and external) of the identified NPHI(s) or organization/agency/institute(s)? Please elaborate as much as possible.
   - What is their affiliation to the Ministry of Health (MOH) in your country?

3. Delegation of authority from the Federal to Governorate level? Working with other ministries?

4. Strategic health information and data is essential for public health priority setting and evidence-based decision-making.
   - Does the identified NPHI(s) or organization/agency/ institute(s) have the authority to access relevant public health data and information? Fragmentation...Integrated
   - Are they able to share this data and information with relevant stakeholders?
   - Do they share this data and information? Please elaborate as much as possible.

5. Does the identified NPHI(s) or organization/agency/institute(s), engage with the private health sector (profit or non-profit) in your country? Please elaborate as much as possible.

6. Does the identified NPHI(s) or organization/agency/institute(s) have the authority to propose and enforce public health-related legislations (e.g., COVID-19 mask wearing mandates, smoke free public places, etc.) in your country? Please elaborate as much as possible. (How does the NPHI contribute to public health policies?)

7. Is the identified NPHI(s) or organization/agency/institute(s) funded through sustainable domestic financing sources to fulfill its mandate in your country? Please elaborate as much as possible.

8. Please describe the role of the identified NPHI(s) or organization/agency/institute(s) during the COVID-19 pandemic in your country.

9. Do you have any other recommendations regarding a NPHI or similar entity going forward (include any relevant governance arrangements, core functions, and/or roles and responsibilities)
   - What should be the reporting line, participatory structure, and relationship with the MOH, should the “head” be a higher level or independent from MOH structure, etc.?
- Is there opportunity and political readiness/appetite to move this forward? What are the challenges?

10. Do you have any final comments or questions?
Appendix 4: Informed consent form

PARTICIPANTS’ INFORMATION SHEET: SURVEY AND/OR KEY INFORMANT INTERVIEWS (to be modified depending on if participation is for survey or interview)

This informed consent information sheet is for key informants in the Eastern Mediterranean Region (including representative from NPHIs, ministries of health, multilateral organizations, NGOs, and other health systems governance experts) who we are invited to participate in surveys and/or interviews to provide their insights on NPHI-relevant governance arrangements (internal and external) and attributes, core functions, as well as roles and responsibilities during the COVID-19 pandemic.

This Informed Consent Form has two parts:
- Participants’ Information Sheet (to share information about the study with you)
- Certificate of Consent (for signatures if you choose to participate)

You will be given a copy of the full Informed Consent Form.

Title of study
Review of National Public Health Institute-relevant governance arrangements, core functions, and roles and responsibilities in Eastern Mediterranean Region countries, applying a COVID-19 lens

Introduction
The purpose of this study is to: i) generate evidence on the NPHI-relevant governance arrangements (internal and external) and attributes, core functions, as well as roles and responsibilities during the COVID-19 pandemic, and to ii) apply generated evidence in support of policy dialogues with EMR countries to build or strengthen supportive public health structures and capacities.

The Investigators are:

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Sebastian van Gilst
WHO/Regional Office for the Eastern Mediterranean
Monazamet El Seha El Alamia Str,
Extension of Abdel Razak El Sanhouri Street
We are going to give you information and invite you to be part of this research. You do not have to decide today whether or not you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research.

This consent form may contain words that you do not understand. Please ask me to stop as we go through the information, and I will take time to explain. If you have questions later, you can ask them to me or to the committee who reviewed this research.

Background and purpose of research
Weak governance practices are a root problem undermining health system performance, accountability, and modernization. In particular, since the onset of the COVID-19 pandemic, governments are recognizing the importance of identifying and strengthening health systems governance prerequisites for advancing UHC and health security in their countries. Weak governance arrangements and institutional frameworks can exist at all levels of the health system starting from macro-level policy issues down to the operational day to day transactions at the service delivery points. Focusing on improving governance as a central component of health system strengthening agenda contains a high degree of complexity as each country’s systems are characterized by different levels of information transparency; dispersions of roles and responsibilities (across governmental and non-governmental actors); and institutional arrangements at national, regional, and local levels.

The COVID-19 pandemic has put extreme stress on a country's health systems, not the least of which are those institutions responsible for a nation’s public health. According to the International Association of National Public Health Institutes (IANPHI), these national public health institutes (NPHI) are a government agency, or closely networked group of agencies, that provides science-based leadership, expertise, and coordination for a country’s public health activities. NPHIs are a key resource to support public health system strengthening with essential public health functions and generate evidence for health policy central to national health and socioeconomic development. Reviewing NPHI-related governance arrangements, core functions, and roles and responsibilities could be considered an effective entry point to strengthen overall public health system performance and responsiveness going forward.

Accordingly, the World Health Organization’s Eastern Mediterranean Region Office (WHO/EMRO) Governance of Health Systems (GHS) team has developed a survey (Appendix 1) and key informant interview guide (Appendix 2) with questions based on the NPHI Core Functions & Attributes and the Staged Development Tool. The survey WHO/EMRO, along

with their partners the Eastern Mediterranean Public Health Network (EMPHNET), look to utilize this survey tool to collect and analyse information about the governance elements and prerequisites related to NPHI(s) (including councils or committees in lieu of institutions) in EMR. The survey will be launched online for convenience and target representatives of NPHIs, as well as other relevant EMR country experts identified by WHO/EMRO, WHO country offices and EMPHNET. The synthesized information will be used to inform and supplement the more detailed key informant interviews, to be conducted over the phone or internet, with the goal of strengthening of NPHI-related governance arrangements, delivery of core functions, and roles and responsibilities in EMR countries going forward.

Declaration of conflicts of interest
We declare that the members of the research team have no conflicts of interest.

Nature of research (type of research intervention)
The research will involve a survey and/or conducting interviews with select key informants (stakeholders) from the NPHIs, governments, and other health systems governance experts from EMR countries. The interviews will last approximately one hour.

Participant Selection
You are being invited to take part in this research because we feel that your experience and knowledge on NPHI-relevant governance arrangements (internal and external), core functions, as well as roles and responsibilities during the COVID-19 pandemic can contribute much to our understanding and knowledge.

Participants’ involvement

- **Duration/what is involved:** We are asking you to help us learn more about NPHI-relevant governance arrangements (internal and external) and attributes, core functions, as well as roles and responsibilities during the COVID-19 pandemic in your country. If you accept, you will be asked to complete a 10-question online survey and/or participate in a key informant interview lasting approximately 60 minutes. The interview will be carried out online, using Microsoft Teams or Zoom. If you do not wish to answer any of the questions during the interview, you may say so and the interviewer will move on to the next question. No one else but the interviewer will be present unless you would like someone else to be there. The information recorded is confidential, and no one outside of the project research team will access the information documented during your survey or interview (i.e., recordings, transcripts). The entire interview will be audio-recorded, if you consent, but no one will be identified by name on the recording. The audio-recording and a transcript produced from this recording will be kept on a password-protected computer and backed up on a password-protected hard drive. If you name your organization or individuals during the interview, we will remove these details and replace them with an anonymized term (e.g., in my company). The recordings will be destroyed after 2 years, in order to ensure enough time for writing up the findings.

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Should the final publications be written up and published in less than two years, the recordings will be destroyed earlier. If you do not consent to the interview being audio-recorded, the interviewer will take written notes.

- **Potential Risks**
  There is a risk that you may share some personal or confidential information by chance, or that you may feel uncomfortable talking about some of the topics. However, we do not wish for this to happen. We will remove potential identifiers from the interview transcripts. You do not have to answer any question or take part in the interview if you feel the question(s) are too personal, or if talking about them makes you uncomfortable. If you become stressed, you can take some time to collect yourself. If you become uncomfortable from the prolonged sitting (approximately 60 minutes), you can take a break to stretch. You can also stop your participation at any time.

- **Benefits**
  The intention of this study is to review NPHI-related governance arrangements (internal and external) and attributes, core functions, as well as roles and responsibilities during the COVID-19 pandemic. This information will ultimately be used to inform the WHO/EMRO regional approach to strengthen health systems governance arrangements, as well as clarify functions and roles and responsibilities of relevant health systems actors in EMR countries.

There will be no direct benefit to participants, and they will not be provided with any incentive to take part in the research; however, they will be informed that their participation is likely to help us find out how to refine our regional approach to strengthening health systems governance and the role of NPHIs in different EMR country contexts. **Costs**

You will incur no costs for participating in this research, apart from a time and opportunity cost of approximately 60 minutes during which you will complete the interview.

- **Compensation**
  You will not be provided with any incentive to take part in the research.

- **Confidentiality**
  All the information that you provide during the interview will remain anonymous, which means that no one will be able to know who you are. This conversation usually takes around one hour but sometimes takes shorter or longer. I may ask you to share some information that is personal. The information you provide is confidential and will be kept private. I will not share personal information about you with anyone and any mentions of your organization will be removed from the transcript and anonymized. The recording and any other information about you will have a unique number on it instead of your name. Only I and the other members of the research team will know what your number is. Findings from the research may be published, but no details from which you could be identified will be shared with anyone. All data from this project will be stored securely.

- **Voluntary participation/withdrawal**
  Your participation in the study is entirely voluntary. It is your choice whether to take part or not. If you choose not to take part, there will be no negative consequences. You may change your mind later and stop taking part even if you agreed earlier. You do not have to give reasons for choosing not to take part. If you would like time to think before you
decide whether to take part, you can tell me and come back at a later date. If you agree to participate, I will ask you to consent to the information shared in this form to show that the study has been explained to you and that you agree to be part of it. You may decide to end your participation in the interview at any time if you do not feel comfortable about continuing.

- **Outcome and feedback**
  Participants will be contacted in the event that any further clarification is required. The data gathered by this study will be analyzed and written up in a final report/paper.

- **Feedback to participant**
  You will be contacted in the event that any further clarification is required. If you are interested in being contacted once the findings from this research are publicly available, we will share the final report(s)/paper(s) with you.

- **Funding information**
  This research is supported by the World Health Organization.

- **Sharing of participants Information/Data:** The World Health Organization will own the data generated by this study.

**Provision of Information and Consent for Participants**

This Informed Consent Form has two parts:

- Participants’ Information Sheet (to share information about the study with you)
- Certificate of Consent (for signatures if you choose to participate)

You will be given a copy of the full Informed Consent Form (Participants’ Information Sheet and Certificate of Consent) once it has been signed.

**Who to Contact for Further Clarification/Questions**

If you have any questions, you can ask them now or later. If you wish to ask questions later about this research, please contact:

**Sebastian van Gilst**

Mobile: +201024555340
Office: +20222765661
vangilsts@who.int
**Certificate of Consent for Key Informant Interviews**

**PARTICIPANT’S STATEMENT**

I acknowledge that I have read or have had the purpose and contents of the ‘Participants’ Information Sheet: Key Informant Interviews’ read and satisfactorily explained to me in a language I understand (*name of language*). I have had the opportunity to ask questions, and any question I have asked has been answered to my satisfaction. I fully understand the contents and any potential implications as well as my right to change my mind (i.e. withdraw from the research) even after I have signed this form.

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have been given an opportunity to ask any questions I may have, and all such questions or inquiries have been answered to my satisfaction. I have been informed orally and in writing of whom to contact in case I have questions.</td>
<td></td>
</tr>
<tr>
<td>I give my consent to participate in this study.</td>
<td></td>
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<tr>
<td>I agree to participate in a recorded interview.</td>
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</tr>
<tr>
<td>I give permission to include my information, without my name, in your research findings that will be shared and published.</td>
<td></td>
</tr>
<tr>
<td>I give permission for my organization to be included in the acknowledgements section of any reports or papers.</td>
<td></td>
</tr>
<tr>
<td>I would like to be contacted once the publications from this research are publicly available to be shared with me.</td>
<td></td>
</tr>
</tbody>
</table>

I consent voluntarily to be a participant in this research study.

Printed name or initials of participant …………………………….

ID code …………………………….

Participant’s signature …………………………………… OR Mark (please specify) …………..

**INTERPRETER’S STATEMENT (where applicable)**

I interpreted the purpose and contents of the Participants’ Information Sheet to the aforementioned participant to the best of my ability in the (*name of language*) language to his proper understanding.

All questions, appropriate clarifications sorted by the participant and answers were also duly interpreted to his/her satisfaction.

Name of interpreter………………………….

Signature of interpreter………………………… Date ……………………….
Contact details .................................

INVESTIGATOR STATEMENT AND SIGNATURE

I certify that I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands that the following will be done. I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily. The participant has been given ample time to read and learn about the study. A copy of this informed consent form has been provided to the participant.

Researcher’s name........................................

Signature .............................................. Date........................................