Public Health Institutes of the World

IANPHI

IANPHI GHEC report

Role of NPHIs in Health Emergencies

NPHI national health emergency corps survey and connected leaders' interviews 2024-2025

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Abbreviations

AFRO	WHO African Region
AMRO	WHO Region of the Americas
CDC	Centers for Disease Control and Prevention
EIS	Epidemic Intelligence Services
EMRO	WHO Eastern Mediterranean Region
EMT	Emergency Medical Team
EURO	WHO European Region
FETP	Field Epidemiology and Training Programme
GHEC	Global Health Emergency Corps
GOARN	Global Outbreak Alert and Response Network
HEPR	Health Emergency, Preparedness and Response
HIC	High-income country
IANPHI	International Association of National Public Health Institutes
IASC	Inter-Agency Standing Committee
IHR	International Health Regulations
INS	Instituto Nacional de Saude, Mozambique

LIC	Low-income country
LMIC	Lower middle-income country
MOH	Ministry of Health
NICD	National Institute for Communicable Diseases, South Africa
NPHI	National public health institute or agency
PAHO	WHO Pan American Health Organization
PHAC	Public Health Agency of Canada
PHEOC	Public Health Emergency Operations Centre
PPE	Personal Protective Equipment
SEARO	WHO South-East Asia Region
Simex	Simulation exercise
TEPHINET	Training Programs in Epidemiology and Public Health Interventions Network
UKHSA	United Kingdom Health Security Agency, UK
UMIC	Upper middle-income country
WHO	World Health Organization
WPRO	WHO Western Pacific Region

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Executive Summary

National Public Health Institutes (NPHIs) hold a unique position and function in the public health emergency ecosystem. Through their mandates many NPHIs are part of government at the national level and function at the intersection of sectors that have operational roles in a health emergency. NPHIs provide their expertise and advice primarily to government using evidence-based approaches. The Global Health Emergency Corps (GHEC), with the secretariat at the WHO, is a network of networks. GHEC seeks to provide a framework that enables a co-ordinated approach to prevent and respond to health emergencies, thereby reducing the impact of health emergencies on populations.

The aim of GHEC is to create collaborative networks at the national, sub-national, and community levels, as well as across the health system and across sectors. These collaborative networks are a workforce of professionals across governmental and non-governmental sectors that can be called upon and mobilised to respond to public health emergencies. These professionals have expertise, skills, and competencies, across a range of activities from forecasting and predictive intelligence, early warning to mobilising public health action on the ground when needed.

The national health emergency workforce will have an intimate knowledge of their country context, including the specific needs, challenges, and gaps. Through their NPHIs, countries can leverage additional support via connected leaders established through bilateral, regional, and international partnerships. The organisation of such a national health emergency corps will enable a co-ordinated deployment of staff and resources, as well as the ability to surge expertise and resources needed in health emergencies.

With funding from the Gates Foundation and in consultation with the GHEC secretariat, IANPHI conducted a survey with its members to understand the role of NPHIs in health emergencies with a focus on the deployment and surge of the health emergency workforce. In addition, interviews were held with 15 NPHI leaders, including two subnational directors and one regional multi-country public health agency director to understand the current state of the interactions, relationships, and strength of connected leaders within the country from national to community level. The interviews also sought to understand how leaders engage with neighbouring countries, regional entities or internationally to expedite access to intelligence, support and agree actions that are mutually beneficial to prevent spillovers across borders and prevent epidemics from becoming pandemics, and to enable timely response to protect borders.

A workshop was held in February 2025 to analyse and interpret initial data, as well as a session with the GHEC secretariat, GOARN and the chair of the IANPHI Pandemic Preparedness Response and Recovery Thematic committee to discuss

emerge themes. Subsequently, at the IANPHI Annual Meeting in Maputo, Mozambique in April 2025 a session was held with NPHI attendees to present the findings and to discuss further the concept of connected leadership.[1]

Key findings

Some NPHIs do not fulfil all emergency management functions and tend to have limited operational roles in health emergencies. This is partly because they are organisationally restricted by their remit and mandate, size, and workforce. In health emergencies it is the Ministry of Health that usually has the leading role for implementing operational responses. NPHIs support government actions primarily through the Ministry of Health. They have a mandate for providing independent evidence-based policy advice aligned to disease surveillance, prevention, public protection and promotion of health and well-being. Key operational functions of NPHIs include:

1. specialist laboratory testing – in health emergencies this will include working with the health sectors on testing and diagnostics;

2. surveillance of infectious diseases in health emergencies, and the monitoring of the secondary health impacts of emergencies (e.g., food and shelter insecurity), extreme heat, and pollution;

3. epidemiological expertise applied to investigational activity, research, surveillance and contact tracing analysis; and

4. providing specialist scientific and technical expertise, guidance, and policy advice.

Notably, NPHIs in low-income countries tend to lead on the coordination of emergency response, including mounting a field response, and related functions (emergency planning, emergency training, emergency needs assessment, evaluation of response). NPHIs in higher income countries are less involved in disaster recovery planning, the mobilization of field response, or post disaster debriefing and lesson learning. Some of the key public health workforce challenges reported by NPHIs from all regions included training, funding, workforce planning and staff retention.

In public health emergencies, NPHIs often act as trusted connectors who bridge health and non-health sectors. Effective leaders wield decision-making authority and control over resource allocation, while also demonstrating the capacity to influence and collaborate across diverse sectors, helping bridge health with broader national security and socio-economic agendas. Effective leadership is seen as not merely as exercising operational command, but as articulating a compelling vision that positions public health as a vital national priority, and not just a health sector issue.

Connected leaders can draw on key professional and organisational networks to enable a co-ordinated and accelerated response, that includes timely information and intelligence exchange through formal and informal agreements, shared understanding of risks and impacts, and common purpose to deliver mitigation

actions that protect health and economic security across borders and regions. For leaders of NPHIs, clearly defined roles and responsibilities and delegated authority from government—paired with an understanding of the roles other sectors play during health emergencies—are essential for fostering strong relationships and ensuring a well-coordinated response. Much of this is shaped by the national context, the mandates of the agencies involved, and the prevailing norms governing inter-agency working.

Key recommendations

Based on the findings of this work, a series of impactful recommendations are proposed as follows:

Legal and political mandates

- Clarify the mandates of NPHIs and other partners in public health emergency management. Strengthen political advocacy for the role of NPHIs in managing public health emergencies.

- Monitor and analyse political economy risks that may hinder effective inter-agency working.

Resourcing and workforce

- Identify the skills and competencies required, and strategies to address gaps, for the national health emergency workforce. This includes expertise required from in country professionals for deployment and surge at national, subnational and community level, as well as expertise and resources required from international sources.

- Develop a recognised multisectoral cadre of trained national health emergency workforce (national health emergency corps). that is assimilated under one collaboration and can be called upon when needed. This cadre of professionals needs to be identified at all levels (from community to national) and working across sectors.

Mechanisms and systems

- Enhance coordination mechanisms both nationally and internationally, for example through conducting cross-border emergency preparedness exercises to strengthen coordinated regional responses.

- Develop and fund comprehensive surge plans, including deployment and surge register with attached training plan which is multi-sectoral and updated by the NPHI (or other lead agency for public health emergency activities).

- Explore the role of technology to support health emergency response.

- Integrate system strengthening specialists into health emergency management systems with strategic oversight of partnership, collaboration, and action.

Leadership and global engagement

- Formalize the role of the NPHI for all public health emergencies, including participation in national-level decision-making to amplify their influence and visibility. Position NPHI leaders strategically within national governance structures (e.g., national security councils, cross-ministerial task forces).

- Include NPHI leaders on global networks, expand support networks and develop communities of shared practice, particularly for low-income countries. Support NPHIs as local translators of global frameworks, ensuring emergency systems align with sociocultural norms, infrastructure, and community needs.

- Global leadership development in health emergency management that links NPHI leaders to peer networks and provides strategic mentorship. Train NPHI leaders in stakeholder engagement and diplomacy to strengthen collaboration with sectors like disaster management, defence, and finance.

- Strengthen global norms for public health emergency response, particularly for multi-sectoral and cross border collaboration as normative practice. Build bridges through simulation exercises for cross border strengthening. Investment in joint training, twinning, peer review, and simulation exercises to foster reciprocity, solidarity, and peer support.

The survey and interviews demonstrated that even though NPHIs are the recognised institutes for public health in their countries there is still variation in their mandates and authorities. NPHIs who have surveillance and specialist laboratories under their functions will be responsible for providing services in the lead up to and during health emergencies. Most NPHIs will act as evidence-driven trusted advisors to governments and other sectors.

Connected leaders' networks need to be strengthened to create a network of networks that operates according to country context. NPHIs should lead this endeavour as bridge connectors, authorised by government. They should not be restricted to the national level unless subnational investment is robust for health emergency management, in which case close collaborative networks between national and subnational levels become critical. Leaders need to be adept at working across sectoral boundaries, identifying shared priorities that foster collaborations, and building norms of cross-sectoral working. Governments need to provide NPHIs with those levers that enable NPHI leaders to be part of the wider intergovernmental dialogue that impacts health security.

Introduction

2.1 Background context

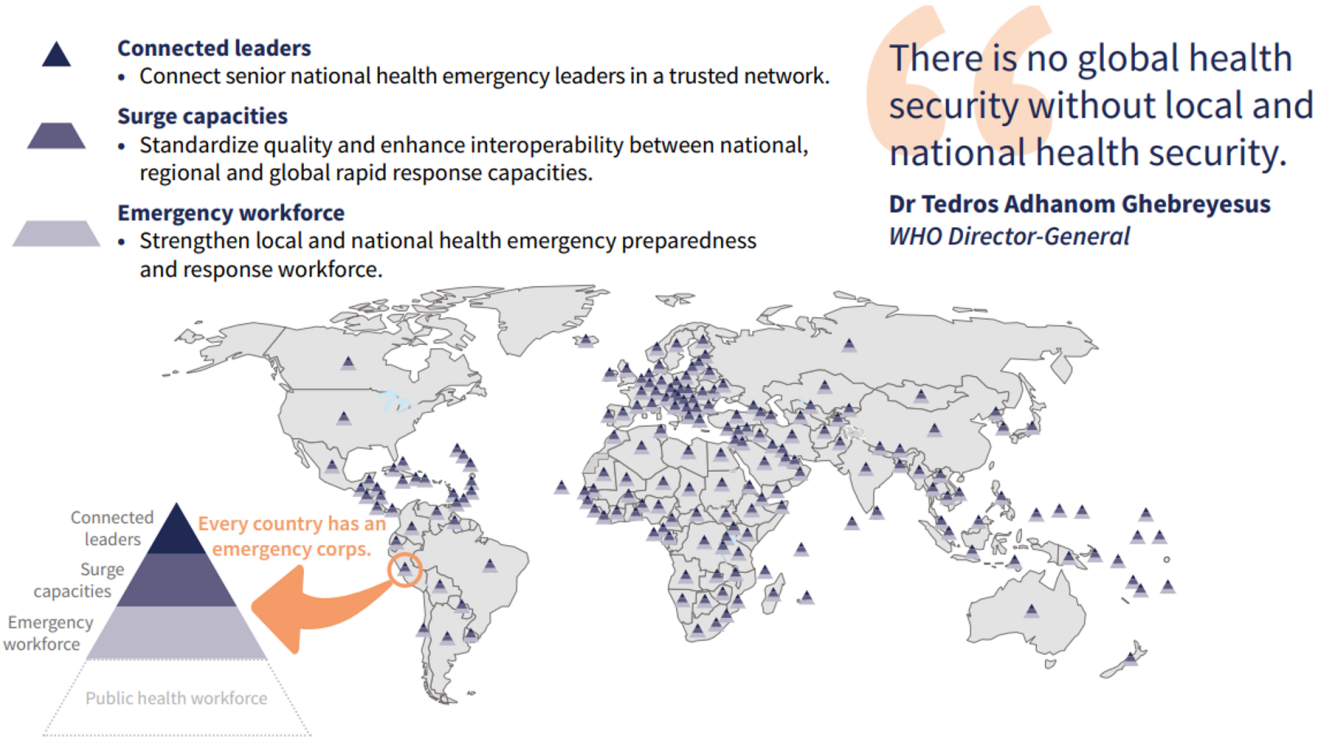
The COVID-19 pandemic exposed significant failures and gaps in international and national responses to an emerging pandemic threat. The Independent Panel on Pandemic Preparedness and Response (IPPR) in 2021 concluded that "current institutions, public and private, failed to protect people" from the pandemic and called for transformational change to a new system that is coordinated, connected, fast-moving, accountable, just, and equitable" [1]. Despite some progress in recent years, in 2024, the IPPR concluded that "the world remains unprepared to stop an outbreak from becoming a pandemic" [2]. Following these longstanding calls for action and learning from the pandemic as well as other health emergencies, the Global Health Emergency Corps (GHEC) was devised and launched in May 2023 as a strengthened approach to collaboration for countries and health emergency networks [3].

2.2 GHEC concept and development

GHEC is a framework for enhancing health emergency workforce capacity within health emergency prevention, preparedness, response, and resilience (HEPR) work [4]. It is a collaboration platform for countries and health emergency networks and integrates with the existing International Health Regulations as well as WHO's updated HEPR framework [5, 6, 7]. GHEC comprises of a network of networks including IANPHI, EMT, GOARN, SBP, WHO regional offices and country offices, supranational CDCs, EOC-Net, TEPHINET and Health Cluster.

The vision of Global Health Emergency Corps (GHEC) is a health emergency workforce centred in countries and coordinated regionally and globally, that connect health emergency workforces, rapid response capacities, and leaders in every country into a cohesive, proactive system (Figure 1) [4]. It was envisaged by the WHO Director General, Dr Tedros Adhanom Ghebreyesus, that GHEC "will enhance interoperability between national and regional teams based on common standards and protocols and establish a network of national health emergency leaders."

Figure 1: Global Health Emergency Corps overview



A small secretariat at global and regional levels will build on and connect existing health emergency networks and institutions into a collaboration platform to collectively address the gaps exposed by the COVID-19 pandemic, identify best practices, areas for collaboration, cross-fertilization and common learning in strengthening the emergency workforce, surge capacities, and connected leadership. The anticipated benefits are that health emergencies are managed closest to where they start, there is surge capacity so that countries are not overwhelmed by emerging health threats and through the efforts of connected leaders and global coordination the next pandemic is stopped (Figure 2).

Figure 2: Global Health Emergency Corps benefits and domains

2.3 Aims and objectives of the survey

The focus of this survey and interviews with NPHIs was on the role and functions of NPHIs in health emergencies. The survey aimed to understand how and the extent to which NPHIs are leading or involved in health emergencies, and specifically with regards to the key domains outlined by the GHEC framework. The information collected sought to:

- Provide an overview of the current landscape and support needed for NPHIs to strengthen their roles in rapid response to health emergencies.
- Provide evidence to support the development of IANPHI guidelines for NPHIs, focusing on reviewing, planning, or developing surge capabilities to respond to domestic, regional, and international emergencies.
- Generate position papers and publications to advocate for investment, support and strengthening of the roles and responsibilities of NPHIs in health emergencies.
- Identify key recommendations to support further GHEC development.

The survey included all NPHIs worldwide who are members or associates of IANPHI. This survey did not set out to provide specific individual country context insights but sought to give a comprehensive overview of the diversity of contexts, systems, needs, management approaches, governance, and authorities that NPHIs need to prevent, prepare and respond to health emergencies.

The objectives of the survey were to collect primary data from NPHIs in the following areas:

- Mandates and authorities of NPHIs in health emergency prevention, preparedness, response, and resilience
- National governance of health emergencies
- Functions linked to the HEPR [7], IHR [6] and key health emergency frameworks
- Workforce needs for a resilient public health system at the national and subnational level
- Gaps and challenges for NPHIs during health emergencies
- Key relationships between NPHIs and other external public health functions (e.g., PHEOCs, environmental health, MoH)
- Key relationships between NPHIs and health emergency networks (e.g., GOARN, EMT, FETP)

In addition, focused key informant interviews were held with a targeted selection of senior leaders of NPHIs from all regions. The objectives of the interviews were to explore the concept of connected leadership from country, regional and global perspectives. The interviews sought to elucidate the formal and informal reporting, partnerships, networks, and collaborations essential for strategic decisions and agreements. This included an understanding of cross-border and transnational agreements, and relationships that need to be sustained through normative practice, to realize a streamlined approach to preparing and responding to health emergencies.

It was anticipated that the outputs of both the survey and interviews would provide key evidence to inform the development and realisation of the GHEC framework, as well as support efforts to strengthen public health services and capacity, specifically with regards to NPHIs' health emergency preparedness and response [8]. In turn, the outputs will help inform and support targeted actions for national and subnational strengthening of the roles and functions of NPHIs. It is envisaged that through connected leadership at the national, regional, and global levels, and built on agreed mechanisms for preparedness and response, co-ordinated and collaborative responses to health emergencies can be mounted.

Results

3.1 Overview of Respondents

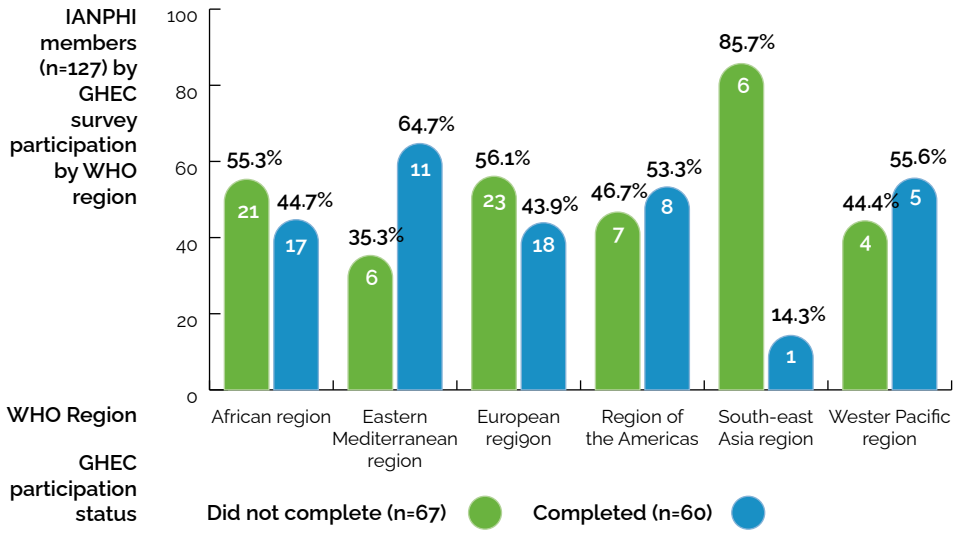
3.1.1 Survey responses

Of the 127 IANPHI member institutions to which the survey was sent in October 2024, 56 completed and 4 partially completed responses were received, a response rate of 47% (60/127).

Respondents represented all seven World Bank regions. The regions with the lowest representation proportional to IANPHI membership were East Asia and the Pacific (39%), and Latin America and the Caribbean (42%). Regions with the highest representation proportional to IANPHI membership were North America (100%), South Asia (60%) and Middle East and North Africa (56%). By World Bank country income group, a higher proportion of NPHIs from high income countries (HICs) (56%) responded compared to countries from Upper Middle (UMIC), Lower Middle-(LMIC), and Low-income (LIC) groups (41% to 47%) (Figure S1).

By WHO region, the regions with the highest proportion of respondents proportional to IANPHI membership were the Eastern Mediterranean region (EMRO) (65%), the Western Pacific region (WPRO) (56%) and the Region of the Americas (AMRO) (53%). The WHO region with the lowest response rate was the South-East Asia Region (SEARO) (14%) (Figure 3).

Figure 3: Survey response numbers and proportions by WHO region



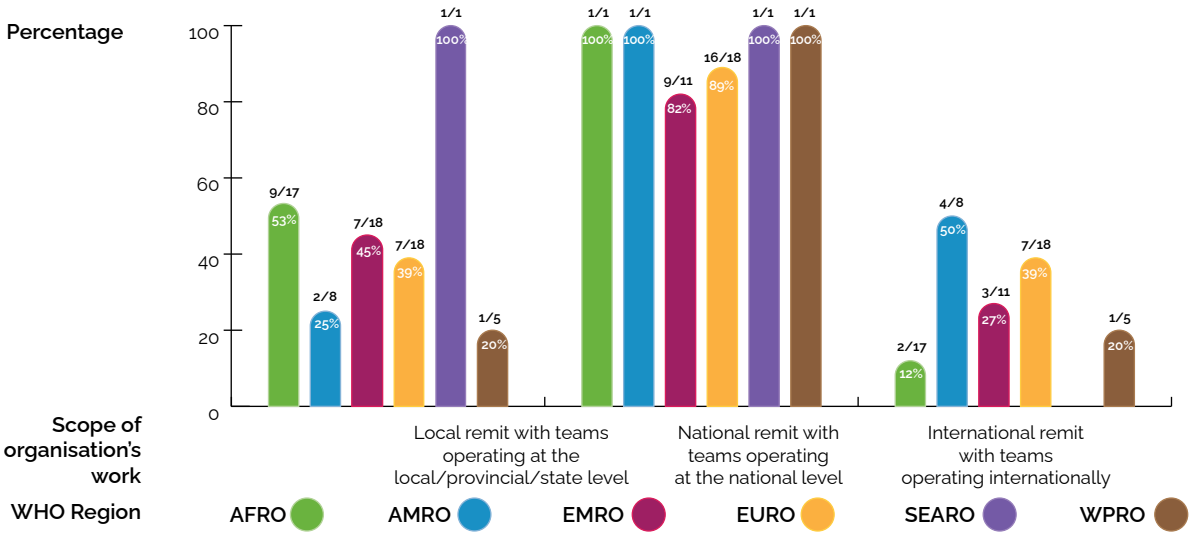
3.1.2 Characteristics of survey respondents

Most of the responses were received from NPHIs (90%, 52/58) and most were IANPHI national members (86%, 48/56).[1] There was considerable diversity in size, age, and mandate of the NPHIs. NPHI sizes varied from less than a hundred to over 2000 employees – many had an employee size of less than 500 (55%, 33/60). Most of the responding NPHIs were established more than 10 years ago (72%, 42/58).

Almost all the respondents had a **national remit** for health emergencies with teams operating at the national level (95%, 56/59). 42% (25/59) of respondents said they had a local remit with teams operating at the local, provincial, or state level. However, **few NPHIs have an international remit** with only 29% (17/59) of respondents indicating that they have teams operating internationally (Figure 4).

Respondents from HICs (45%, 10/22) and the Region of the Americas (50%, 4/8) were more likely to report an international remit. Conversely, respondents from the LMICs (8%, 1/12) were less likely to report having an international remit (Table Q9A, Q9B).

Figure 4: NPHIs' scope of work by WHO region



3.2 NPHI Mandate and Governance

3.2.1 The role of NPHIs in a Public Health Emergency

Most respondents indicated that their **NPHIs have a role in public health emergencies**. 85% (50/59) of NPHIs specified that they have a **legally mandated role** whilst the remaining 15% indicated that they had a role, but it

1 IANPHI includes members who are NPHIs, as well as associate members who are not NPHIs e.g. regional public health networks and organisations such as CARPHA.

was not legally mandated (Figure Q11). For this latter group, five of the 9 countries were from the EURO region, with the remaining four from AMRO, AFRO, and EMRO regions (Table Q11B).

3.2.2 NPHI involvement in specific functions and issues

With regards to specific public health functions in relation to national public health emergencies, respondents reported that their NPHIs were often the **lead agency for *specialist laboratory or scientific capability*** (75%, 45/60), ***surveillance*** (65%, 39/60), and ***risk assessment*** (57%, 34/60) (Figure Q12, Table Q12A). Conversely, the most common functions that NPHIs reported not being involved in were *disaster recovery planning* (20%, 12/60), *mobilization of field response* (20%, 12/60), or *post-disaster debriefing and lessons learning* (13%, 8/60). In low income countries, NPHIs were more likely to report being the lead agency in *mobilization of field response* (58%, 7/12, compared to 23%, 5/22, in HICs) and none reported not being involved in this function (compared to 32%, 7/22, in HICs) (Table Q12B, Table Q12C). A similar pattern was observed by WHO Region, with EURO respondents reporting higher non-involvement than other regions (Tables Q12D-G).

NPHIs and Ministries of Health (MoHs) were frequently reported as being actively involved in the response for infectious disease public health emergencies (Figure Q13). This high involvement remained regardless of country income level (Table Q13A). For other public health emergencies, namely *environmental, chemical, biological, or radiological hazards*, NPHI involvement was relatively high and more likely with higher income level. Involvement of MOH was relatively high in all but the lower-middle income countries, where it was markedly lower (Table Q13A).

For public health emergencies related to *civil disorder*, the involvement of NPHIs was low across the board. The involvement of a civil defence agency was low in LICs, except for public health emergencies related to civil disorder. For countries of other income levels, civil defence agency involvement was higher, yet lowest for emergencies related to infectious disease (Table 13A).

In terms of broader public health issues, fewer NPHIs reported being involved in *employment* (27%), *housing* (34%), *animal health* (58%), *health equity* (60%), and *water and sanitation* (64%) in a public health emergency (Figure Q14). Higher proportions of NPHIs reported leading on or having some involvement in *non-communicable disease management* (15% leading, 70% some involvement), *healthcare planning and management* (7% leading, 60% some involvement), *community engagement* (10% leading, 52% some involvement), *environmental issues* (3% leading, 65% some involvement), and *mental health* (3% leading, 42% some involvement) (Figure Q14).

The relatively low proportions of NPHIs reporting leading on these broader public health issues were marginally lower in high income countries compared to low-income countries, although they remained very low for most of the functions regardless of income level (Table Q14B, Q14C).

3.2.3 What emergency preparedness and response plans are in place?

Most NPHIs (78%, 47/60) reported that there is a **formal framework or plan in place** for public health emergencies (Figure Q15). This was more likely for HICs (86%, 19/22) and larger NPHIs (88%, 23/26), and lowest in the AMRO region (62%, 5/8) (Tables Q15A, Q15B, Q15C). Most NPHIs have updated this plan since the COVID-19 pandemic (75%, 33/44), and especially larger NPHIs (90%, 18/20) (Figure Q16, Table Q16C). Many respondents reported that this **plan was collaboratively produced** with other departments, agencies, or organisations (82%, 37/45) (Figure Q17).

Around half (47%, 27/58) of responding NPHIs said they contributed to a regional or international plan (Figure Q18). A quarter (24%, 14/58) of respondents reported contributing at a regional and/or international level for certain hazards only, and 9% (5/58) reported that they did not contribute to any plans for emergency preparedness and response at these levels.

When looking at formal agreements with international organisations for emergency response, over half the respondents confirmed that they **have agreements with other NPHIs** (54%, 32/59) and/or **with international organisations** (51%, 30/59). 19% (11/59) of respondents stated that they do not have any such agreements (Figure Q19). When asked what these agreements included, the majority stated that they included **sharing of health intelligence** (76%, 32/42), **sharing of laboratory samples** (55%, 23/42) and **testing facilities** (45%, 19/42) (Figure Q20).

3.3 Public Health Emergency Workforce

The survey examined several workforce related issues regarding workforce planning, staff qualification requirements, training, and where staff could be drawn from in the event of a public health emergency.

3.3.1 Planning for public health workforce in an emergency

Many respondents (54%, 32/59) reported that their country has a national public health workforce strategy or development plan with specified roles and responsibilities for national public health emergencies (Figure Q21). Respondents who reported that their country did not have such a strategy or plan were likely to be from low-income countries (LIC) (55%, 6/11, vs. HIC 32%, 7/22), from the African region (AFRO) (56%, 9/16) or from smaller NPHIs (48%, 16/33, vs. larger NPHIs 15%, 4/25)[2] (Table Q21A-C).

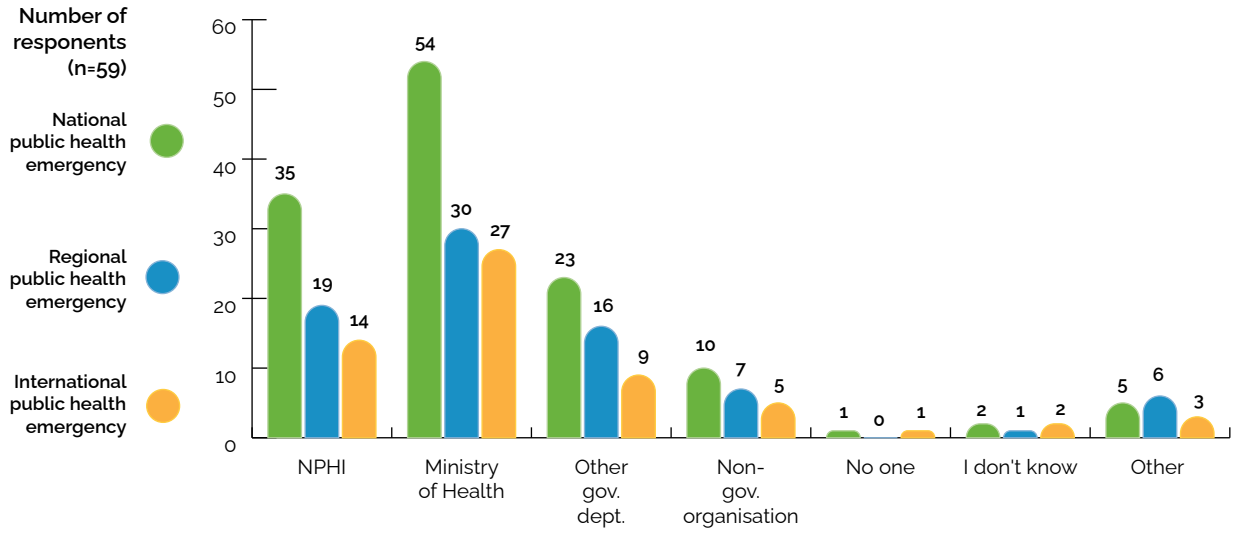
Most respondents noted that their workforce plan or strategy had been developed or updated in the past year (43%, 13/30) or within the last one to three years (33%, 10/30) (Figure Q22). Of concern, 13% (4/30) said their plan was developed or last updated more than 3 years ago.

2 We define size of NPHIs as follows: <=500 as small, >500 as large.

In terms of responsibility for public health workforce planning for national health emergencies, in general the MoH (92%, 54/59) was more likely to be the responsible body, followed by the NPHI (59%, 39/59) (Figure 5). Similarly, the MoH (86%, 51/59), followed by the NPHI (61%, 36/59), were more likely to be involved in assessing the public health workforce needs of the country (Figure Q24).

Figure 5: Responsibility for public health workforce planning for national health emergencies

Q23: Who is responsible for public health workforce planning for health emergencies in your country?



3.3.2 Public health emergency staff

Several organizations were reported to provide public health staff to respond to a national public health emergency. Most respondents reported that the staff came from the MoH (81%, 48/59) or NPHI (75%, 44/59) or other government department (39%, 23/59) (Figure Q25). Non-government organisations (NGOs) were cited as a source of staff by 20% of respondents (12/59). There was a difference however for an international health emergency with more high-income countries reporting NGOs as a source of public health staff (32%, 7/22, compared to other income groups <9%) (Table Q25A).

3.3.3 Key public health workforce challenges

In responding to health emergencies, the key public health workforce challenges reported by NPHIs from all regions were training (76%, 44/58), ***funding*** (76%, 44/58), ***workforce planning*** (67%, 39/58), ***staff retention*** (57%, 33/58), ***gaps in the wider health system*** (52%, 30/58), and ***recruitment*** (50%, 29/50) (Figure Q26).

3.3.4 Required qualifications for health emergencies

Respondents reported that staff qualifications for work in health emergencies were required for clinical (97%, 57/59), laboratory (86%, 51/59), emergency services (85%, 50/59), public health (83%, 49/59) and emergency planning and management (69%, 41/59) roles (Figure Q27). 19% (11/59) of respondents stated that formal qualifications were not required for emergency planners and managers, and 15% (9/59) stated that formal qualifications were not required for public health staff. There were variations by country income group, with qualification requirements for emergency planning and management roles were lowest in high income countries (45%, 10/22, not required) (Table Q27A).

3.3.5 Training providers for public health emergencies

Across all regions and country income groups, the NPHI and MoH were the most common providers of training (90%, 53/59 and 76%, 45/59 respectively) (Figure Q28). There were differences by country income levels; LIC were more likely to report having UN agencies (LIC 45%, 5/11, LMIC 38%, 5/13, UMIC 38%, 5/13) as a training provider compared to HIC (0%, 0/22) (Table Q28A). Regional agencies were also cited to be a popular training provider for middle income countries (MIC) (LMIC 69%, 9/13, UMIC 54%, 7/13) compared to HIC (23%, 5/22). Academic institutions in higher income countries (UMIC 54%, 7/13 – HIC 59%, 13/22) were also more likely to be training providers than in lower income countries (LIC 18%, 2/11, LMIC 31%, 4/13) (Table Q28A).

By region, for the AFRO, AMRO, EMRO and EURO the NPHIs and MoHs were most frequently cited as training providers (Table Q28B). For AFRO, the regional agencies and UN agencies also were reported to have strong roles (56%, 9/16; and 50%, 8/16 respectively). In Europe and the Americas, academic institutions were also a key training provider (88%, 7/8; and 61%, 11/18, respectively).

3.4 Surge Capacity and Rapid Response

This section investigated the preparedness and capacity of NPHIs to surge their functions for national and regional or international health emergencies.

3.4.1 Source of surge capacity

NPHIs reported several places from which they drew their staff in the event of a national public health emergency. The most popular responses were from an *existing NPHI rapid response team* (66%, 38/58), from *non-NPHI staff working within the public health care sector* (64%, 37/58), *short term temporary recruitment* (62%, 36/58), and from *existing NPHI staff who could be redeployed* (60%, 35/58) (Figure Q38). The less popular sources were non-NPHI staff working within the private health care sector (28%, 16/58), private consultancy firms (26%, 15/58), a volunteer roster (33%, 19/58), retired staff (31%, 18/58), or from academic institutions (34%, 20/58).

Regional differences did appear; no AMRO respondents reported drawing non-NPHI staff from private health care sector and only one indicated that a volunteer roster was used (Table Q38B). For EMRO respondents there was a heavy reliance on a roster of volunteers (55%, 6/11). EURO respondents had a high proportion redeploying existing NPHI staff (71%, 12/17). Respondents from high income NPHIs were more likely to draw on existing NPHI staff (67%, 14/21 compared to 45%, 5/11 in low income NPHIs) and use retired staff (57%, 12/21 compared to 18%, 2/11 in low income NPHIs) (Table Q38A).

3.4.2 Experience of deployment to a national health emergency in the last decade

Since 2014, 75% (42/56) of respondents reported that their NPHI has deployed workforce in response to a national level health emergency (Figure Q29). There were no strong differences in national deployment rates among income groups nor region, except for EMRO respondents reporting the lowest deployment rate (55%, 6/11; Tables Q29A, Q29B, Q29C).

Of the respondents reporting national deployments since 2014 (n=42/55), the types of workforces being deployed reflected the higher frequency of threats related to infectious diseases, environmental and biological hazards. The top types of workforces deployed were **public health rapid response teams** (81%, 34/42), **epidemiology/data and analytics staff** (81%, 34/42), **surveillance staff** (79%, 33/42), **laboratory staff** (79%, 33/42), and **public health technical experts** (64%, 27/42). The top types of workforces deployed were similar across the country income groups and regions. Other commonly deployed staff included leadership staff (55%, 23/42), and research, evidence, and/or knowledge management staff (50%, 21/42; Figure Q30). The workforce that was reported to be deployed with the lowest rate was "Public safety/national disaster response" (17%, 7/42). LMICs, NPHIs with ≤ 500 employees, and NPHIs from the AFRO region were more likely to deploy a wider range of workforce types (Table Q30B).

3.4.3 Challenges to increasing surge capacity to respond to national health emergencies

The commonly reported challenges currently to increasing surge capacity to respond to health emergencies at the national level were **logistical challenges deploying staff** (61%, 34/56), **lack of staff to deploy** (54%, 30/56), **challenges with rapid recruitment** (52%, 29/56), l**ack of plan or protocol for deployment of staff** (48%, 27/56), **lack of budget for deployments** (45%, 25/56), **lack of required skillset** in staff available to deploy (43%, 24/56), and **delayed identification of surge needs** (39%, 22/56; Figure Q36).

In comparing the LIC and HIC groups, LIC challenges tended more towards preparedness issues such as the lack of plan or protocol for deployment of staff (73%, 8/11), challenges with logistics required to deploy staff (73%, 8/11), or the lack of budget for deployments (73%, 8/11). The top challenge for the HIC was related to staffing (lack of staff to deploy (75%, 15/20; Table Q36A).

3.4.4 Experience of receiving workforce from abroad in a public health emergency

Most respondents (64%, 38/59) reported that since 2014, no regional or international workforce was received to support an emergency (Figure Q31). LICs (36%, 4/11) and LMICs (46%, 6/13) were more likely to report receiving support (Table Q31A). AFRO and EMRO respondents reported higher rates of receiving support compared to AMRO and EURO respondents (Table Q31B). Smaller NPHIs with ≤500 employees were also more likely to report receiving support compared to larger NPHI's with >500 employees (Table Q31C).

For the 27% (16/59) of respondents reporting that regional or international workforce support was received (Figure Q31), the types of workforces received suggested support was needed for emergencies related to infectious diseases, environmental or biological hazards. The top five reported workforces received were **epidemiology/data and analytics staff** (62%, 10/16), **public health rapid response teams** (56%, 9/16), **laboratory staff** (56%, 9/16), **surveillance staff** (44%, 7/16), and **research, evidence, and/or knowledge management staff** (44%, 7/16) (Figure Q33). The types of workforces received closely mirrors the types of workforces reported to be deployed by NPHIs for national level emergencies (Figure Q30).

Of the respondents that reported receiving regional or international workforces (27%, 16/59) (Figure Q31), 15 reported that there were challenges when integrating the external staff into their NPHI workforce (Figure Q34). The main challenges were related to **understanding of organisational processes, remit, and responsibilities** (60%, 9/15), **difficulties related to orientation & management of external staff** (40%, 6/15), **language barriers, cultural norms, and familiarity with organisation** (33%, 5/15). The lack of appropriate skills and experience of external staff (27%, 4/15) was less commonly reported to be an issue.

The highest reporting rates for challenges were reported by respondents from LIC, AFRO and smaller NPHIs with ≤500 employees (Tables Q34A, Q34B, Q34C). The same group of respondents that reported receiving regional or international workforces reported that their NPHI gave feedback to the sending organisation (Figure Q35; 62%, 10/16). With a small sample size, it was difficult to assess for trends in returning feedback. However, there is evidence that larger NPHIs are more likely to return feedback (Table Q35C).

3.4.5 Experience of deployment to a regional or international health emergency

The most common health emergencies NPHIs indicated they would respond to at the regional level were *infectious diseases* (97%, 56/58), *environmental hazards* (76%, 44/58), *biological hazards* (72%, 42/58), *chemical hazards* (48%, 28/58) and *radiological/nuclear hazards* (38%, 22/58) (Figure Q39). Similarly, but with much reduced capacity (particularly for non-infectious disease emergencies), NPHIs indicated they would respond to these health emergencies at the international level in a similar order; infectious diseases (69%, 40/58),

biological hazards (40%, 23/58), environmental hazards (38%, 22/58), chemical hazards (22%, 13/58) and radiological/nuclear hazards (19%, 11/58).

There was little difference between responses to infectious diseases and environmental hazards by income groups, but noticeable differences for the other health emergencies between LICs and HICs, particularly when responding to international versus regional emergencies (Table Q39A). In general, HICs were more likely to be involved in international response across all types of emergencies compared to LICs. Response to international emergencies by NPHIs was lowest for regional civil disorder/conflict and radiological/nuclear hazards (Figure Q39). In general, larger NPHIs were more likely to report responding to regional and international emergencies compared to smaller NPHIs, particularly at the regional level (Table Q39C).

Since 2014, 50% (29/58) of respondents reported that their NPHI deployed workforce in response to a regional or international health emergence (Figure Q40). The types of workforces that were deployed were similar to the types of workforces deployed nationally and received by NPHIs from regional and international mechanisms (Figure Q33). The top five workforce types deployed at the regional or international levels were *epidemiology/data and analytics staff* (86%, 25/29), *public health rapid response teams* (69%, 20/29), *surveillance staff* (62%, 18/29), *public health technical experts* (59%, 17/29), and *laboratory staff* (55%, 16/29) (Figure Q41).

With the small sample size of respondents deploying workforce at regional and international levels (n=29/58) it was difficult to draw strong conclusions at the group levels. However, survey results suggest that higher income and larger NPHIs (>500 employees) have higher deployment rates than lower income and smaller NPHIs (Table Q40C). Most respondents reported that their NPHI *deployed workforces within their WHO region* (61%, 17/28), followed by d*eployments to neighbouring countries* (43%, 12/28) and *within the continent* (39%, 11/28), and lastly, *outside of the WHO region* (36%, 10/28; Figure Q43).

There is an indication that as income group increases, deployment rates to more distant locations increase (Table Q43A). NPHIs from LICs are more likely to deploy to neighbouring countries (62%, 5/8 vs. 10%, 1/10 for HICs) or within their WHO region (75%, 6/8 vs. 30%, 3/10 for HICs), whilst NPHIs from HICs are more likely to deploy further afield internationally (80%, 8/10, vs 0%, 0/8 for LICs). Regional trends were less clear but suggest NPHIs in AFRO deploy closer to home (to neighbouring countries (64%, 7/11), or within WHO region (82%, 9/11)), and NPHIs in EURO were more likely to deploy outside of region (62%, 5/8). The low deployment within neighbouring countries in EURO (12%, 1/8; Table Q43B) may reflect sufficient capacity of EURO countries to respond to public health emergencies at the national level.

Regarding the length of deployments, most respondents reported **short deployments** of up to three months. The reported rates were <1 month (24%, 7/29), 1 to <3 months (34%, 10/29), 3 to <6 months (14%, 4/29), and ≥6 months (0%, 0/29) (Figure Q48). The sample sizes were small, but there is evidence that there is a broader range in deployment lengths for LIC and AFRO (Tables Q48A, Q48B, Q48C). There were no notable trends by NPHI size (Table Q48C).

3.4.6 Deployment mechanisms to a regional or international health emergency

There was no clearly dominant mechanism used by NPHIs to deploy staff at regional or international levels. This may reflect the context of individual NPHIs given their location, familiarity, and history of using deployment mechanisms, and other factors related to their capacity, availability, and political willingness to deploy. Overall, the top four mechanisms used were **via GOARN** (50%, 14/28), **other international organisations** (e.g., European Centre for Disease Prevention and Control (ECDC), European Programme for Intervention Epidemiology Training (EPIET), International Committee of the Red Cross (ICRC), or Africa Centres for Disease Prevention and Control (Africa CDC)) (46%, 13/28), NPHI has deployed staff directly to another country on an ad hoc basis previously (36%, 10/28), other UN agencies (e.g., United Nations Children's Fund (UNICEF), United Nations Development Programme (UNDP), United Nations High Commissioner for Refugees (UNHCR)) (29%, 8/28; Figure Q42).

Trends were difficult to discern with the small sample size, however, GOARN was more commonly cited by respondents in HIC, EURO, and larger NPHIs (Table Q42). The commonest mechanism cited for the AFRO region was via other international organisations (55%, 6/11). For LIC, the top selection was via other UN agencies (50%, 4/8) and where the NPHI has deployed staff directly to another country on an ad hoc basis previously (50%, 4/8).

3.4.7 Support and training provided for deployment to a regional or international health emergency

Self-reported rates of pre-deployment training were low (46%, 28/60). Of those who reported training staff before deployment, the top training categories was for *health and safety* (75%, 21/28), *cultural awareness* (68%, 19/28) and *personal security* (61%, 17/28). Less commonly reported was training for *IT and cybersecurity* and *Safeguarding and Sexual Exploitation* (43%, 12/28 each) (Figure Q46). Training provision was more commonly reported for larger NPHIs (Table Q46C).

With regards to support received by staff while on regional or international deployments, the top selection was *technical support* (83%, 24/29), followed by *financial support* (72%, 21/29), and *wellbeing support* (48%, 14/29; Figure Q47). Reported technical and financial support were consistently high across the different NPHI groups; while support for wellbeing was always lower (Tables Q47A, Q47B, Q47C).

3.4.8 Current challenges to increasing surge capacity to respond to regional and international health emergencies

Response rates for this question at the regional level were higher than for the international level (Figure Q44), but this may simply reflect the fact that most NPHIs deploy regionally rather than further afield internationally (Figure Q41).

The top reported challenges were similar to those reported for increasing surge capacity at the national level, suggesting that preparedness and staff issues are common barriers to increasing surge capacity. More specifically, the top challenges at regional and international levels centred on *logistical challenges to deploy staff* (regional 57%, 31/54; international 43%, 23/54), *lack of plan or protocol for deployment of staff* (regional 56%, 30/54; international 50%, 27/54), *issues with the coordination of deployments* (regional 50%, 27/54; international 46%, 25/54), and *lack of staff to deploy* (regional 46%, 25/54; international 39%, 21/54) (Figure Q44).

LIC respondents reported the top challenges were the l*ack of a plan or protocol for deployment of staff* (regional 73%, 8/11) and *lack of budget for deployments* (regional 64%, 7/11). The top challenge shared by the middle-income respondents was *logistical challenges to deploy staff* at the regional level. LMIC NPHIs also reported that *unclear decision-making authority around deployment* was also a top challenge. For the HIC respondents, the response rate was lower than the other groups, with the top challenge cited being issues with the coordination of deployments at the international level (53%, 10/19; TableQ44A). Respondents from AFRO, EMRO, and smaller NPHIs were more likely to report challenges (Table Q44B).

3.4.9 Priority areas for improving surge capacity to respond to health emergencies

Survey respondents were asked to identify their NPHIs' top three priority areas for improving surge capacity to respond to health emergencies at the national, regional, and international level. Similar priorities were reported by respondents for health emergencies at the national, regional, and international levels. These were: **resources** (primarily monetary), **workforce** (both capacity and level of expertise), **emergency planning/protocols**, and **coordination of the deployment and response**. Priorities around **communication with the public and key stakeholders**, and **data surveillance and public health intelligence** (e.g., greater integration of various sources of intelligence and surveillance data, and improving the speed of data analytics), were also identified.

For regional emergencies, **developing communication and emergency protocols** were more frequently cited as priorities for NPHIs in lower-middle income settings; while **developing public health intelligence** was more frequently cited by NPHIs in upper-high income settings. For national emergencies, **developing the workforce** was more frequently cited as a priority for institutions in upper-high income settings, rather than those in lower-middle income setting.

3.5 Connected leadership in health emergencies

3.5.1 Senior level NPHI lead for national health emergencies

Most respondents indicated that there is a high-level NPHI lead for health emergencies (84%, 47/56). 8/56 (14%) reported that it would depend on the specific context of the health emergency. 2/56 (4%) stated that there was no NPHI lead (Table Q49).

3.5.2 Key partners for the NPHI in response to health emergencies

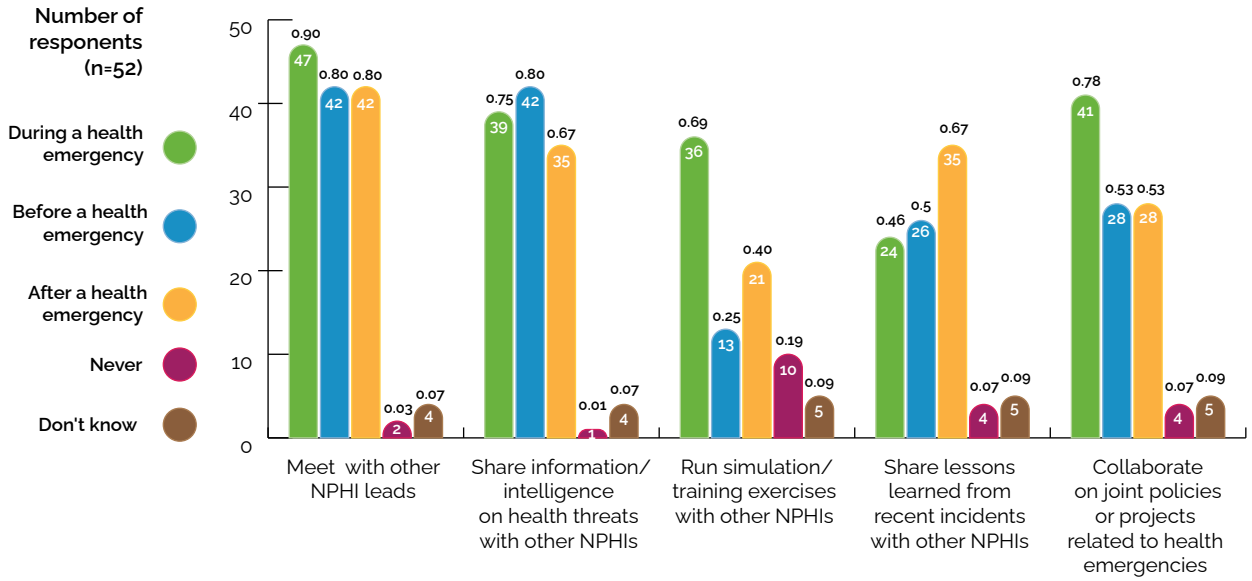
For national health emergencies, the MoH was the most cited (96%, 54/56) key partner for NPHIs in national health emergencies. Other frequently identified stakeholders included *other government departments* (75%, 45/60), *subnational government* (73%, 41/56), *disaster management agency* (66%, 37/56), *academic institutions* (62%, 35/56), and *non-governmental organisations* (61%, 34/56) (Figure Q50). Ministry of Health were still the most common key partner in regional and international health emergencies; however, regional and UN agencies were also frequently cited. Across the board, *private agencies* or *contractors* were not a common partner. *Civil society organisations* and NGO stakeholders were less commonly cited in HIC, whilst the military was a more prominent partner for national emergencies, especially in LMICs. Other NPHIs were listed as a partner for 52% of respondents in HIC during international emergencies and 42% of respondents during regional emergencies in both UMIC and LMIC (Table Q50A).

3.5.3 NPHI collaboration with other NPHIs

In terms of the nature of the collaboration, most NPHIs reported meeting with other NPHI leads (90% will meet with other NPHI leads before a health emergency), to *share information or intelligence on health threats* (81% will share information during a health emergency), *share lessons learned from recent incidents* (67% will share lessons learned after a health emergency) and to *collaborate on joint policies or projects related to health emergencies* (79% will collaborate before a health emergency). NPHIs were less likely however to run *simulation or training exercises* with other NPHIs: 19% (10/52) indicated that they do not run simulation or training exercises together (Figure 6).

Figure 6: How does your NPHI collaborate with other NPHIs before, during and after health emergencies?

Q51: How does your NPHI collaborate with other NPHIs before, during and after health emergencies?

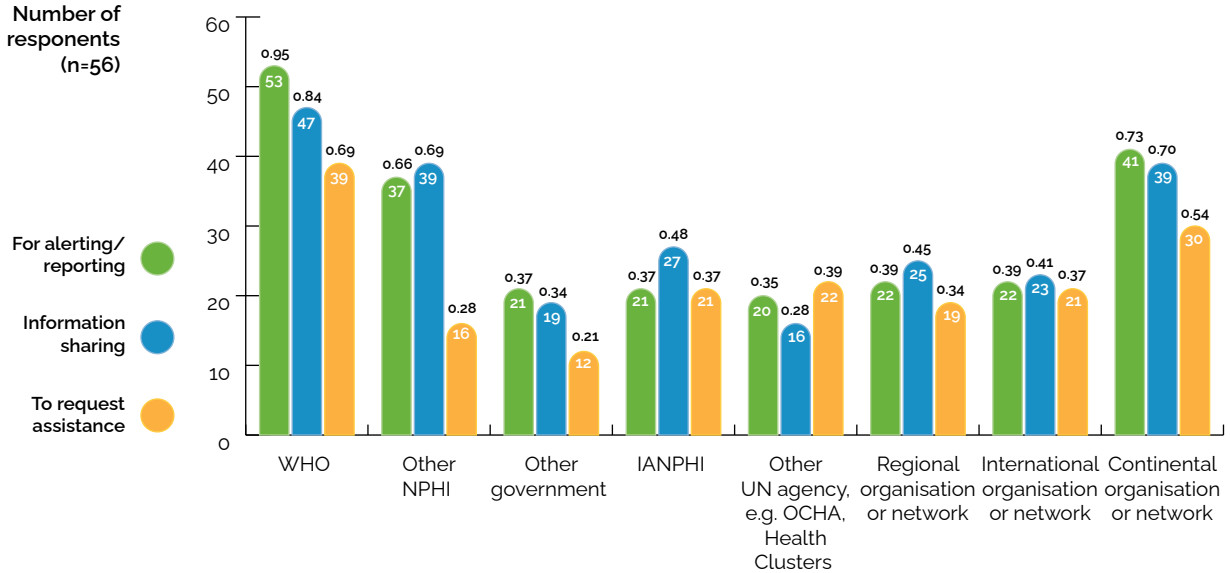


3.5.4 Organisations and associations contacted in a health emergency

In a health emergency of potential international concern, most NPHI respondents said they would contact WHO, or a continental organisation or network (such as ECDC or Africa CDC), or other NPHI. This would be for the purposes of alerting/ reporting, information sharing, or to request assistance (Figure 7).

Figure 7: International organizations and associations an NPHI would consider contacting in a health emergency of potential international concern

Q52: Which international organizations and associations would you consider contacting in a health emergency of potential international concern?



With regards to seeking assistance, LIC respondents were most likely to select several organisations to contact including WHO (82%), IANPHI (73%), a continental organisation or network (73%) or a regional organisation or network (64%). NPHIs from HIC were less likely to report contacting other organisations for this purpose, apart from WHO (48%), and only 10% of respondents indicated that they would contact IANPHI. (Tables Q52A and Q52B)

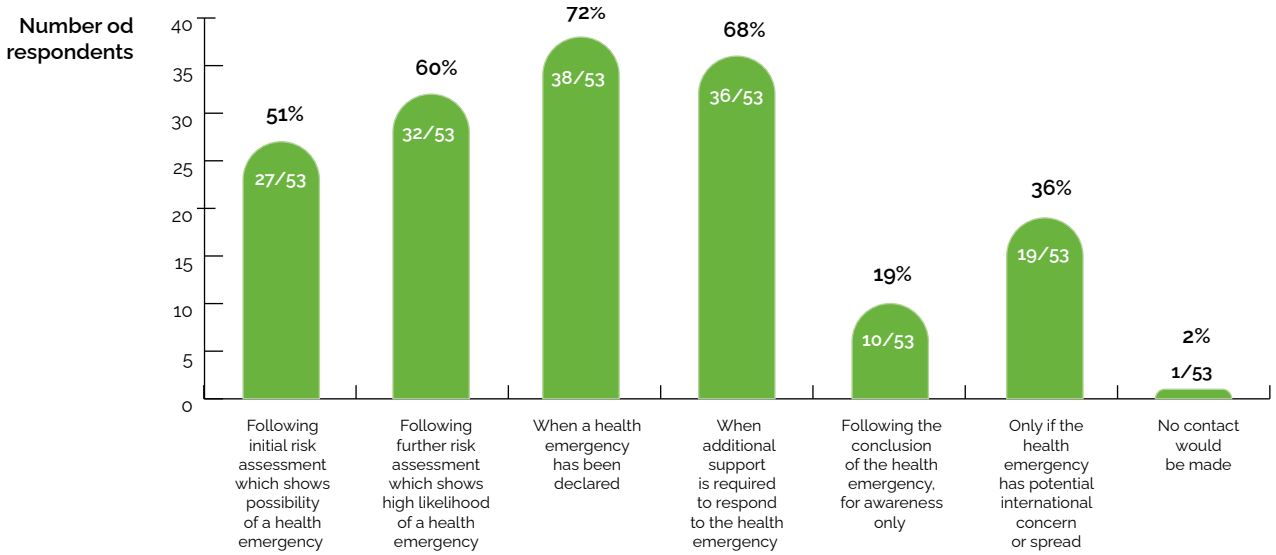
In terms of regional trends, NPHIs from the African region were likely to seek assistance from the WHO (73%) or a continental organisation or network (67%), whilst NHPIs from the Americas were likely to choose a continental organisation or network (62%) (Table Q52B).

3.5.5 Timing of contact

In terms of timing of contact, more than half of NPHIs indicated that they would contact regional or international organisations when a health emergency has been declared (72%, 38/53), when additional support is required (68%, 36/53), or following a further risk assessment conducted (30/57; 53%). Notably, 36% (19/53) said they would only do so if the health emergency has potential international concern or spread (Figure 8). There were **regional differences in the timing of contact** – NPHIs from the African region said they would make contact when a health emergency has been declared, or when additional support is required, or after further risk assessment. NPHIs from EURO and AMRO said they would make contact at an earlier stage after initial risk assessment (Table Q53B).

Figure 8. When the NPHI would contact a regional or international organizations and associations regarding a health emergency

Q53: When will your NPHI contact any regional or international organisations and associations regarding a health emergency?

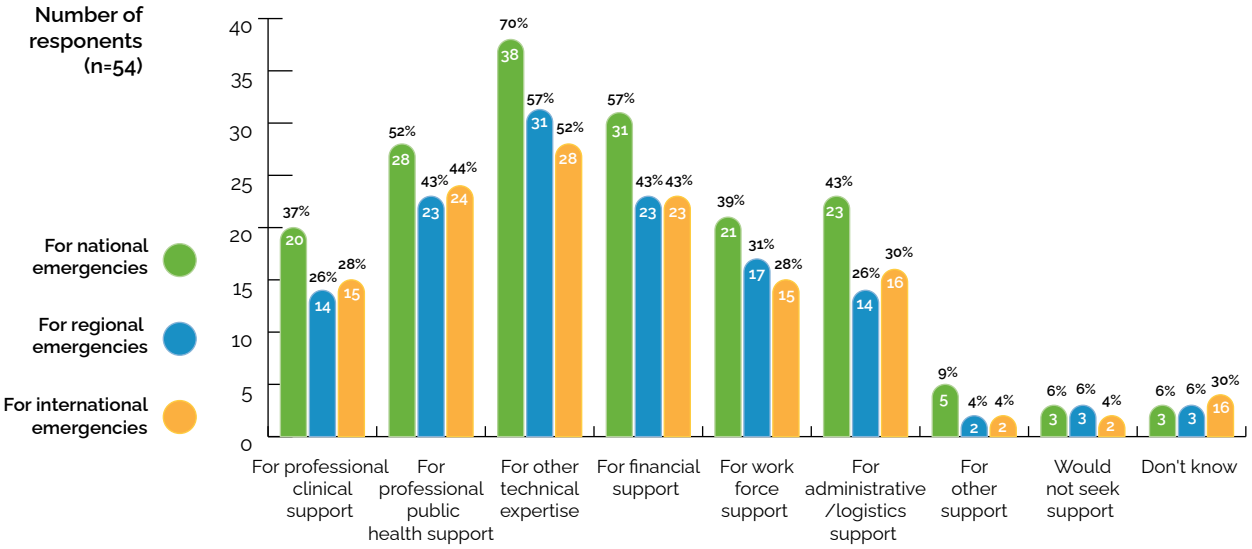


3.5.6 Type of support sought in a health emergency

In a national health emergency, if the NPHI contacted other organisations for support, respondents said this was for *technical expertise* (70%, 38/54), *financial support* (57%, 31/54), *professional public health support* (52%, 28/54). Similar trends were seen for regional and international emergencies (Figure 9).

Figure 9: Type of support sought in a health emergency

Q54: In a health emergency, if your NPHI contacted other organizations for support, what kind of support would you be seeking?

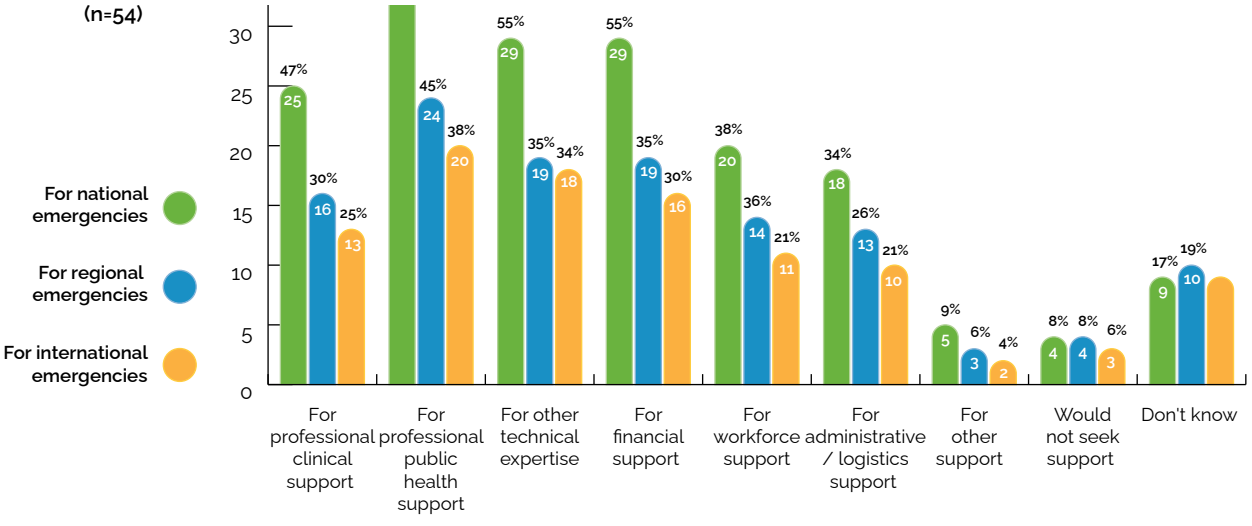


3.5.7 Standard protocols on who to contact

For a national health emergency, respondents mostly indicated that they have standards protocols on who to contact for: professional public health support (66%, 35/53), technical expertise (55%, 29/53) and financial support (55%, 29/53). The same trend was seen for regional and international health emergencies, although less than 50% of respondents selected these options. Four NPHIs indicated that they will not seek support during national or regional health emergency (8%, 4/53) (Figure 10).

Figure 10: In a health emergency, does the NPHI have standard protocols for who to contact

Q55: In a health emergency, does your NPHI have standard protocols for who to contact?

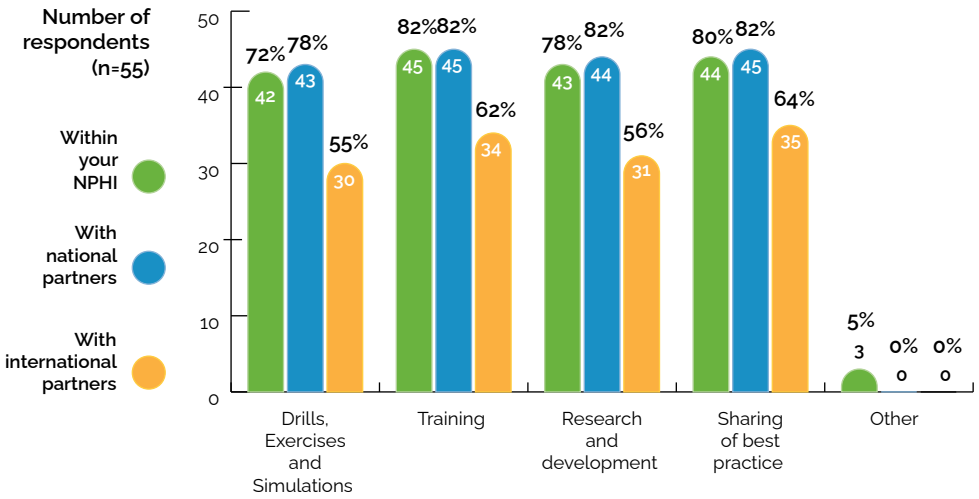


3.5.8 NPHI emergency preparedness activities

Respondents were asked if their NPHIs were involved in activities to aid preparedness for health emergencies. Most NPHIs did training within their NPHI (82%, 45/55) and with national partners (82%, 45/55). Most respondents (80%, 44/55) indicated that they shared best practices within their NPHI, 82% (45/55) shared best practices with national partners and 64% (35/55) shared best practices with international partners. Drills, exercises, and simulations were done more frequently with national partners (78%, 43/55) and within the NPHI (76%, 42/55) and less so with international partners (55%, 30/55) (Figure 11, Table Q56).

Figure 11. NPHI involvement in simulations, drills, and exercises to aid preparedness for health emergencies

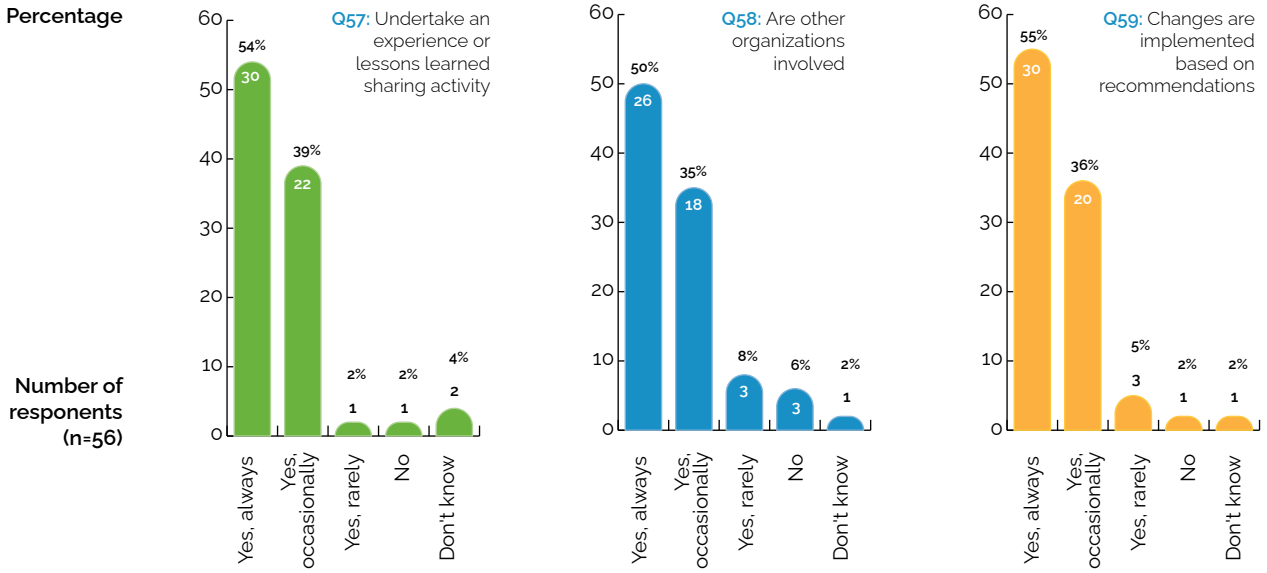
Q56: Is your NPHI involved in simulations, drills and exercises to aid preparedness for health emergencies?



3.5.9 After action learning

Post-health emergency, most NPHIs said they undertook a lesson learned sharing activity (always, 54%, 30/56; occasionally, 39%, 22/56) (Table Q57). Most responded that other organisations are involved in this exercise (always, 50%, 26/52; occasionally, 35%, 18/52) (Table Q58). Most respondents reported that their NPHI implement changes based on the recommendations from after action reviews (always, 55%, 30/55; occasionally, 36%, 20/55) (Table Q59).

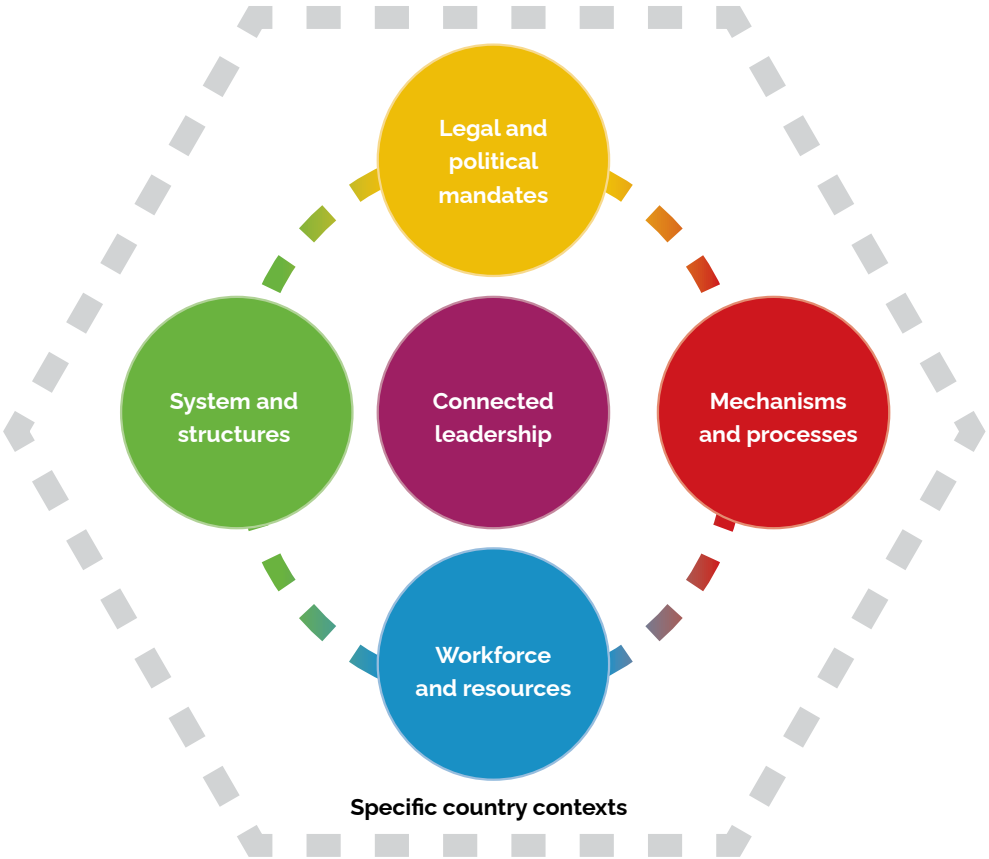
Figure 12. After action learning by NPHIs



Themes from the Key Informant Interviews

We interviewed Director Generals or their Deputies of 15 NPHIs. Participating NPHIs were selected from all WHO Regions (AFRO – 4, AMRO – 3, EMRO – 3, EURO – 2, SEARO – 1, WPRO – 2), and across different World Bank Income Groups (HIC – 6, UMIC – 3, LMIC – 3, LIC – 3). The type of NPHIs also varied and included a regional NPHI responsible for several countries, national level NPHIs in centralised and decentralised countries, national level NPHIs in a federated state, as well as sub-national/provincial level NPHIs in a federation. The key themes emerging from the interviews can be grouped into the following inter-linked thematic categories: connected leadership, the legal and political mandates of NPHIs, mechanisms and processes, workforce and resources, and system and structures, for which there are further specific country context influences. (Figure 13)

Figure 13: Key themes emerging from the interviews



4.1 Legal and political mandates

4.1.1 Legal mandate

First, the legal mandates of NPHIs, as set out by their home governments with regards to health emergencies and particularly for deployments within a country and beyond its borders, affect what the NPHI can and cannot do. The **legal mandate and governance frameworks dictate the permissions, remit, and autonomy** that an NPHI has to operate in health emergencies. The importance of supportive legal frameworks and mandate was a recurrent theme voiced by many respondents. National legislation gives NPHIs the authority and legal infrastructure to operate. NPHI leaders were very conscious of the need to operate within the legal remits for their agencies.

The legal mandate and governance frameworks also **determine the leadership and command and control structures** in a country for health emergencies. One NPHI leader reflected that it is useful to have the "*legal status of NPHI with clear authority to lead in health emergencies and to coordinate efforts*," a need for "*common words in the mandate*" and clarity as to "*who is responsible for decisions.*" The latter is important as the **remit for health emergencies may be split** between different government agencies and NPHIs may "*only have part of the mandate.*" A legal mandate and framework can help clarify purpose, roles and responsibilities of the different actors involved in a health emergency.

However, there is **considerable variability in the legal mandates** of the NPHIs interviewed. Some have only a domestic mandate and have no mandate to deploy abroad to an international health emergency. Many NPHIs must seek permissions from their respective Ministries or other higher authority. It also impacts on the degree of agency and autonomy the NPHIs and other responder organisations have, and the permission for the NPHIs to collaborate. "*(NPHIs need a) legislative framework that promotes collaborative engagement …. (such that the) NPHI does not need to go the Ministry for permission …. The bureaucracy (of seeking permissions) would stifle (collaboration).*"

4.1.2 Political support

Another closely related aspect linked to the legal remit of NPHIs for health emergencies is the extent of political support they have for responding and deploying abroad – "*(It) relies on goodwill of ministers who champion Global Health Security.*" Some NPHIs had high-level political support whilst a few did not. Respondents described how essential it was to have strong political support and sanction, and government commitment, as this in turn would "*give strategic intent, positioned at that level to get political buy in, that would then facilitate the technical level*". The level of political support also appeared to correlate with degree of resourcing for the NPHI and their autonomy. Examples given of NPHIs with strong political support included one agency that "*belonged*" to the Prime Minister with a Board headed by the Prime Minister. Another NPHI had its director in a powerful decision-making position in the country, on a national committee linked into other key government agencies.

The policy framework for engagement "*spells out what do (NPHIs) do, step by step, triggers, and SOPs with defined roles and responsibilities.*" National interests and political agendas may dictate where they can deploy to. These national interests may extend beyond the health domain and include for example national economic interests. As one NPHI respondent described, "*We respond where the government wants us to go. We are all bound by our own politics and funding opportunities.*"

The political context within a country could also be complicated by local and national "*politics,*" turf wars and competing political agendas. These could be significant barriers to NPHI functioning. For example, one NPHI described how efforts to set up the NPHI were derailed by other political actors who feared the NPHI would take away their authority and resourcing: "*Commissioners think we're taking away their powers. The NPHI is seen as more powerful and more respected, … dismantling the components of the ministry system. Some political actors worried the NPHI will take authority, powers, … steal the show.*" The political context can therefore be both an enabler—or constraint—on the activities of NPHIs in health emergencies and in global health engagement. It was also recognized that what NPHIs could do was intrinsically tied to their governments' decisions, priorities, and policies.

4.1.3 Perceived value, need, and purpose

Respondents stated a **need for clarity of purpose and NPHI role in emergencies**, but also specific mention was made for GHEC, "*What is the problem we are trying to solve?*" Currently, there was a perception that "*GHEC is not tangible, … (and is) difficult to explain.*" It was not clear to them how GHEC fits into the WHO structure, and the gap or niche GHEC will address. There were concerns around potential duplication. Furthermore, it was stated that the case for GHEC must be needs-driven and based on the assessed needs for the country. The latter includes assessments of the "competencies and capacities needed" for health emergency response, spanning multiple sectors and domains (e.g., knowledge, ICU capacity, etc.).

Respondents articulated the need for **advocacy at the highest level** to "*position GHEC at the highest level.*" The advocacy includes of the value of having highly skilled public health staff, and the need for continued support to train them up. Furthermore, NPHI respondents highlighted the need to **communicate the value**: "*Socialise GHEC into NPHIs so there's a good understanding of intent, what's the value it's going to add, demonstrate the value.*" It was also clear that the articulation of value had to be "*something concrete*" with clear description of the added benefit, especially in the context of competing priorities that NPHIs and national government ministries may be experiencing. Indeed, a few respondents questioned the value of deployments, longer term impact, and value for money of such activities with concerns about the possible diversion of funds, gaps, and challenges with getting and mobilising more funds.

4.2 Mechanisms and processes

The presence and state of existing mechanisms and procedures for the mobilisation of health emergency workforce and response was frequently commented on by respondents. In an emergency, NPHIs would often need to mobilise staff from within the agency, However, a few respondents reported that their NPHIs did not have a clear **mechanism for mobilising surge capacity** from their own staff. As one respondent noted, *"(There is) no clear guideline how to send staff to respond to international call for help… Unsure how to receive staff from abroad… No clear SOP for requesting support."* For some specific health emergencies, such as natural disasters, a few NPHIs reported having well developed guidelines already. Other NPHIs reported having well versed mechanisms, e.g., for the deployment of emergency medical teams, usually in the context of existing partnerships. However, for other threats, often there were no guidelines or processes.

Coordination challenges were repeatedly cited as a common issue including for the **coordination of surge responses**. There was a multiplicity of routes identified by which international requests for support may come in currently: NPHI-NPHI, ministry to ministry, government to government, via WHO, or partner collaboration networks. These may be *ad hoc* as well as through more formalized existing mechanisms such as GOARN. Where mechanisms were already in place, they were often for regional collaborations such as the EU Health Task Force or bilateral agreements usually with neighbouring countries. Respondents were keen to **avoid duplication** and to not operationalise another system on top of existing systems (e.g., GOARN) and overstretched public health systems.

There were also multiple **issues with deploying a response** that were identified such as late engagement by the agencies involved, or legislative or governance requirements at national and subnational levels that delayed responses. The response deployed may not align with response needs and there were also challenges maintaining the supply of emergency response resources to meet rapidly changing and growing demand in crises. There needed to be *"**prepared and tested logistics** of deployment before the deployment and not (just) in emergencies."* There was also the question of how best to support staff that were deployed in an emergency, and the need for streamlined reporting mechanisms. The importance of having clear established guidelines or protocols in place was highlighted due to the problem of frequent churn of key decisionmakers who may be unfamiliar with processes., *"(We have) turnover of people in power so need these protocols written down."*

Another aspect of this domain was the issue of how emergency response was authorised, triggered, and escalated by the NPHI. As already highlighted above, some NPHIs needed government **approval for international deployment**. Others required concrete, **clear requests for assistance** – with a specific ask to address a specific need. However, the need for international assistance is not always clear cut – *"When is it really required"*? Similarly, the approvals process for deployments may not always have clear criteria or basis for them. The speed of the **decision-making processes** triggered in turn varied considerably. Some NPHIs were able to enact fast decision-making processes (e.g., for procurement of

required resources) whilst others were hampered by problems with bureaucratic government processes; "*In a crisis, (we) need staff mobilised within 1-2 days but it's not easy to get government approval to deploy. This takes time. Not sure how to leverage MoH.*"

4.3 Workforce and Resources

4.3.1 Funding and resources

Resource mobilisation, including funding, was cited as a major barrier or enabler for emergency response mobilisation and deployments. For funding in emergencies, several NPHIs stated the need to apply to their Finance Ministry. Emergency funding may not be easily mobilised as there could be strict limitations and rules governing how the monies were spent. Applications for funding also needed to make the case and demonstrate that it is "*needs based*". Public funds for this purpose were not always protected and ringfenced with a risk it could be diverted elsewhere. Some NPHIs had to rely on their own allocated funds or seek other external sources of funding. A few NPHIs reported funds for emergency response usually are found, but "*the challenge is the delay in the process*". Another said, "*In a crisis there will be funding. The funds become available when the house is on fire. The challenge is to have funding before it is aflame.*" Ideally, response plans need to have mechanisms to mobilise funds quickly.

Similarly, preparedness activities were resource-dependent and impacted by funding availability. Funding for activities outside of emergency response such as preparedness whilst important was more difficult to secure. Funding is also needed to support collaborative visits and work with other countries as there are often travel restrictions experienced by NPHIs. In low-income country settings, the resourcing to address funding gaps were highly **dependent on donors and development partners**. However, various respondents reported **shrinking NPHI budgets** post-pandemic and public health is increasingly a neglected area, again. Against this backdrop, financing was identified as a key priority going forward. Indeed, in terms of 10-year priorities for NPHIs, funding was a common priority, specifically for steady, **sustained, and predictable funding** including targeted allocation for emergency preparedness. In terms of advancing the GHEC agenda, it was articulated that GHEC needs resources, "*Game changer if it is resourced seriously.*"

In terms of mobilising response to support other actors in health emergencies, it was observed that there are **different modalities** of needs and surge, such as people, skills, data, vaccines, PPE, funding, etc. That said, support mobilised tended to have a narrow spectrum – NPHIs tended to have a limited offer as to what can be brought to the table. The other related issue flagged by one respondent was that all the **emergency resources needed did not always sit with the NPHI** – "*(We had) no medical countermeasures as it is in a different agency.*"

4.3.2 Capacity and capacity gaps

Issue of existing capacities and capacity gaps in the NPHI and system for health emergency response were also highlighted by the NPHIs. A universal issue reported by the NPHIs was of being under constant pressure, working with constrained resources and limited capacity. Often, there is "**no national reserve**." These capacity issues were further heightened during times of crisis when additional surge capacity is often required. Respondents said, "*Surge capacity gaps are often neglected in the broader health system*"; "*Surge capacity is always going to be a problem even for a middle-income country that has resource allocations of a lower income country*"; "*How do you deploy surge capacity when you don't have it?*"

Several NPHIs reported that it was **difficult to deploy staff** to respond to emergencies. Such deployments require "*experienced staff with no strings attached" who were "readily available*" and had prior institutional approval to be deployed. Moreover, deployments would often mean other functions performed by those staff would be affected. "*People have day jobs – how can you pull them out?*" Long deployments were particularly challenging. Deployments and surge responses are therefore usually short term only. Some NPHIs use temporary short-term contracts, but this creates a problem of temporary staff. Other NPHIs described having a register of staff who can be deployed as part of their deployable surge capacity. These include district or regional teams (including case management teams) that can be mobilised. However, such capacity is limited.

The other issue reported were **existing capacity gaps** that included having the right staffing and skill mix, i.e., there needed to be a trained surge team. Respondents highlighted a need for capacity building within their NPHIs that included workforce training to cover all phases of the emergency management cycle from early warning to response, to "*strengthen the workforce.*" In this regard, it was suggested that there may be a role for GHEC to identify the cadre of health emergency workforce with the specific skills and capacity required for emergency response, and to build that capacity. It was recommended that GHEC avoid duplicating other public health emergency initiatives but to "*push the boundaries - the space is crowded so move into a different, ground break, solution-oriented intervention, space. Build health work cadre capacity.*"

Another aspect of the capacity dimension was about having the public health emergency response workforce with the right skills and competencies. These skills and competencies had to match what was needed. When what was provided did not fit what was needed, it could lead to suboptimal outcomes. For example, one NPHI described how foreign health workers deployed during COVID-19 was a bad fit: "*It was a disaster due to language and cultural problems but also because they had epidemiology skills thrown into emergency medical/response roles.*" This also reiterates the need for training and capacity building, not just at the national but also subnational levels.

It was noted that currently emergency medical teams (EMTs) usually have intense training pre-deployment, but this was not the case for public health workforce deployed in emergencies. One respondent noted that for international emergency response, there were "*not many personnel trained to do this*" and their staff had "*variable skills and expertise.*" Another reported that although they had staff to deploy, they often struggled with language barriers or lacked international experience or sufficient understanding of public health systems abroad. Deployed staff also needed to be supported on deployment, including insurance and salaries or compensation.

Another important aspect was **contextual awareness** – internationally deployed staff may lack adequate understanding of the local context. One respondent fed back, "*It takes time to understand the context (of the host country) before (the international staff) can support properly.*" It was also stressed that when staff are deployed, they should be operating "within (their) own expertise" and NPHIs needed to ask, "*For responding abroad, have we the expertise? Are they available? Is there funding (to support the deployment)?*" Another warned, "*You can't just parachute people in.*" As such, building the emergency response is "***not just workforce volume but also quality***" and the need to "develop workforce competencies."

There were existing exemplars of how this could work. The example that was oft cited was the support for training for advanced epidemiologists, usually as part of capacity building through participation in Field Epidemiology Training Programmes (FETPs), that were usually based at NPHIs. However, epidemiology skills were just one competency domain. Another respondent stated the need to strengthen PHEOC, with trained staff, supporting lab capacity and workforce development. Another highlighted the essential need to strengthen public health leadership competencies.

There were different forms of skills building mentioned. One was through "*learning by working – Experience of multiple outbreaks, from actual response and not just simulations.*" However, this was a reactive "*firefighting*" approach. Another approach suggested was to "*increase understanding of emergency preparedness by doing more (training) sessions on this topic.*" In this regard, there was a need for training of trainers.

The retention of staff was identified to be problematic for some settings. For example, the staff they have trained up are not bonded. As they are not paid well and have "marketable skills," they tend to "*move on after 2-3 years*". Consequently, the system is not sustainable, highlighting a need to create opportunities to retain staff.

4.3.4 Knowledge, data, and information sharing

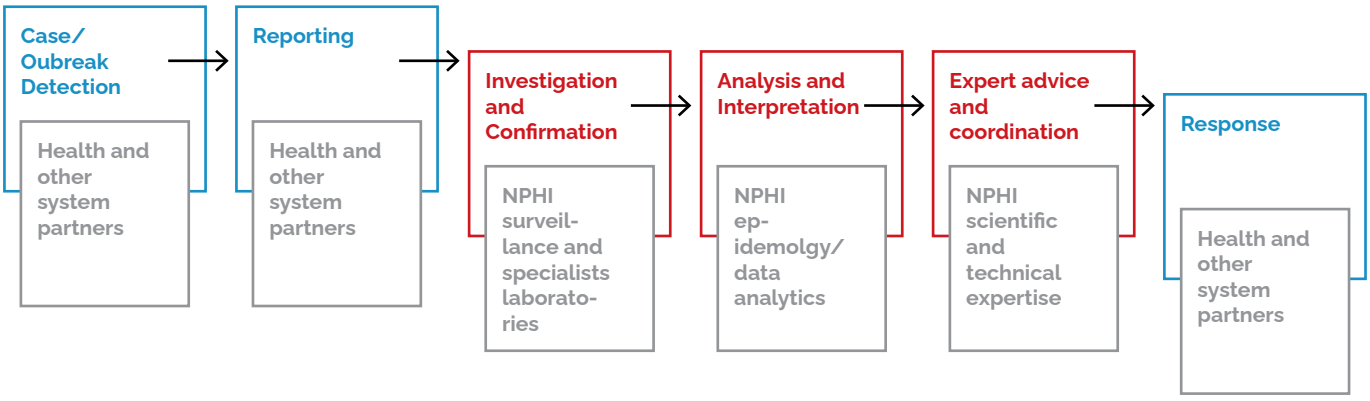
Another resource domain that arose in the interviews included knowledge, data, and information. This includes research evidence as well as information as part of situational awareness. There was value articulated in **knowledge production and scale up** – this requires building up the research infrastructure as well as research capacity through establishing research groups and networks working on public health emergencies. In turn, these research groups need to be sustained "*in peacetime*" between emergencies.

Currently, the knowledge base was stated to be scarce with considerable gaps, "*Lots of research is needed on how to scale up, vulnerable groups, modelling etc.*" The information and data existed in silos and greater integration of health service data is needed. There may be value for promoting multi-country research, which in turn requires protocols for funding, research activities, clear situation analysis and gap analysis, sharing of knowledge and good practice, as well as sharing of expertise and experts. Another related aspect voiced was around **facilitating information and knowledge exchange, as well as sharing of good practice and learning**, both within and between countries. These could include the use of simulation exercises to impart learning, but this was contingent on having appropriate technical staff available to deliver them and resourcing to run them. Moreover, data sharing with neighbouring countries was identified as a barrier often attributed to data protection concerns.

4.4 System and structures

The ability of the health system to respond to public health emergencies was noted to be **contingent on the health infrastructure in place**. Responses were delivered through the existing health system infrastructure and covered for example laboratory infrastructure, surveillance systems, and health related supply chains. (Figure14) The health infrastructure did not operate in isolation but existed in a wider system involving health and related partners.

Figure 14. Schematic illustration of surveillance to public health response pathway and partner roles



Public health emergency response was recognized to not be a single agency domain but a **multi-sectoral and multi-agency** endeavour involving government, NGOs, as well as development partners and implementing partners. Government involvement could involve multiple ministries. This entails different layers of responsibility, and cross-government connections. Such multisectoral responses **needs coordination and collaboration**, not just at the technical level but also higher levels. The leadership of the response is consequently multi-sectoral too. However, respondents noted this introduced significant complexity, and links to animal health surveillance was identified as challenging, "*How can we think of transboundary issues, e.g., zoonotic diseases? A One Health Strategic Framework for the country exists but it is difficult as many ministries are involved.*" This reiterates the need to develop the One Health framework for response.

The health emergency system also acts at various levels from local to international. Respondents described how subnational resources could be mobilised to support national responses, and in turn national responses could support international efforts through global networks. Health emergency response was described as operating through a "*matrix of collaboration*" or a "***network of networks.***"

However, the public health system infrastructure was often evolving and described in some cases as insufficient. Respondents voiced the need to "***strengthen health infrastructure at (all the) different levels.***" This included "*lab system strengthening including the courier system (for sample collection)*" as lab infrastructure was often neglected and there were frequent problems with diagnostics, equipment, reagents, and supplies. Similarly, there was a need to establish and strengthen surveillance systems to improve real time surveillance, sample referral systems and cross-border surveillance.

Respondents noted there was less focus currently on health system strengthening which they felt needed to change as there is a real need to **strengthen the internal capacity in every country to respond to emergencies** – "Best preparedness is actually (one's) own country being able to respond (so that external support is secondary)". Likewise, they articulated a need to **build regional capacities** in the pre-emergency period, "*What we do between emergencies also important - e.g., build links, build capacities.*"

Respondents recommended that GHEC needs to network with existing structures. There is a role for the NPHI to "*act as a nucleus of change and mobilise responses.*" Recognizing that **health emergency response occurs at the systems level** highlights the need for conversations to occur too at the network of networks level. This requires setting up and nurturing relationships and network engagement, the benefit of which are partnerships and relationships that are long lasting. NPHIs could play a role here convening and coordination such networks of networks. An example given by respondents was the role played by the IANPHI network during the COVID-19 pandemic which they said, "*simplifies network engagement*" and gave the sense of "*camaraderie*" and "*being part of an (international) team*".

4.5 Connected leadership

4.5.1 Collaborative leadership, bridge connectors and trust

There is a clear **need for leadership** in this space. Respondents described the need for "*respected leaders … (who) support at all levels*" and have decision-making powers and authority to commit resources. "*Strong leadership provides vision.*" Health emergencies needed to have a "*clearly appointed incident commander.*" It was also identified that there needed to be a "*focus on collaborative leadership,*" but also that this concept needed further clarification and development. Some elements of collaborative leadership were identified which included engagement with other actors, working to have influence, strengthening relationships, as well as bridging different sectors to "*avoid the misperception that (health emergencies) was health only.*"

Key to successful collaborations were the presence of "***bridge connectors***" between NPHIs. These bridge connectors helped to "*form bridges with other connected leaders… who build bridges within your institution and outside your sector… (to create a) matrix of multiple different connected leaders … (who can) leverage those links for problem solving*" .

Effective collaboration relies on **relationships** ***"built on trust"*** that were "built during non-emergency times." "*Trust is the biggest asset.*" Such relationships of trust are characterised by "*information sharing, collegial relationships, (where NPHIs) benchmark good practice, learn the lessons from elsewhere and implement (them locally)*". There is a "*history of working together*" and having "*trained together*" over many years. NPHIs suggested that such relationships can be fostered through twinning projects and other long-term collaborations.

Connected leadership could also help foster the **creation of global norms**. This sense of connection and collaboration was clear in responses from interviewees: "*(We are) part of the global …, (we) can't do things alone.*" Being part of the global network brought with it a "*sense of belonging, recognition, momentum, and clout.*" Respondents highlighted the need to continue to **promote international collaboration**, a role that IANPHI could play. This would help foster similar values and strengthen interpersonal relationships between NPHIs. Inclusivity was essential and this bottom-up inclusive approach was desired early on.

From the interviews, it was evident that many international collaborations were weighted towards **regional collaborations**. Countries tended to be more concerned for their neighbouring countries with whom they were likely to have close ties and much bilateral conversation. Respondents highlighted the need to continue to strengthen regional coordination, such as through cross border meetings and one-to-one engagements, to explore and find areas of collaboration, share data, and unify processes (e.g., for cross border screening). It was identified that collaboration is "*needed at all levels,*" from subnational to national and international levels. Moreover, respondents said, "*Of necessity we have to collaborate and share resources*", and spoke also of common shared issues and risks, "*Our neighbours' problems are our problems, and our problems are our neighbours' problems*" and "*pathogens don't respect borders*". The more

developed relationships also tended to be with neighbouring countries. These relationships of trust were also with other external and international organisations (e.g., USCDC, ECDC, IANPHI) and had the benefit that NPHIs could tap into additional technical assistance by drawing on their good relationships with partners. That said, it was felt that there is still a need to improve (engagement) processes.

4.5.2 Relational factors

NPHI responses and support to other NPHIs were strongly characterised by relational factors between them. These included aspects such as reciprocity and working for mutual benefit and having opportunities for collaboration. The deployment and receipt of deployed resources in a health emergency relied on **perceived mutual benefit and reciprocity** between NPHIs. For example, "*Africa CDC sent them epi support during COVID. (Our NPHI) has sent staff to (other NPHIs) … (These were) mutually beneficial two-way collaborations.*"

Opportunities for collaboration included staff exchanges, bilateral twinning arrangements, and peer reviews which were appreciated as mutually beneficial learning opportunities, to "*learn the lessons of how it was managed (elsewhere)*". NPHIs recognized that "*Our challenges are the same*" and through joint working, there was a sense of "*You are not alone*". There was perceived value in coming together "***to prepare together***," so that NPHIs understand each other, and learn to work together. Such opportunities could be through joint training and exercises, regular communication, networking. Such opportunities often require a convening partner and focus, for example it could be a "*SimEx with neighbouring countries around points of entry.*"

The relationships established through joint working and networking were reported to be important drivers of collaboration. Having good pre-crisis relationships between political leaders of different countries was a key enabler. IANPHI played a significant role here in facilitating opportunities for international collaboration through providing a forum for more regular communication and a "***safe space*** to speak openly" on technical matters. In terms of mechanisms and structures for collaboration, there are few pre-existing collaboration platforms for regular affairs, but otherwise there is "*no user manual*" for facilitating collaboration and it is often ad hoc.

4.6 Specific country contexts

The context and environment in which NPHIs operate in is highly diverse. These multiple contextual factors influence how the NPHIs operate. For example, there are sociocultural norms with regards to how co-working, co-operation and collaboration operates in different countries. As one respondent described, *"(It) depends on the administrative culture in your society … (We) need to build (emergency response) systems that work with the people and society."* Other related sociocultural context factors include social trends that manifest for example through social media driven mis- and dis-information. This is further compounded by population diversity within and between countries.

A recurrent theme was the need for international guidance or frameworks to be adaptable to **fit local contexts**. *"(We have) shared goal but how do we achieve it? (It) has to be adapted to context"* How one NPHI operates in a country may be considerably different to another NPHI in a different country. Externally imposed ways of working may not fit local norms. This highlights a key role of NPHIs acting as the *"translators into practice,"* who think through operationalising concepts, *"We take the WHO approach and then tailor it to local context and capacities."* To this end, flexibility of mechanism was highlighted as important. This flexibility was essential to adapt the guidelines and frameworks to different health infrastructure for different countries. This translation was needed to transform guidance and policy into real world solutions.

Discussion

5.1 Summary of key insights

There is significant contextual variability between countries and NPHIs such that it is unlikely a one-size-fits-all framework can be devised that fits all circumstances. The abilities of NPHIs to respond depends on several key elements (Figure 15):

- legal and political mandate to operate,
- resources including human resources and funding,
- mechanisms and procedures for response,
- a functional health system and infrastructure by which a response is delivered,
- and connected leadership working through collaborative networks of networks.

Figure 15: Network of networks diagram

5.1.1 Legal and political enablers are essential

The legal and political contexts were clearly foundational enablers—or constraints—on the effectiveness of NPHIs, particularly during health emergencies and in global health engagement. Legal mandates set out the remits, responsibilities, and authority of NPHIs. It is important to have clear mandates and clear division of responsibilities between agencies and stakeholders. Strong political backing is linked with greater NPHI autonomy, visibility, and access to resources. Where political support is weak or dependent on individual champions, NPHIs may face operational limitations or fragile mandates. Political buy-in is also essential for translating strategic intent into actionable policy and resourcing. The alignment of the work of the NPHI and government policies is also influential as national political priorities (including non-health domains such as trade, economy, and foreign policy) can shape or restrict NPHI engagement in activities abroad. Political engagement and support are also required to avoid any political friction.

5.1.2 Surge capacity is limited by existing mechanisms and resourcing

The capacities of NPHIs and health systems are highly contingent on the extent of their resourcing. Similarly, the surge capacities of national systems rely on the pre-existing resource envelopes for NPHIs and health system providers. To this end, there may be value in mapping what NPHIs can offer, especially at the regional level, that could be brought to bear in an emergency. It also highlights the need to strengthen domestic funding, ensuring it is sustainable and longer term.

Human resources for public health emergency response was a frequent problem for which there were different considerations including sufficiency of numbers of staff, skills, and competencies. Several NPHIs described not having enough staff (especially trained staff), and this was particularly true for long deployments. NPHI involvement in workforce strategies and planning are patchy, and this may leave gaps in readiness. In some countries workforce planning is not the NPHI's responsibility, as other agencies are responsible for the actual operational emergency response. Qualification requirements and training standards also vary widely, particularly for emergency planning roles. Low-income countries also face dependency on external training providers.

NPHIs may find it useful to map and assess their health emergencies workforce needs – what deployed skillsets and functions are needed – that may facilitate strategic workforce planning and enable more targeted requests for technical assistance and streamlined deployments that meet local needs. Practical tools such as the *PANDEM-2 tool for Public Health Emergency Preparedness workforce self-assessment for NPHIs*[3] may be helpful in this regard.

3 PANDEM-2 tool for Public Health Emergency Preparedness workforce self-assessment for NPHIs. Available online at: https://www.resilienceadvisors.eu/docs/eNOTICE/38-workforce_self-assessment.pdf

5.1.3 Narrow range of NPHI responses to emergencies

Most NPHIs are well-positioned in scientific and technical leadership functions, but their operational role in emergencies varies. The scope of work for many NPHIs is often focused on infectious disease threats, particularly in LICs, and do not cover the full range of hazards (e.g., chemical, biological, radiological/nuclear, etc). It is also does not span the full emergency management cycle with notably less involvement in post-emergency recovery and lessons learning aspects. NPHIs in low-income settings are more involved in field response, possibly due to weaker health system infrastructure. The engagement of civil defence and other sectoral agencies also varies significantly. In addition, several cross-sectoral issues critical to long-term health outcomes (e.g., housing and environment) are often not within NPHI mandates or activities. NPHI remits do not always include water and sanitation, or animal health, which will have implications for One Health. The question that arises here is whether NPHIs should continue to solely focus on their unique strengths (surveillance, specialist laboratories, and scientific and technical advice), or is there a need to expand the mandate and offer of NPHIs wider, or to collaborate better and in a more structured way with other stakeholders.

5.1.4 Deploying a response internationally is challenging

The key challenges to mobilizing national and international surge capacity include logistical barriers, lack of protocols, coordination problems, and staff shortages. LICs tend to struggle with the lack of plans and budget, whilst HICs experience more coordination issues. Across all levels (national, regional, international), the top priorities for strengthening emergency deployment identified were for resources (especially funding), workforce (capacity and expertise), deployment planning and coordination. Streamlined, established and well-rehearsed mechanisms for requests for technical assistance and surge deployment are needed. Some of these already exist (e.g., GOARN) and duplication should be avoided. These mechanisms need to be universally agreed, transparent and accessible. There are other international examples that could be emulated such as the IASC Protocol for the Control of Infectious Disease Events Humanitarian System-Wide Scale-Up Activation (2019).[4]

It is also important to understand what 'receiving' NPHIs need in emergencies, how best to deliver that support, whether that support works, but also whether that support was needed or reflected what NPHIs were able to send. In terms of the support sought in emergencies, NPHIs usually request technical expertise, financial assistance, and public health personnel. However, there are considerable challenges to integrating external staff, especially around understanding organizational processes, and remit and responsibilities, as well as language and cultural barriers. This indicates that deployed staff require better pre-deployment information and training, or in-country training, but this would create additional burdens on the host agency at a time of extremis.

4 *IASC Protocol for the Control of Infectious Disease Events Humanitarian System-Wide Scale-Up Activation* (2019). Available at: https://interagencystandingcommittee.org/iasc-transformative-agenda/iasc-protocol-control-infectious-disease-events-humanitarian-system-wide-scale-activation-2019

The value, impact and success of international deployments need to be better evaluated. Most international deployments tended to be with neighboring countries or countries within the same region. This may reflect local commonalities (e.g., language and culture) or pre-existing ties that may facilitate cross-border collaborations. Many of these appear to be short term (less than 3 months), with a small number of deployed staff with a specific skillset or expertise (usually epidemiology, surveillance, or laboratory), sent out in an emergency. This approach has parallels with the US CDC *Epi Aid*[5] model where Epidemic Intelligence Service officers are deployed to support the investigation of urgent public health problems, such as infectious and non-infectious disease outbreaks, unexplained illnesses, or natural or manmade disasters. However, such deployments are unlikely to address the full range of needs of local public health systems in an emergency or all domains of an emergency response. That said, they may usefully tackle a particular aspect, be it rapid outbreak investigation or disease surveillance.

5.1.5 Collaborative, connected leadership is key

The findings underline the importance of connected leaders, strategic partnerships, and robust learning systems in health emergency preparedness and response. Experienced, senior leadership is often required in emergencies, collaboratively working in partnership with Ministries of Health, government agencies, and other disaster response partners. Such leadership connections exist at all levels from subnational, national to international, and are also evident in NPHI-NPHI collaborations. These have a key role in facilitating joint planning, information-sharing that enhances situational awareness, and the sharing of good practice. Global and regional coordination during internationally significant emergencies, functions that the WHO, continental networks and UN agencies often fulfil, are also enhanced by established, 'trusted' working relationships between partner agencies.

However, the nature of the leadership connections is organic and patchy. There needs to be spaces and opportunities for collaboration to take place to build those relational links between leaders, NPHIs and partner agencies. These opportunities for collaboration facilitate contact between partners, sharing of information and ideas, and build familiarity with protocols, remits, and responsibilities. Further opportunities to develop such links, e.g., including the greater use of cross-border simulation exercises and other areas of joint working, may be useful areas for targeted investment and development.

5 US CDC Epidemic Intelligence Service. Requesting EIS Services – Urgent Assistance (Epi-Aid). https://www.cdc.gov/eis/php/request-services/index.html#:~:text=An%20Epi-Aid%20enables%20rapid%20response%20by%20CDC%27s%20Epidemic,natural%20or%20manmade%20disasters.%20What%20is%20an%20Epi-Aid%3F

5.2 Recommendations

5.2.1 Legal and political mandates

1. **Clarify the mandates of NPHIs and other partners for public health emergency management:** There are multiple roles and functions spanning the emergency management cycle, from preparedness, response to recovery, that involve multiple agencies and sectors. The emergency management structure, and the roles of these agencies needs to be clearly defined, including that of the NPHI. Countries need to codify emergency response roles and responsibilities of NPHIs in national legislation or policy. This is to ensure operational clarity, legitimacy, and insulation from discretionary or politically motivated changes. NPHIs could be provided model SOPs and policy templates through international platforms (e.g., IANPHI, WHO collaborations). In addition, there is a need to strengthen the cross-sectoral collaboration and to build normative partnerships between NPHIs and the other agencies involved in emergency management including MoHs and civil defence agencies. This extends to other sectors including housing, mental health, animal health, and climate change.

2. **Strengthen political advocacy for clear public health emergency management roles of NPHIs:** Political support is essential for NPHIs to perform their role effectively in public health emergencies. Develop and implement a political engagement plan targeting high-level policymakers, tailored to each country's governance structure. This is to secure political buy-in for NPHI mandates and reinforce long-term commitment beyond political cycles. This includes advocacy for strategic alignment of NPHI responsibilities and activities, as well as government policy, to build public health capacity, and to strengthen the public health system as well as health emergency management system that can stand up rapidly and effectively to respond to public health emergencies. Case studies of successful, politically empowered NPHIs could be used as examples. Developing communities of shared practice would help facilitate active knowledge management and dissemination. This will benefit NPHIs in making a case to governments and stakeholders of innovative and effective practice that could be applied according to country context. It is not only important to strengthen NPHI's role, but also to have clearly defined roles and responsibilities vis-a-vis other stakeholders involved in health emergencies. Power struggles and competition between agencies for overlapping responsibilities hinders emergency responses.

3. **Monitor and analyse political economy risks:** NPHIs operate in a complex multisectoral environment with many actors and agendas. Consequently, there is a need to integrate political economic analysis into NPHI development, expansion, or reform projects. Proactively identify and address barriers stemming from political rivalry, resource competition, or ideological resistance. Develop a rapid political context assessment tool for use in country planning missions, that can form part of the emergency needs assessment for a country.

5.2.2 Resourcing and workforce

4. **Identify the skills and competencies required, and strategies to address gaps, for the national health emergency workforce:** Public health emergency management is multimodal and requires different workforce, skills, and competencies. There is a need for a recognised cadre of trained multisectoral national health emergency workforce (national health emergency corps) that can be called upon when needed. This cadre needs to be identified from the community level up to national level, that include public health professionals working across different sectors. As a first step, this entails mapping of current public health emergency workforce staffing and needs. A related issue is the need for the standardization of qualification requirements, and advocacy for minimum competency and certification standards, especially for emergency planning and management roles. In turn, there is a need to invest in regional and local training infrastructure. This could be achieved by encouraging partnerships with academic institutions and regional bodies to expand access to high quality, context-specific training.

5. **Support the development and updating of workforce strategies:** National workforce planning is essential to address key systemic workforce challenges, such as through the integration of funding, retention, and recruitment strategies into national workforce plans with a focus on long-term system resilience. There is value in enhancing the role of the NPHI in workforce planning, particularly with regards to strengthening NPHI capacity, and consider in conjunction with their respective MoHs their role in addressing wider public health system workforce issues beyond the NPHI. There may also be a need to prioritize technical and financial support for low-income countries and small NPHIs to establish or refresh workforce plans.

6. **Develop and fund comprehensive surge plans:** There is a need for comprehensive surge plans, as the lack of these leads to a delay in securing and deploying resources in a response. There is a need for NPHIs, especially in LICs, to create and operationalize clear, context-specific surge protocols. This can be assisted through regional or peer-to-peer support. Peer-to-peer across borders means there is a likelihood of shared understanding, support, and goals which can be beneficial during epidemics that threaten to spill over borders and pandemics.

7. **Build a diverse, flexible workforce resource for public health emergencies:** Existing rapid response and surge capacity for many NPHIs is currently limited. There needs to be a standing corps of staff trained in basic emergency response skills and able to be rapidly deployed. This pool of human resources to be drawn on for emergencies needs to be expanded. This can be done through establishing volunteer rosters, retired staff databases, as well as partnerships with academia and NGOs who can provide additional surge capacity. Linked to this is the need to invest in deployment training and support for this deployable pool of reserves, such as standardized pre-deployment training in health, safety, and cultural readiness, and strengthened support systems for deployed staff, including wellbeing and reintegration. It is important to define a minimum workforce capacity between emergencies that can scale up when emergencies emerge. This minimum capacity must be kept in a state of readiness. Between emergencies, this resource can be deployed to conduct other useful preparedness and system strengthening activities.

8. **Explore the role of technology to support health emergency response:** Artificial intelligence and automation of early warning systems was identified as a potential enabler to improve public health emergency management. Similarly, public health intelligence dashboards could help provide better situational awareness. On a related theme, there is a need to strengthen and improve intelligence systems (through greater integration of surveillance data) and communication channels to aid timely response and transparency.

5.2.3 Mechanisms and systems

9. **Enhance coordination mechanisms:** Coordination across sectors in emergencies is often cited as a challenge. As a first step, existing surge mechanisms should be mapped, and gaps should be identified. This will help inform the development of streamlined deployment and surge coordination mechanisms as necessary – these may be current mechanisms or new mechanisms. Ideally, promote the use of existing multi-lateral deployment platforms (e.g., GOARN), especially in LMICs and for rapid response, rather than duplicate mechanisms. However, surge response mechanisms will need to be flexible and adapted to reflect local context, capacities and hazards, particularly in AFRO and EMRO regions. Similarly, capacity building will need to be tailored to develop context-specific strategies that support field response roles in lower-income countries and improve multi-hazard response capacity in higher-income countries. Institute cross-border emergency preparedness exercises to strengthen coordinated regional responses. Integrate system strengthening efforts into health emergency management systems with a focus on strategic oversight of partnerships, joint collaborations and coordinate multi-agency and multi-sectoral action.

10. **Develop global engagement protocols:** Currently, international deployments and bilateral joint action is not common. There is often a mismatch between what is deployed by sending countries and what is needed by receiving countries. Aligned with national interests, WHO (GHEC/GOARN) could support NPHIs to develop deployment plans or SOPs that align public health priorities with regional and international networks' operating models and national development goals. This should enhance the legitimacy of, and facilitate smoother approvals for, international response work. By creating engagement protocols and policy briefs co-authored with ministries of foreign affairs (or equivalent) or national security agencies, this can help NPHIs to provide visibility and governmental endorsement for deployments. Moreover, effective collaboration across borders and regionally depends on mutual benefit and past engagements. These relationships can be built up through investment in joint training, NPHI to NPHI twinning, peer review, and simulation exercises that fosters reciprocity, solidarity, and peer support.

5.2.4 Leadership and global engagement

11. **Formalise the role of the NPHI for all public health emergencies:** Clear leadership in emergencies is essential for effective and well-coordinated responses. Ensure all NPHIs have a clearly designated senior leader for emergencies to coordinate multi-sectoral efforts and improve accountability. Formalise also partnerships with key stakeholders (e.g., MoHs, disaster agencies, and academia) as well as encourage greater inclusion of NGOs, civil society, and the private sector, especially in HICs. Build and support formalised leadership structures and leadership development for emergencies from national to subnational levels that includes key subnational and provincial organisations. Implement formal lines and methods of communication and information exchange.

12. **Strengthen global norms for public health emergency response and collaboration:** International collaboration for public health emergency response is still developing and highly dependent on existing relationships and networks established usually at the bilateral level. There is considerable variability in such collaborations leading to issues with equity of international response. Norms for greater multi-sectoral and global collaboration need to be strengthened, such as for early engagement in an emergency – NPHIs should be encouraged to activate and alert the wider system early. This will require standardised criteria for when to contact international bodies (e.g., post-initial risk assessment). Encourage proactive rather than reactive communication. Institutionalise After-Action Reviews that are mandatory, multi-sectoral, systematically documented, with plans for corrective action to be taken. Such plans should track the implementation of AAR recommendations to close the feedback loop and audit. Strengthen international NPHI collaboration, e.g., through regular joint simulations and training exercises with other NPHIs and facilitate multilateral platforms for peer

learning and coordinated policy development. Establish communities of shared practice to exchange ideas, good practice, learning, and intelligence. Invest in simulation exercises and emergency preparedness activities across borders. Promote and fund cross-border emergency drills, particularly for pandemic threats and regional hazards.

13. **Expand support networks:** There are delays to LIC's in accessing support in a timely manner. Therefore, mechanisms need to be established to enable LICs to access broader international support rapidly. Thus, approaches to co-ordinate this support should be implemented which reduces duplication and redundancy of misplaced expertise. There is a need to strengthen resource mobilisation through networks like IANPHI and WHO regional offices as well as encourage international donor support for preparedness in under-resourced settings.

Our recommendations are further mapped out, with suggested stakeholders and lead agencies for each recommendation, in the Appendix section entitled "*Call for Action.*"

5.3 Conclusion

There is considerable variability between countries in terms of context, legal mandates, and authority for NPHIs, capabilities, processes, and experience of mobilising surge capacity to national and international public health emergencies. This implies a one-size-fits-all approach is unlikely to work, and tailored, country-adapted approaches are needed. The early detection and confirmation of the pathogen, followed by timely public health intervention are essential for effective pandemic control. This requires multi-sectoral and multi-agency responses be it at the subnational, national, or international levels. For example, health providers/health system are key for the early reporting, sample taking through to response. NPHIs play a key role in this chain of action and response through provision of specialist scientific and technical advice, surveillance, and specialist laboratory facilities/testing, that help inform health providers, policymakers, and decisions. Consequently, it is vital to ensure NPHIs are developed, resourced, and empowered to fulfil that function.

However, there are significant gaps and challenges experienced currently by NPHIs. There is limited surge capacity within countries let alone internationally, that limit what NPHIs can deploy. The current approach to responding to public health emergencies tends to be quite reactive and the prevailing view is that not enough is done on public health system strengthening in the inter-crisis period. There is a pressing need for further work to develop surge mechanisms and exercising how countries surge and deploy, particularly in support of other countries or for cross-border issues. Most NPHI to NPHI and bilateral interactions tend to be with neighbouring countries and countries within the same continental region. Consequently, if the aim is to strengthen international collaboration, a natural starting point would be to foster and develop cross-border collaborations. This

could be through developing trusted relationships at various levels of NPHIs and having more interactions, such as through cross-border simulation exercises or other joint projects.

Finally, connected leadership in health emergencies refers to a leadership approach that emphasizes collaboration, communication, coordination, and relationship-building across various sectors, organizations, and communities to effectively manage and respond to crises like pandemics, natural disasters, or other public health threats. It is made up of a network of people, working in different places and at various levels, with a common purpose, and cooperating to deliver a coordinated response or make a system level impact. For it to be effective, relationships and trust are needed as systems can only move forward at the speed of trust. Connections between public health agencies can be established and strengthened at the various leadership levels (i.e., building "connected leadership") and through scientific, technical, and professional networks operating in a "network of networks." This would serve to enhance information and intelligence exchange that benefits greater situational awareness. The sharing of good practice and lessons learned improves effective practice. These connections foster collaboration essential for coordinated responses, strengthen global health security systems, and enhance the capacity to stop the next pandemic.

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GHEC Survey Team

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7.4 Declaration of conflicts of interest

The authors of this report declare no conflicts of interest.

Appendices

8.1 Call for Actions

Every country is different, in terms of context, health system organisation, processes and NPHI remits for public health emergencies. Consequently, there is no universal model, and each country will need to tailor and adapt public health emergency planning from emergency preparedness to surge response and deployment to suit their country-specific context. Such planning would benefit from peer-to-peer support, knowledge exchange and the sharing of experience, as well as collaboration particularly for cross-border and international response to public health threats. Moreover, multisectoral and multiagency responses are required and hence various actors, with differing remits, powers, and resources, are involved. In the call for action table below we identified areas for action to strengthen national health emergency workforce and surge required to respond to public health threats, based on the findings from this IANPHI project. In the lead/responsibility column, we have indicated which of the actors has responsibility for leading the implementation of these actions.

8.1.1 Legal and political mandates

Areas for Action	Aim	Stakeholders	Activity	Lead/ Responsibility	Expected Output	Expected Outcome
1) Clarify the mandates of NPHIs and other partners for public health emergency management	Clear roles and responsibilities for all agencies involved in public health emergency management	MoH, NPHI, WHO, Regional CDC	i) Map all roles and functions spanning the emergency management cycle. ii) Countries ideally need to codify the emergency response roles and responsibilities, including supporting national legislation and policy. iii) Build partnerships and strengthen cross-sectoral collaboration.	MoH	i) Defined roles for all agencies involved and national structures for public health emergency management. ii) Supporting legislation that provides the legal mandates for key agencies, including the NPHI. iii) Norms for multi-agency partnership working in emergencies.	National public health emergency management activity occurs seamlessly, and responds efficiently and effectively to public health threats
2. Strengthen political advocacy for clear public health emergency management role of NPHIs	Ensure NPHIs have the political support to engage in public health emergency management	MoH, NPHI, WHO, Regional CDC, IANPHI	i) Develop and implement an engagement plan targeting high-level policymakers, tailored to each country's governance structure. ii) Develop, share and use case studies of successful, politically empowered NPHIs. iii) Develop communities of shared practice to facilitate active knowledge management and dissemination.	NPHI, IANPHI	i) NPHI responsibilities and activities, are strategically aligned and supported by government policy. ii) NPHIs and MoH enabled to make the case to government and political stakeholders for the key functions NPHIs provide in public health emergency management.	NPHIs have the political support and long-term commitment, working in conjunction with MoH to build public health capacity, strengthen the public health and emergency management system.
3. Monitor and analyse political economy risks	To enable awareness and agility to political and policy changes impacting national emergency response capabilities	NPHI, MoH, IANPHI, WHO	i) Integrate political economic analysis into NPHI development, expansion or reform projects. ii) IANPHI or WHO could develop a rapid political context assessment tool for use by NPHIs/MoHs in national public health emergency management planning. This can form part of the emergency needs assessment for a country.	NPHI / IANPHI / WHO	NPHIs proactively identify and address potential barriers stemming from political rivalry, resource competition, or ideological resistance.	Measures can be put in place to mitigate potential political barriers to NPHI activity in public health emergencies

8.1.2 Resourcing and workforce

Areas for Action	Aim	Stakeholders	Activity	Lead/ Responsibility	Expected Output	Expected Outcome
4. Establish a register of a multi-sectoral health emergency workforce professionals that could be needed during a health emergency	Establishing an understanding of the types of expertise and professions that enable response for health emergency situations	MoH, OneHealth stakeholders, academic, national organisations (public, private), civil society	i) Identify a list of the professionals that would be engaged in a public health emergency. ii) Disseminate the list to organisations that could identify key roles within their organisation that could provide support in a national public health emergency	MoH/NPHI	Comprehensive list of the location of health emergency workforce on national, subnational (district, provincial, regional) level.	In times of health emergency surge of professionals that can support response and identification of gaps that can then be requested through international networks
5. Identify the skills and competencies required, and strategies to address gaps, for the national health emergency workforce	Achieve a recognized multisectoral cadre of national health emergency workforce that can be called upon to respond to public health emergencies	MoH, NPHI	i) Identify current public health emergency workforce (in terms of numbers, roles, skills, and competencies). ii) Identify and map national public health workforce staffing gaps and needs. iii) Review the need for standardization of qualification requirements for key roles. iv) Advocate for minimum competency and certification standards in emergency planning and management roles. v) Invest in regional and local training infrastructure. vi) Encourage partnerships with academic institutions and regional bodies to expand access to high quality training required.	MoH, NPHI	Comprehensive national picture of staffing skills and capacity gaps and needs. Standardization of skills, competencies and certification of the public health emergency workforce. Strengthened training infrastructure and provision of high quality training.	Workforce mapping guides longer term strategic workforce planning to address gaps and needs. The public health emergency workforce is better trained and their skills and competencies are standardized.

Areas for Action	Aim	Stakeholders	Activity	Lead/ Responsibility	Expected Output	Expected Outcome
6. Support the development and updating of workforce strategies	Address key systemic workforce challenges through supporting national workforce planning	MoH, NPHI, IANPHI	i) Enhance the role of NPHIs in workforce planning to strengthen NPHI capacity. ii) NPHI, working in conjunction with their respective MoH, to input into national health workforce planning that addresses the wider public health system workforce issues beyond the NPHI. iii) Technical and financial support for low-income countries and small NPHIs through peer to peer or bilateral relationships to establish or refresh workforce plans.	MoH, NPHI	NPHI input into national health emergency workforce planning with a focus on wider and long-term system resilience. National workforce plans devised or refreshed.	Strengthened NPHI and health emergency workforce capacity.
7. Develop, test and fund comprehensive surge plans	Clear, tested, context-specific surge protocols implemented	NPHI, MoH	i) Create and operationalize surge protocols. ii) Exercise those surge protocols. iii) Regional and peer to peer support and exchange of knowledge and experience. iv) Fund the development and testing of surge plans. v) Secure funding for surge deployments.	NPHI	Comprehensive surge plans devised and exercised.	Health systems able to rapidly and effectively surge their workforce to respond to a public health emergency
8. Build a diverse, flexible workforce resource for public health emergencies	To have an expanded pool of human resources that can be drawn on for emergencies.	MoH, NPHI	i) Establish a volunteer roster ii) Collate a database of retired staff who can be called upon iii) Develop partnerships with academic and NGOs who can provide additional surge capacity iv) Deliver deployment training vi) Develop support mechanisms for deployed staff	MoH, NPHI	Roster/database of deployable staff that can be activated in an emergency. Developed standardized pre-deployment training in health, safety, and cultural readiness. Strengthened support systems for deployed staff.	In the event of a national public health emergency, sufficient skilled staff can be sourced and mobilised as part of surge response.

Areas for Action	Aim	Stakeholders	Activity	Lead/ Responsibility	Expected Output	Expected Outcome
9. Explore the role of technology to support health emergency response	Health emergency response is optimised through the use of technology.	NPHI, MoH	i) Explore the possible utility of artificial intelligence and automation to enhance early warning systems. ii) Optimise public health intelligence dashboards. iii) Strengthen and improve intelligence systems (e.g. through greater integration of surveillance data) iv) Strengthen and improve communication channels to aid timely response and transparency.	NPHI	Early warning systems are optimised to provide timely alert and warning of potential threats. Situational awareness for decision makers is improved.	Health system response to public health threats is timely and optimised through better situational awareness and early warning.

8.1.3 Mechanisms and systems

Areas for Action	Aim	Stakeholders	Activity	Lead/ Responsibility	Expected Output	Expected Outcome
10. Enhance coordination mechanisms	To improve the coordination of surge responses to public health emergencies and threats.	NPHI, MoH, WHO, IANPHI, regional networks (GOARN, EMT) with country presence	i) Map existing surge mechanisms and identify gaps. ii) Develop and improve deployment and surge coordination mechanisms. iii) Promote the use of existing multi-lateral deployment platforms iv) Adapt mechanisms to reflect local contexts, capacities and hazards. v) Institute cross-border emergency preparedness exercises vi) Integrate system strengthening efforts into health emergency management systems	NPHI, WHO	Streamlined deployment of surge response and well-coordinated surge mechanisms. Context-specific mechanisms developed that support field responses and improve multi-hazard response capacity. Greater cross-border collaborations.	Well-coordinated multi-agency and multi-sectoral action, including for cross-border responses to public health threats.
11. Develop global engagement protocols	Strengthen global norms of joint working and response to public health threats.	WHO, IANPHI	i) Support NPHIs to develop deployment plans or SOPs that align public health priorities with regional / international networks' operating models and national goals. ii) Create engagement protocols and policy briefs to support efforts to gain governmental endorsement for deployments. iii) Carry out joint training, NPHI-NPHI twinning, peer reviews, and simulation exercises.	WHO	NPHI deployment plans align with national and international protocols. NPHI resources (engagement protocols and policy briefs) to advocate for deployments. Culture of joint NPHI-NPHI training and peer reviews becomes normative.	Global norms for joint working and response to public health threats

8.1.4 Leadership and global engagement

Areas for Action	Aim	Stakeholders	Activity	Lead/ Responsibility	Expected Output	Expected Outcome
12. Formalise the role of the NPHI for all public health emergencies	There is clear leadership and role for NPHIs in public health emergencies	MoH, NPHI, Governmental ministries	i) NPHI clearly designates a senior leader for emergencies to coordinate multi-sectoral efforts ii) Partnerships between key stakeholders are formalised iii) Build formalised leadership structures for public health emergency management iv) Train and develop leaders for emergencies from national to subnational levels. v) Implement and clarify formal lines of communication and information exchange between partners and levels of government.	MoH, NPHI	Clear senior NPHI leader for emergencies that is known across sectors. Trained cadres of leaders for public health emergencies. Formal structures for health emergency management. Formal partnership agreements on ways of working in emergencies between key actors. Clear communication lines between actors	Clear and strong leadership in public health emergencies. Clear role for NPHIs in public health emergencies.
13. Establish global norms for public health emergency response and collaboration	Establish global norms for public health emergency response and collaboration	MoH, NPHI, WHO, Regional CDCs, IANPHI	i) Develop and agree standardised criteria for when countries would contact international bodies. ii) Encourage proactive rather than reactive communication between key agencies. iii) Institute multi-agency After Action Reviews (AARs). iv) Audit the implementation of learning from AARs. v) Conduct activities that promote international NPHI collaboration e.g. joint cross-border simulation and training exercises. vi) Establish communities of shared practice.	WHO, Regional CDCs, IANPHI	Early engagement / alerting by countries in a public health emergency. AARs are routinely conducted after major incidents and public health emergencies. Communities of shared practice exist to exchange ideas, good practice, learning and intelligence. Regular international collaboration activities between NPHIs.	Wider national and international public health system activated early in an emergency
14. Expand support networks	Strengthen resource mobilisation for LICs in emergencies	WHO, Regional CDCs, IANPHI, donors	i) Establish mechanisms to enable LICs to access broader international support rapidly. ii) Encourage donor support for preparedness activities in under-resourced settings	WHO, Regional CDCs, donors	Clear mechanisms exist for LICs to seek timely international support. Avenues for donor support exist.	Resource gaps in health emergencies in LICs can be rapidly addressed.

8.2 Methods

This survey had two components – a structured questionnaire survey sent to all IANPHI members, and key informant interviews with a targeted selection of NPHI leaders.

8.2.1 The survey

A web-based questionnaire was disseminated to 127 IANPHI members in 107 countries between October 2024 and March 2025. The survey was deployed using the survey tool, SelectSurvey v5.0. IANPHI requested a senior-level focal individual to act as liaison and coordinator to collate the information. All IANPHI member institutions were invited to participate, and email reminders were used to maximize the survey response rate. Data were securely collected and stored on a cloud-based server housed in the European Union to which only core survey team members had access. Data were descriptively analyzed, stratified by World Health Organization region, World Bank Income Group, and self-reported NPHI size.

8.2.1.1 Questionnaire development

The survey was developed and deployed digitally, using Select Survey. The questionnaire was developed in English. Areas covered by the survey are summarised in Table 1. A total of 59 questions were asked, including questions about the characteristics of the IANPHI member organisation responding to the questionnaire. Core survey questions included questions on the responding NPHI's mandate and governance, public health emergency workforce, surge capacity and rapid response, and connected leaderships in health emergencies.

Table 1. Areas covered by the survey

Objectives of the survey	Areas covered by the survey
1. **Describe the characteristics of NPHIs surveyed**	• Baseline characteristics of NPHIs surveyed (e.g., size, year of establishment, type of organisation)
2. **Understand the mandates and authorities of NPHIs for health emergencies**	• Scope of the organisation's work • Legal frameworks and remit • Role and place of NPHI in the national architecture for disaster and emergency management • Core public health functions in the NPHI's mandate
3. **Describe the governance of country health emergencies**	• Existence of formal framework or plan for emergency preparedness and response • National level co-ordination • NPHI level co-ordination with multi-sectoral partners both nationally, sub-nationally and internationally • Collaboration agreements
4. **Identify the workforce needs for a resilient public health system at national and subnational level**	• National public health workforce plans • Needs and priorities for NPHI (professions, skills, and competencies) • Public health system emergency gaps

Objectives of the survey	Areas covered by the survey
5. **Understand current surge capacity and rapid response mechanisms**	• Training providers for public health emergency preparedness and response • NPHI experience of surge deployment • Current challenges to increasing surge capacity • Sources of workforce for current surge capacity • Types of emergencies that the NPHI would respond to • NPHI's top priorities for improving surge capacity
6. **Explore the nature of connected leadership**	• Key stakeholders involved in health emergency response • How NPHI collaborates with other NPHIs • Which international organizations are contacted in emergencies and protocols for contacting • Type of support sought from other agencies in emergencies • Lessons learning and sharing

8.1.1.2 Questionnaire validation

Once the survey was populated in SelectSurvey, various members of the analysis team proofread and tested the survey to ensure responses were collected and collated accurately. Skip logic questions were checked by multiple team members and mock data surveys were completed and extracted for validation. Prior to the launch of the online survey, the questionnaire was formatted and pilot-tested to identify potential constraints and time requirements to complete the questionnaire. Based on the pre-test experience, the survey questionnaire was revised and translated from English into French, Portuguese, and Spanish.

8.1.1.3 Sampling approach and recruitment

The target survey population included the **127 NPHIs** in 107 countries who were members or associate members of IANPHI in 2024. These NPHIs were from all WHO regions of the world.8 Invitation emails were sent to all IANPHI members through the designated focal points as registered with IANPHI, with a further round of follow up invitation emails if no response was initially received. Respondents were given six weeks from the end of October 2024 to complete the survey, with reminders sent periodically to maximise the response rate. A two-week extension was initially provided, but the survey remained opened, and the last respondent completed the survey in March 2025. Personal communication and encouragement to participate from the project team and the IANPHI president, Duncan Selbie, was sent to encourage responses. In addition, individual letters to the heads of each IANPHI member were sent to highlight the importance of the project and the survey with the aim to improve the quality and elicit a high response rate.

8.1.1.4 Data collation

Survey data was extracted from Select Survey and quantitative descriptive analyses were undertaken using R Statistical Software v4.4.1. Survey responses were checked for duplications, in the case of multiple responses from the same IANPHI member institute, the survey response provided by the more senior respondent in the IANPHI member organisation was retained. Survey questions were summarised into tables and figures for all respondents and stratified by WHO region, World Bank Income Group and self-reported NPHI size. Data were tabulated by

responding institutions and presented as absolute numbers and proportions. As the denominator used to calculate proportions varied by question, denominators are presented alongside proportions.

8.1.1.5 Data analysis

Four analysts (JB, NG, VN, ER) extracted survey responses and conducted descriptive analyses of the 59 questions in the survey. Responses were analysed across all respondents, then grouped by WHO regions, World Bank Income group and self-reported NPHI size for sub-analyses. Results were written up in this report and support by tables and figures in the Appendix. For each survey question, supplementary material is provided to support the findings, in addition to select tables and figures presented in this report. The free text question responses (Q37, 45) were reviewed by two authors (AT, AL) with responses grouped into overarching themes. A narrative summary of these themes was discussed and agreed between authors.

8.1.1.6 Strengths and limitations of the survey

The survey achieved a reasonable response rate for a large multi-country survey and was well represented across all WHO regions and World Bank income groups, but with less than half of all survey respondents submitting a survey, it was difficult to generalize results to other NPHIs. As with all self-administered surveys, this study was limited by the perceptions and experience of respondents and their ability to interpret the questions and response options. Further, the survey was administered in four languages only, which might have an impact on interpretation and understanding of the questions as well as led to sampling bias towards IANPHI members fluent in the four languages available. Despite targeting senior-level respondents, having only one focal person per NPHI responding to a topic area that covers regional and international topics may have limited responses beyond the national context.

Further, our approach of breaking down responses into key themes introduced some subjectivity into the analytical process. However, the results presented can be triangulated with similar findings in both the quantitative elements of the survey, and the findings from the interviews.

8.2.2 Key informant interviews

Key informant interviews were also carried out through a qualitative sub-study conducted after the initial survey.

8.2.2.1 Sampling and recruitment for interviews

The project team identified a targeted set of NPHIs to conduct more in-depth interviews with. The NPHIs were selected to ensure diversity in terms of country income levels, and WHO region. In addition, a regional network that was an associate member of IANPHI was also invited to capture a regional organisation's perspective. Invitation emails were sent to the respective directors of those NPHIs.

Potential participants were informed in writing of the purpose of the interviews. The interviews were voluntary and undertaken on the condition of anonymity to encourage open dialogue.

8.2.2.2 Interview methodology

Interviews were conducted virtually by videoconferencing online with the respective NPHI key informant. The interviews took place between January – February 2025. These were undertaken by 2 interviewers and observed by 2 note-takers who took notes as well as transcribed and summarised the interviews. These interviews lasted between 30-60 minutes and carried out in English. The interviews were guided by an interview topic guide (Table 2) developed specifically to explore the following key themes:

1. What would enable NPHIs (leaders?) to engage and respond to national and international public health emergencies?
2. How can IANPHI help NPHIs to enable them to engage with GHEC
3. Focused discussion on connected leadership

The development of the topic guide was informed by the survey which identified various themes that could not be sufficiently explored through the survey questions. These included for example questions around the concept and experience of connected leadership.

Table 2. Interview topic guide

Topic 1. Enablers and Barriers to NPHIs responding to international health emergencies
1. Tell us about some of the enablers and barriers that your NPHI experiences when it comes to responding to international health emergencies.
2. Has your NPHI either received or lent workforce to an international health emergency? Please describe your experience
3. What are your NPHI's three main priorities over the next ten years that would improve the response to health emergencies?
Topic 2. Connected Leadership
4. Describe to us the health leadership mandates, authorities and structure for health emergencies in your country/ NPHI
5. How does your NPHI link and interact with other agencies internationally?
6. What are the triggers and mechanisms for convening leaders and aligning emergency response
7. Can you give an example of successful coordination with other organizations in a health emergency? How does your NPHI collaborate with other agencies in other countries?
Topic 3. How IANPHI can help
8. Reflecting on our discussions so far, what do you think are the biggest challenges / gaps with connected leadership? What are the biggest challenges for realizing the GHEC concept?
9. How can IANPHI help NPHIs to realize GHEC?

8.2.2.3 Interview analysis

The interviews were transcribed, and coding of the transcripts was then undertaken. These were then categorised into themes and higher thematic categories, using a qualitative thematic analysis approach. Using an inductive approach, a thematic map was developed based on the emerging insights from the interviews as well as through triangulation with the survey findings.

8.2.2.4 Subsequent triangulation and analysis

The findings from the interviews and survey were then triangulated, analysed and interpreted by the team at a 3-day workshop in February 2025. Emerging findings and themes were shared with key expert representatives from WHO GHEC and GOARN. These findings were subsequently shared at the IANPHI Annual Conference in April 2025 with attending NPHI representatives from around the world to sense check the findings and conclusions. At this meeting, further roundtable discussions were held with attendees to explore the concept of connected leadership. No new themes were identified, and the discussions helped to confirm our findings and conclusions.

8.3.1 Ethical waiver and research governance

This survey and interview protocol was submitted for review and approval by the IANPHI working group. IANPHI formally requested and received a waiver from ethical approval from Emory University's institutional ethics review board.

In addition, the IANPHI project team ensured, in line with IANPHI's internal policies and code of conduct, that the steps associated with the survey took measures to protect the participants from harm or danger, preserve their rights, and reassure them that this was being done.

- **Benefits and harm:** The questions included in the survey questionnaire and interviews did not include sensitive issues.
- **Anonymity:** The survey and interviews were anonymised.
- **Confidentiality:** Interviewers, supervisors, translators, analysts were aware about confidentiality and took all reasonable measures possible to maintain confidentiality throughout the survey.
- **Right of withdrawal:** Participation to the survey and interviews was on a voluntary basis and participants were free to withdraw at any stage without offering an explanation.
- **Consent and information to participants:** Consent was obtained from the participating interviewees prior to initiating interviews. Similarly for the survey questionnaire, the introductory letter to them clearly set out the purpose of the survey.

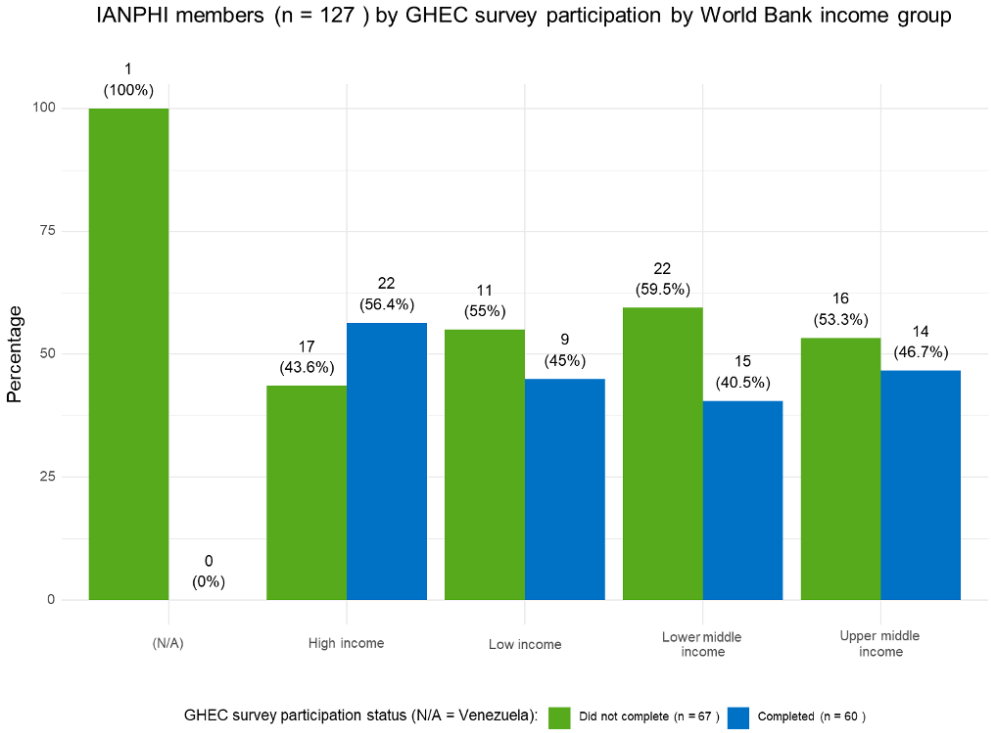
8.4.1 Data management and protection

IANPHI complies with the General Data Protection Regulation (GDPR) that came into effect on 25 May 2018. All data was processed in a manner that ensures appropriate security, including protection against unauthorised or unlawful processing and against accidental loss, destruction, or damage. With regards to the security of data storage, with the online survey, there was inbuilt mechanisms to protect data. Data was stored on IANPHI's SharePoint folder which was password protected with an individual password known only by members of the survey team. Data transfer was encrypted and the server where data was stored was also encrypted and protected, as well as backed up in line will the required standards. Survey data was stored on the IANPHI's server (kept inside the European Union) with only the core survey team having access to it. Access to data on the server is only allowed to limited staff via a private key and is not accessible to anyone else (including server owners). This system is fully backed up to limit the risk of any loss and data leakage. Data will be retained for a maximum period of 3 years and will only be used for the purpose of this exercise. To ensure high-quality data, IANPHI regularly checks the data uploaded on the server. The survey team checked for any missing values or inconsistencies. These were discussed with the survey team lead to ensure that those errors do not persist and on two occasions the team reached out to a small number of NPHIs involved to clarify discrepant survey responses.

8.3 Data Figures and Tables

8.3.1 NPHI Respondents Details

Figure S1: Survey response numbers and proportions by World Bank country income group



Question 6 What type of organisation do you work for?

Figure Q6

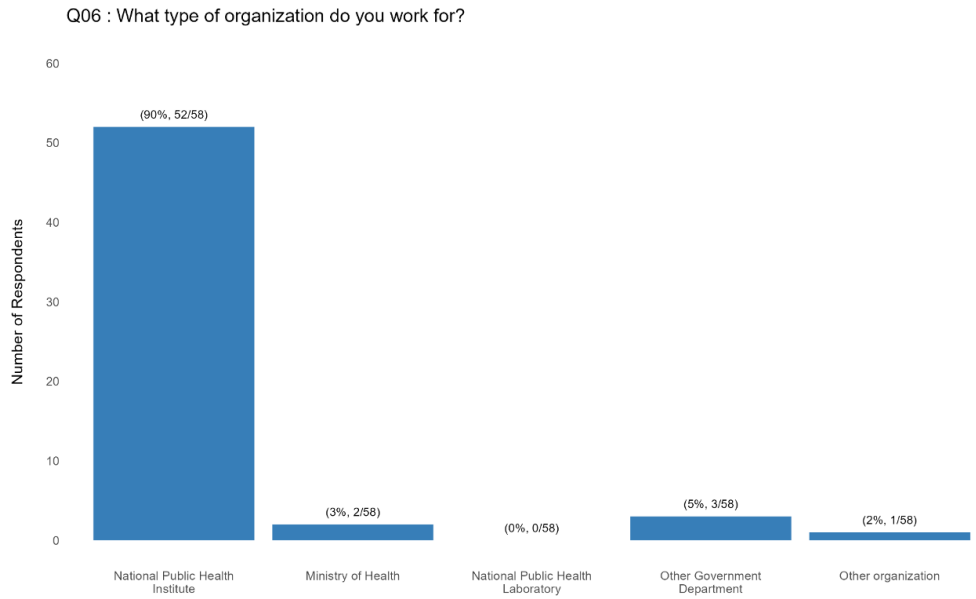


Table Q6A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
National Public Health Institute		52	58	92% (11/12)	85% (11/13)	100% (11/11)	86% (19/22)
Ministry of Health		2	58	8% (1/12)	8% (1/13)	0% (0/11)	0% (0/22)
National Public Health Laboratory		0	58	0	0	0	0
Other Government Department		3	58	0% (0/12)	8% (1/13)	0% (0/11)	9% (2/22)
Other organization		1	58	0% (0/12)	0% (0/13)	0% (0/11)	5% (1/22)

Table Q6B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
National Public Health Institute		52	58	88% (15/17)	100% (7/7)	73% (8/11)	94% (17/18)	100% (1/1)	100% (4/4)
Ministry of Health		2	58	6% (1/17)	0% (0/7)	9% (1/11)	0% (0/18)	0% (0/1)	0% (0/4)
National Public Health Laboratory		0	58	0	0	0	0	0	0
Other Government Department		3	58	6% (1/17)	0% (0/7)	18% (2/11)	0% (0/18)	0% (0/1)	0% (0/4)
Other organization		1	58	0% (0/17)	0% (0/7)	0% (0/11)	6% (1/18)	0% (0/1)	0% (0/4)

Table Q6C: By NPHI Size

Options	Level	n	total	<100	101-500	501-1000	1001-2000	>2000	Unknown
National Public Health Institute		52	58	100% (5/5)	85% (23/27)	100% (9/9)	86% (6/7)	89% (8/9)	100% (1/1)
Ministry of Health		2	58	0% (0/5)	7% (2/27)	0% (0/9)	0% (0/7)	0% (0/9)	0% (0/1)
National Public Health Laboratory		0	58	0	0	0	0	0	
Other Government Department		3	58	0% (0/5)	4% (1/27)	0% (0/9)	14% (1/7)	11% (1/9)	0% (0/1)
Other organization		1	58	0% (0/5)	4% (1/27)	0% (0/9)	0% (0/7)	0% (0/9)	0% (0/1)

Question 7 Is your organisation a National Member or an Associate Member of IANPHI?

Figure Q7

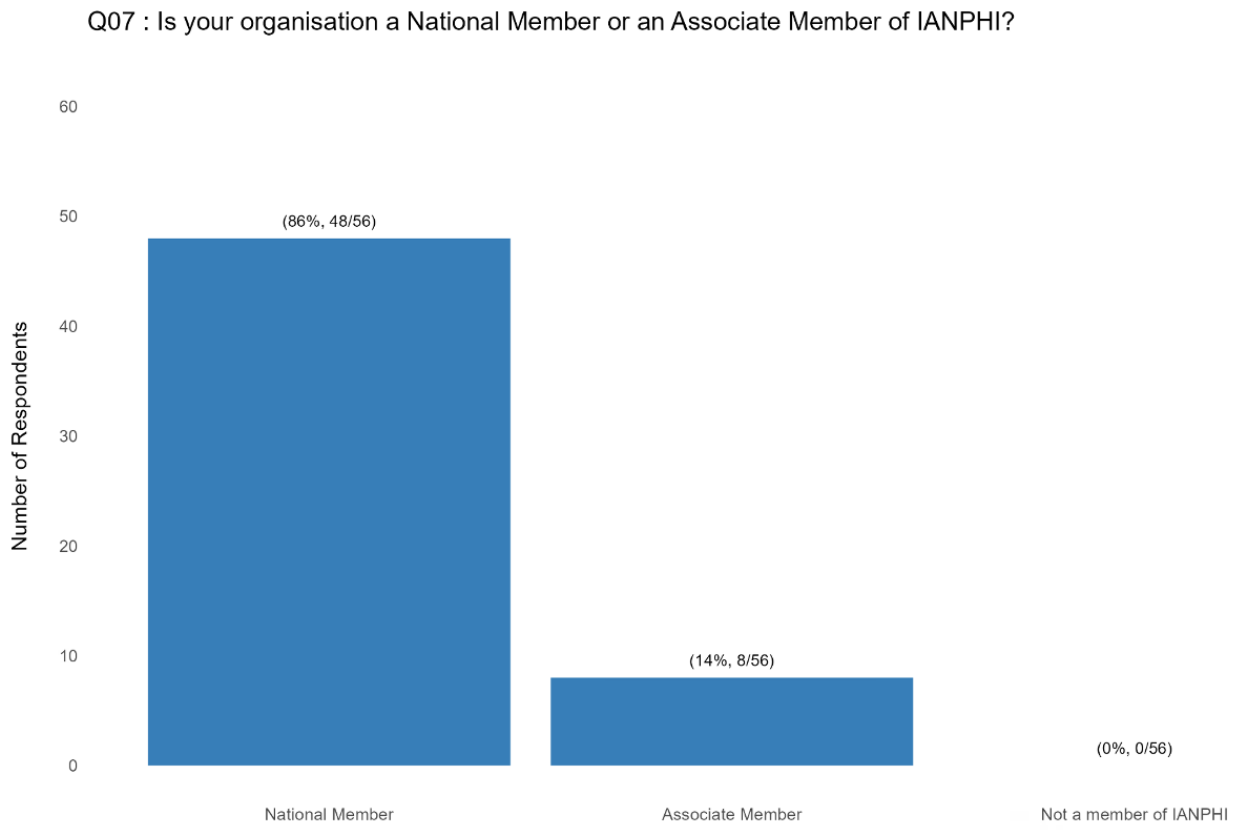


Table Q7A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
National Member		48	56	91% (10/11)	85% (11/13)	92% (11/12)	80% (16/20)
Associate Member		8	56	9% (1/11)	15% (2/13)	8% (1/12)	20% (4/20)
Not a member of IANPHI		0	56	0	0	0	0

Table Q7B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
National Member		48	56	81% (13/16)	75% (6/8)	82% (9/11)	100% (16/16)	100% (1/1)	75% (3/4)
Associate Member		8	56	19% (3/16)	25% (2/8)	18% (2/11)	0% (0/16)	0% (0/1)	25% (1/4)
Not a member of IANPHI		0	56	0	0	0	0	0	0

Table Q7C: By NPHI Size

Options	Level	n	total	<=500	>500
National Member		48	56	90% (28/31)	80% (20/25)
Associate Member		8	56	10% (3/31)	20% (5/25)
Not a member of IANPHI		0	56	0	0

Question 9 What is the scope of your organisation's work?

Figure Q9

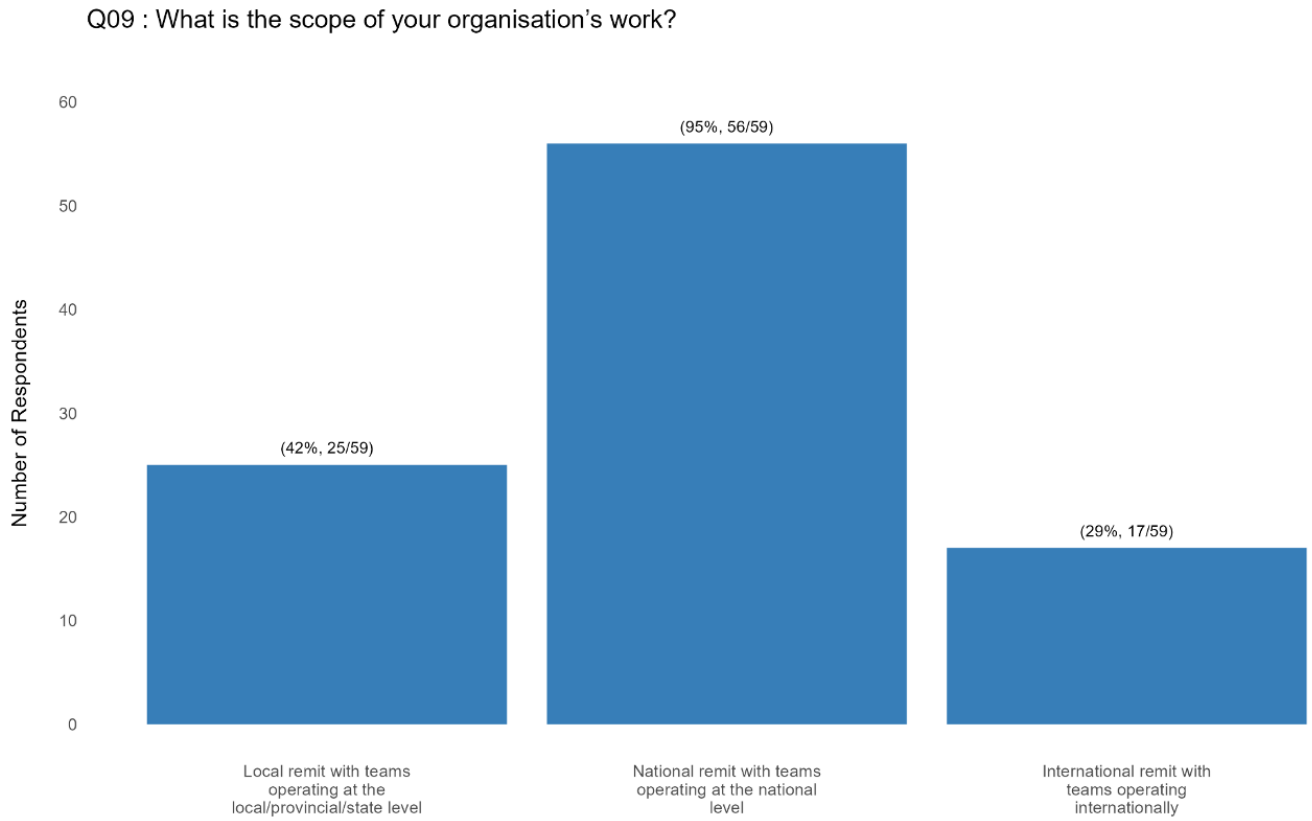


Table Q9A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Local remit with teams operating at the local/provincial/state level		25	59	67% (8/12)	25% (3/12)	31% (4/13)	45% (10/22)
National remit with teams operating at the national level		56	59	100% (12/12)	92% (11/12)	100% (13/13)	91% (20/22)
International remit with teams operating internationally		17	59	17% (2/12)	8% (1/12)	31% (4/13)	45% (10/22)

Table Q9B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Local remit with teams operating at the local/provincial/state level		25	59	53% (9/17)	25% (2/8)	45% (5/11)	41% (7/17)	100% (1/1)	20% (1/5)
National remit with teams operating at the national level		56	59	100% (17/17)	100% (8/8)	82% (9/11)	94% (16/17)	100% (1/1)	100% (5/5)
International remit with teams operating internationally		17	59	12% (2/17)	50% (4/8)	27% (3/11)	41% (7/17)	0% (0/1)	20% (1/5)

Table Q9C: By NPHI Size

Options	Level	n	total	<=500	>500
Local remit with teams operating at the local/provincial/state level		25	59	38% (12/32)	48% (13/27)
National remit with teams operating at the national level		56	59	97% (31/32)	93% (25/27)
International remit with teams operating internationally		17	59	19% (6/32)	41% (11/27)

Question 10 What is your organisation's total number of emloyees?

Figure Q10

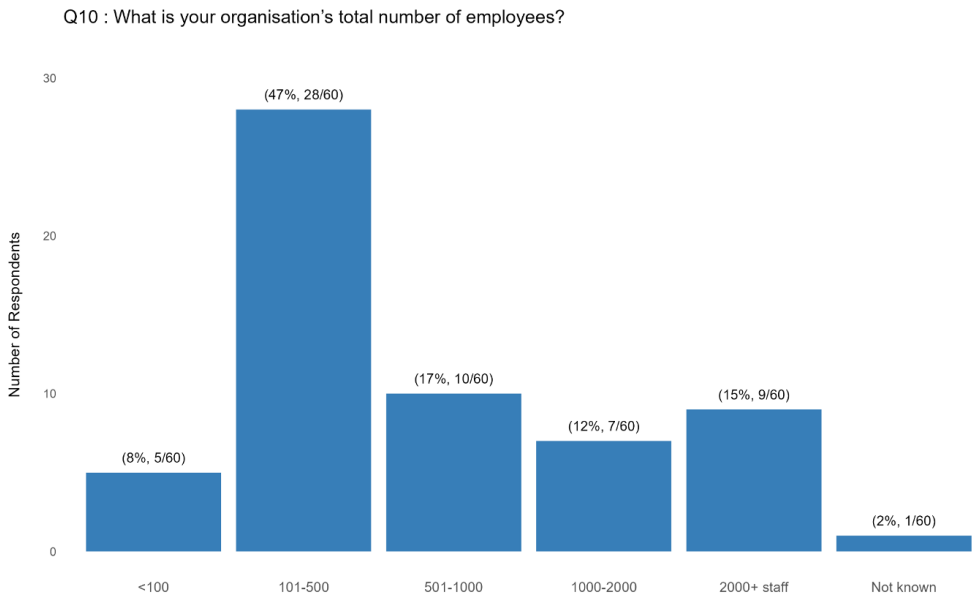


Table Q10A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
<100		5	60	17% (2/12)	15% (2/13)	8% (1/13)	0% (0/22)
101-500		28	60	58% (7/12)	62% (8/13)	54% (7/13)	27% (6/22)
501-1000		10	60	17% (2/12)	8% (1/13)	15% (2/13)	23% (5/22)
1000-2000		7	60	8% (1/12)	8% (1/13)	8% (1/13)	18% (4/22)
2000+ staff		9	60	0% (0/12)	8% (1/13)	15% (2/13)	27% (6/22)
Not known		1	60	0% (0/12)	0% (0/13)	0% (0/13)	5% (1/22)

Table Q10B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
<100		5	60	12% (2/17)	0% (0/8)	27% (3/11)	0% (0/18)	0% (0/1)	0% (0/5)
101-500		28	60	65% (11/17)	25% (2/8)	45% (5/11)	39% (7/18)	100% (1/1)	40% (2/5)
501-1000		10	60	12% (2/17)	38% (3/8)	9% (1/11)	17% (3/18)	0% (0/1)	20% (1/5)
1000-2000		7	60	6% (1/17)	0% (0/8)	18% (2/11)	17% (3/18)	0% (0/1)	20% (1/5)
2000+ staff		9	60	6% (1/17)	38% (3/8)	0% (0/11)	22% (4/18)	0% (0/1)	20% (1/5)
Not known		1	60	0% (0/17)	0% (0/8)	0% (0/11)	6% (1/18)	0% (0/1)	0% (0/5)

Table Q10C: By NPHI Size

Options	Level	n	total	<=500	>500
<100		5	60	15% (5/33)	0% (0/27)
101-500		28	60	85% (28/33)	0% (0/27)
501-1000		10	60	0% (0/33)	37% (10/27)
1000-2000		7	60	0% (0/33)	26% (7/27)
2000+ staff		9	60	0% (0/33)	33% (9/27)
Not known		1	60	0% (0/33)	4% (1/27)

8.3.2 NPHI Mandate and Governance

Question 11 Does your NPHI have a role in the management of public health emergencies in your country?

Figure Q11

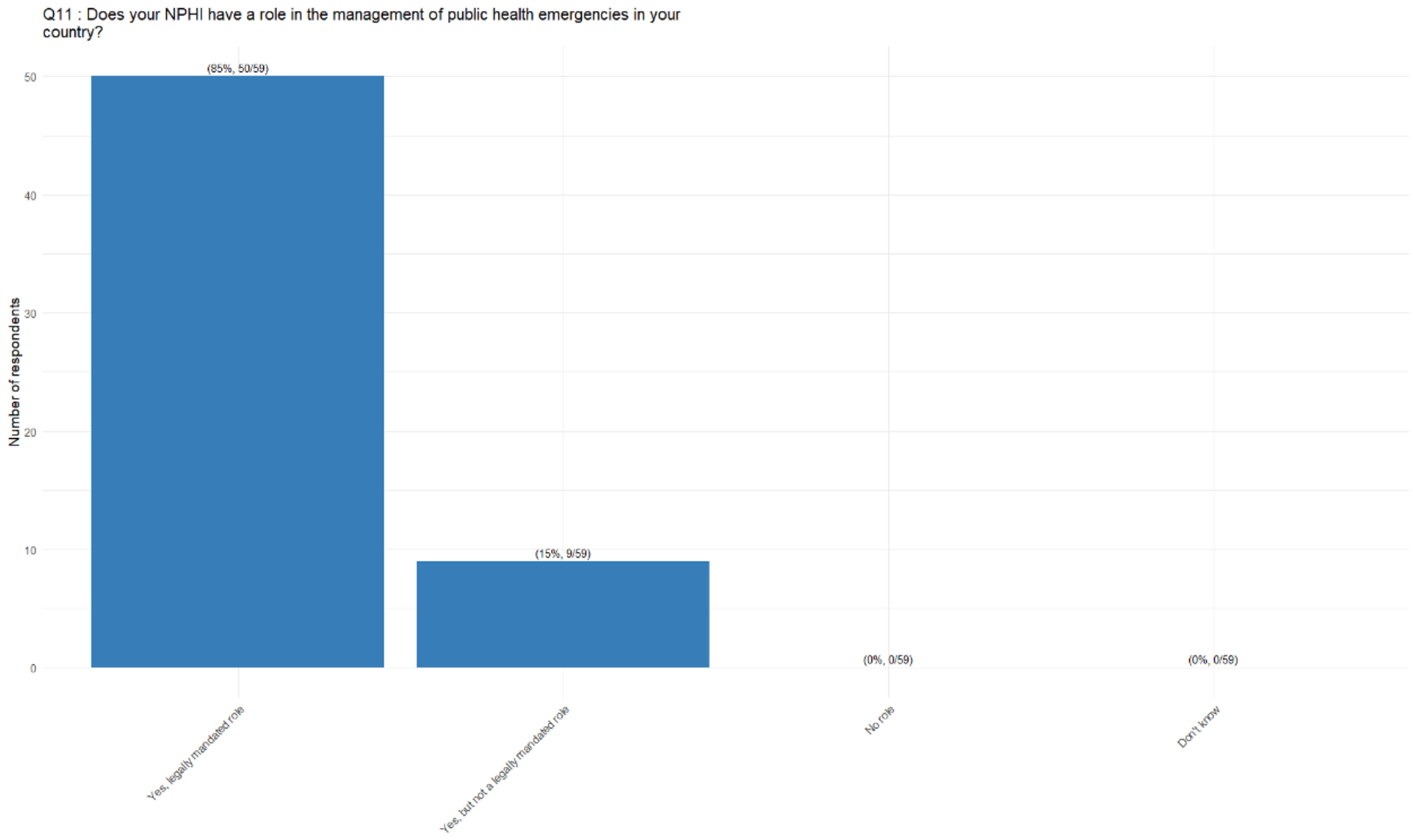


Table Q11A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Yes, legally mandated role	50	59	92%, (11/12)	100%, (12/12)	77%, (10/13)	77%, (17/22)
Yes, but not a legally mandated role	9	59	8%, (1/12)	0%, (0/12)	23%, (3/13)	23%, (5/22)
No role	0	59	0	0	0	0
Don't know	0	59	0	0	0	0

Table Q11B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Yes, legally mandated role	50	59	94%, (16/17)	75%, (6/8)	90%, (9/10)	72%, (13/18)	100%, (1/1)	100%, (5/5)
Yes, but not a legally mandated role	9	59	6%, (1/17)	25%, (2/8)	10%, (1/10)	28%, (5/18)	0%, (0/1)	0%, (0/5)
No role	0	59	0	0	0	0	0	0
Don't know	0	59	0	0	0	0	0	0

Table Q11C: By NPHI Size

Options	n	total	<=500	>500	Unknown
Yes, legally mandated role	50	59	84%, (27/32)	85%, (22/26)	100%, (1/1)
Yes, but not a legally mandated role	9	59	16%, (5/32)	15%, (4/26)	0%, (0/1)
No role	0	59	0	0	
Don't know	0	59	0	0	

Question 12 Is your NPHI involved in the following public health functions related to national public health emergencies?

Figure Q12

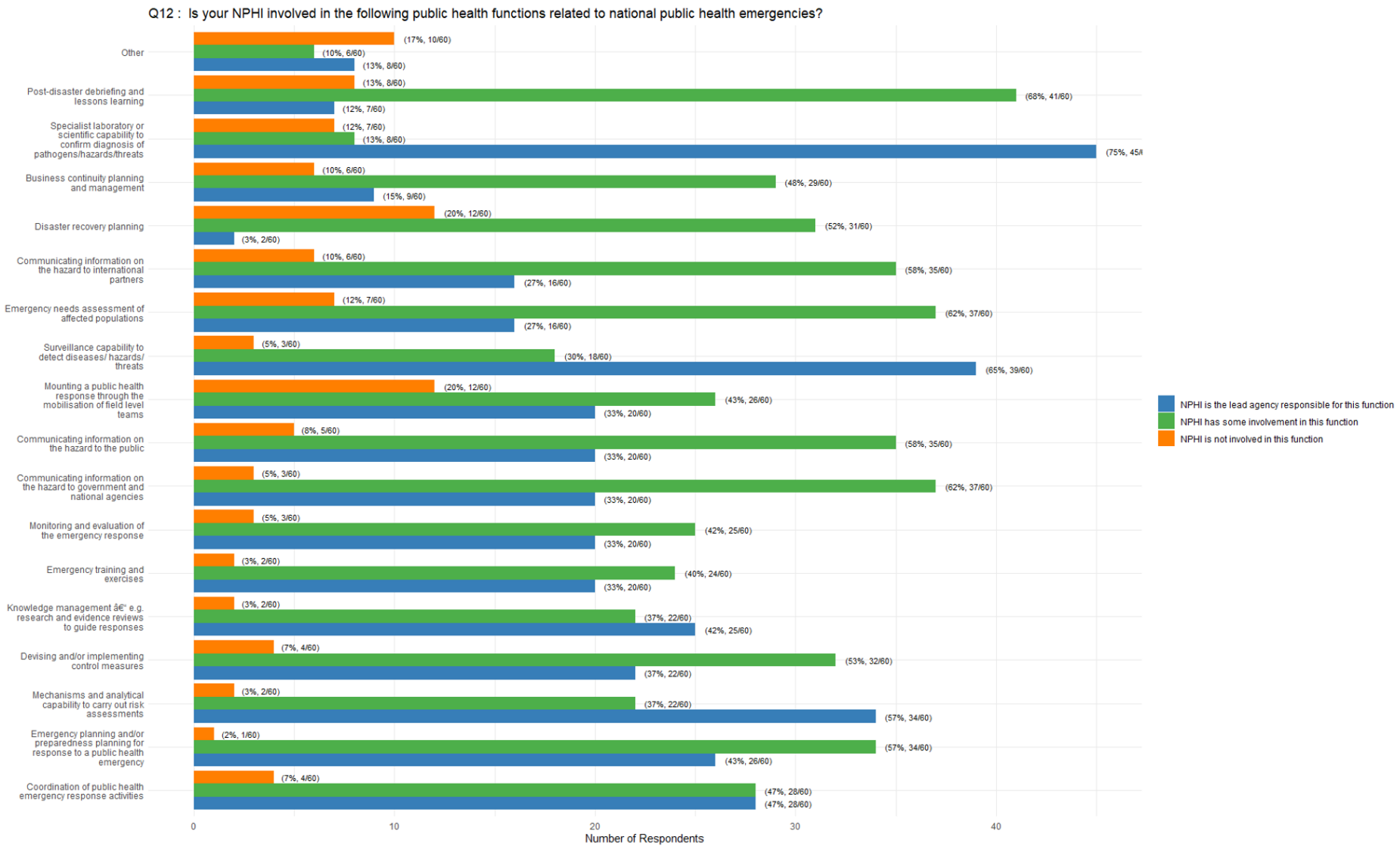


Table Q12A: Overall

	NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	Total (overall)	%			
					NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	*Did not answer*
Emergency planning and/or preparedness planning for response to a public health emergency	26	34	1	60	43%	57%	2%	*0%*
Coordination of public health emergency response activities	28	28	4	60	47%	47%	7%	*0%*
Surveillance capability to detect diseases/ hazards/ threats	39	18	3	60	65%	30%	5%	*0%*
Business continuity planning and management	9	29	6	60	15%	48%	10%	*27%*
Emergency training and exercises	20	24	2	60	33%	40%	3%	*23%*
Specialist laboratory or scientific capability to confirm diagnosis of pathogens/hazards/threats	45	8	7	60	75%	13%	12%	*0%*
Mechanisms and analytical capability to carry out risk assessments	34	22	2	60	57%	37%	3%	*3%*
Emergency needs assessment of affected populations	16	37	7	60	27%	62%	12%	*0%*
Devising and/or implementing control measures	22	32	4	60	37%	53%	7%	*3%*
Monitoring and evaluation of the emergency response	20	25	3	60	33%	42%	5%	*20%*
Knowledge management Ã¢â‚¬â€œ e.g. research and evidence reviews to guide responses	25	22	2	60	42%	37%	3%	*18%*
Disaster recovery planning	2	31	12	60	3%	52%	20%	*25%*
Post-disaster debriefing and lessons learning	7	41	8	60	12%	68%	13%	*7%*
Communicating information on the hazard to government and national agencies	20	37	3	60	33%	62%	5%	*0%*
Communicating information on the hazard to the public	20	35	5	60	33%	58%	8%	*0%*
Communicating information on the hazard to international partners	16	35	6	60	27%	58%	10%	*5%*
Mounting a public health response through the mobilisation of field level teams	20	26	12	60	33%	43%	20%	*3%*
Other	8	6	10	60	13%	10%	17%	*60%*

Table Q12B: Low Income Countries

	NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	Total (overall)	%			
					NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	*Did not answer*
Emergency planning and/or preparedness planning for response to a public health emergency	7	5	0	12	58%	42%	0%	*0%*
Coordination of public health emergency response activities	8	4	0	12	67%	33%	0%	*0%*
Surveillance capability to detect diseases/ hazards/ threats	7	5	0	12	58%	42%	0%	*0%*
Business continuity planning and management	4	3	0	12	33%	25%	0%	*42%*
Emergency training and exercises	5	2	0	12	42%	17%	0%	*42%*
Specialist laboratory or scientific capability to confirm diagnosis of pathogens/hazards/threats	10	1	1	12	83%	8%	8%	*0%*
Mechanisms and analytical capability to carry out risk assessments	9	3	0	12	75%	25%	0%	*0%*
Emergency needs assessment of affected populations	7	4	1	12	58%	33%	8%	*0%*
Devising and/or implementing control measures	5	7	0	12	42%	58%	0%	*0%*
Monitoring and evaluation of the emergency response	5	2	1	12	42%	17%	8%	*33%*
Knowledge management Ã¢â‚¬â€œ e.g. research and evidence reviews to guide responses	6	2	0	12	50%	17%	0%	*33%*
Disaster recovery planning	1	5	2	12	8%	42%	17%	*33%*
Post-disaster debriefing and lessons learning	3	5	4	12	25%	42%	33%	*0%*
Communicating information on the hazard to government and national agencies	4	8	0	12	33%	67%	0%	*0%*
Communicating information on the hazard to the public	4	7	1	12	33%	58%	8%	*0%*
Communicating information on the hazard to international partners	2	5	2	12	17%	42%	17%	*25%*
Mounting a public health response through the mobilisation of field level teams	7	5	0	12	58%	42%	0%	*0%*
Other	3	2	1	12	25%	17%	8%	*50%*

Table Q12C: High Income Countries

	NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	Total (overall)	%			
					NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	*Did not answer*
Emergency planning and/or preparedness planning for response to a public health emergency	7	14	1	22	32%	64%	5%	*0%*
Coordination of public health emergency response activities	9	11	2	22	41%	50%	9%	*0%*
Surveillance capability to detect diseases/ hazards/ threats	15	5	2	22	68%	23%	9%	*0%*
Business continuity planning and management	2	14	2	22	9%	64%	9%	*18%*
Emergency training and exercises	5	11	2	22	23%	50%	9%	*18%*
Specialist laboratory or scientific capability to confirm diagnosis of pathogens/hazards/threats	15	3	4	22	68%	14%	18%	*0%*
Mechanisms and analytical capability to carry out risk assessments	14	6	2	22	64%	27%	9%	*0%*
Emergency needs assessment of affected populations	3	15	4	22	14%	68%	18%	*0%*
Devising and/or implementing control measures	8	9	3	22	36%	41%	14%	*9%*
Monitoring and evaluation of the emergency response	6	12	1	22	27%	55%	5%	*14%*
Knowledge management Ã¢â‚¬â€œ e.g. research and evidence reviews to guide responses	7	11	1	22	32%	50%	5%	*14%*
Disaster recovery planning	1	11	7	22	5%	50%	32%	*14%*
Post-disaster debriefing and lessons learning	1	19	2	22	5%	86%	9%	*0%*
Communicating information on the hazard to government and national agencies	8	13	1	22	36%	59%	5%	*0%*
Communicating information on the hazard to the public	8	13	1	22	36%	59%	5%	*0%*
Communicating information on the hazard to international partners	7	14	1	22	32%	64%	5%	*0%*
Mounting a public health response through the mobilisation of field level teams	5	8	7	22	23%	36%	32%	*9%*
Other	1	1	6	22	5%	5%	27%	*64%*

Table Q12D: EURO WHO Region

	NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	Total (overall)	%			
					NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	*Did not answer*
Emergency planning and/or preparedness planning for response to a public health emergency	7	10	1	18	39%	56%	6%	*0%*
Coordination of public health emergency response activities	9	8	1	18	50%	44%	6%	*0%*
Surveillance capability to detect diseases/ hazards/ threats	13	3	2	18	72%	17%	11%	*0%*
Business continuity planning and management	1	12	2	18	6%	67%	11%	*17%*
Emergency training and exercises	4	9	2	18	22%	50%	11%	*17%*
Specialist laboratory or scientific capability to confirm diagnosis of pathogens/hazards/threats	13	1	4	18	72%	6%	22%	*0%*
Mechanisms and analytical capability to carry out risk assessments	14	2	2	18	78%	11%	11%	*0%*
Emergency needs assessment of affected populations	4	11	3	18	22%	61%	17%	*0%*
Devising and/or implementing control measures	6	8	2	18	33%	44%	11%	*11%*
Monitoring and evaluation of the emergency response	7	8	1	18	39%	44%	6%	*11%*
Knowledge management Ã¢â‚¬â€œ e.g. research and evidence reviews to guide responses	5	10	1	18	28%	56%	6%	*11%*
Disaster recovery planning	1	9	6	18	6%	50%	33%	*11%*
Post-disaster debriefing and lessons learning	2	14	2	18	11%	78%	11%	*0%*
Communicating information on the hazard to government and national agencies	8	9	1	18	44%	50%	6%	*0%*
Communicating information on the hazard to the public	7	10	1	18	39%	56%	6%	*0%*
Communicating information on the hazard to international partners	9	9	0	18	50%	50%	0%	*0%*
Mounting a public health response through the mobilisation of field level teams	5	6	6	18	28%	33%	33%	*6%*
Other	2	1	3	18	11%	6%	17%	*67%*

Table Q12E: AFRO WHO Region

	NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	Total (overall)	%			
					NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	*Did not answer*
Emergency planning and/or preparedness planning for response to a public health emergency	9	8	0	17	53%	47%	0%	*0%*
Coordination of public health emergency response activities	11	5	1	17	65%	29%	6%	*0%*
Surveillance capability to detect diseases/ hazards/ threats	11	6	0	17	65%	35%	0%	*0%*
Business continuity planning and management	4	4	2	17	24%	24%	12%	*41%*
Emergency training and exercises	7	3	0	17	41%	18%	0%	*41%*
Specialist laboratory or scientific capability to confirm diagnosis of pathogens/hazards/threats	15	1	1	17	88%	6%	6%	*0%*
Mechanisms and analytical capability to carry out risk assessments	9	7	0	17	53%	41%	0%	*6%*
Emergency needs assessment of affected populations	8	8	1	17	47%	47%	6%	*0%*
Devising and/or implementing control measures	6	10	0	17	35%	59%	0%	*6%*
Monitoring and evaluation of the emergency response	7	3	2	17	41%	18%	12%	*29%*
Knowledge management Ã¢â‚¬â€œ e.g. research and evidence reviews to guide responses	10	2	0	17	59%	12%	0%	*29%*
Disaster recovery planning	1	8	3	17	6%	47%	18%	*29%*
Post-disaster debriefing and lessons learning	3	10	4	17	18%	59%	24%	*0%*
Communicating information on the hazard to government and national agencies	4	12	1	17	24%	71%	6%	*0%*
Communicating information on the hazard to the public	5	11	1	17	29%	65%	6%	*0%*
Communicating information on the hazard to international partners	3	9	2	17	18%	53%	12%	*18%*
Mounting a public health response through the mobilisation of field level teams	8	8	1	17	47%	47%	6%	*0%*
Other	3	3	1	17	18%	18%	6%	*59%*

Table Q12F: EMRO WHO Region

	NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	Total (overall)	%			
					NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	*Did not answer*
Emergency planning and/or preparedness planning for response to a public health emergency	5	6	0	11	45%	55%	0%	*0%*
Coordination of public health emergency response activities	4	7	0	11	36%	64%	0%	*0%*
Surveillance capability to detect diseases/ hazards/ threats	7	3	1	11	64%	27%	9%	*0%*
Business continuity planning and management	3	4	1	11	27%	36%	9%	*27%*
Emergency training and exercises	4	4	0	11	36%	36%	0%	*27%*
Specialist laboratory or scientific capability to confirm diagnosis of pathogens/hazards/threats	6	3	2	11	55%	27%	18%	*0%*
Mechanisms and analytical capability to carry out risk assessments	5	5	0	11	45%	45%	0%	*9%*
Emergency needs assessment of affected populations	3	7	1	11	27%	64%	9%	*0%*
Devising and/or implementing control measures	5	6	0	11	45%	55%	0%	*0%*
Monitoring and evaluation of the emergency response	3	5	0	11	27%	45%	0%	*27%*
Knowledge management Ã¢â‚¬â€œ e.g. research and evidence reviews to guide responses	2	6	0	11	18%	55%	0%	*27%*
Disaster recovery planning	0	6	2	11	0%	55%	18%	*27%*
Post-disaster debriefing and lessons learning	2	7	2	11	18%	64%	18%	*0%*
Communicating information on the hazard to government and national agencies	4	6	1	11	36%	55%	9%	*0%*
Communicating information on the hazard to the public	6	4	1	11	55%	36%	9%	*0%*
Communicating information on the hazard to international partners	2	6	3	11	18%	55%	27%	*0%*
Mounting a public health response through the mobilisation of field level teams	3	6	2	11	27%	55%	18%	*0%*
Other	2	0	4	11	18%	0%	36%	*45%*

Table Q12G: AMRO WHO Region

	NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	Total (overall)	%			
					NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	*Did not answer*
Emergency planning and/or preparedness planning for response to a public health emergency	2	6	0	8	25%	75%	0%	*0%*
Coordination of public health emergency response activities	1	5	2	8	13%	63%	25%	*0%*
Surveillance capability to detect diseases/ hazards/ threats	4	4	0	8	50%	50%	0%	*0%*
Business continuity planning and management	0	4	1	8	0%	50%	13%	*38%*
Emergency training and exercises	2	5	0	8	25%	63%	0%	*13%*
Specialist laboratory or scientific capability to confirm diagnosis of pathogens/hazards/threats	7	1	0	8	88%	13%	0%	*0%*
Mechanisms and analytical capability to carry out risk assessments	2	6	0	8	25%	75%	0%	*0%*
Emergency needs assessment of affected populations	0	6	2	8	0%	75%	25%	*0%*
Devising and/or implementing control measures	3	4	2	8	38%	38%	25%	*0%*
Monitoring and evaluation of the emergency response	1	5	0	8	13%	63%	0%	*25%*
Knowledge management Ã¢â‚¬â€œ e.g. research and evidence reviews to guide responses	5	1	1	8	63%	13%	13%	*13%*
Disaster recovery planning	0	3	0	8	0%	38%	0%	*63%*
Post-disaster debriefing and lessons learning	0	4	0	8	0%	50%	0%	*50%*
Communicating information on the hazard to government and national agencies	2	6	0	8	25%	75%	0%	*0%*
Communicating information on the hazard to the public	1	5	2	8	13%	63%	25%	*0%*
Communicating information on the hazard to international partners	1	6	1	8	13%	75%	13%	*0%*
Mounting a public health response through the mobilisation of field level teams	1	3	3	8	13%	38%	38%	*13%*
Other	0	2	1	8	0%	25%	13%	*63%*

Table Q12H: NPHI Size under or equal at 500 employees

	NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	Total (overall)	%			
					NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	*Did not answer*
Emergency planning and/or preparedness planning for response to a public health emergency	15	18	0	33	45%	55%	0%	*0%*
Coordination of public health emergency response activities	16	17	0	33	48%	52%	0%	*0%*
Surveillance capability to detect diseases/ hazards/ threats	19	11	3	33	58%	33%	9%	*0%*
Business continuity planning and management	4	17	2	33	12%	52%	6%	*30%*
Emergency training and exercises	10	11	2	33	30%	33%	6%	*30%*
Specialist laboratory or scientific capability to confirm diagnosis of pathogens/hazards/threats	24	5	4	33	73%	15%	12%	*0%*
Mechanisms and analytical capability to carry out risk assessments	18	11	2	33	55%	33%	6%	*6%*
Emergency needs assessment of affected populations	9	20	4	33	27%	61%	12%	*0%*
Devising and/or implementing control measures	11	19	2	33	33%	58%	6%	*3%*
Monitoring and evaluation of the emergency response	11	12	2	33	33%	36%	6%	*24%*
Knowledge management Ã¢â‚¬â€œ e.g. research and evidence reviews to guide responses	10	13	2	33	30%	39%	6%	*24%*
Disaster recovery planning	1	18	4	33	3%	55%	12%	*30%*
Post-disaster debriefing and lessons learning	5	20	6	33	15%	61%	18%	*6%*
Communicating information on the hazard to government and national agencies	9	22	2	33	27%	67%	6%	*0%*
Communicating information on the hazard to the public	10	19	4	33	30%	58%	12%	*0%*
Communicating information on the hazard to international partners	7	21	3	33	21%	64%	9%	*6%*
Mounting a public health response through the mobilisation of field level teams	12	16	5	33	36%	48%	15%	*0%*
Other	5	3	7	33	15%	9%	21%	*55%*

Table Q12I: NPHI Size superior at 500 employees

	NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	Total (overall)	%			
					NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	*Did not answer*
Emergency planning and/or preparedness planning for response to a public health emergency	11	14	1	26	42%	54%	4%	*0%*
Coordination of public health emergency response activities	12	10	4	26	46%	38%	15%	*0%*
Surveillance capability to detect diseases/ hazards/ threats	19	7	0	26	73%	27%	0%	*0%*
Business continuity planning and management	5	11	4	26	19%	42%	15%	*23%*
Emergency training and exercises	10	12	0	26	38%	46%	0%	*15%*
Specialist laboratory or scientific capability to confirm diagnosis of pathogens/hazards/threats	20	3	3	26	77%	12%	12%	*0%*
Mechanisms and analytical capability to carry out risk assessments	15	11	0	26	58%	42%	0%	*0%*
Emergency needs assessment of affected populations	6	17	3	26	23%	65%	12%	*0%*
Devising and/or implementing control measures	11	13	2	26	42%	50%	8%	*0%*
Monitoring and evaluation of the emergency response	8	13	1	26	31%	50%	4%	*15%*
Knowledge management Ã¢â‚¬â€œ e.g. research and evidence reviews to guide responses	14	9	0	26	54%	35%	0%	*12%*
Disaster recovery planning	1	13	7	26	4%	50%	27%	*19%*
Post-disaster debriefing and lessons learning	2	20	2	26	8%	77%	8%	*8%*
Communicating information on the hazard to government and national agencies	11	14	1	26	42%	54%	4%	*0%*
Communicating information on the hazard to the public	10	15	1	26	38%	58%	4%	*0%*
Communicating information on the hazard to international partners	9	13	3	26	35%	50%	12%	*4%*
Mounting a public health response through the mobilisation of field level teams	8	10	6	26	31%	38%	23%	*8%*
Other	3	3	2	26	12%	12%	8%	*69%*

Question 13 In your country, which agencies are actively involved in the response for the following national public health emergencies?

Figure Q13

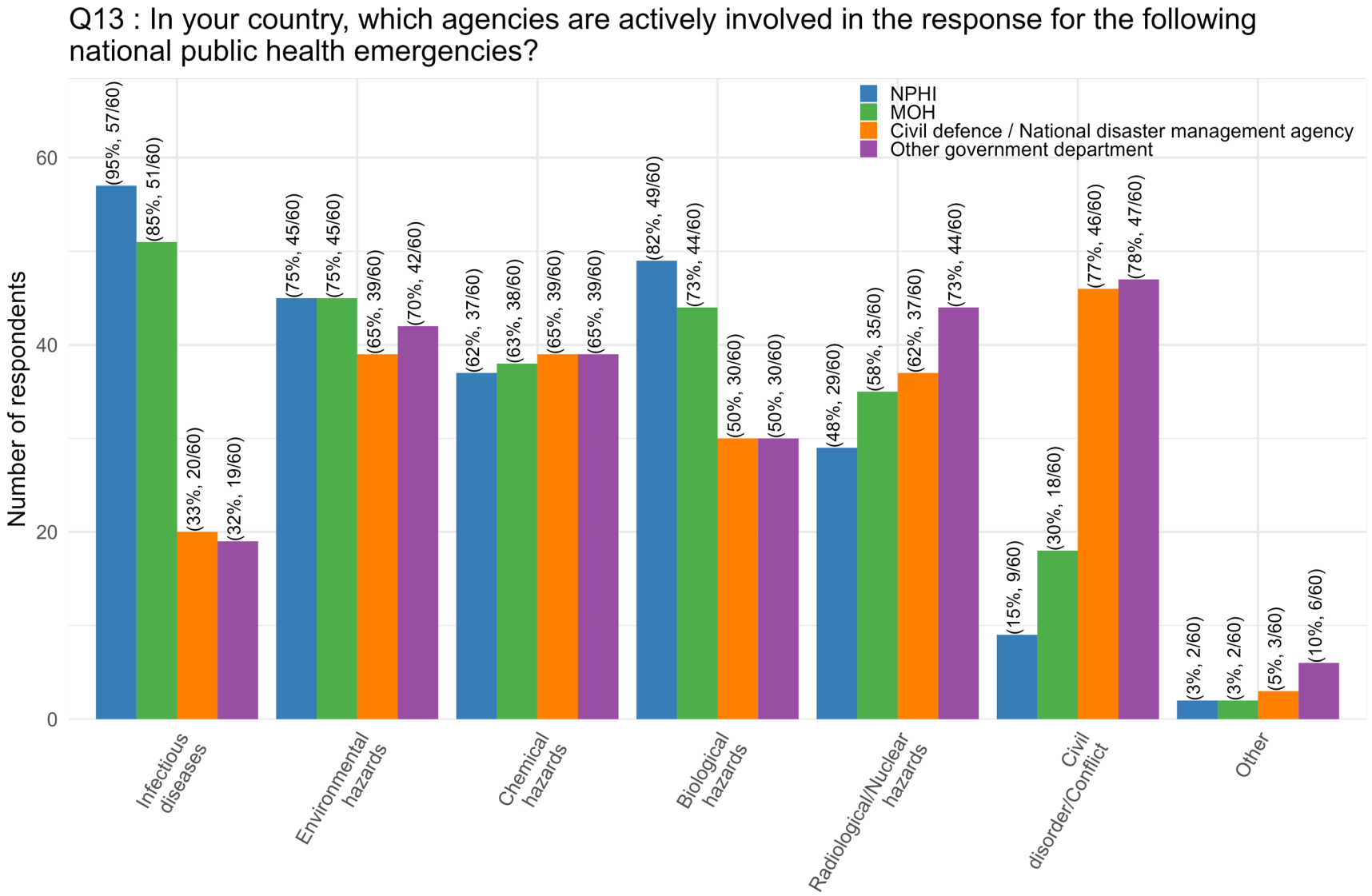


Table Q13A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Infectious diseases	NPHI	57	60	100%, (12/12)	85%, (11/13)	92%, (12/13)	100%, (22/22)
Infectious diseases	MOH	51	60	75%, (9/12)	92%, (12/13)	100%, (13/13)	77%, (17/22)
Infectious diseases	Civil defence / National disaster management agency	20	60	17%, (2/12)	23%, (3/13)	54%, (7/13)	36%, (8/22)
Infectious diseases	Other government department	19	60	25%, (3/12)	23%, (3/13)	31%, (4/13)	41%, (9/22)
Environmental hazards	NPHI	45	60	67%, (8/12)	69%, (9/13)	69%, (9/13)	86%, (19/22)
Environmental hazards	MOH	45	60	67%, (8/12)	62%, (8/13)	100%, (13/13)	73%, (16/22)
Environmental hazards	Civil defence / National disaster management agency	39	60	58%, (7/12)	77%, (10/13)	77%, (10/13)	55%, (12/22)
Environmental hazards	Other government department	42	60	67%, (8/12)	54%, (7/13)	77%, (10/13)	77%, (17/22)
Chemical hazards	NPHI	37	60	50%, (6/12)	62%, (8/13)	54%, (7/13)	73%, (16/22)
Chemical hazards	MOH	38	60	50%, (6/12)	46%, (6/13)	85%, (11/13)	68%, (15/22)
Chemical hazards	Civil defence / National disaster management agency	39	60	33%, (4/12)	85%, (11/13)	77%, (10/13)	64%, (14/22)
Chemical hazards	Other government department	39	60	58%, (7/12)	62%, (8/13)	69%, (9/13)	68%, (15/22)
Biological hazards	NPHI	49	60	75%, (9/12)	85%, (11/13)	69%, (9/13)	91%, (20/22)
Biological hazards	MOH	44	60	75%, (9/12)	62%, (8/13)	92%, (12/13)	68%, (15/22)
Biological hazards	Civil defence / National disaster management agency	30	60	8%, (1/12)	62%, (8/13)	69%, (9/13)	55%, (12/22)
Biological hazards	Other government department	30	60	33%, (4/12)	54%, (7/13)	46%, (6/13)	59%, (13/22)
Radiological/Nuclear hazards	NPHI	29	60	42%, (5/12)	38%, (5/13)	38%, (5/13)	64%, (14/22)
Radiological/Nuclear hazards	MOH	35	60	58%, (7/12)	31%, (4/13)	77%, (10/13)	64%, (14/22)

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Radiological/Nuclear hazards	Civil defence / National disaster management agency	37	60	8%, (1/12)	62%, (8/13)	85%, (11/13)	77%, (17/22)
Radiological/Nuclear hazards	Other government department	44	60	58%, (7/12)	69%, (9/13)	77%, (10/13)	82%, (18/22)
Civil disorder/Conflict	NPHI	9	60	17%, (2/12)	0%, (0/13)	23%, (3/13)	18%, (4/22)
Civil disorder/Conflict	MOH	18	60	25%, (3/12)	15%, (2/13)	31%, (4/13)	41%, (9/22)
Civil disorder/Conflict	Civil defence / National disaster management agency	46	60	58%, (7/12)	85%, (11/13)	69%, (9/13)	86%, (19/22)
Civil disorder/Conflict	Other government department	47	60	58%, (7/12)	69%, (9/13)	92%, (12/13)	86%, (19/22)
Other	NPHI	2	60	0%, (0/12)	0%, (0/13)	15%, (2/13)	0%, (0/22)
Other	MOH	2	60	0%, (0/12)	0%, (0/13)	15%, (2/13)	0%, (0/22)
Other	Civil defence / National disaster management agency	3	60	0%, (0/12)	0%, (0/13)	15%, (2/13)	5%, (1/22)
Other	Other government department	6	60	8%, (1/12)	0%, (0/13)	31%, (4/13)	5%, (1/22)

Table Q13B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Infectious diseases	NPHI	57	60	94%, (16/17)	100%, (8/8)	82%, (9/11)	100%, (18/18)	100%, (1/1)	100%, (5/5)
Infectious diseases	MOH	51	60	82%, (14/17)	100%, (8/8)	91%, (10/11)	83%, (15/18)	0%, (0/1)	80%, (4/5)
Infectious diseases	Civil defence / National disaster management agency	20	60	29%, (5/17)	75%, (6/8)	18%, (2/11)	39%, (7/18)	0%, (0/1)	0%, (0/5)
Infectious diseases	Other government department	19	60	35%, (6/17)	25%, (2/8)	27%, (3/11)	39%, (7/18)	0%, (0/1)	20%, (1/5)
Environmental hazards	NPHI	45	60	71%, (12/17)	75%, (6/8)	64%, (7/11)	94%, (17/18)	0%, (0/1)	60%, (3/5)
Environmental hazards	MOH	45	60	76%, (13/17)	100%, (8/8)	55%, (6/11)	78%, (14/18)	0%, (0/1)	80%, (4/5)
Environmental hazards	Civil defence / National disaster management agency	39	60	65%, (11/17)	88%, (7/8)	55%, (6/11)	67%, (12/18)	100%, (1/1)	40%, (2/5)
Environmental hazards	Other government department	42	60	71%, (12/17)	88%, (7/8)	36%, (4/11)	78%, (14/18)	0%, (0/1)	100%, (5/5)
Chemical hazards	NPHI	37	60	59%, (10/17)	50%, (4/8)	55%, (6/11)	83%, (15/18)	0%, (0/1)	40%, (2/5)
Chemical hazards	MOH	38	60	53%, (9/17)	100%, (8/8)	45%, (5/11)	72%, (13/18)	0%, (0/1)	60%, (3/5)
Chemical hazards	Civil defence / National disaster management agency	39	60	59%, (10/17)	88%, (7/8)	45%, (5/11)	78%, (14/18)	100%, (1/1)	40%, (2/5)
Chemical hazards	Other government department	39	60	65%, (11/17)	62%, (5/8)	55%, (6/11)	67%, (12/18)	0%, (0/1)	100%, (5/5)
Biological hazards	NPHI	49	60	82%, (14/17)	62%, (5/8)	73%, (8/11)	94%, (17/18)	0%, (0/1)	100%, (5/5)
Biological hazards	MOH	44	60	71%, (12/17)	100%, (8/8)	64%, (7/11)	72%, (13/18)	0%, (0/1)	80%, (4/5)
Biological hazards	Civil defence / National disaster management agency	30	60	29%, (5/17)	88%, (7/8)	36%, (4/11)	61%, (11/18)	100%, (1/1)	40%, (2/5)
Biological hazards	Other government department	30	60	41%, (7/17)	50%, (4/8)	45%, (5/11)	61%, (11/18)	0%, (0/1)	60%, (3/5)

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Radiological/Nuclear hazards	NPHI	29	60	35%, (6/17)	38%, (3/8)	45%, (5/11)	72%, (13/18)	0%, (0/1)	40%, (2/5)
Radiological/Nuclear hazards	MOH	35	60	41%, (7/17)	100%, (8/8)	36%, (4/11)	72%, (13/18)	0%, (0/1)	60%, (3/5)
Radiological/Nuclear hazards	Civil defence / National disaster management agency	37	60	35%, (6/17)	88%, (7/8)	27%, (3/11)	94%, (17/18)	100%, (1/1)	60%, (3/5)
Radiological/Nuclear hazards	Other government department	44	60	71%, (12/17)	62%, (5/8)	64%, (7/11)	83%, (15/18)	0%, (0/1)	100%, (5/5)
Civil disorder/Conflict	NPHI	9	60	12%, (2/17)	12%, (1/8)	0%, (0/11)	28%, (5/18)	0%, (0/1)	20%, (1/5)
Civil disorder/Conflict	MOH	18	60	12%, (2/17)	12%, (1/8)	27%, (3/11)	61%, (11/18)	0%, (0/1)	20%, (1/5)
Civil disorder/Conflict	Civil defence / National disaster management agency	46	60	76%, (13/17)	62%, (5/8)	64%, (7/11)	94%, (17/18)	100%, (1/1)	60%, (3/5)
Civil disorder/Conflict	Other government department	47	60	59%, (10/17)	88%, (7/8)	82%, (9/11)	89%, (16/18)	0%, (0/1)	100%, (5/5)
Other	NPHI	2	60	0%, (0/17)	12%, (1/8)	0%, (0/11)	6%, (1/18)	0%, (0/1)	0%, (0/5)
Other	MOH	2	60	0%, (0/17)	12%, (1/8)	0%, (0/11)	6%, (1/18)	0%, (0/1)	0%, (0/5)
Other	Civil defence / National disaster management agency	3	60	0%, (0/17)	12%, (1/8)	0%, (0/11)	11%, (2/18)	0%, (0/1)	0%, (0/5)
Other	Other government department	6	60	6%, (1/17)	38%, (3/8)	9%, (1/11)	6%, (1/18)	0%, (0/1)	0%, (0/5)

Table Q13C: By NPHI Size

Options	Level	n	total	<=500	>500	Unknown
Infectious diseases	NPHI	57	60	94%, (31/33)	96%, (25/26)	100%, (1/1)
Infectious diseases	MOH	51	60	82%, (27/33)	88%, (23/26)	100%, (1/1)
Infectious diseases	Civil defence / National disaster management agency	20	60	33%, (11/33)	35%, (9/26)	0%, (0/1)
Infectious diseases	Other government department	19	60	33%, (11/33)	31%, (8/26)	0%, (0/1)
Environmental hazards	NPHI	45	60	73%, (24/33)	77%, (20/26)	100%, (1/1)
Environmental hazards	MOH	45	60	70%, (23/33)	81%, (21/26)	100%, (1/1)
Environmental hazards	Civil defence / National disaster management agency	39	60	70%, (23/33)	62%, (16/26)	0%, (0/1)
Environmental hazards	Other government department	42	60	61%, (20/33)	81%, (21/26)	100%, (1/1)
Chemical hazards	NPHI	37	60	67%, (22/33)	54%, (14/26)	100%, (1/1)
Chemical hazards	MOH	38	60	58%, (19/33)	69%, (18/26)	100%, (1/1)
Chemical hazards	Civil defence / National disaster management agency	39	60	64%, (21/33)	65%, (17/26)	100%, (1/1)
Chemical hazards	Other government department	39	60	61%, (20/33)	69%, (18/26)	100%, (1/1)
Biological hazards	NPHI	49	60	79%, (26/33)	85%, (22/26)	100%, (1/1)
Biological hazards	MOH	44	60	70%, (23/33)	81%, (21/26)	0%, (0/1)
Biological hazards	Civil defence / National disaster management agency	30	60	48%, (16/33)	50%, (13/26)	100%, (1/1)
Biological hazards	Other government department	30	60	48%, (16/33)	50%, (13/26)	100%, (1/1)
Radiological/Nuclear hazards	NPHI	29	60	52%, (17/33)	42%, (11/26)	100%, (1/1)

Options	Level	n	total	<=500	>500	Unknown
Radiological/Nuclear hazards	MOH	35	60	52%, (17/33)	69%, (18/26)	0%, (0/1)
Radiological/Nuclear hazards	Civil defence / National disaster management agency	37	60	58%, (19/33)	65%, (17/26)	100%, (1/1)
Radiological/Nuclear hazards	Other government department	44	60	70%, (23/33)	77%, (20/26)	100%, (1/1)
Civil disorder/Conflict	NPHI	9	60	18%, (6/33)	12%, (3/26)	0%, (0/1)
Civil disorder/Conflict	MOH	18	60	30%, (10/33)	31%, (8/26)	0%, (0/1)
Civil disorder/Conflict	Civil defence / National disaster management agency	46	60	76%, (25/33)	81%, (21/26)	0%, (0/1)
Civil disorder/Conflict	Other government department	47	60	73%, (24/33)	85%, (22/26)	100%, (1/1)
Other	NPHI	2	60	3%, (1/33)	4%, (1/26)	0%, (0/1)
Other	MOH	2	60	3%, (1/33)	4%, (1/26)	0%, (0/1)
Other	Civil defence / National disaster management agency	3	60	3%, (1/33)	8%, (2/26)	0%, (0/1)
Other	Other government department	6	60	12%, (4/33)	8%, (2/26)	0%, (0/1)

Question 14 In a public health emergency, is your NPHI also involved in the following issues?

Figure Q14

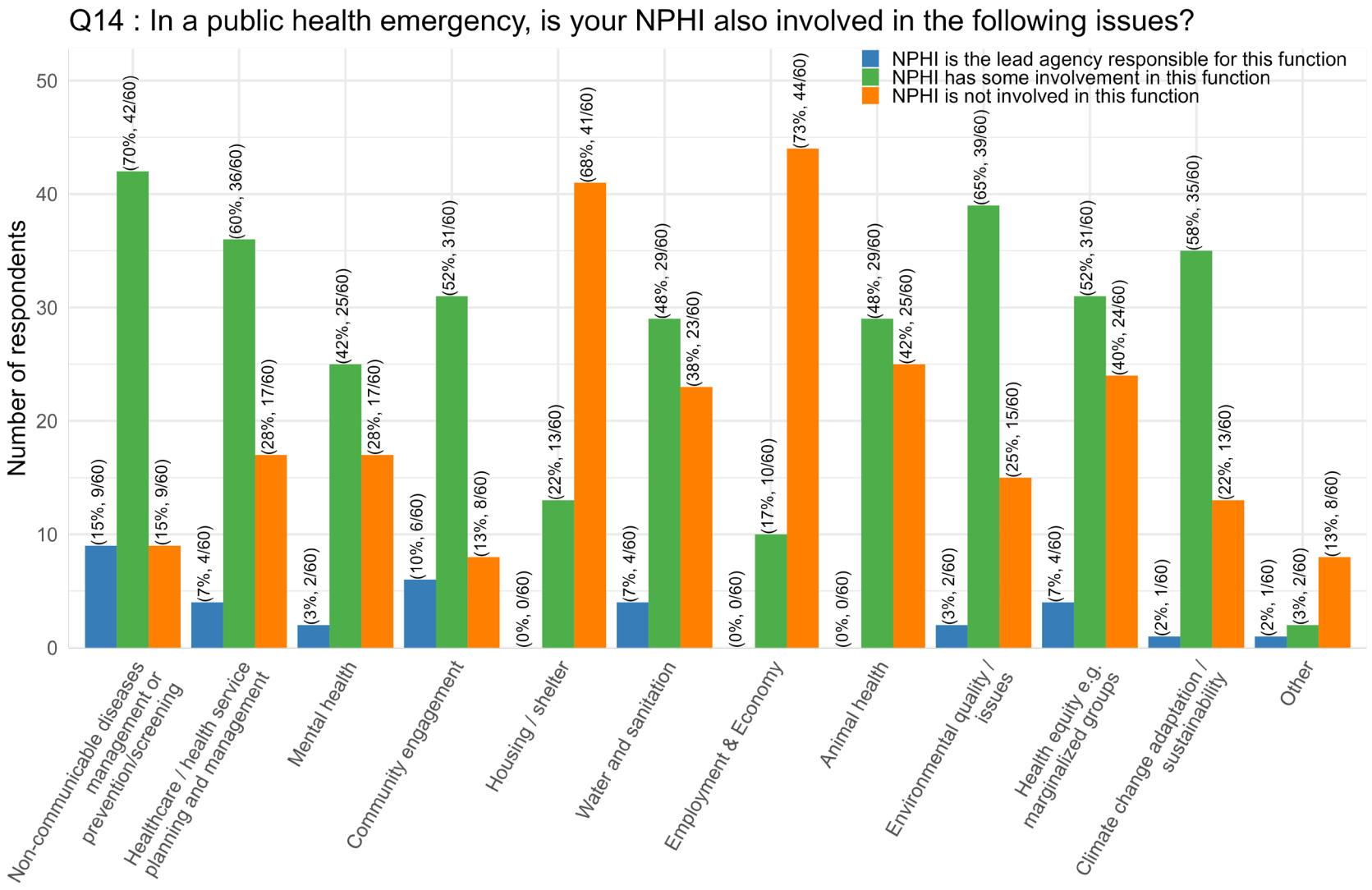


Table Q14A: Overall

	NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	Total (overall)	%			
					NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	*Did not answer*
Non-communicable diseases management or prevention/screening	9	42	9	60	15%	70%	15%	*0%*
Healthcare / health service planning and management	4	36	17	60	7%	60%	28%	*5%*
Mental health	2	25	17	60	3%	42%	28%	*27%*
Community engagement	6	31	8	60	10%	52%	13%	*25%*
Housing / shelter	0	13	41	60	0%	22%	68%	*10%*
Water and sanitation	4	29	23	60	7%	48%	38%	*7%*
Employment & Economy	0	10	44	60	0%	17%	73%	*10%*
Animal health	0	29	25	60	0%	48%	42%	*10%*
Environmental quality / issues	2	39	15	60	3%	65%	25%	*7%*
Health equity e.g. marginalized groups	4	31	24	60	7%	52%	40%	*2%*
Climate change adaptation / sustainability	1	35	13	60	2%	58%	22%	*18%*
Other	1	2	8	60	2%	3%	13%	*82%*

Table Q14B: Low Income Countries

	NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	Total (overall)	%			
					NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	*Did not answer*
Non-communicable diseases management or prevention/screening	1	9	2	12	8%	75%	17%	*0%*
Healthcare / health service planning and management	1	9	1	12	8%	75%	8%	*8%*
Mental health	2	3	1	12	17%	25%	8%	*50%*
Community engagement	3	2	2	12	25%	17%	17%	*42%*
Housing / shelter	0	1	8	12	0%	8%	67%	*25%*
Water and sanitation	2	6	3	12	17%	50%	25%	*8%*
Employment & Economy	0	0	10	12	0%	0%	83%	*17%*
Animal health	0	8	2	12	0%	67%	17%	*17%*
Environmental quality / issues	1	5	5	12	8%	42%	42%	*8%*
Health equity e.g. marginalized groups	0	6	5	12	0%	50%	42%	*8%*
Climate change adaptation / sustainability	1	3	4	12	8%	25%	33%	*33%*
Other	0	0	1	12	0%	0%	8%	*92%*

Table Q14C: High Income Countries

	NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	Total (overall)	%			
					NPHI is the lead agency responsible for this function	NPHI has some involvement in this function	NPHI is not involved in this function	*Did not answer*
Non-communicable diseases management or prevention/screening	1	9	2	12	8%	75%	17%	*0%*
Healthcare / health service planning and management	1	9	1	12	8%	75%	8%	*8%*
Mental health	2	3	1	12	17%	25%	8%	*50%*
Community engagement	3	2	2	12	25%	17%	17%	*42%*
Housing / shelter	0	1	8	12	0%	8%	67%	*25%*
Water and sanitation	2	6	3	12	17%	50%	25%	*8%*
Employment & Economy	0	0	10	12	0%	0%	83%	*17%*
Animal health	0	8	2	12	0%	67%	17%	*17%*
Environmental quality / issues	1	5	5	12	8%	42%	42%	*8%*
Health equity e.g. marginalized groups	0	6	5	12	0%	50%	42%	*8%*
Climate change adaptation / sustainability	1	3	4	12	8%	25%	33%	*33%*
Other	0	0	1	12	0%	0%	8%	*92%*

Question 15 Does your NPHI have a formal framework or plan for emergency preparedness and response in a health emergency?

Figure Q15

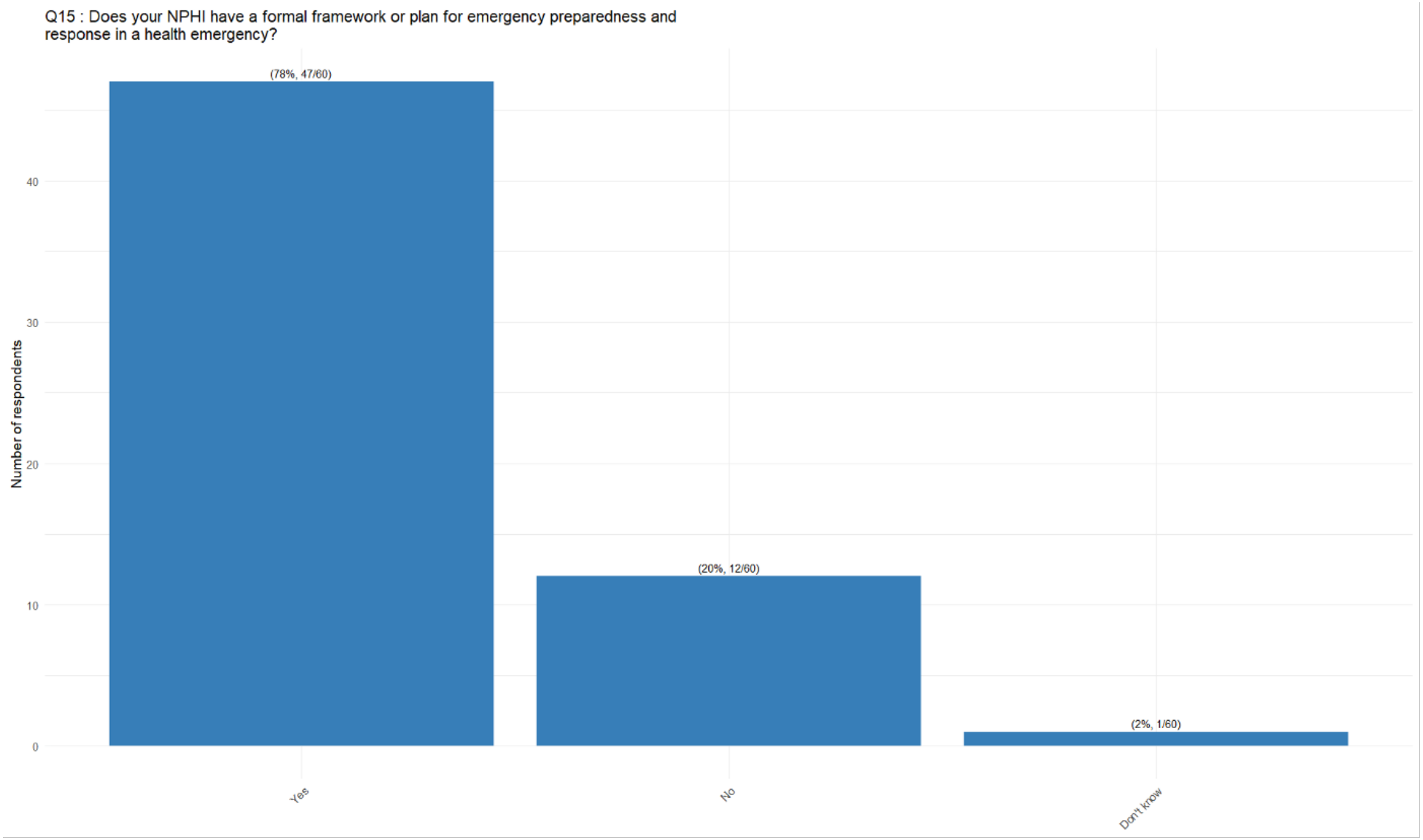


Table Q15A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Yes	47	60	75%, (9/12)	77%, (10/13)	69%, (9/13)	86%, (19/22)
No	12	60	25%, (3/12)	23%, (3/13)	31%, (4/13)	9%, (2/22)
Don't know	1	60	0%, (0/12)	0%, (0/13)	0%, (0/13)	5%, (1/22)

Table Q15B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Yes	47	60	71%, (12/17)	62%, (5/8)	82%, (9/11)	83%, (15/18)	100%, (1/1)	100%, (5/5)
No	12	60	29%, (5/17)	38%, (3/8)	18%, (2/11)	11%, (2/18)	0%, (0/1)	0%, (0/5)
Don't know	1	60	0%, (0/17)	0%, (0/8)	0%, (0/11)	6%, (1/18)	0%, (0/1)	0%, (0/5)

Table Q15C: By NPHI Size

Options	n	total	<=500	>500	Unknown
Yes	47	60	70%, (23/33)	88%, (23/26)	100%, (1/1)
No	12	60	27%, (9/33)	12%, (3/26)	0%, (0/1)
Don't know	1	60	3%, (1/33)	0%, (0/26)	0%, (0/1)

Question 16 If yes, has this plan been updated since the COVID-19 Pandemic?

Figure Q16

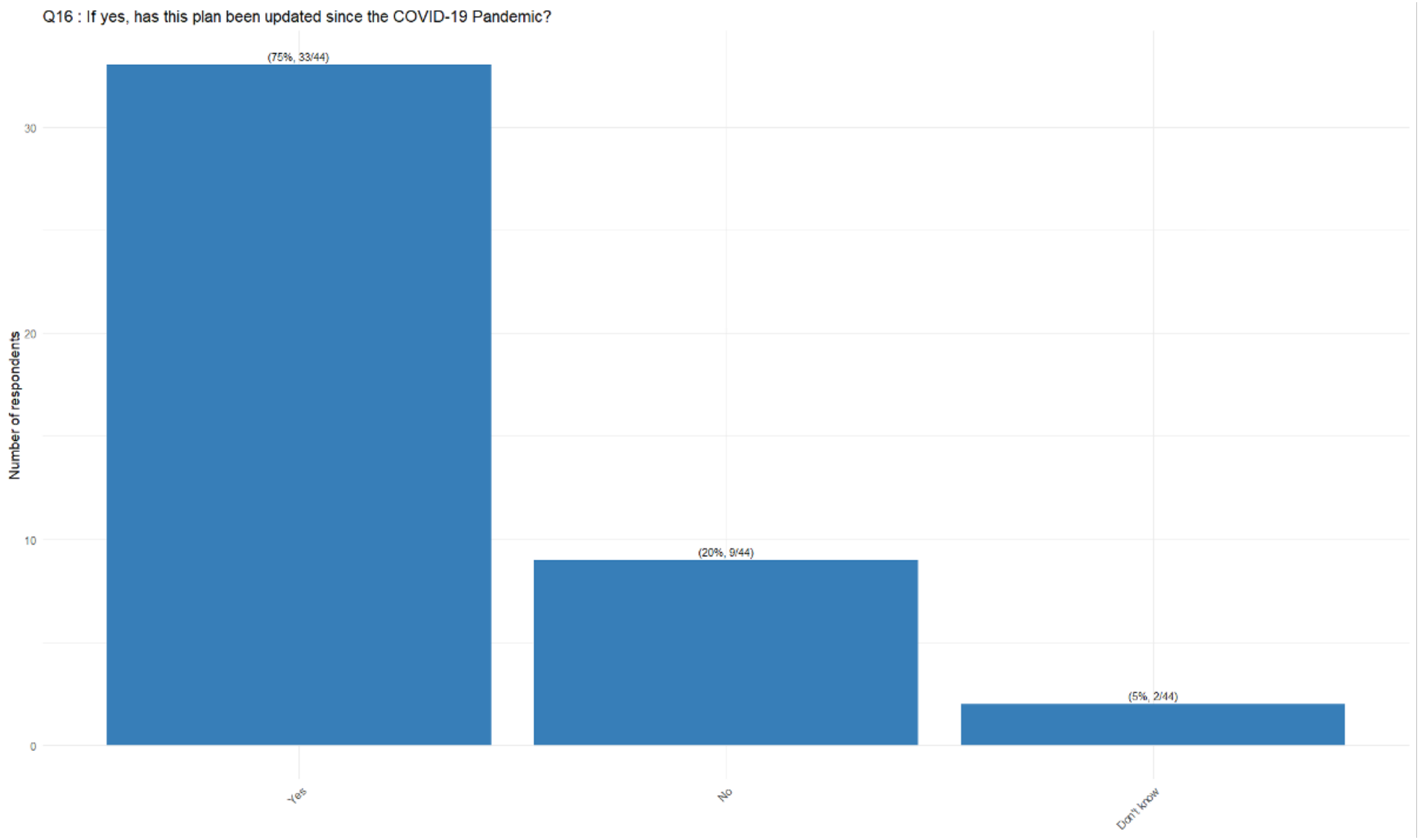


Table Q16A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Yes	33	44	75%, (6/8)	70%, (7/10)	43%, (3/7)	89%, (17/19)
No	9	44	25%, (2/8)	30%, (3/10)	57%, (4/7)	0%, (0/19)
Don't know	2	44	0%, (0/8)	0%, (0/10)	0%, (0/7)	11%, (2/19)

Table Q16B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Yes	33	44	55%, (6/11)	100%, (3/3)	89%, (8/9)	73%, (11/15)	100%, (1/1)	80%, (4/5)
No	9	44	45%, (5/11)	0%, (0/3)	11%, (1/9)	13%, (2/15)	0%, (0/1)	20%, (1/5)
Don't know	2	44	0%, (0/11)	0%, (0/3)	0%, (0/9)	13%, (2/15)	0%, (0/1)	0%, (0/5)

Table Q16C: By NPHI Size

Options	n	total	<=500	>500	Unknown
Yes	33	44	65%, (15/23)	90%, (18/20)	0%, (0/1)
No	9	44	35%, (8/23)	5%, (1/20)	0%, (0/1)
Don't know	2	44	0%, (0/23)	5%, (1/20)	100%, (1/1)

Question 17 If yes, was this plan produced in collaboration with any other government departments, agencies, or organisations?

Figure Q17

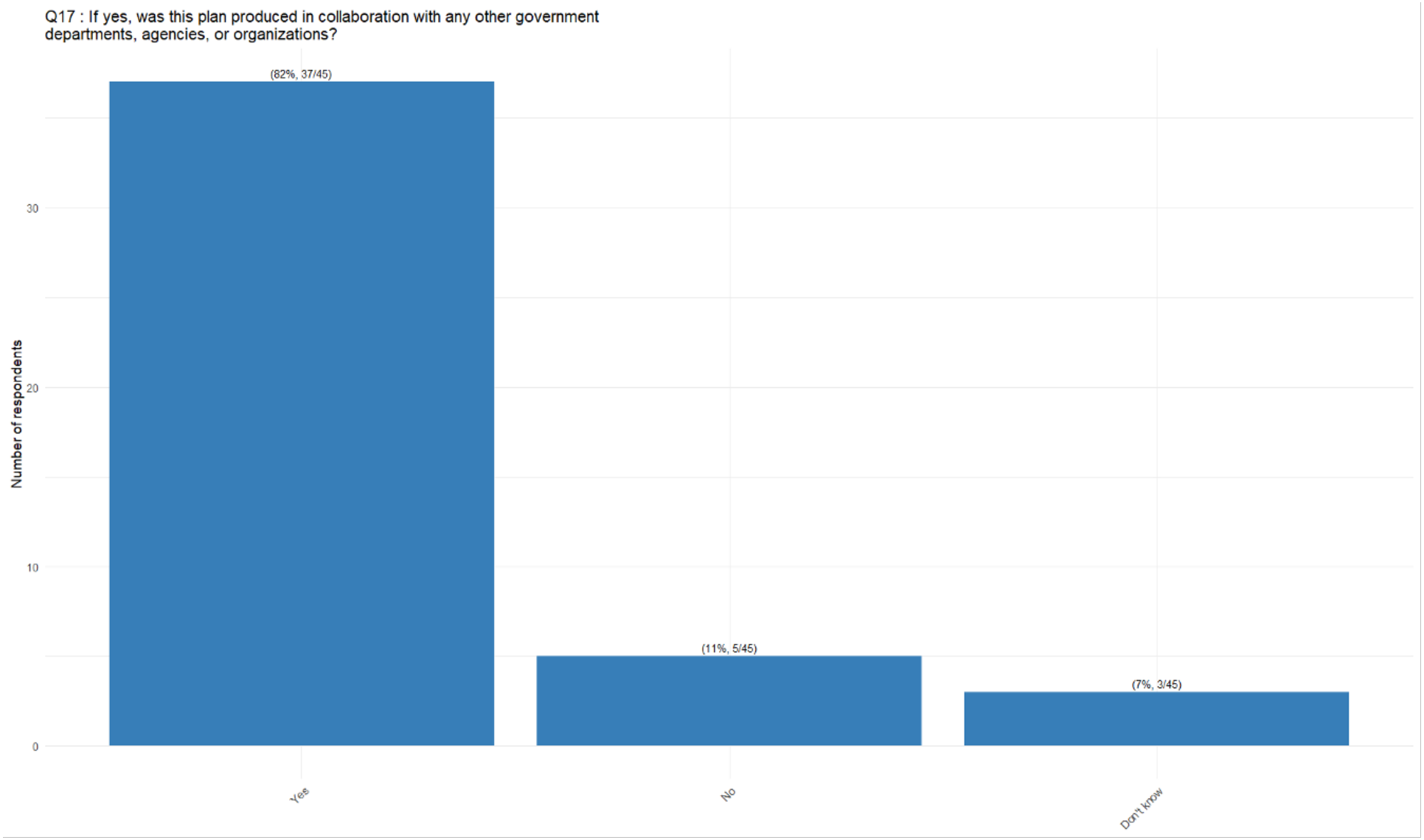


Table Q17A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Yes	37	45	86%, (6/7)	90%, (9/10)	78%, (7/9)	79%, (15/19)
No	5	45	0%, (0/7)	10%, (1/10)	22%, (2/9)	11%, (2/19)
Don't know	3	45	14%, (1/7)	0%, (0/10)	0%, (0/9)	11%, (2/19)

Table Q17B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Yes	37	45	90%, (9/10)	80%, (4/5)	78%, (7/9)	73%, (11/15)	100%, (1/1)	100%, (5/5)
No	5	45	10%, (1/10)	0%, (0/5)	11%, (1/9)	20%, (3/15)	0%, (0/1)	0%, (0/5)
Don't know	3	45	0%, (0/10)	20%, (1/5)	11%, (1/9)	7%, (1/15)	0%, (0/1)	0%, (0/5)

Table Q17C: By NPHI Size

Options	n	total	<=500	>500	Unknown
Yes	37	45	86%, (19/22)	82%, (18/22)	0%, (0/1)
No	5	45	9%, (2/22)	14%, (3/22)	0%, (0/1)
Don't know	3	45	5%, (1/22)	5%, (1/22)	100%, (1/1)

Question 18 Does your NPHI contribute to a regional or international framework or plan for emergency preparedness and response in a health emergency?

Figure Q18

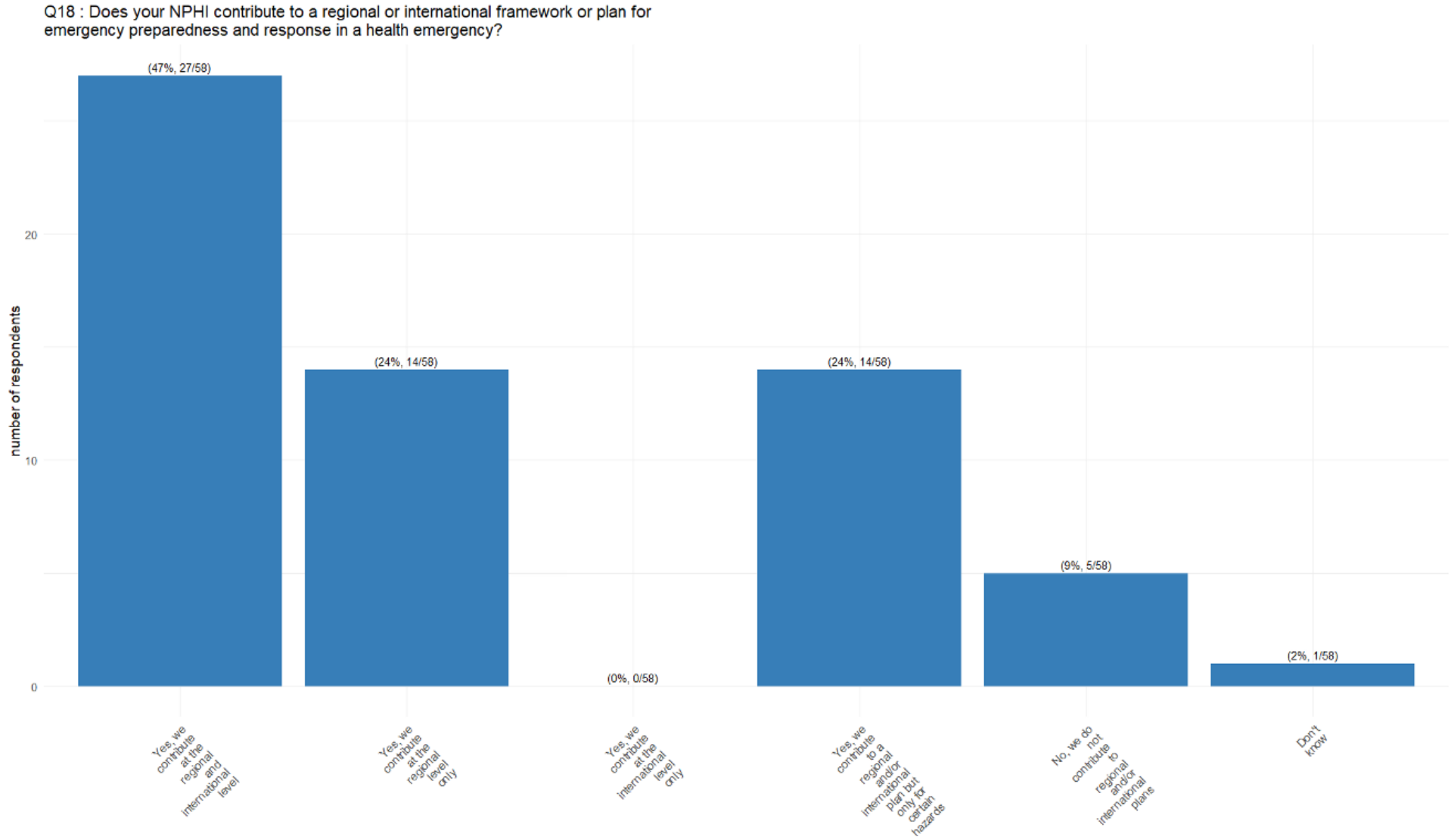


Table Q18A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Yes, we contribute at the regional and international level	27	58	45%, (5/11)	33%, (4/12)	54%, (7/13)	50%, (11/22)
Yes, we contribute at the regional level only	14	58	27%, (3/11)	17%, (2/12)	23%, (3/13)	27%, (6/22)
Yes, we contribute at the international level only	0	58	0	0	0	0
Yes, we contribute to a regional and/or international plan but only for certain hazards	14	58	18%, (2/11)	25%, (3/12)	31%, (4/13)	23%, (5/22)
No, we do not contribute to regional and/or international plans	5	58	9%, (1/11)	25%, (3/12)	8%, (1/13)	0%, (0/22)
Don't know	1	58	0%, (0/11)	0%, (0/12)	0%, (0/13)	5%, (1/22)

Table Q18B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Yes, we contribute at the regional and international level	27	58	44%, (7/16)	50%, (4/8)	20%, (2/10)	44%, (8/18)	100%, (1/1)	100%, (5/5)
Yes, we contribute at the regional level only	14	58	25%, (4/16)	25%, (2/8)	40%, (4/10)	22%, (4/18)	0%, (0/1)	0%, (0/5)
Yes, we contribute at the international level only	0	58	0	0	0	0	0	0
Yes, we contribute to a regional and/or international plan but only for certain hazards	14	58	19%, (3/16)	50%, (4/8)	20%, (2/10)	28%, (5/18)	0%, (0/1)	0%, (0/5)
No, we do not contribute to regional and/or international plans	5	58	12%, (2/16)	0%, (0/8)	30%, (3/10)	0%, (0/18)	0%, (0/1)	0%, (0/5)
Don't know	1	58	0%, (0/16)	0%, (0/8)	0%, (0/10)	6%, (1/18)	0%, (0/1)	0%, (0/5)

Table Q18C: By NPHI Size

Options	n	total	<=500	>500	Unknown
Yes, we contribute at the regional and international level	27	58	41%, (13/32)	52%, (13/25)	100%, (1/1)
Yes, we contribute at the regional level only	14	58	22%, (7/32)	28%, (7/25)	0%, (0/1)
Yes, we contribute at the international level only	0	58	0	0	
Yes, we contribute to a regional and/or international plan but only for certain hazards	14	58	25%, (8/32)	24%, (6/25)	0%, (0/1)
No, we do not contribute to regional and/or international plans	5	58	12%, (4/32)	4%, (1/25)	0%, (0/1)
Don't know	1	58	3%, (1/32)	0%, (0/25)	0%, (0/1)

Question 19 Does your NPHI have collaboration agreements with international organizations or institutions from other countries for public health emergency response, e.g., legal agreements, Memoranda of Understanding, data sharing agreements etc.?

Figure Q19

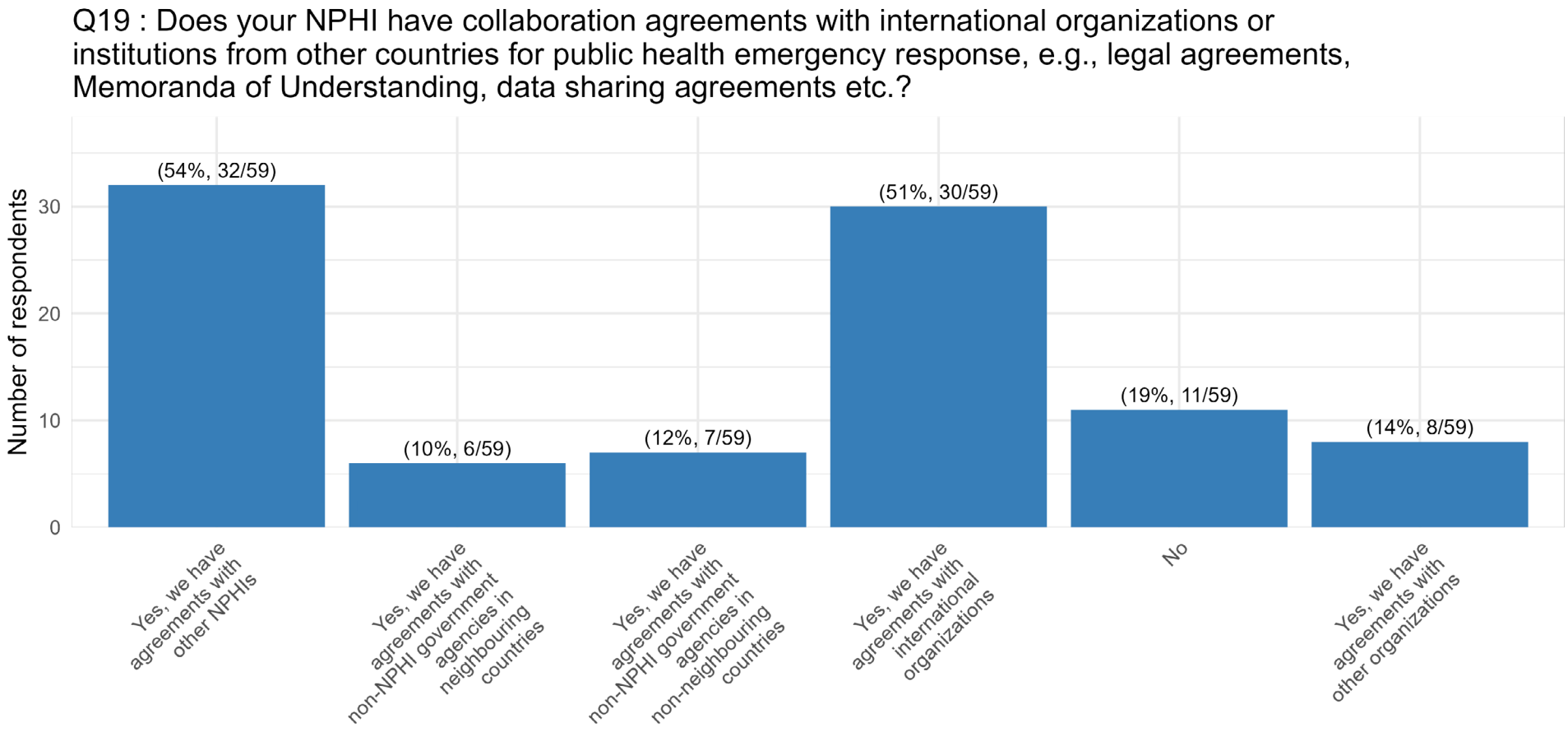


Table Q19A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Yes, we have agreements with other NPHIs	32	59	55%, (6/11)	54%, (7/13)	54%, (7/13)	55%, (12/22)
Yes, we have agreements with non-NPHI government agencies in neighbouring countries	6	59	0%, (0/11)	0%, (0/13)	31%, (4/13)	9%, (2/22)
Yes, we have agreements with non-NPHI government agencies in non-neighbouring countries	7	59	0%, (0/11)	0%, (0/13)	31%, (4/13)	14%, (3/22)
Yes, we have agreements with international organizations	30	59	55%, (6/11)	46%, (6/13)	62%, (8/13)	45%, (10/22)
No	11	59	18%, (2/11)	8%, (1/13)	23%, (3/13)	23%, (5/22)
Yes, we have agreements with other organizations	8	59	0%, (0/11)	23%, (3/13)	31%, (4/13)	5%, (1/22)

Table Q19B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Yes, we have agreements with other NPHIs	32	59	69%, (11/16)	62%, (5/8)	36%, (4/11)	44%, (8/18)	0%, (0/1)	80%, (4/5)
Yes, we have agreements with non-NPHI government agencies in neighbouring countries	6	59	6%, (1/16)	38%, (3/8)	0%, (0/11)	11%, (2/18)	0%, (0/1)	0%, (0/5)
Yes, we have agreements with non-NPHI government agencies in non-neighbouring countries	7	59	6%, (1/16)	38%, (3/8)	0%, (0/11)	17%, (3/18)	0%, (0/1)	0%, (0/5)
Yes, we have agreements with international organizations	30	59	44%, (7/16)	75%, (6/8)	45%, (5/11)	61%, (11/18)	100%, (1/1)	0%, (0/5)
No	11	59	12%, (2/16)	25%, (2/8)	45%, (5/11)	11%, (2/18)	0%, (0/1)	0%, (0/5)
Yes, we have agreements with other organizations	8	59	6%, (1/16)	25%, (2/8)	27%, (3/11)	6%, (1/18)	0%, (0/1)	20%, (1/5)

Table Q19C: By NPHI Size

Options	n	total	<=500	>500	Unknown
Yes, we have agreements with other NPHIs	32	59	52%, (17/33)	56%, (14/25)	100%, (1/1)
Yes, we have agreements with non-NPHI government agencies in neighbouring countries	6	59	6%, (2/33)	16%, (4/25)	0%, (0/1)
Yes, we have agreements with non-NPHI government agencies in non-neighbouring countries	7	59	9%, (3/33)	16%, (4/25)	0%, (0/1)
Yes, we have agreements with international organizations	30	59	42%, (14/33)	64%, (16/25)	0%, (0/1)
No	11	59	27%, (9/33)	8%, (2/25)	0%, (0/1)
Yes, we have agreements with other organizations	8	59	12%, (4/33)	16%, (4/25)	0%, (0/1)

8.3.3 Public Health Emergency Workforce

Question 20 If yes, what do these agreements include?

Figure Q20

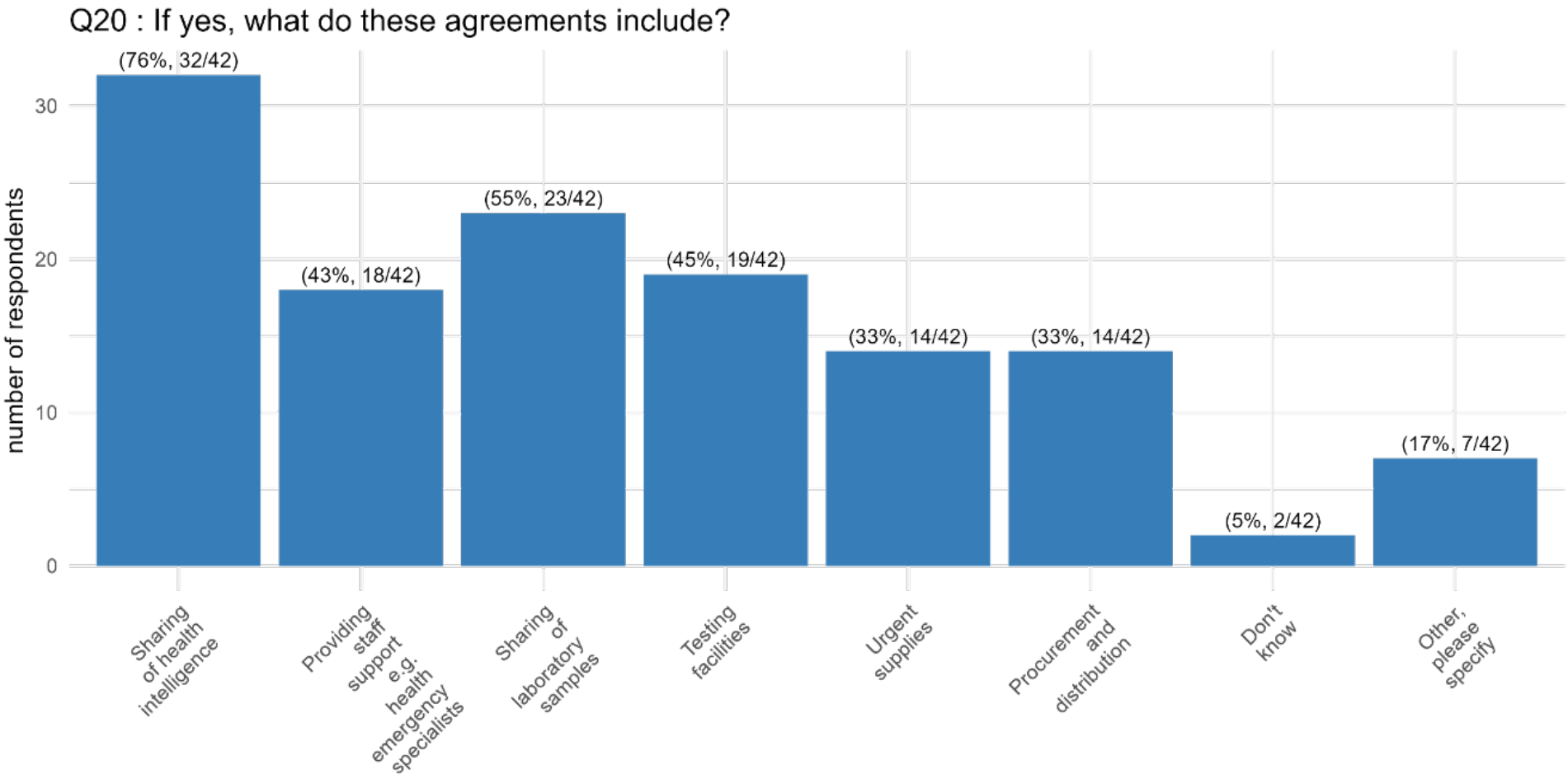


Table Q20A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Sharing of health intelligence	32	42	78%, (7/9)	58%, (7/12)	86%, (6/7)	86%, (12/14)
Providing staff support e.g., health emergency specialists	18	42	33%, (3/9)	50%, (6/12)	57%, (4/7)	36%, (5/14)
Sharing of laboratory samples	23	42	44%, (4/9)	67%, (8/12)	71%, (5/7)	43%, (6/14)
Testing facilities	19	42	44%, (4/9)	50%, (6/12)	57%, (4/7)	36%, (5/14)
Urgent supplies	14	42	44%, (4/9)	33%, (4/12)	43%, (3/7)	21%, (3/14)
Procurement and distribution	14	42	33%, (3/9)	42%, (5/12)	14%, (1/7)	36%, (5/14)
Don't know	2	42	0%, (0/9)	8%, (1/12)	0%, (0/7)	7%, (1/14)
Other, please specify	7	42	0%, (0/9)	17%, (2/12)	29%, (2/7)	21%, (3/14)

Table Q20B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Sharing of health intelligence	32	42	69%, (9/13)	80%, (4/5)	33%, (2/6)	92%, (12/13)	100%, (1/1)	100%, (4/4)
Providing staff support e.g., health emergency specialists	18	42	46%, (6/13)	60%, (3/5)	17%, (1/6)	46%, (6/13)	0%, (0/1)	50%, (2/4)
Sharing of laboratory samples	23	42	38%, (5/13)	60%, (3/5)	67%, (4/6)	62%, (8/13)	100%, (1/1)	50%, (2/4)
Testing facilities	19	42	46%, (6/13)	40%, (2/5)	17%, (1/6)	54%, (7/13)	100%, (1/1)	50%, (2/4)
Urgent supplies	14	42	31%, (4/13)	40%, (2/5)	33%, (2/6)	38%, (5/13)	0%, (0/1)	25%, (1/4)
Procurement and distribution	14	42	23%, (3/13)	20%, (1/5)	50%, (3/6)	46%, (6/13)	0%, (0/1)	25%, (1/4)
Don't know	2	42	0%, (0/13)	0%, (0/5)	17%, (1/6)	8%, (1/13)	0%, (0/1)	0%, (0/4)
Other, please specify	7	42	15%, (2/13)	60%, (3/5)	17%, (1/6)	0%, (0/13)	0%, (0/1)	25%, (1/4)

Table Q20C: By NPHI Size

Sharing of health intelligence	32	42	74%, (17/23)	83%, (15/18)	0%, (0/1)
Providing staff support e.g., health emergency specialists	18	42	48%, (11/23)	39%, (7/18)	0%, (0/1)
Sharing of laboratory samples	23	42	61%, (14/23)	50%, (9/18)	0%, (0/1)
Testing facilities	19	42	52%, (12/23)	39%, (7/18)	0%, (0/1)
Urgent supplies	14	42	43%, (10/23)	22%, (4/18)	0%, (0/1)
Procurement and distribution	14	42	43%, (10/23)	22%, (4/18)	0%, (0/1)
Don't know	2	42	4%, (1/23)	0%, (0/18)	100%, (1/1)
Other, please specify	7	42	13%, (3/23)	22%, (4/18)	0%, (0/1)

Question 21 Is there a national public health workforce startegy or development plan with specific roles and responsabilities for national public health emergencies?

Figure Q21

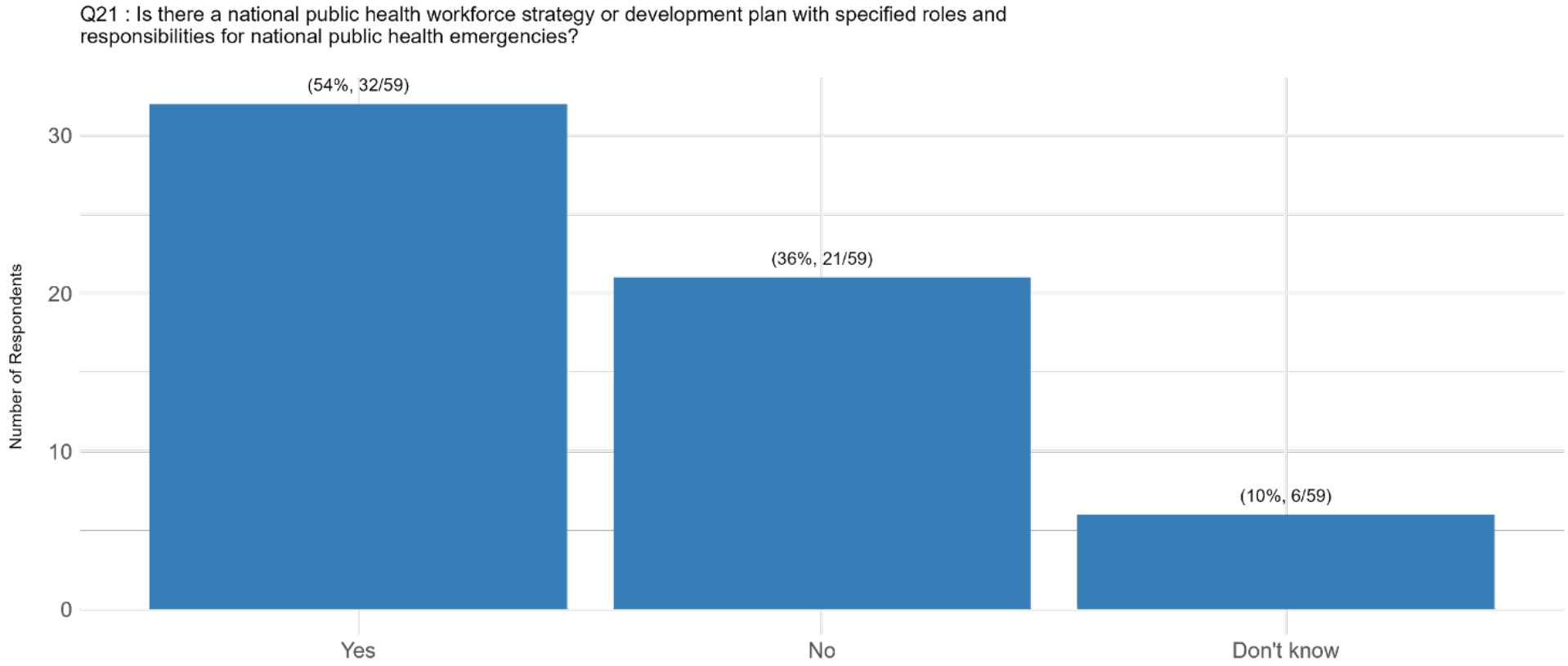


Table Q21A: By Income Group

	n	total	Low income	Lower middle income	Upper middle income	High income
Yes	32	59	(5/11) 45.45%	(7/13) 53.85%	(8/13) 61.54%	(12/22) 54.55%
No	21	59	(6/11) 54.55%	(4/13) 30.77%	(4/13) 30.77%	(7/22) 31.82%
Don't know	6	59	(0/11) 0%	(2/13) 15.38%	(1/13) 7.69%	(3/22) 13.64%

Table Q21B: By WHO Regions

	n	total	Africa	Americas	Eastern Mediterranean	Europe	South-East Asia	Western Pacific
Yes	32	59	(7/16) 43.75%	(5/8) 62.5%	(5/11) 45.45%	(9/18) 50%	(1/1) 100%	(5/5) 100%
No	21	59	(9/16) 56.25%	(3/8) 37.5%	(4/11) 36.36%	(5/18) 27.78%	(0/1) 0%	(0/5) 0%
Don't know	6	59	(0/16) 0%	(0/8) 0%	(2/11) 18.18%	(4/18) 22.22%	(0/1) 0%	(0/5) 0%

Table Q21C: By NPHI Size

Options	n	total	<=500	>500	Unknown
Yes	32	59	(13/33) 39.39%	(19/25) 76%	(0/1) 0%
No	21	59	(16/33) 48.48%	(4/25) 16%	(1/1) 100%
Don't know	6	59	(4/33) 12.12%	(2/25) 8%	(0/1) 0%

Question 22 If yes, when was this plan developed or last updated?

Figure Q22

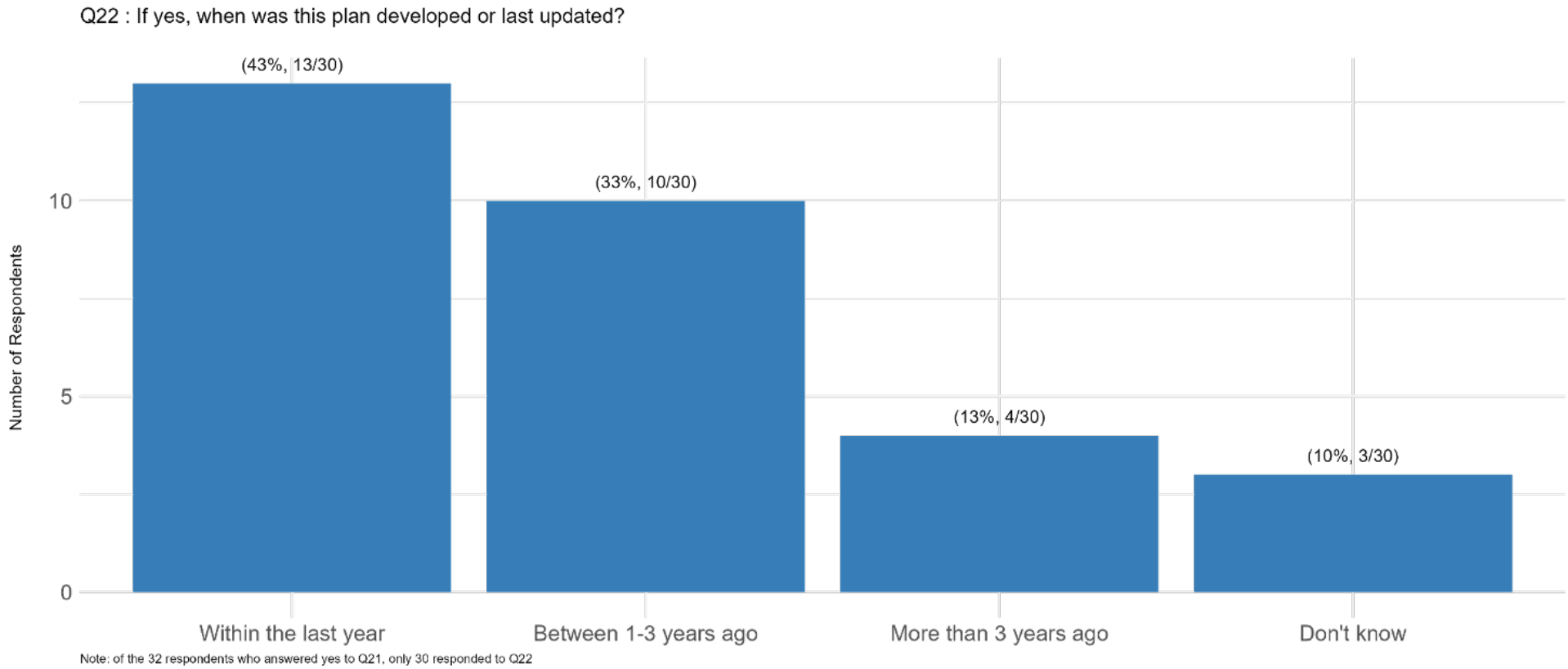


Table Q22A: By Income Group

	n	total	Low income	Lower middle income	Upper middle income	High income
Within the last year	13	30	(3/4) 75%	(3/7) 42.86%	(3/8) 37.5%	(4/11) 36.36%
Between 1-3 years ago	10	30	(0/4) 0%	(3/7) 42.86%	(4/8) 50%	(3/11) 27.27%
More than 3 years ago	4	30	(1/4) 25%	(1/7) 14.29%	(0/8) 0%	(2/11) 18.18%
Don't know	3	30	(0/4) 0%	(0/7) 0%	(1/8) 12.5%	(2/11) 18.18%

Table Q22B: By WHO Regions

Options	n	total	Africa	Americas	Eastern Mediterranean	Europe	South-East Asia	Western Pacific
Within the last year	13	30	(4/6) 66.67%	(2/5) 40%	(2/5) 40%	(3/9) 33.33%	(1/1) 100%	(1/4) 25%
Between 1-3 years ago	10	30	(1/6) 16.67%	(2/5) 40%	(2/5) 40%	(3/9) 33.33%	(0/1) 0%	(2/4) 50%
More than 3 years ago	4	30	(1/6) 16.67%	(0/5) 0%	(1/5) 20%	(1/9) 11.11%	(0/1) 0%	(1/4) 25%
Don't know	3	30	(0/6) 0%	(1/5) 20%	(0/5) 0%	(2/9) 22.22%	(0/1) 0%	(0/4) 0%

Table Q22C: By NPHI Size

Options	n	total	<500	>500
Within the last year	13	30	(6/12) 50%	(7/18) 38.89%
Between 1-3 years ago	10	30	(3/12) 25%	(7/18) 38.89%
More than 3 years ago	4	30	(1/12) 8.33%	(3/18) 16.67%
Don't know	3	30	(2/12) 16.67%	(1/18) 5.56%

Question 23 Who is responsible for public health workforce planning for health emergencies in your country?

Figure Q23

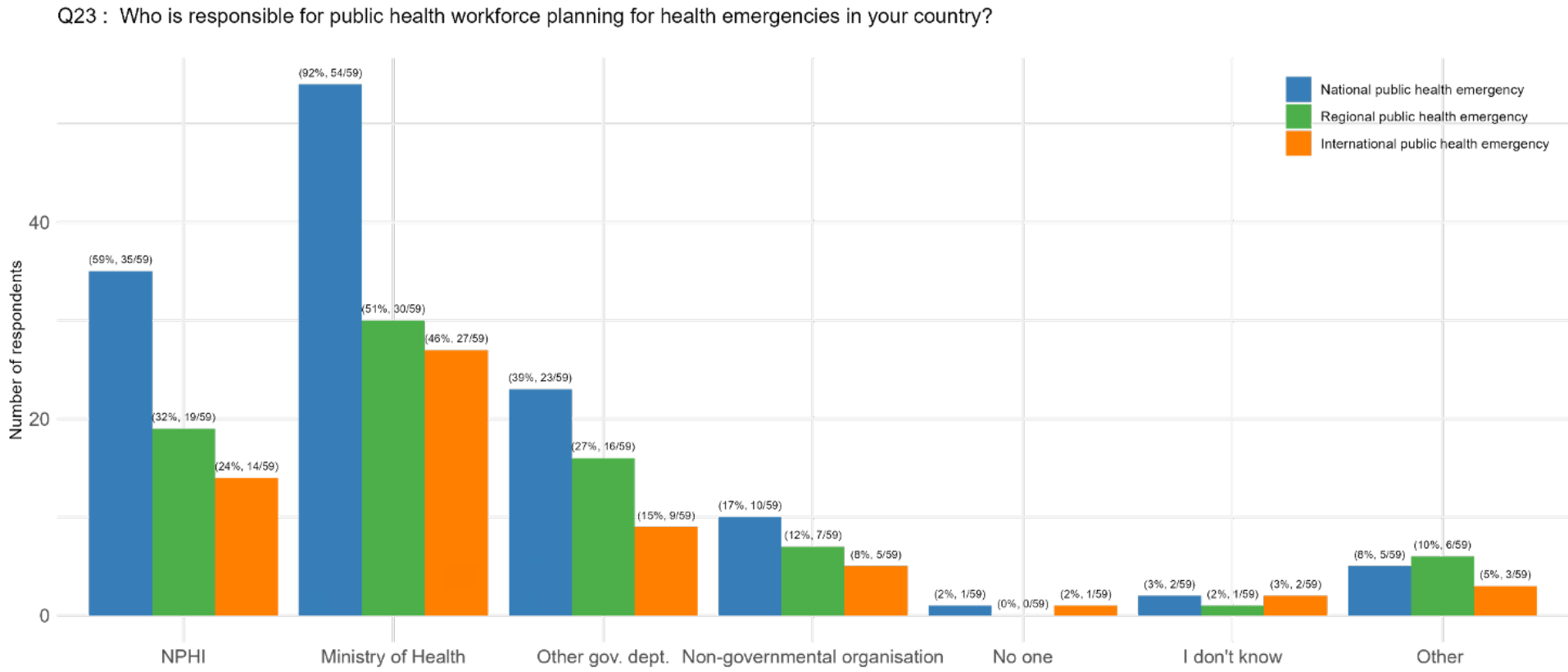


Table Q23A: By Income Group

Options	Level	n	total	Low income	Lower middle income	Upper middle income	High income
NPHI	National public health emergency	35	59	(8/11) 72.73%	(9/13) 69.23%	(7/13) 53.85%	(11/22) 50%
NPHI	Regional public health emergency	19	59	(4/11) 36.36%	(5/13) 38.46%	(2/13) 15.38%	(8/22) 36.36%
NPHI	International public health emergency	14	59	(3/11) 27.27%	(3/13) 23.08%	(1/13) 7.69%	(7/22) 31.82%
Ministry of Health	National public health emergency	54	59	(9/11) 81.82%	(12/13) 92.31%	(13/13) 100%	(20/22) 90.91%
Ministry of Health	Regional public health emergency	30	59	(4/11) 36.36%	(8/13) 61.54%	(7/13) 53.85%	(11/22) 50%
Ministry of Health	International public health emergency	27	59	(3/11) 27.27%	(5/13) 38.46%	(7/13) 53.85%	(12/22) 54.55%
Other gov. dept.	National public health emergency	23	59	(2/11) 18.18%	(6/13) 46.15%	(6/13) 46.15%	(9/22) 40.91%
Other gov. dept.	Regional public health emergency	16	59	(0/11) 0%	(3/13) 23.08%	(1/13) 7.69%	(12/22) 54.55%
Other gov. dept.	International public health emergency	9	59	(0/11) 0%	(2/13) 15.38%	(0/13) 0%	(7/22) 31.82%
Non-governmental organisation	National public health emergency	10	59	(3/11) 27.27%	(3/13) 23.08%	(1/13) 7.69%	(3/22) 13.64%
Non-governmental organisation	Regional public health emergency	7	59	(1/11) 9.09%	(1/13) 7.69%	(1/13) 7.69%	(4/22) 18.18%

Options	Level	n	total	Low income	Lower middle income	Upper middle income	High income
Non-governmental organisation	International public health emergency	5	59	(1/11) 9.09%	(0/13) 0%	(0/13) 0%	(4/22) 18.18%
No one	National public health emergency	1	59	(0/11) 0%	(1/13) 7.69%	(0/13) 0%	(0/22) 0%
No one	Regional public health emergency	0	59	0	0	0	0
No one	International public health emergency	1	59	(0/11) 0%	(1/13) 7.69%	(0/13) 0%	(0/22) 0%
I don't know	National public health emergency	2	59	(0/11) 0%	(1/13) 7.69%	(0/13) 0%	(1/22) 4.55%
I don't know	Regional public health emergency	1	59	(0/11) 0%	(0/13) 0%	(0/13) 0%	(1/22) 4.55%
I don't know	International public health emergency	2	59	(0/11) 0%	(0/13) 0%	(0/13) 0%	(2/22) 9.09%
Other	National public health emergency	5	59	(0/11) 0%	(0/13) 0%	(1/13) 7.69%	(4/22) 18.18%
Other	Regional public health emergency	6	59	(1/11) 9.09%	(0/13) 0%	(0/13) 0%	(5/22) 22.73%
Other	International public health emergency	3	59	(1/11) 9.09%	(0/13) 0%	(0/13) 0%	(2/22) 9.09%

Table Q23B: By WHO Regions

Options	Level	n	total	Africa	Americas	Eastern Mediterranean	Europe	South-East Asia	Western Pacific
NPHI	National public health emergency	35	59	(11/16) 68.75%	(4/8) 50%	(8/11) 72.73%	(7/18) 38.89%	(0/1) 0%	(5/5) 100%
NPHI	Regional public health emergency	19	59	(4/16) 25%	(2/8) 25%	(4/11) 36.36%	(5/18) 27.78%	(0/1) 0%	(4/5) 80%
NPHI	International public health emergency	14	59	(2/16) 12.5%	(2/8) 25%	(3/11) 27.27%	(5/18) 27.78%	(0/1) 0%	(2/5) 40%
Ministry of Health	National public health emergency	54	59	(14/16) 87.5%	(8/8) 100%	(10/11) 90.91%	(16/18) 88.89%	(1/1) 100%	(5/5) 100%
Ministry of Health	Regional public health emergency	30	59	(5/16) 31.25%	(6/8) 75%	(7/11) 63.64%	(7/18) 38.89%	(0/1) 0%	(5/5) 100%
Ministry of Health	International public health emergency	27	59	(3/16) 18.75%	(6/8) 75%	(5/11) 45.45%	(8/18) 44.44%	(0/1) 0%	(5/5) 100%
Other gov. dept.	National public health emergency	23	59	(6/16) 37.5%	(3/8) 37.5%	(5/11) 45.45%	(7/18) 38.89%	(0/1) 0%	(2/5) 40%
Other gov. dept.	Regional public health emergency	16	59	(2/16) 12.5%	(3/8) 37.5%	(2/11) 18.18%	(7/18) 38.89%	(0/1) 0%	(2/5) 40%
Other gov. dept.	International public health emergency	9	59	(1/16) 6.25%	(1/8) 12.5%	(0/11) 0%	(5/18) 27.78%	(0/1) 0%	(2/5) 40%
Non-governmental organisation	National public health emergency	10	59	(3/16) 18.75%	(0/8) 0%	(3/11) 27.27%	(2/18) 11.11%	(0/1) 0%	(2/5) 40%
Non-governmental organisation	Regional public health emergency	7	59	(0/16) 0%	(0/8) 0%	(2/11) 18.18%	(3/18) 16.67%	(0/1) 0%	(2/5) 40%

Options	Level	n	total	Africa	Americas	Eastern Mediterranean	Europe	South-East Asia	Western Pacific
Non-governmental organisation	International public health emergency	5	59	(0/16) 0%	(0/8) 0%	(1/11) 9.09%	(3/18) 16.67%	(0/1) 0%	(1/5) 20%
No one	National public health emergency	1	59	(0/16) 0%	(0/8) 0%	(1/11) 9.09%	(0/18) 0%	(0/1) 0%	(0/5) 0%
No one	Regional public health emergency	0	59	0	0	0	0	0	0
No one	International public health emergency	1	59	(1/16) 6.25%	(0/8) 0%	(0/11) 0%	(0/18) 0%	(0/1) 0%	(0/5) 0%
I don't know	National public health emergency	2	59	(0/16) 0%	(0/8) 0%	(1/11) 9.09%	(1/18) 5.56%	(0/1) 0%	(0/5) 0%
I don't know	Regional public health emergency	1	59	(0/16) 0%	(0/8) 0%	(0/11) 0%	(1/18) 5.56%	(0/1) 0%	(0/5) 0%
I don't know	International public health emergency	2	59	(0/16) 0%	(1/8) 12.5%	(0/11) 0%	(1/18) 5.56%	(0/1) 0%	(0/5) 0%
Other	National public health emergency	5	59	(0/16) 0%	(2/8) 25%	(0/11) 0%	(3/18) 16.67%	(0/1) 0%	(0/5) 0%
Other	Regional public health emergency	6	59	(1/16) 6.25%	(1/8) 12.5%	(0/11) 0%	(4/18) 22.22%	(0/1) 0%	(0/5) 0%
Other	International public health emergency	3	59	(1/16) 6.25%	(0/8) 0%	(0/11) 0%	(2/18) 11.11%	(0/1) 0%	(0/5) 0%

Table Q23C: By NPHI Size

Options	Level	n	total	<=500	>500	Unknown
NPHI	National public health emergency	35	59	(20/33) 60.61%	(15/25) 60%	(0/1) 0%
NPHI	Regional public health emergency	19	59	(9/33) 27.27%	(10/25) 40%	(0/1) 0%
NPHI	International public health emergency	14	59	(6/33) 18.18%	(8/25) 32%	(0/1) 0%
Ministry of Health	National public health emergency	54	59	(31/33) 93.94%	(23/25) 92%	(0/1) 0%
Ministry of Health	Regional public health emergency	30	59	(16/33) 48.48%	(14/25) 56%	(0/1) 0%
Ministry of Health	International public health emergency	27	59	(14/33) 42.42%	(13/25) 52%	(0/1) 0%
Other gov. dept.	National public health emergency	23	59	(12/33) 36.36%	(11/25) 44%	(0/1) 0%
Other gov. dept.	Regional public health emergency	16	59	(5/33) 15.15%	(11/25) 44%	(0/1) 0%
Other gov. dept.	International public health emergency	9	59	(3/33) 9.09%	(6/25) 24%	(0/1) 0%
Non-governmental organisation	National public health emergency	10	59	(7/33) 21.21%	(3/25) 12%	(0/1) 0%
Non-governmental organisation	Regional public health emergency	7	59	(4/33) 12.12%	(3/25) 12%	(0/1) 0%

Options	Level	n	total	<=500	>500	Unknown
No one	National public health emergency	1	59	(1/33) 3.03%	(0/25) 0%	(0/1) 0%
No one	Regional public health emergency	0	59		0	
No one	International public health emergency	1	59	(0/33) 0%	(1/25) 4%	(0/1) 0%
I don't know	National public health emergency	2	59	(1/33) 3.03%	(0/25) 0%	(1/1) 100%
I don't know	Regional public health emergency	1	59	(0/33) 0%	(0/25) 0%	(1/1) 100%
I don't know	International public health emergency	2	59	(0/33) 0%	(1/25) 4%	(1/1) 100%
Other	National public health emergency	5	59	(1/33) 3.03%	(4/25) 16%	(0/1) 0%
Other	Regional public health emergency	6	59	(2/33) 6.06%	(4/25) 16%	(0/1) 0%
Other	International public health emergency	3	59	(1/33) 3.03%	(2/25) 8%	(0/1) 0%

Question 24 Who is responsible for public health workforce planning for health emergencies in your country?

Figure Q24

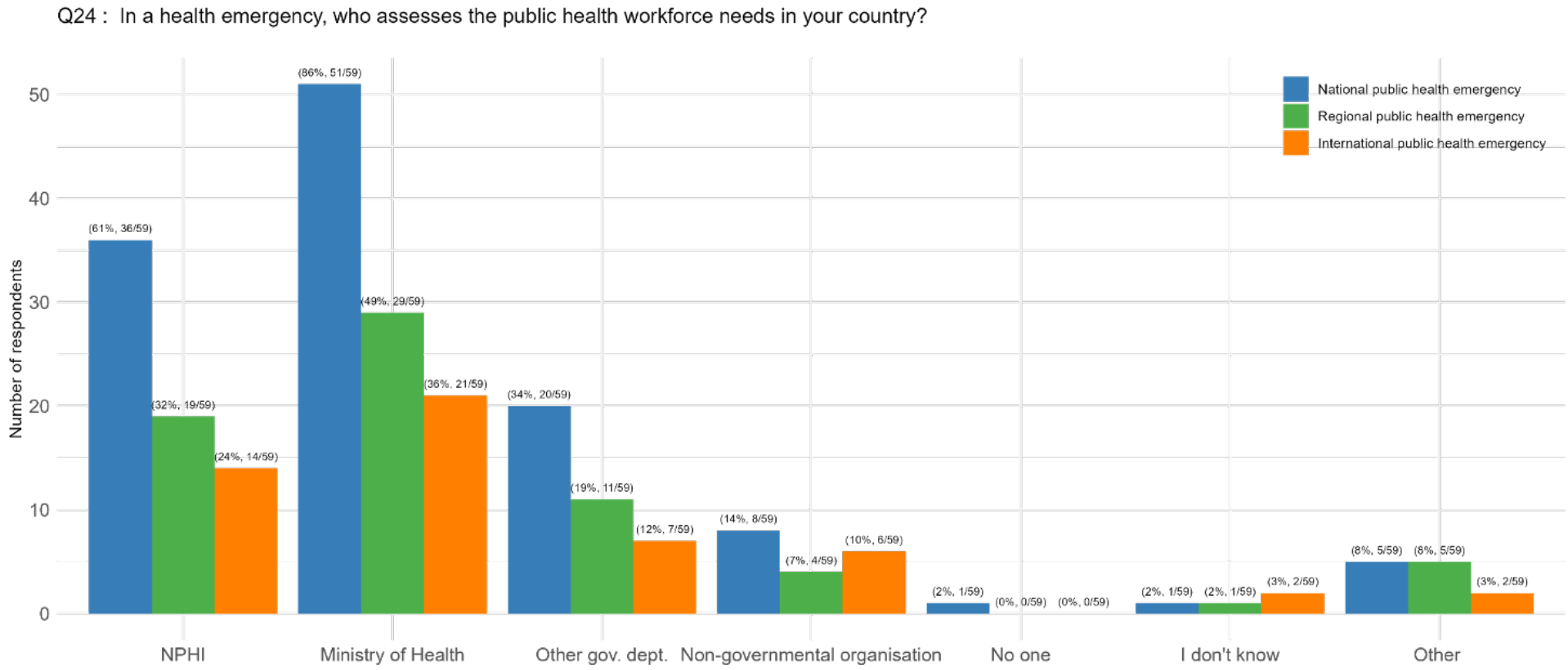


Table Q24A: By Income Group

Options	Level	n	total	Low income	Lower middle income	Upper middle income	High income
NPHI	National public health emergency	36	59	(9/11) 81.82%	(7/13) 53.85%	(8/13) 61.54%	(12/22) 54.55%
NPHI	Regional public health emergency	19	59	(5/11) 45.45%	(3/13) 23.08%	(2/13) 15.38%	(9/22) 40.91%
NPHI	International public health emergency	14	59	(3/11) 27.27%	(2/13) 15.38%	(1/13) 7.69%	(8/22) 36.36%
Ministry of Health	National public health emergency	51	59	(10/11) 90.91%	(11/13) 84.62%	(12/13) 92.31%	(18/22) 81.82%
Ministry of Health	Regional public health emergency	29	59	(4/11) 36.36%	(7/13) 53.85%	(7/13) 53.85%	(11/22) 50%
Ministry of Health	International public health emergency	21	59	(3/11) 27.27%	(4/13) 30.77%	(6/13) 46.15%	(8/22) 36.36%
Other gov. dept.	National public health emergency	20	59	(3/11) 27.27%	(3/13) 23.08%	(5/13) 38.46%	(9/22) 40.91%
Other gov. dept.	Regional public health emergency	11	59	(1/11) 9.09%	(1/13) 7.69%	(0/13) 0%	(9/22) 40.91%
Other gov. dept.	International public health emergency	7	59	(1/11) 9.09%	(0/13) 0%	(0/13) 0%	(6/22) 27.27%
Non-governmental organisation	National public health emergency	8	59	(2/11) 18.18%	(1/13) 7.69%	(1/13) 7.69%	(4/22) 18.18%
Non-governmental organisation	Regional public health emergency	4	59	(1/11) 9.09%	(0/13) 0%	(0/13) 0%	(3/22) 13.64%

Options	Level	n	total	Low income	Lower middle income	Upper middle income	High income
Non-governmental organisation	International public health emergency	6	59	(1/11) 9.09%	(1/13) 7.69%	(0/13) 0%	(4/22) 18.18%
No one	National public health emergency	1	59	(0/11) 0%	(1/13) 7.69%	(0/13) 0%	(0/22) 0%
No one	Regional public health emergency	0	59	0	0	0	0
No one	International public health emergency	0	59	0	0	0	0
I don't know	National public health emergency	1	59	(0/11) 0%	(0/13) 0%	(0/13) 0%	(1/22) 4.55%
I don't know	Regional public health emergency	1	59	(0/11) 0%	(0/13) 0%	(0/13) 0%	(1/22) 4.55%
I don't know	International public health emergency	2	59	(0/11) 0%	(0/13) 0%	(0/13) 0%	(2/22) 9.09%
Other	National public health emergency	5	59	(0/11) 0%	(0/13) 0%	(0/13) 0%	(5/22) 22.73%
Other	Regional public health emergency	5	59	(0/11) 0%	(0/13) 0%	(0/13) 0%	(5/22) 22.73%
Other	International public health emergency	2	59	(0/11) 0%	(0/13) 0%	(0/13) 0%	(2/22) 9.09%

Table Q24B: By WHO Regions

Options	Level	n	total	Africa	Americas	Eastern Mediterranean	Europe	South-East Asia	Western Pacific
NPHI	National public health emergency	36	59	(11/16) 68.75%	(4/8) 50%	(8/11) 72.73%	(9/18) 50%	(0/1) 0%	(4/5) 80%
NPHI	Regional public health emergency	19	59	(4/16) 25%	(2/8) 25%	(4/11) 36.36%	(6/18) 33.33%	(0/1) 0%	(3/5) 60%
NPHI	International public health emergency	14	59	(2/16) 12.5%	(3/8) 37.5%	(2/11) 18.18%	(5/18) 27.78%	(0/1) 0%	(2/5) 40%
Ministry of Health	National public health emergency	51	59	(13/16) 81.25%	(8/8) 100%	(11/11) 100%	(14/18) 77.78%	(1/1) 100%	(4/5) 80%
Ministry of Health	Regional public health emergency	29	59	(6/16) 37.5%	(7/8) 87.5%	(4/11) 36.36%	(7/18) 38.89%	(0/1) 0%	(5/5) 100%
Ministry of Health	International public health emergency	21	59	(2/16) 12.5%	(5/8) 62.5%	(3/11) 27.27%	(6/18) 33.33%	(0/1) 0%	(5/5) 100%
Other gov. dept.	National public health emergency	20	59	(4/16) 25%	(2/8) 25%	(5/11) 45.45%	(8/18) 44.44%	(0/1) 0%	(1/5) 20%
Other gov. dept.	Regional public health emergency	11	59	(2/16) 12.5%	(2/8) 25%	(1/11) 9.09%	(5/18) 27.78%	(0/1) 0%	(1/5) 20%
Other gov. dept.	International public health emergency	7	59	(1/16) 6.25%	(1/8) 12.5%	(0/11) 0%	(4/18) 22.22%	(0/1) 0%	(1/5) 20%
Non-governmental organisation	National public health emergency	8	59	(1/16) 6.25%	(1/8) 12.5%	(2/11) 18.18%	(3/18) 16.67%	(0/1) 0%	(1/5) 20%
Non-governmental organisation	Regional public health emergency	4	59	(0/16) 0%	(0/8) 0%	(1/11) 9.09%	(2/18) 11.11%	(0/1) 0%	(1/5) 20%

Options	Level	n	total	Africa	Americas	Eastern Mediterranean	Europe	South-East Asia	Western Pacific
Non-governmental organisation	International public health emergency	6	59	(0/16) 0%	(1/8) 12.5%	(2/11) 18.18%	(2/18) 11.11%	(0/1) 0%	(1/5) 20%
No one	National public health emergency	1	59	(0/16) 0%	(0/8) 0%	(1/11) 9.09%	(0/18) 0%	(0/1) 0%	(0/5) 0%
No one	Regional public health emergency	0	59	0	0	0	0	0	0
No one	International public health emergency	0	59	0	0	0	0	0	0
I don't know	National public health emergency	1	59	(0/16) 0%	(0/8) 0%	(0/11) 0%	(1/18) 5.56%	(0/1) 0%	(0/5) 0%
I don't know	Regional public health emergency	1	59	(0/16) 0%	(0/8) 0%	(0/11) 0%	(1/18) 5.56%	(0/1) 0%	(0/5) 0%
I don't know	International public health emergency	2	59	(0/16) 0%	(1/8) 12.5%	(0/11) 0%	(1/18) 5.56%	(0/1) 0%	(0/5) 0%
Other	National public health emergency	5	59	(0/16) 0%	(0/8) 0%	(1/11) 9.09%	(4/18) 22.22%	(0/1) 0%	(0/5) 0%
Other	Regional public health emergency	5	59	(0/16) 0%	(1/8) 12.5%	(1/11) 9.09%	(3/18) 16.67%	(0/1) 0%	(0/5) 0%
Other	International public health emergency	2	59	(0/16) 0%	(0/8) 0%	(0/11) 0%	(2/18) 11.11%	(0/1) 0%	(0/5) 0%

Table Q24C: By NPHI Size

Options	Level	n	total	<=500	>500	Unknown
NPHI	National public health emergency	36	59	(19/33) 57.58%	(17/25) 68%	(0/1) 0%
NPHI	Regional public health emergency	19	59	(9/33) 27.27%	(10/25) 40%	(0/1) 0%
NPHI	International public health emergency	14	59	(5/33) 15.15%	(9/25) 36%	(0/1) 0%
Ministry of Health	National public health emergency	51	59	(28/33) 84.85%	(23/25) 92%	(0/1) 0%
Ministry of Health	Regional public health emergency	29	59	(14/33) 42.42%	(15/25) 60%	(0/1) 0%
Ministry of Health	International public health emergency	21	59	(10/33) 30.3%	(11/25) 44%	(0/1) 0%
Other gov. dept.	National public health emergency	20	59	(11/33) 33.33%	(9/25) 36%	(0/1) 0%
Other gov. dept.	Regional public health emergency	11	59	(3/33) 9.09%	(8/25) 32%	(0/1) 0%
Other gov. dept.	International public health emergency	7	59	(2/33) 6.06%	(5/25) 20%	(0/1) 0%
Non-governmental organisation	National public health emergency	8	59	(4/33) 12.12%	(4/25) 16%	(0/1) 0%
Non-governmental organisation	Regional public health emergency	4	59	(1/33) 3.03%	(3/25) 12%	(0/1) 0%
Non-governmental organisation	International public health emergency	6	59	(2/33) 6.06%	(4/25) 16%	(0/1) 0%

Options	Level	n	total	<=500	>500	Unknown
No one	National public health emergency	1	59	(1/33) 3.03%	(0/25) 0%	(0/1) 0%
No one	Regional public health emergency	0	59		0	
No one	International public health emergency	1	59	(0/33) 0%	(1/25) 4%	(0/1) 0%
I don't know	National public health emergency	2	59	(1/33) 3.03%	(0/25) 0%	(1/1) 100%
I don't know	Regional public health emergency	1	59	(0/33) 0%	(0/25) 0%	(1/1) 100%
I don't know	International public health emergency	2	59	(0/33) 0%	(1/25) 4%	(1/1) 100%
Other	National public health emergency	5	59	(1/33) 3.03%	(4/25) 16%	(0/1) 0%
Other	Regional public health emergency	6	59	(2/33) 6.06%	(4/25) 16%	(0/1) 0%
Other	International public health emergency	3	59	(1/33) 3.03%	(2/25) 8%	(0/1) 0%

Question 25 Which organization provides public health staff from your country to respond to a public health emergency?

Figure Q25

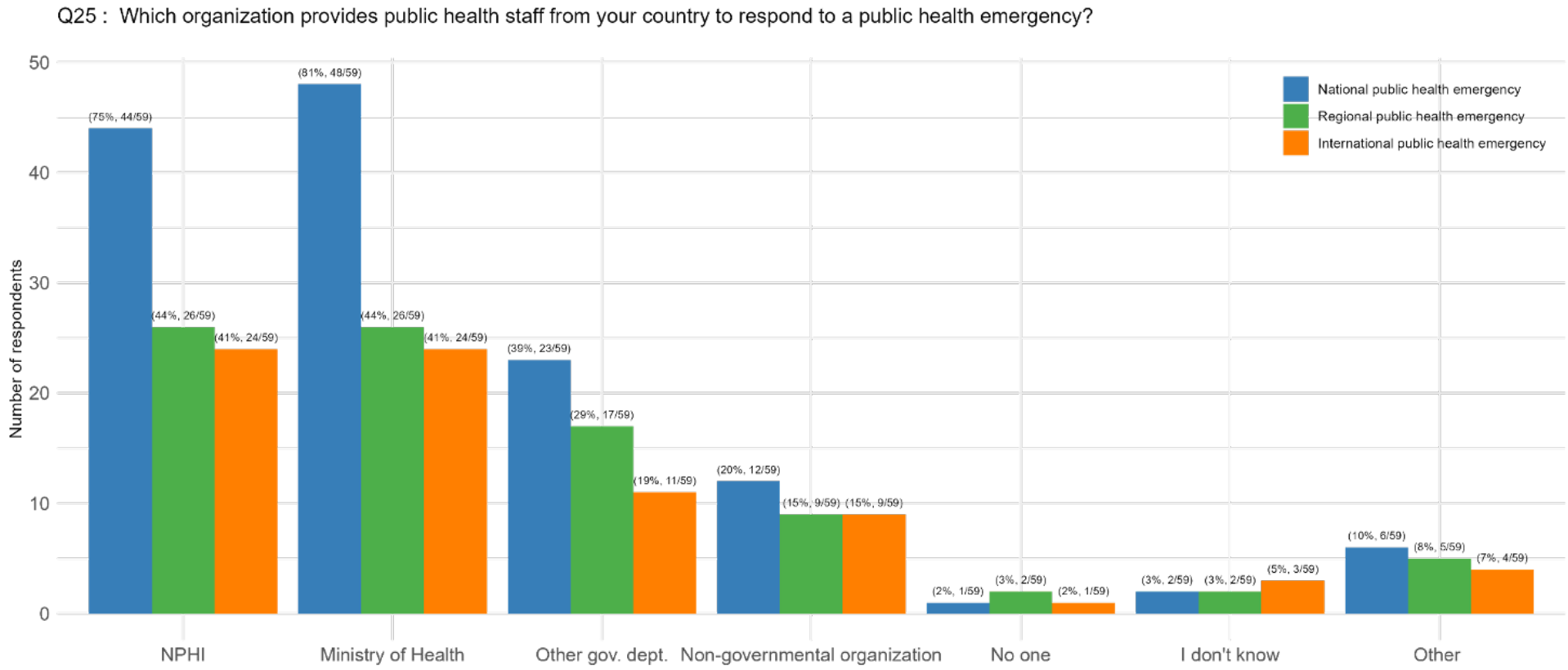


Table Q25A: By Income Group

Options	Level	n	total	Low income	Lower middle income	Upper middle income	High income
NPHI	National public health emergency	44	59	(8/11) 72.73%	(10/13) 76.92%	(9/13) 69.23%	(17/22) 77.27%
NPHI	Regional public health emergency	26	59	(4/11) 36.36%	(6/13) 46.15%	(4/13) 30.77%	(12/22) 54.55%
NPHI	International public health emergency	24	59	(4/11) 36.36%	(4/13) 30.77%	(3/13) 23.08%	(13/22) 59.09%
Ministry of Health	National public health emergency	48	59	(11/11) 100%	(10/13) 76.92%	(11/13) 84.62%	(16/22) 72.73%
Ministry of Health	Regional public health emergency	26	59	(5/11) 45.45%	(7/13) 53.85%	(6/13) 46.15%	(8/22) 36.36%
Ministry of Health	International public health emergency	24	59	(4/11) 36.36%	(5/13) 38.46%	(6/13) 46.15%	(9/22) 40.91%
Other gov. dept.	National public health emergency	23	59	(4/11) 36.36%	(3/13) 23.08%	(6/13) 46.15%	(10/22) 45.45%
Other gov. dept.	Regional public health emergency	17	59	(2/11) 18.18%	(1/13) 7.69%	(3/13) 23.08%	(11/22) 50%
Other gov. dept.	International public health emergency	11	59	(1/11) 9.09%	(0/13) 0%	(2/13) 15.38%	(8/22) 36.36%
Non-governmental organization	National public health emergency	12	59	(2/11) 18.18%	(3/13) 23.08%	(1/13) 7.69%	(6/22) 27.27%

Options	Level	n	total	Low income	Lower middle income	Upper middle income	High income
Non-governmental organization	Regional public health emergency	9	59	(1/11) 9.09%	(2/13) 15.38%	(1/13) 7.69%	(5/22) 22.73%
Non-governmental organization	International public health emergency	9	59	(1/11) 9.09%	(0/13) 0%	(1/13) 7.69%	(7/22) 31.82%
No one	National public health emergency	1	59	(0/11) 0%	(0/13) 0%	(1/13) 7.69%	(0/22) 0%
No one	Regional public health emergency	2	59	(0/11) 0%	(1/13) 7.69%	(1/13) 7.69%	(0/22) 0%
No one	International public health emergency	1	59	(0/11) 0%	(0/13) 0%	(1/13) 7.69%	(0/22) 0%
I don't know	National public health emergency	2	59	(0/11) 0%	(1/13) 7.69%	(0/13) 0%	(1/22) 4.55%
I don't know	Regional public health emergency	2	59	(0/11) 0%	(1/13) 7.69%	(0/13) 0%	(1/22) 4.55%
I don't know	International public health emergency	3	59	(0/11) 0%	(1/13) 7.69%	(0/13) 0%	(2/22) 9.09%
Other	National public health emergency	6	59	(0/11) 0%	(0/13) 0%	(1/13) 7.69%	(5/22) 22.73%
Other	Regional public health emergency	5	59	(1/11) 9.09%	(0/13) 0%	(0/13) 0%	(4/22) 18.18%
Other	International public health emergency	4	59	(1/11) 9.09%	(0/13) 0%	(0/13) 0%	(3/22) 13.64%

Table Q25B: By WHO Regions

Options	Level	n	total	Africa	Americas	Eastern Mediterranean	Europe	South-East Asia	Western Pacific
NPHI	National public health emergency	44	59	(10/16) 62.5%	(7/8) 87.5%	(9/11) 81.82%	(13/18) 72.22%	(1/1) 100%	(4/5) 80%
NPHI	Regional public health emergency	26	59	(4/16) 25%	(4/8) 50%	(6/11) 54.55%	(8/18) 44.44%	(0/1) 0%	(4/5) 80%
NPHI	International public health emergency	24	59	(2/16) 12.5%	(4/8) 50%	(5/11) 45.45%	(10/18) 55.56%	(0/1) 0%	(3/5) 60%
Ministry of Health	National public health emergency	48	59	(14/16) 87.5%	(6/8) 75%	(10/11) 90.91%	(13/18) 72.22%	(0/1) 0%	(5/5) 100%
Ministry of Health	Regional public health emergency	26	59	(6/16) 37.5%	(5/8) 62.5%	(5/11) 45.45%	(5/18) 27.78%	(0/1) 0%	(5/5) 100%
Ministry of Health	International public health emergency	24	59	(3/16) 18.75%	(5/8) 62.5%	(4/11) 36.36%	(7/18) 38.89%	(0/1) 0%	(5/5) 100%
Other gov. dept.	National public health emergency	23	59	(6/16) 37.5%	(5/8) 62.5%	(1/11) 9.09%	(8/18) 44.44%	(1/1) 100%	(2/5) 40%
Other gov. dept.	Regional public health emergency	17	59	(3/16) 18.75%	(5/8) 62.5%	(1/11) 9.09%	(6/18) 33.33%	(0/1) 0%	(2/5) 40%
Other gov. dept.	International public health emergency	11	59	(1/16) 6.25%	(4/8) 50%	(0/11) 0%	(5/18) 27.78%	(0/1) 0%	(1/5) 20%
Non-governmental organization	National public health emergency	12	59	(3/16) 18.75%	(1/8) 12.5%	(2/11) 18.18%	(3/18) 16.67%	(1/1) 100%	(2/5) 40%
Non-governmental organization	Regional public health emergency	9	59	(1/16) 6.25%	(1/8) 12.5%	(2/11) 18.18%	(3/18) 16.67%	(0/1) 0%	(2/5) 40%

Options	Level	n	total	Africa	Americas	Eastern Mediterranean	Europe	South-East Asia	Western Pacific
Non-governmental organization	International public health emergency	9	59	(1/16) 6.25%	(1/8) 12.5%	(0/11) 0%	(5/18) 27.78%	(0/1) 0%	(2/5) 40%
No one	National public health emergency	1	59	(0/16) 0%	(1/8) 12.5%	(0/11) 0%	(0/18) 0%	(0/1) 0%	(0/5) 0%
No one	Regional public health emergency	2	59	(0/16) 0%	(1/8) 12.5%	(1/11) 9.09%	(0/18) 0%	(0/1) 0%	(0/5) 0%
No one	International public health emergency	1	59	(0/16) 0%	(1/8) 12.5%	(0/11) 0%	(0/18) 0%	(0/1) 0%	(0/5) 0%
I don't know	National public health emergency	2	59	(1/16) 6.25%	(0/8) 0%	(0/11) 0%	(1/18) 5.56%	(0/1) 0%	(0/5) 0%
I don't know	Regional public health emergency	2	59	(1/16) 6.25%	(0/8) 0%	(0/11) 0%	(1/18) 5.56%	(0/1) 0%	(0/5) 0%
I don't know	International public health emergency	3	59	(1/16) 6.25%	(1/8) 12.5%	(0/11) 0%	(1/18) 5.56%	(0/1) 0%	(0/5) 0%
Other	National public health emergency	6	59	(0/16) 0%	(1/8) 12.5%	(1/11) 9.09%	(4/18) 22.22%	(0/1) 0%	(0/5) 0%
Other	Regional public health emergency	5	59	(1/16) 6.25%	(0/8) 0%	(0/11) 0%	(4/18) 22.22%	(0/1) 0%	(0/5) 0%
Other	International public health emergency	4	59	(1/16) 6.25%	(0/8) 0%	(0/11) 0%	(3/18) 16.67%	(0/1) 0%	(0/5) 0%

Table Q25C: By NPHI Size

Options	Level	n	total	<=500	>500	Unknown
NPHI	National public health emergency	44	59	(22/33) 66.67%	(21/25) 84%	(1/1) 100%
NPHI	Regional public health emergency	26	59	(10/33) 30.3%	(15/25) 60%	(1/1) 100%
NPHI	International public health emergency	24	59	(8/33) 24.24%	(15/25) 60%	(1/1) 100%
Ministry of Health	National public health emergency	48	59	(26/33) 78.79%	(22/25) 88%	(0/1) 0%
Ministry of Health	Regional public health emergency	26	59	(14/33) 42.42%	(12/25) 48%	(0/1) 0%
Ministry of Health	International public health emergency	24	59	(13/33) 39.39%	(11/25) 44%	(0/1) 0%
Other gov. dept.	National public health emergency	23	59	(8/33) 24.24%	(15/25) 60%	(0/1) 0%
Other gov. dept.	Regional public health emergency	17	59	(3/33) 9.09%	(14/25) 56%	(0/1) 0%
Other gov. dept.	International public health emergency	11	59	(2/33) 6.06%	(9/25) 36%	(0/1) 0%
Non-governmental organization	National public health emergency	12	59	(6/33) 18.18%	(6/25) 24%	(0/1) 0%
Non-governmental organization	Regional public health emergency	9	59	(4/33) 12.12%	(5/25) 20%	(0/1) 0%
Non-governmental organization	International public health emergency	9	59	(2/33) 6.06%	(6/25) 24%	(1/1) 100%
No one	National public health emergency	1	59	(1/33) 3.03%	(0/25) 0%	(0/1) 0%
No one	Regional public health emergency	2	59	(2/33) 6.06%	(0/25) 0%	(0/1) 0%
No one	International public health emergency	1	59	(1/33) 3.03%	(0/25) 0%	(0/1) 0%
I don't know	National public health emergency	2	59	(1/33) 3.03%	(0/25) 0%	(1/1) 100%

Options	Level	n	total	<=500	>500	Unknown
I don't know	Regional public health emergency	2	59	(1/33) 3.03%	(0/25) 0%	(1/1) 100%
I don't know	International public health emergency	3	59	(1/33) 3.03%	(1/25) 4%	(1/1) 100%
Other	National public health emergency	6	59	(3/33) 9.09%	(3/25) 12%	(0/1) 0%
Other	Regional public health emergency	5	59	(3/33) 9.09%	(2/25) 8%	(0/1) 0%
Other	International public health emergency	4	59	(2/33) 6.06%	(2/25) 8%	(0/1) 0%

Question 26 What do you think are the key public health workforce challenges for responding to health emergencies in your country?

Figure Q26

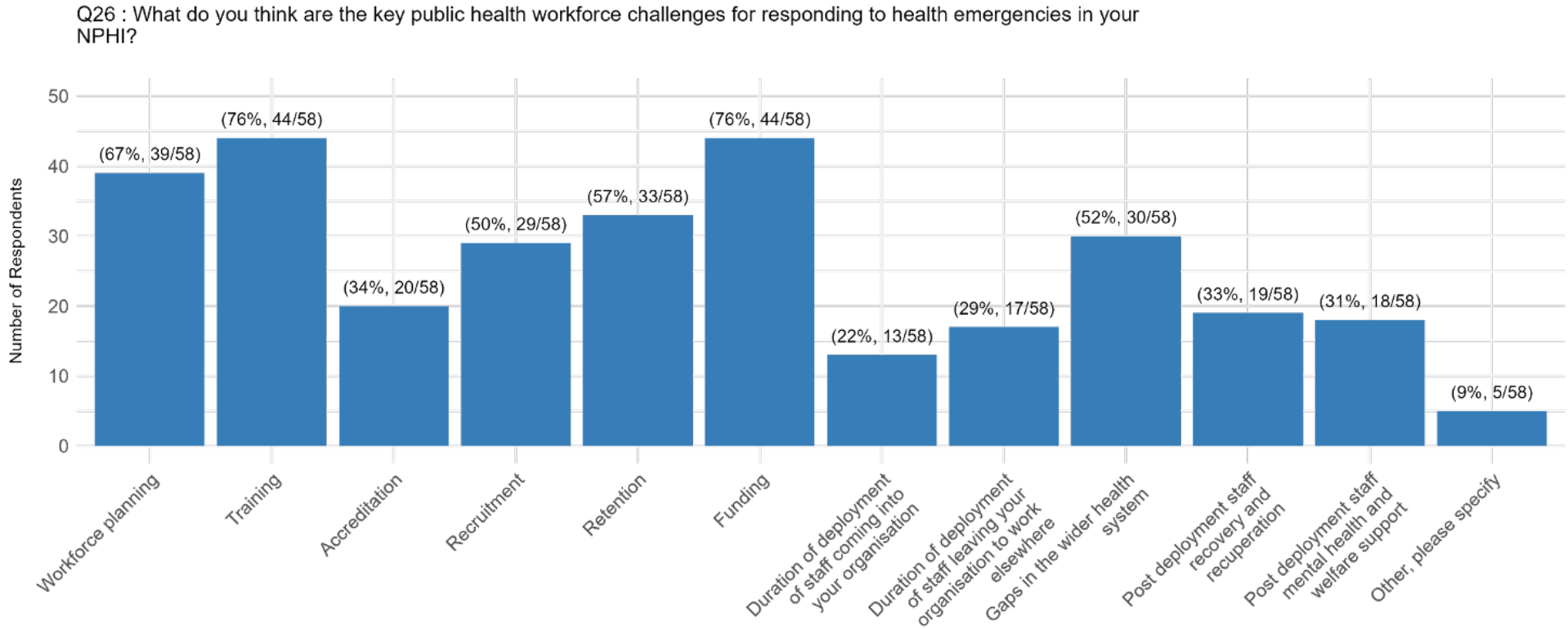


Table Q26A: By Income Group

Options	n	total	Low income	Lower middle income	Upper middle income	High income
Workforce planning	39	58	(7/11) 63.64%	(10/13) 76.92%	(9/13) 69.23%	(13/21) 61.9%
Training	44	58	(11/11) 100%	(10/13) 76.92%	(11/13) 84.62%	(12/21) 57.14%
Accreditation	20	58	(6/11) 54.55%	(5/13) 38.46%	(6/13) 46.15%	(3/21) 14.29%
Recruitment	29	58	(5/11) 45.45%	(8/13) 61.54%	(5/13) 38.46%	(11/21) 52.38%
Retention	33	58	(8/11) 72.73%	(10/13) 76.92%	(6/13) 46.15%	(9/21) 42.86%
Funding	44	58	(10/11) 90.91%	(12/13) 92.31%	(9/13) 69.23%	(13/21) 61.9%
Duration of deployment of staff coming into your organisation	13	58	(6/11) 54.55%	(2/13) 15.38%	(4/13) 30.77%	(1/21) 4.76%
Duration of deployment of staff leaving your organisation to work elsewhere	17	58	(5/11) 45.45%	(1/13) 7.69%	(5/13) 38.46%	(6/21) 28.57%
Gaps in the wider health system	30	58	(7/11) 63.64%	(6/13) 46.15%	(6/13) 46.15%	(11/21) 52.38%
Post deployment staff recovery and recuperation	19	58	(7/11) 63.64%	(1/13) 7.69%	(5/13) 38.46%	(6/21) 28.57%
Post deployment staff mental health and welfare support	18	58	(5/11) 45.45%	(4/13) 30.77%	(5/13) 38.46%	(4/21) 19.05%
Other, please specify	5	58	(0/11) 0%	(1/13) 7.69%	(1/13) 7.69%	(3/21) 14.29%

Table Q26B: By WHO Regions

Options	n	total	Africa	Americas	Eastern Mediterranean	Europe	South-East Asia	Western Pacific
Workforce planning	39	58	(12/16) 75%	(4/8) 50%	(7/11) 63.64%	(13/18) 72.22%	(1/1) 100%	(2/4) 50%
Training	44	58	(16/16) 100%	(6/8) 75%	(8/11) 72.73%	(10/18) 55.56%	(1/1) 100%	(3/4) 75%
Accreditation	20	58	(6/16) 37.5%	(3/8) 37.5%	(4/11) 36.36%	(4/18) 22.22%	(1/1) 100%	(2/4) 50%
Recruitment	29	58	(8/16) 50%	(4/8) 50%	(5/11) 45.45%	(9/18) 50%	(1/1) 100%	(2/4) 50%
Retention	33	58	(14/16) 87.5%	(3/8) 37.5%	(5/11) 45.45%	(7/18) 38.89%	(1/1) 100%	(3/4) 75%
Funding	44	58	(15/16) 93.75%	(6/8) 75%	(9/11) 81.82%	(11/18) 61.11%	(1/1) 100%	(2/4) 50%
Duration of deployment of staff coming into your organisation	13	58	(4/16) 25%	(2/8) 25%	(3/11) 27.27%	(2/18) 11.11%	(1/1) 100%	(1/4) 25%
Duration of deployment of staff leaving your organisation to work elsewhere	17	58	(4/16) 25%	(2/8) 25%	(4/11) 36.36%	(6/18) 33.33%	(0/1) 0%	(1/4) 25%
Gaps in the wider health system	30	58	(10/16) 62.5%	(2/8) 25%	(5/11) 45.45%	(10/18) 55.56%	(1/1) 100%	(2/4) 50%
Post deployment staff recovery and recuperation	19	58	(8/16) 50%	(4/8) 50%	(0/11) 0%	(5/18) 27.78%	(0/1) 0%	(2/4) 50%
Post deployment staff mental health and welfare support	18	58	(8/16) 50%	(3/8) 37.5%	(0/11) 0%	(5/18) 27.78%	(0/1) 0%	(2/4) 50%
Other, please specify	5	58	(0/16) 0%	(2/8) 25%	(1/11) 9.09%	(2/18) 11.11%	(0/1) 0%	(0/4) 0%

Table Q26C: By NPHI Size

Options	n	total	<=500	>500	Unknown
Workforce planning	39	58	(24/33) 72.73%	(14/24) 58.33%	(1/1) 100%
Training	44	58	(28/33) 84.85%	(16/24) 66.67%	(0/1) 0%
Accreditation	20	58	(14/33) 42.42%	(5/24) 20.83%	(1/1) 100%
Recruitment	29	58	(18/33) 54.55%	(11/24) 45.83%	(0/1) 0%
Retention	33	58	(20/33) 60.61%	(13/24) 54.17%	(0/1) 0%
Funding	44	58	(28/33) 84.85%	(15/24) 62.5%	(1/1) 100%
Duration of deployment of staff coming into your organisation	13	58	(10/33) 30.3%	(3/24) 12.5%	(0/1) 0%
Duration of deployment of staff leaving your organisation to work elsewhere	17	58	(9/33) 27.27%	(8/24) 33.33%	(0/1) 0%
Gaps in the wider health system	30	58	(18/33) 54.55%	(11/24) 45.83%	(1/1) 100%
Post deployment staff recovery and recuperation	19	58	(10/33) 30.3%	(9/24) 37.5%	(0/1) 0%
Post deployment staff mental health and welfare support	18	58	(11/33) 33.33%	(7/24) 29.17%	(0/1) 0%
Other, please specify	5	58	(1/33) 3.03%	(4/24) 16.67%	(0/1) 0%

Question 27 Are formal qualifications required for the following staff groups who are involved in health emergencies in your country?

Figure Q27

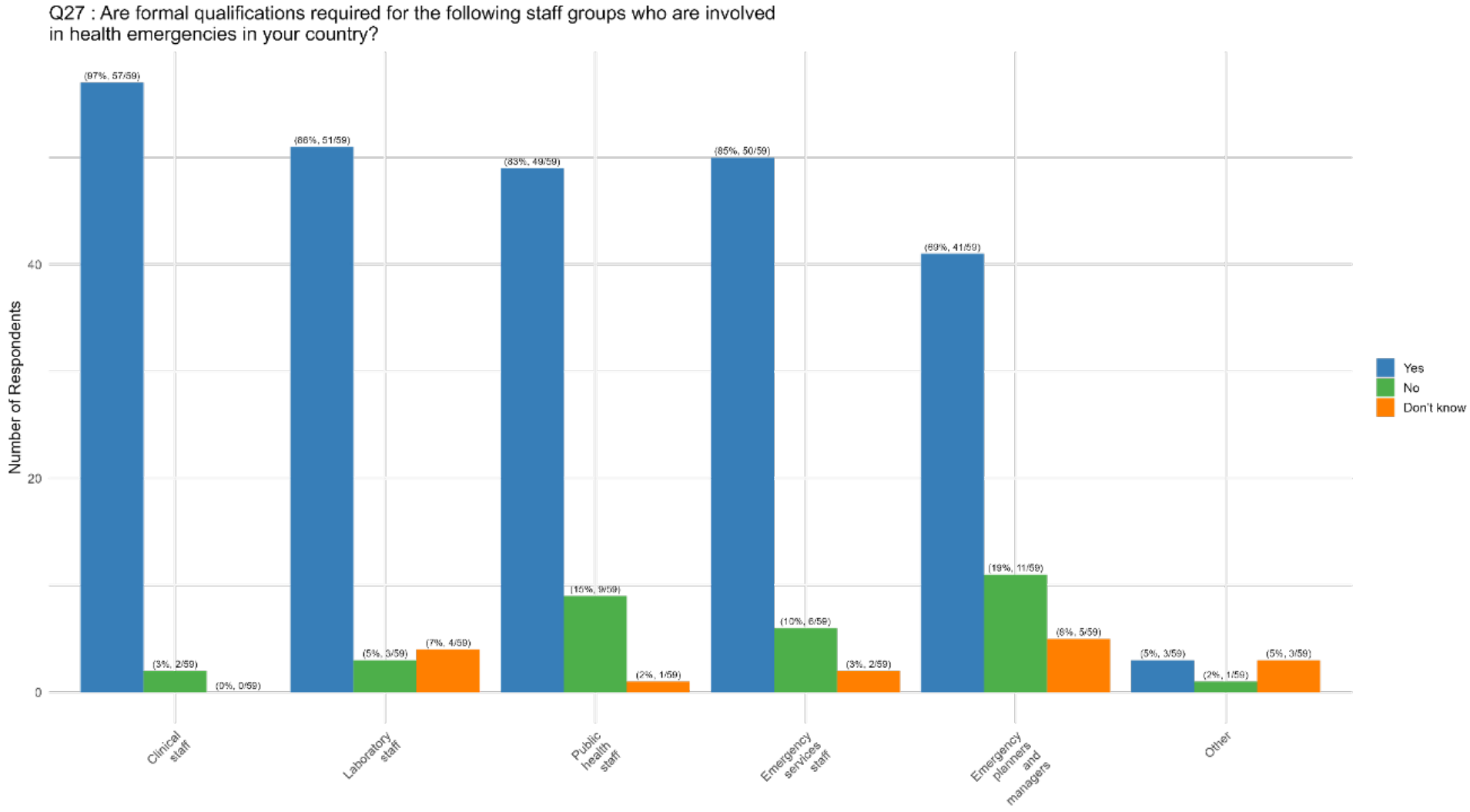


Table Q27A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Clinical staff	Yes	57	59	100%, (11/11)	92%, (12/13)	100%, (13/13)	95%, (21/22)
Clinical staff	No	2	59	0%, (0/11)	8%, (1/13)	0%, (0/13)	5%, (1/22)
Clinical staff	Don't know	0	59	0	0	0	0
Laboratory staff	Yes	51	59	91%, (10/11)	100%, (13/13)	85%, (11/13)	77%, (17/22)
Laboratory staff	No	3	59	9%, (1/11)	0%, (0/13)	8%, (1/13)	5%, (1/22)
Laboratory staff	Don't know	4	59	0%, (0/11)	0%, (0/13)	8%, (1/13)	14%, (3/22)
Public health staff	Yes	49	59	100%, (11/11)	100%, (13/13)	85%, (11/13)	64%, (14/22)
Public health staff	No	9	59	0%, (0/11)	0%, (0/13)	15%, (2/13)	32%, (7/22)
Public health staff	Don't know	1	59	0%, (0/11)	0%, (0/13)	0%, (0/13)	5%, (1/22)
Emergency services staff	Yes	50	59	82%, (9/11)	85%, (11/13)	85%, (11/13)	86%, (19/22)
Emergency services staff	No	6	59	9%, (1/11)	8%, (1/13)	8%, (1/13)	14%, (3/22)
Emergency services staff	Don't know	2	59	0%, (0/11)	8%, (1/13)	8%, (1/13)	0%, (0/22)
Emergency planners and managers	Yes	41	59	91%, (10/11)	77%, (10/13)	85%, (11/13)	45%, (10/22)
Emergency planners and managers	No	11	59	0%, (0/11)	0%, (0/13)	8%, (1/13)	45%, (10/22)
Emergency planners and managers	Don't know	5	59	0%, (0/11)	15%, (2/13)	8%, (1/13)	9%, (2/22)
Other	Yes	3	59	0%, (0/11)	8%, (1/13)	0%, (0/13)	9%, (2/22)
Other	No	1	59	0%, (0/11)	0%, (0/13)	0%, (0/13)	5%, (1/22)
Other	Don't know	3	59	9%, (1/11)	0%, (0/13)	8%, (1/13)	5%, (1/22)

Table Q27B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Clinical staff	Yes	57	59	100%, (16/16)	100%, (8/8)	91%, (10/11)	94%, (17/18)	100%, (1/1)	100%, (5/5)
Clinical staff	No	2	59	0%, (0/16)	0%, (0/8)	9%, (1/11)	6%, (1/18)	0%, (0/1)	0%, (0/5)
Clinical staff	Don't know	0	59	0	0	0	0	0	0
Laboratory staff	Yes	51	59	94%, (15/16)	62%, (5/8)	91%, (10/11)	83%, (15/18)	100%, (1/1)	100%, (5/5)
Laboratory staff	No	3	59	6%, (1/16)	0%, (0/8)	9%, (1/11)	6%, (1/18)	0%, (0/1)	0%, (0/5)
Laboratory staff	Don't know	4	59	0%, (0/16)	38%, (3/8)	0%, (0/11)	6%, (1/18)	0%, (0/1)	0%, (0/5)
Public health staff	Yes	49	59	94%, (15/16)	62%, (5/8)	100%, (11/11)	67%, (12/18)	100%, (1/1)	100%, (5/5)
Public health staff	No	9	59	6%, (1/16)	38%, (3/8)	0%, (0/11)	28%, (5/18)	0%, (0/1)	0%, (0/5)
Public health staff	Don't know	1	59	0%, (0/16)	0%, (0/8)	0%, (0/11)	6%, (1/18)	0%, (0/1)	0%, (0/5)
Emergency services staff	Yes	50	59	81%, (13/16)	62%, (5/8)	91%, (10/11)	89%, (16/18)	100%, (1/1)	100%, (5/5)
Emergency services staff	No	6	59	6%, (1/16)	25%, (2/8)	9%, (1/11)	11%, (2/18)	0%, (0/1)	0%, (0/5)
Emergency services staff	Don't know	2	59	6%, (1/16)	12%, (1/8)	0%, (0/11)	0%, (0/18)	0%, (0/1)	0%, (0/5)
Emergency planners and managers	Yes	41	59	88%, (14/16)	38%, (3/8)	100%, (11/11)	44%, (8/18)	100%, (1/1)	80%, (4/5)
Emergency planners and managers	No	11	59	0%, (0/16)	50%, (4/8)	0%, (0/11)	39%, (7/18)	0%, (0/1)	0%, (0/5)
Emergency planners and managers	Don't know	5	59	6%, (1/16)	12%, (1/8)	0%, (0/11)	11%, (2/18)	0%, (0/1)	20%, (1/5)
Other	Yes	3	59	0%, (0/16)	0%, (0/8)	9%, (1/11)	11%, (2/18)	0%, (0/1)	0%, (0/5)
Other	No	1	59	0%, (0/16)	0%, (0/8)	0%, (0/11)	6%, (1/18)	0%, (0/1)	0%, (0/5)
Other	Don't know	3	59	0%, (0/16)	12%, (1/8)	18%, (2/11)	0%, (0/18)	0%, (0/1)	0%, (0/5)

Table Q27C: By NPHI Size

Options	Level	n	total	<=500	>500	Unknown
Clinical staff	Yes	57	59	97%, (32/33)	96%, (24/25)	100%, (1/1)
Clinical staff	No	2	59	3%, (1/33)	4%, (1/25)	0%, (0/1)
Clinical staff	Don't know	0	59	0	0	
Laboratory staff	Yes	51	59	91%, (30/33)	84%, (21/25)	0%, (0/1)
Laboratory staff	No	3	59	6%, (2/33)	4%, (1/25)	0%, (0/1)
Laboratory staff	Don't know	4	59	0%, (0/33)	12%, (3/25)	100%, (1/1)
Public health staff	Yes	49	59	94%, (31/33)	72%, (18/25)	0%, (0/1)
Public health staff	No	9	59	6%, (2/33)	28%, (7/25)	0%, (0/1)
Public health staff	Don't know	1	59	0%, (0/33)	0%, (0/25)	100%, (1/1)
Emergency services staff	Yes	50	59	88%, (29/33)	80%, (20/25)	100%, (1/1)
Emergency services staff	No	6	59	6%, (2/33)	16%, (4/25)	0%, (0/1)
Emergency services staff	Don't know	2	59	3%, (1/33)	4%, (1/25)	0%, (0/1)
Emergency planners and managers	Yes	41	59	85%, (28/33)	52%, (13/25)	0%, (0/1)
Emergency planners and managers	No	11	59	3%, (1/33)	40%, (10/25)	0%, (0/1)
Emergency planners and managers	Don't know	5	59	6%, (2/33)	8%, (2/25)	100%, (1/1)
Other	Yes	3	59	3%, (1/33)	8%, (2/25)	0%, (0/1)
Other	No	1	59	0%, (0/33)	4%, (1/25)	0%, (0/1)
Other	Don't know	3	59	6%, (2/33)	4%, (1/25)	0%, (0/1)

Question 28 Who provides training for public health emergency preparedness and response in your country?

Figure Q28

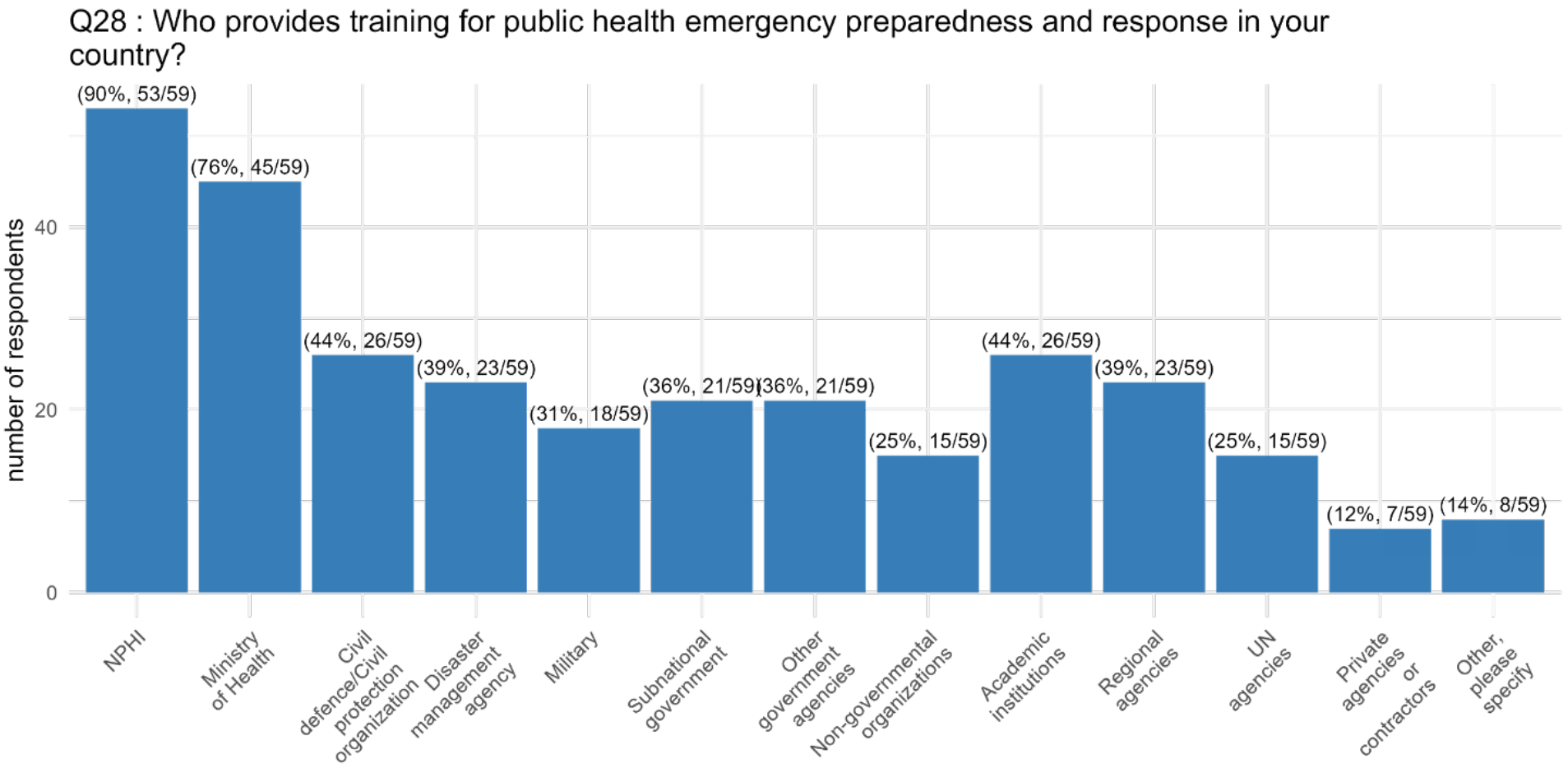


Table Q28A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
NPHI	53	59	100%, (11/11)	85%, (11/13)	92%, (12/13)	86%, (19/22)
Ministry of Health	45	59	82%, (9/11)	69%, (9/13)	77%, (10/13)	77%, (17/22)
Civil defence/Civil protection organization	26	59	9%, (1/11)	46%, (6/13)	62%, (8/13)	50%, (11/22)
Disaster management agency	23	59	18%, (2/11)	54%, (7/13)	38%, (5/13)	41%, (9/22)
Military	18	59	0%, (0/11)	46%, (6/13)	46%, (6/13)	27%, (6/22)
Subnational government	21	59	18%, (2/11)	46%, (6/13)	38%, (5/13)	36%, (8/22)
Other government agencies	21	59	18%, (2/11)	31%, (4/13)	31%, (4/13)	50%, (11/22)
Non-governmental organizations	15	59	27%, (3/11)	31%, (4/13)	15%, (2/13)	27%, (6/22)
Academic institutions	26	59	18%, (2/11)	31%, (4/13)	54%, (7/13)	59%, (13/22)
Regional agencies	23	59	18%, (2/11)	69%, (9/13)	54%, (7/13)	23%, (5/22)
UN agencies	15	59	45%, (5/11)	38%, (5/13)	38%, (5/13)	0%, (0/22)
Private agencies or contractors	7	59	0%, (0/11)	15%, (2/13)	0%, (0/13)	23%, (5/22)
Other, please specify	8	59	18%, (2/11)	0%, (0/13)	8%, (1/13)	23%, (5/22)

Table Q28B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
NPHI	53	59	94%, (15/16)	88%, (7/8)	91%, (10/11)	83%, (15/18)	100%, (1/1)	100%, (5/5)
Ministry of Health	45	59	69%, (11/16)	88%, (7/8)	91%, (10/11)	67%, (12/18)	0%, (0/1)	100%, (5/5)
Civil defence/Civil protection organization	26	59	25%, (4/16)	62%, (5/8)	45%, (5/11)	67%, (12/18)	0%, (0/1)	0%, (0/5)
Disaster management agency	23	59	31%, (5/16)	25%, (2/8)	55%, (6/11)	39%, (7/18)	100%, (1/1)	40%, (2/5)
Military	18	59	19%, (3/16)	38%, (3/8)	9%, (1/11)	44%, (8/18)	100%, (1/1)	40%, (2/5)
Subnational government	21	59	38%, (6/16)	50%, (4/8)	27%, (3/11)	39%, (7/18)	0%, (0/1)	20%, (1/5)
Other government agencies	21	59	25%, (4/16)	62%, (5/8)	9%, (1/11)	50%, (9/18)	0%, (0/1)	40%, (2/5)
Non-governmental organizations	15	59	19%, (3/16)	38%, (3/8)	36%, (4/11)	28%, (5/18)	0%, (0/1)	0%, (0/5)
Academic institutions	26	59	19%, (3/16)	88%, (7/8)	36%, (4/11)	61%, (11/18)	0%, (0/1)	20%, (1/5)
Regional agencies	23	59	56%, (9/16)	38%, (3/8)	27%, (3/11)	39%, (7/18)	100%, (1/1)	0%, (0/5)
UN agencies	15	59	50%, (8/16)	25%, (2/8)	18%, (2/11)	17%, (3/18)	0%, (0/1)	0%, (0/5)
Private agencies or contractors	7	59	0%, (0/16)	12%, (1/8)	18%, (2/11)	22%, (4/18)	0%, (0/1)	0%, (0/5)
Other, please specify	8	59	12%, (2/16)	12%, (1/8)	0%, (0/11)	22%, (4/18)	0%, (0/1)	20%, (1/5)

Table Q28C: By NPHI Size

Options	n	total	<=500	>500	Unknown
NPHI	53	59	91%, (30/33)	88%, (22/25)	100%, (1/1)
Ministry of Health	45	59	73%, (24/33)	80%, (20/25)	100%, (1/1)
Civil defence/Civil protection organization	26	59	39%, (13/33)	48%, (12/25)	100%, (1/1)
Disaster management agency	23	59	42%, (14/33)	32%, (8/25)	100%, (1/1)
Military	18	59	30%, (10/33)	32%, (8/25)	0%, (0/1)
Subnational government	21	59	27%, (9/33)	48%, (12/25)	0%, (0/1)
Other government agencies	21	59	27%, (9/33)	44%, (11/25)	100%, (1/1)
Non-governmental organizations	15	59	21%, (7/33)	28%, (7/25)	100%, (1/1)
Academic institutions	26	59	33%, (11/33)	56%, (14/25)	100%, (1/1)
Regional agencies	23	59	45%, (15/33)	32%, (8/25)	0%, (0/1)
UN agencies	15	59	33%, (11/33)	16%, (4/25)	0%, (0/1)
Private agencies or contractors	7	59	9%, (3/33)	12%, (3/25)	100%, (1/1)
Other, please specify	8	59	6%, (2/33)	24%, (6/25)	0%, (0/1)

8.3.4.1 Subsection, National Health Emergency

Question 29 Since 2014, has your NPHI deployed any workforce nationally (i.e country) in a health emergency?

Figure Q29

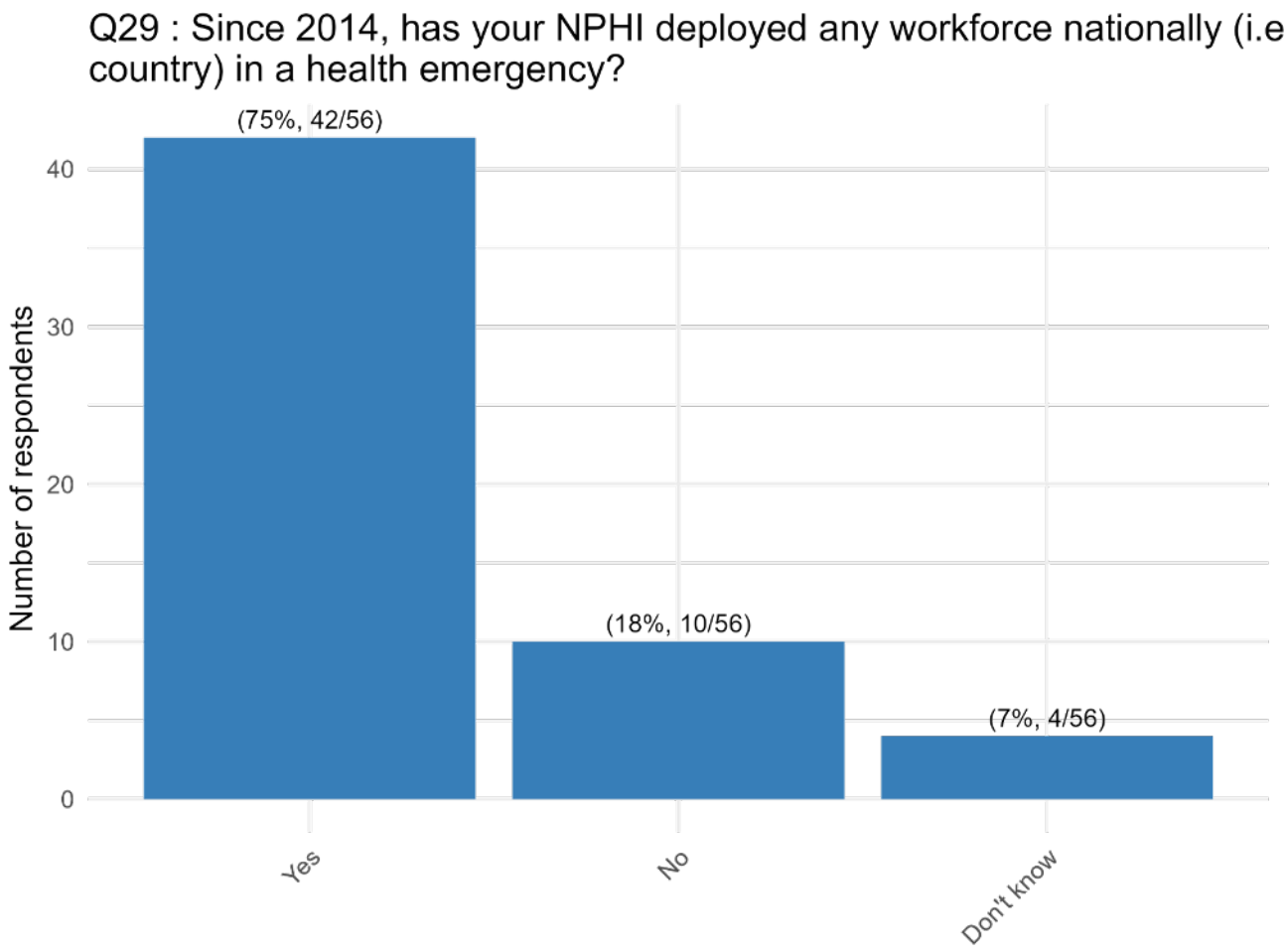


Table Q29A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Yes	42	56	82%, (9/11)	75%, (9/12)	75%, (9/12)	71%, (15/21)
No	10	56	0%, (0/11)	25%, (3/12)	17%, (2/12)	24%, (5/21)
Don't know	4	56	18%, (2/11)	0%, (0/12)	8%, (1/12)	5%, (1/21)

Table Q29B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Yes	42	56	79%, (11/14)	75%, (6/8)	55%, (6/11)	76%, (13/17)	100%, (1/1)	100%, (5/5)
No	10	56	14%, (2/14)	12%, (1/8)	27%, (3/11)	24%, (4/17)	0%, (0/1)	0%, (0/5)
Don't know	4	56	7%, (1/14)	12%, (1/8)	18%, (2/11)	0%, (0/17)	0%, (0/1)	0%, (0/5)

Table Q29C: By NPHI Size

Options	n	total	<=500	>500	Unknown
Yes	42	56	70%, (21/30)	80%, (20/25)	100%, (1/1)
No	10	56	23%, (7/30)	12%, (3/25)	0%, (0/1)
Don't know	4	56	7%, (2/30)	8%, (2/25)	0%, (0/1)

Question 30 If yes, which type of workforce did your NPHI deploy?

Figure Q30

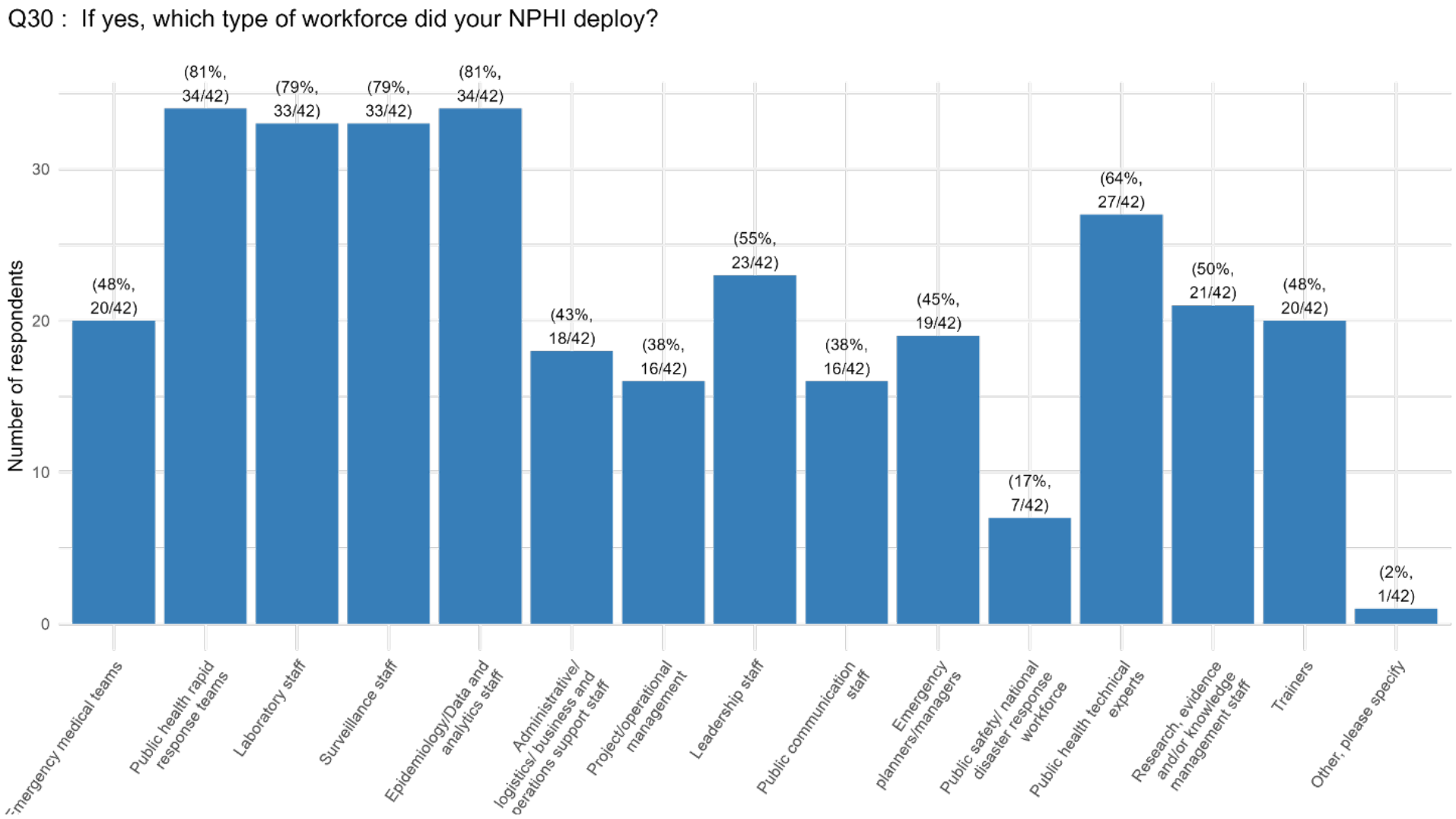


Table Q30A: By Income Group

Options	n	total	<=500	>500	Unknown
Emergency medical teams	20	42	48%, (10/21)	45%, (9/20)	100%, (1/1)
Public health rapid response teams	34	42	81%, (17/21)	80%, (16/20)	100%, (1/1)
Laboratory staff	33	42	81%, (17/21)	75%, (15/20)	100%, (1/1)
Surveillance staff	33	42	76%, (16/21)	80%, (16/20)	100%, (1/1)
Epidemiology/Data and analytics staff	34	42	81%, (17/21)	80%, (16/20)	100%, (1/1)
Administrative/ logistics/ business and operations support staff	18	42	48%, (10/21)	35%, (7/20)	100%, (1/1)
Project/operational management	16	42	38%, (8/21)	40%, (8/20)	0%, (0/1)
Leadership staff	23	42	52%, (11/21)	60%, (12/20)	0%, (0/1)
Public communication staff	16	42	38%, (8/21)	40%, (8/20)	0%, (0/1)
Emergency planners/managers	19	42	48%, (10/21)	40%, (8/20)	100%, (1/1)
Public safety/ national disaster response workforce	7	42	24%, (5/21)	10%, (2/20)	0%, (0/1)
Public health technical experts	27	42	57%, (12/21)	70%, (14/20)	100%, (1/1)
Research, evidence and/or knowledge management staff	21	42	52%, (11/21)	50%, (10/20)	0%, (0/1)
Trainers	20	42	48%, (10/21)	50%, (10/20)	0%, (0/1)
Other, please specify	1	42	5%, (1/21)	0%, (0/20)	0%, (0/1)

Table Q30B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Emergency medical teams	20	42	73%, (8/11)	33%, (2/6)	50%, (3/6)	38%, (5/13)	100%, (1/1)	20%, (1/5)
Public health rapid response teams	34	42	82%, (9/11)	50%, (3/6)	67%, (4/6)	92%, (12/13)	100%, (1/1)	100%, (5/5)
Laboratory staff	33	42	91%, (10/11)	83%, (5/6)	83%, (5/6)	77%, (10/13)	100%, (1/1)	40%, (2/5)
Surveillance staff	33	42	91%, (10/11)	83%, (5/6)	67%, (4/6)	85%, (11/13)	100%, (1/1)	40%, (2/5)
Epidemiology/Data and analytics staff	34	42	91%, (10/11)	100%, (6/6)	33%, (2/6)	92%, (12/13)	100%, (1/1)	60%, (3/5)
Administrative/ logistics/ business and operations support staff	18	42	55%, (6/11)	33%, (2/6)	17%, (1/6)	54%, (7/13)	100%, (1/1)	20%, (1/5)
Project/operational management	16	42	55%, (6/11)	17%, (1/6)	0%, (0/6)	62%, (8/13)	100%, (1/1)	0%, (0/5)
Leadership staff	23	42	64%, (7/11)	50%, (3/6)	33%, (2/6)	62%, (8/13)	100%, (1/1)	40%, (2/5)
Public communication staff	16	42	55%, (6/11)	33%, (2/6)	17%, (1/6)	38%, (5/13)	100%, (1/1)	20%, (1/5)
Emergency planners/managers	19	42	64%, (7/11)	17%, (1/6)	33%, (2/6)	54%, (7/13)	100%, (1/1)	20%, (1/5)
Public safety/ national disaster response workforce	7	42	18%, (2/11)	0%, (0/6)	0%, (0/6)	31%, (4/13)	100%, (1/1)	0%, (0/5)
Public health technical experts	27	42	73%, (8/11)	67%, (4/6)	50%, (3/6)	62%, (8/13)	100%, (1/1)	60%, (3/5)
Research, evidence and/or knowledge management staff	21	42	73%, (8/11)	67%, (4/6)	17%, (1/6)	38%, (5/13)	100%, (1/1)	40%, (2/5)
Trainers	20	42	73%, (8/11)	17%, (1/6)	50%, (3/6)	31%, (4/13)	100%, (1/1)	60%, (3/5)
Other, please specify	1	42	9%, (1/11)	0%, (0/6)	0%, (0/6)	0%, (0/13)	0%, (0/1)	0%, (0/5)

Table Q30C: By NPHI Size

Options	n	total	<=500	>500	Unknown
Emergency medical teams	20	42	48%, (10/21)	45%, (9/20)	100%, (1/1)
Public health rapid response teams	34	42	81%, (17/21)	80%, (16/20)	100%, (1/1)
Laboratory staff	33	42	81%, (17/21)	75%, (15/20)	100%, (1/1)
Surveillance staff	33	42	76%, (16/21)	80%, (16/20)	100%, (1/1)
Epidemiology/Data and analytics staff	34	42	81%, (17/21)	80%, (16/20)	100%, (1/1)
Administrative/ logistics/ business and operations support staff	18	42	48%, (10/21)	35%, (7/20)	100%, (1/1)
Project/operational management	16	42	38%, (8/21)	40%, (8/20)	0%, (0/1)
Leadership staff	23	42	52%, (11/21)	60%, (12/20)	0%, (0/1)
Public communication staff	16	42	38%, (8/21)	40%, (8/20)	0%, (0/1)
Emergency planners/managers	19	42	48%, (10/21)	40%, (8/20)	100%, (1/1)
Public safety/ national disaster response workforce	7	42	24%, (5/21)	10%, (2/20)	0%, (0/1)
Public health technical experts	27	42	57%, (12/21)	70%, (14/20)	100%, (1/1)
Research, evidence and/or knowledge management staff	21	42	52%, (11/21)	50%, (10/20)	0%, (0/1)
Trainers	20	42	48%, (10/21)	50%, (10/20)	0%, (0/1)
Other, please specify	1	42	5%, (1/21)	0%, (0/20)	0%, (0/1)

Question 31 Since 2014, has your NPHI received any workforce regionally, or internationally (i.e. fom outside your country) following a call for assistance in a public health emergency?

Figure Q31

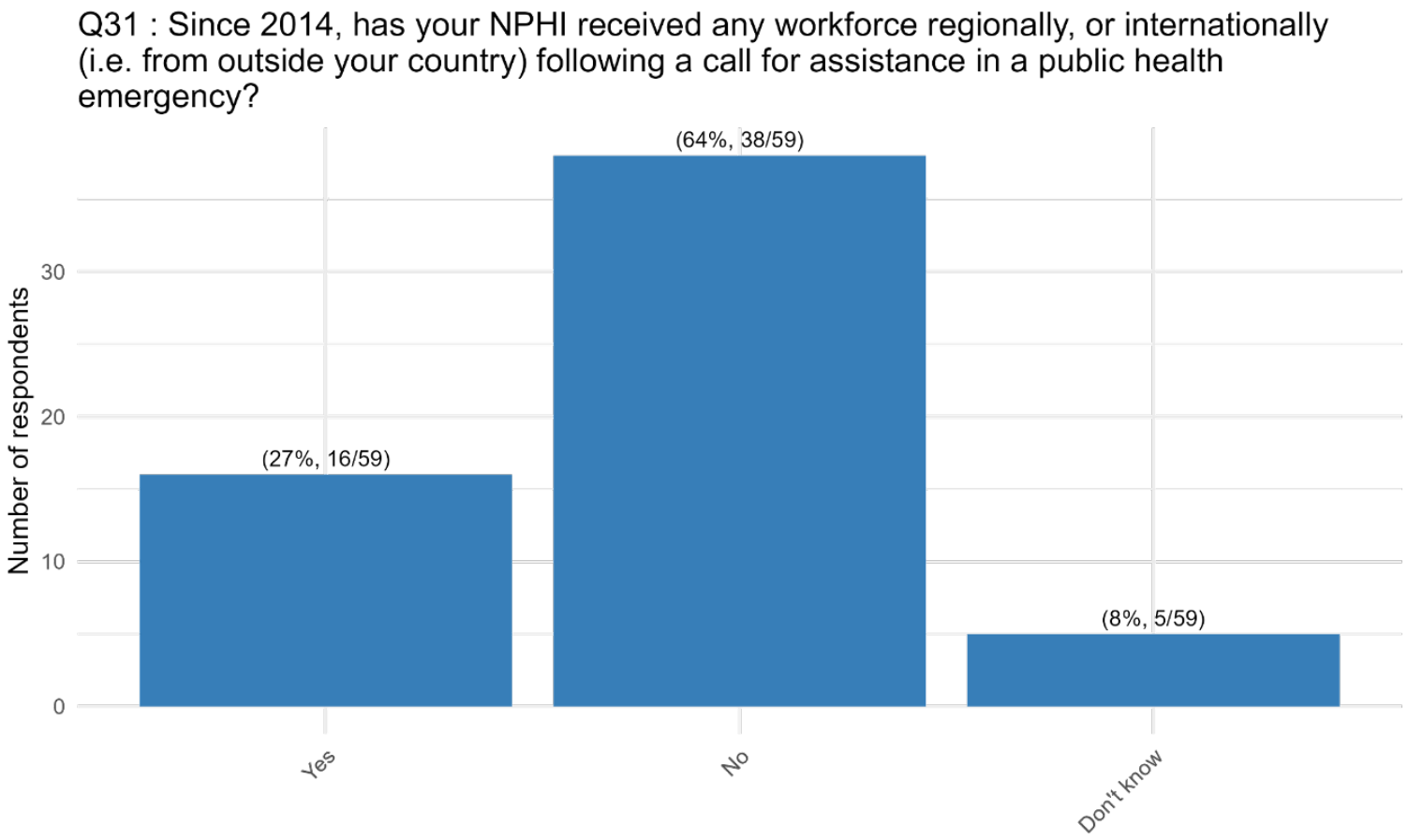


Table Q31A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Yes	16	59	36%, (4/11)	46%, (6/13)	23%, (3/13)	14%, (3/22)
No	38	59	36%, (4/11)	54%, (7/13)	69%, (9/13)	82%, (18/22)
Don't know	5	59	27%, (3/11)	0%, (0/13)	8%, (1/13)	5%, (1/22)

Table Q31B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Yes	16	59	38%, (6/16)	25%, (2/8)	36%, (4/11)	22%, (4/18)	0%, (0/1)	0%, (0/5)
No	38	59	50%, (8/16)	75%, (6/8)	55%, (6/11)	72%, (13/18)	100%, (1/1)	80%, (4/5)
Don't know	5	59	12%, (2/16)	0%, (0/8)	9%, (1/11)	6%, (1/18)	0%, (0/1)	20%, (1/5)

Table Q31C: By NPHI Size

Options	n	total	<=500	>500	Unknown
Yes	16	59	33%, (11/33)	20%, (5/25)	0%, (0/1)
No	38	59	55%, (18/33)	76%, (19/25)	100%, (1/1)
Don't know	5	59	12%, (4/33)	4%, (1/25)	0%, (0/1)

Question 33 If yes, which type of workforce did your NPHI receive?

Figure Q33

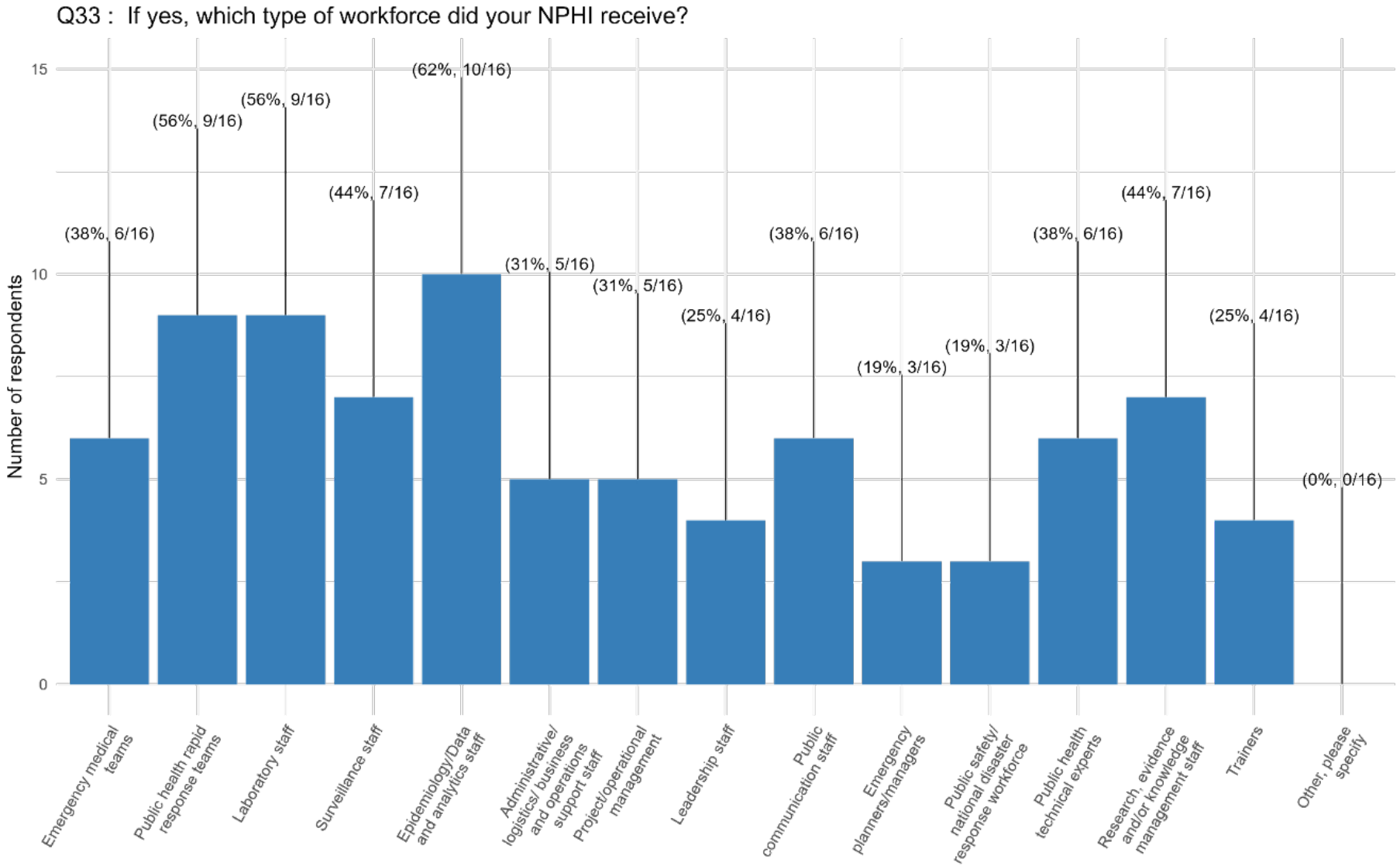


Table Q33A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Emergency medical teams	6	16	75%, (3/4)	17%, (1/6)	33%, (1/3)	33%, (1/3)
Public health rapid response teams	9	16	100%, (4/4)	33%, (2/6)	67%, (2/3)	33%, (1/3)
Laboratory staff	9	16	50%, (2/4)	67%, (4/6)	67%, (2/3)	33%, (1/3)
Surveillance staff	7	16	75%, (3/4)	17%, (1/6)	67%, (2/3)	33%, (1/3)
Epidemiology/Data and analytics staff	10	16	100%, (4/4)	33%, (2/6)	67%, (2/3)	67%, (2/3)
Administrative/ logistics/ business and operations support staff	5	16	75%, (3/4)	0%, (0/6)	33%, (1/3)	33%, (1/3)
Project/operational management	5	16	75%, (3/4)	0%, (0/6)	67%, (2/3)	0%, (0/3)
Leadership staff	4	16	75%, (3/4)	0%, (0/6)	33%, (1/3)	0%, (0/3)
Public communication staff	6	16	75%, (3/4)	33%, (2/6)	33%, (1/3)	0%, (0/3)
Emergency planners/managers	3	16	75%, (3/4)	0%, (0/6)	0%, (0/3)	0%, (0/3)
Public safety/ national disaster response workforce	3	16	75%, (3/4)	0%, (0/6)	0%, (0/3)	0%, (0/3)
Public health technical experts	6	16	75%, (3/4)	0%, (0/6)	100%, (3/3)	0%, (0/3)
Research, evidence and/or knowledge management staff	7	16	75%, (3/4)	17%, (1/6)	100%, (3/3)	0%, (0/3)
Trainers	4	16	75%, (3/4)	17%, (1/6)	0%, (0/3)	0%, (0/3)
Other, please specify	0	16	0	0	0	0

Table Q33B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Emergency medical teams	6	16	50%, (3/6)	0%, (0/2)	50%, (2/4)	25%, (1/4)		
Public health rapid response teams	9	16	67%, (4/6)	50%, (1/2)	50%, (2/4)	50%, (2/4)		
Laboratory staff	9	16	50%, (3/6)	100%, (2/2)	75%, (3/4)	25%, (1/4)		
Surveillance staff	7	16	50%, (3/6)	100%, (2/2)	25%, (1/4)	25%, (1/4)		
Epidemiology/Data and analytics staff	10	16	67%, (4/6)	100%, (2/2)	50%, (2/4)	50%, (2/4)		
Administrative/ logistics/ business and operations support staff	5	16	50%, (3/6)	0%, (0/2)	0%, (0/4)	50%, (2/4)		
Project/operational management	5	16	50%, (3/6)	100%, (2/2)	0%, (0/4)	0%, (0/4)		
Leadership staff	4	16	50%, (3/6)	50%, (1/2)	0%, (0/4)	0%, (0/4)		
Public communication staff	6	16	67%, (4/6)	0%, (0/2)	25%, (1/4)	25%, (1/4)		
Emergency planners/managers	3	16	50%, (3/6)	0%, (0/2)	0%, (0/4)	0%, (0/4)		
Public safety/ national disaster response workforce	3	16	50%, (3/6)	0%, (0/2)	0%, (0/4)	0%, (0/4)		
Public health technical experts	6	16	50%, (3/6)	100%, (2/2)	0%, (0/4)	25%, (1/4)		
Research, evidence and/or knowledge management staff	7	16	67%, (4/6)	100%, (2/2)	0%, (0/4)	25%, (1/4)		
Trainers	4	16	50%, (3/6)	0%, (0/2)	25%, (1/4)	0%, (0/4)		
Other, please specify	0	16	0	0	0	0	0	0

Table Q33C: By NPHI Size

Options	n	total	<=500	>500
Emergency medical teams	6	16	27%, (3/11)	60%, (3/5)
Public health rapid response teams	9	16	36%, (4/11)	100%, (5/5)
Laboratory staff	9	16	64%, (7/11)	40%, (2/5)
Surveillance staff	7	16	45%, (5/11)	40%, (2/5)
Epidemiology/Data and analytics staff	10	16	64%, (7/11)	60%, (3/5)
Administrative/ logistics/ business and operations support staff	5	16	36%, (4/11)	20%, (1/5)
Project/operational management	5	16	36%, (4/11)	20%, (1/5)
Leadership staff	4	16	27%, (3/11)	20%, (1/5)
Public communication staff	6	16	36%, (4/11)	40%, (2/5)
Emergency planners/managers	3	16	27%, (3/11)	0%, (0/5)
Public safety/ national disaster response workforce	3	16	27%, (3/11)	0%, (0/5)
Public health technical experts	6	16	36%, (4/11)	40%, (2/5)
Research, evidence and/or knowledge management staff	7	16	45%, (5/11)	40%, (2/5)
Trainers	4	16	27%, (3/11)	20%, (1/5)
Other, please specify	0	16	0	0

Question 34 What were the challenges faced when integrating external staff into your NPHI worforce?

Figure Q34

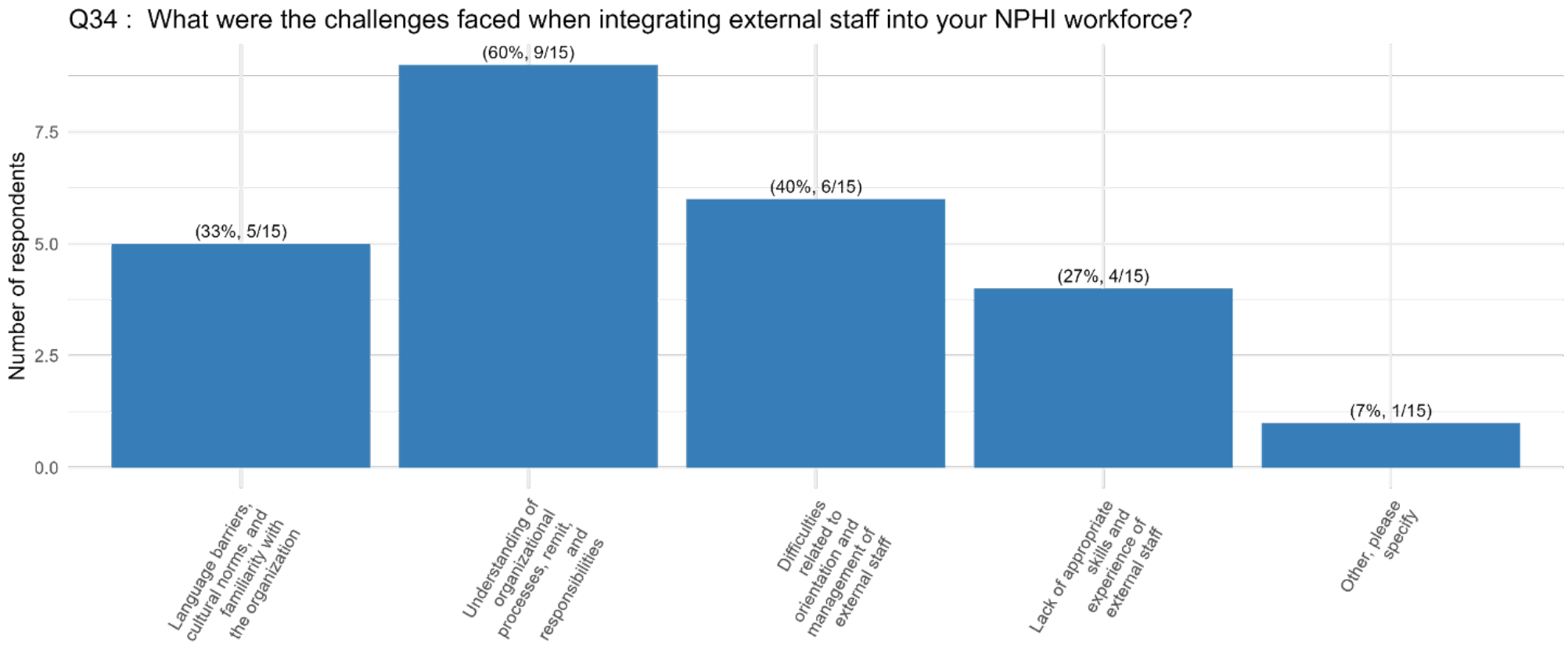


Table Q34A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Language barriers, cultural norms, and familiarity with the organization	5	15	75%, (3/4)	17%, (1/6)	0%, (0/2)	33%, (1/3)
Understanding of organizational processes, remit, and responsibilities	9	15	75%, (3/4)	33%, (2/6)	50%, (1/2)	100%, (3/3)
Difficulties related to orientation and management of external staff	6	15	100%, (4/4)	0%, (0/6)	50%, (1/2)	33%, (1/3)
Lack of appropriate skills and experience of external staff	4	15	25%, (1/4)	33%, (2/6)	0%, (0/2)	33%, (1/3)
Other, please specify	1	15	0%, (0/4)	17%, (1/6)	0%, (0/2)	0%, (0/3)

Table Q34B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO
Language barriers, cultural norms, and familiarity with the organization	5	15	50%, (3/6)	0%, (0/1)	50%, (2/4)	0%, (0/4)
Understanding of organizational processes, remit, and responsibilities	9	15	83%, (5/6)	100%, (1/1)	25%, (1/4)	50%, (2/4)
Difficulties related to orientation and management of external staff	6	15	67%, (4/6)	0%, (0/1)	0%, (0/4)	50%, (2/4)
Lack of appropriate skills and experience of external staff	4	15	17%, (1/6)	0%, (0/1)	50%, (2/4)	25%, (1/4)
Other, please specify	1	15	0%, (0/6)	0%, (0/1)	0%, (0/4)	25%, (1/4)

Table Q34C: By NPHI Size

Options	n	total	<=500	>500
Language barriers, cultural norms, and familiarity with the organization	5	15	30%, (3/10)	40%, (2/5)
Understanding of organizational processes, remit, and responsibilities	9	15	70%, (7/10)	40%, (2/5)
Difficulties related to orientation and management of external staff	6	15	40%, (4/10)	40%, (2/5)
Lack of appropriate skills and experience of external staff	4	15	40%, (4/10)	0%, (0/5)
Other, please specify	1	15	10%, (1/10)	0%, (0/5)

Question 35 When receiving staff in a health emergency, has your NPHI given feedback to the sending organization?

Figure Q35

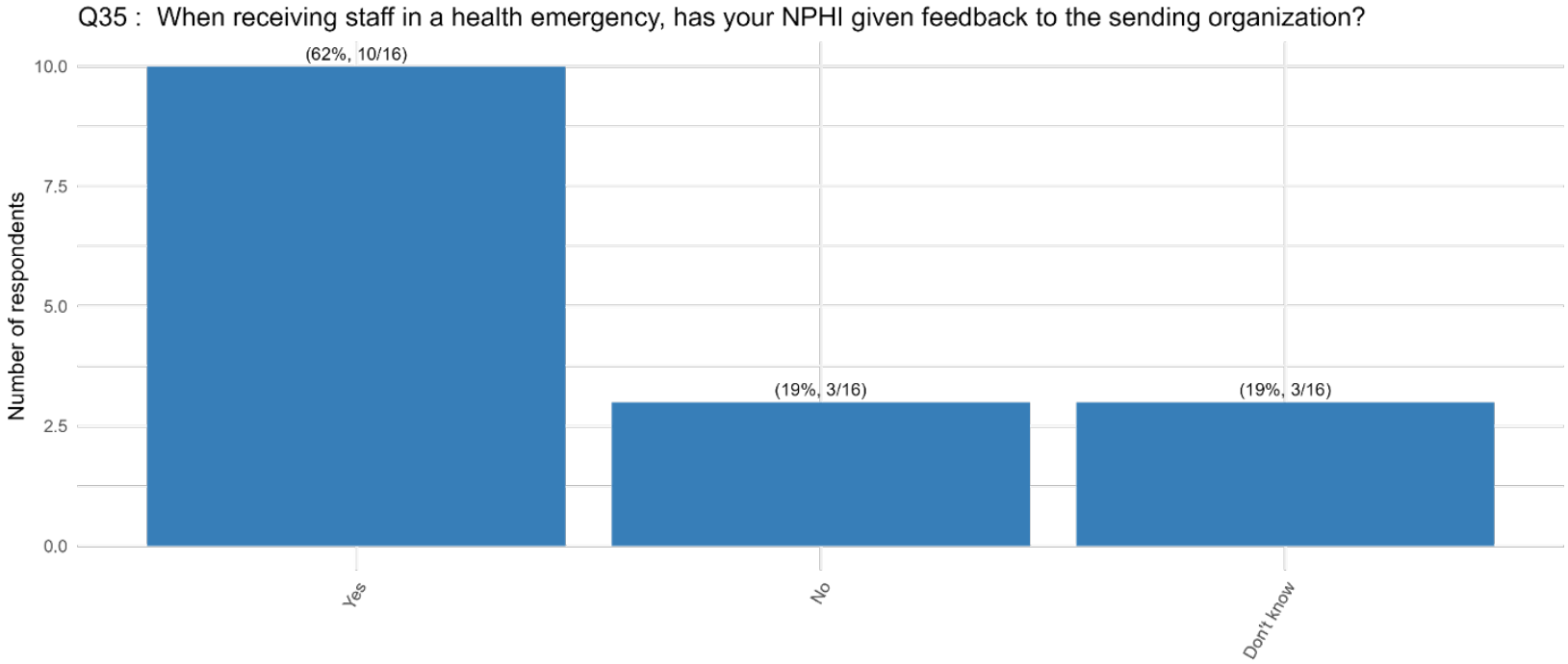


Table Q35A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Yes	10	16	50%, (2/4)	50%, (3/6)	100%, (3/3)	67%, (2/3)
No	3	16	50%, (2/4)	17%, (1/6)	0%, (0/3)	0%, (0/3)
Don't know	3	16	0%, (0/4)	33%, (2/6)	0%, (0/3)	33%, (1/3)

Table Q35B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO
Yes	10	16	50%, (3/6)	100%, (2/2)	50%, (2/4)	75%, (3/4)
No	3	16	50%, (3/6)	0%, (0/2)	0%, (0/4)	0%, (0/4)
Don't know	3	16	0%, (0/6)	0%, (0/2)	50%, (2/4)	25%, (1/4)

Table Q35C: By NPHI Size

Options	n	total	<=500	>500
Yes	10	16	55%, (6/11)	80%, (4/5)
No	3	16	27%, (3/11)	0%, (0/5)
Don't know	3	16	18%, (2/11)	20%, (1/5)

Question 36 What are the current challenges to increasing surge capacity to respond to health emergencies at a national level in your country?

Figure Q36

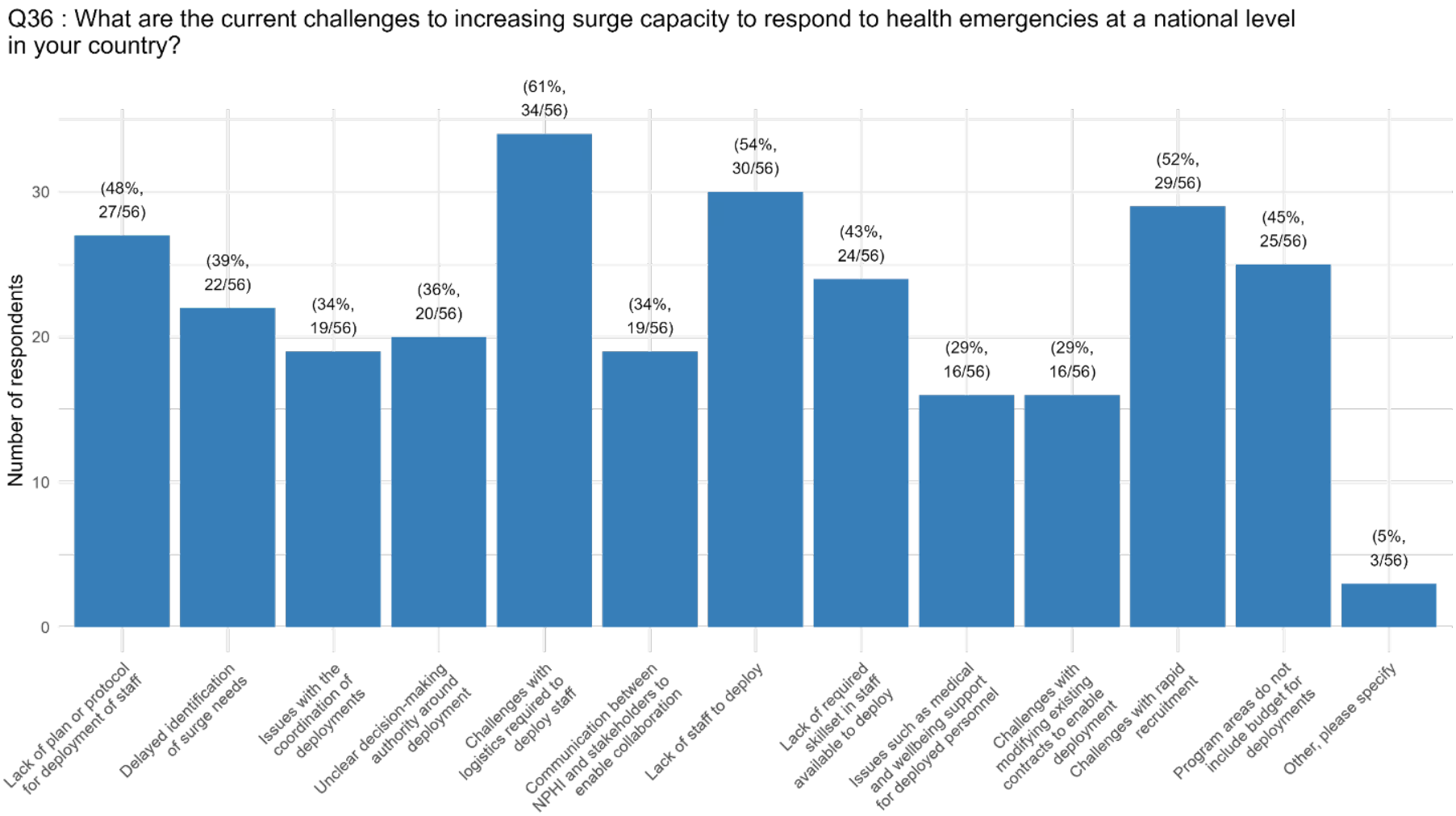


Table Q36A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Lack of plan or protocol for deployment of staff	27	56	73%, (8/11)	42%, (5/12)	54%, (7/13)	35%, (7/20)
Delayed identification of surge needs	22	56	45%, (5/11)	58%, (7/12)	31%, (4/13)	30%, (6/20)
Issues with the coordination of deployments	19	56	64%, (7/11)	42%, (5/12)	46%, (6/13)	5%, (1/20)
Unclear decision-making authority around deployment	20	56	36%, (4/11)	50%, (6/12)	31%, (4/13)	30%, (6/20)
Challenges with logistics required to deploy staff	34	56	73%, (8/11)	42%, (5/12)	85%, (11/13)	50%, (10/20)
Communication between NPHI and stakeholders to enable collaboration	19	56	36%, (4/11)	25%, (3/12)	38%, (5/13)	35%, (7/20)
Lack of staff to deploy	30	56	27%, (3/11)	25%, (3/12)	69%, (9/13)	75%, (15/20)
Lack of required skillset in staff available to deploy	24	56	36%, (4/11)	33%, (4/12)	62%, (8/13)	40%, (8/20)
Issues such as medical and wellbeing support for deployed personnel	16	56	55%, (6/11)	50%, (6/12)	31%, (4/13)	0%, (0/20)
Challenges with modifying existing contracts to enable deployment	16	56	36%, (4/11)	25%, (3/12)	31%, (4/13)	25%, (5/20)
Challenges with rapid recruitment	29	56	55%, (6/11)	50%, (6/12)	54%, (7/13)	50%, (10/20)
Program areas do not include budget for deployments	25	56	73%, (8/11)	42%, (5/12)	54%, (7/13)	25%, (5/20)
Other, please specify	3	56	0%, (0/11)	8%, (1/12)	8%, (1/13)	5%, (1/20)

Table Q36B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Lack of plan or protocol for deployment of staff	27	56	69%, (11/16)	38%, (3/8)	60%, (6/10)	35%, (6/17)	100%, (1/1)	0%, (0/4)
Delayed identification of surge needs	22	56	56%, (9/16)	25%, (2/8)	40%, (4/10)	29%, (5/17)	100%, (1/1)	25%, (1/4)
Issues with the coordination of deployments	19	56	62%, (10/16)	25%, (2/8)	40%, (4/10)	12%, (2/17)	100%, (1/1)	0%, (0/4)
Unclear decision-making authority around deployment	20	56	56%, (9/16)	25%, (2/8)	20%, (2/10)	35%, (6/17)	100%, (1/1)	0%, (0/4)
Challenges with logistics required to deploy staff	34	56	62%, (10/16)	75%, (6/8)	80%, (8/10)	41%, (7/17)	100%, (1/1)	50%, (2/4)
Communication between NPHI and stakeholders to enable collaboration	19	56	31%, (5/16)	50%, (4/8)	40%, (4/10)	29%, (5/17)	100%, (1/1)	0%, (0/4)
Lack of staff to deploy	30	56	31%, (5/16)	62%, (5/8)	40%, (4/10)	82%, (14/17)	100%, (1/1)	25%, (1/4)
Lack of required skillset in staff available to deploy	24	56	38%, (6/16)	50%, (4/8)	30%, (3/10)	41%, (7/17)	100%, (1/1)	75%, (3/4)
Issues such as medical and wellbeing support for deployed personnel	16	56	56%, (9/16)	25%, (2/8)	0%, (0/10)	18%, (3/17)	100%, (1/1)	25%, (1/4)
Challenges with modifying existing contracts to enable deployment	16	56	12%, (2/16)	62%, (5/8)	50%, (5/10)	18%, (3/17)	100%, (1/1)	0%, (0/4)
Challenges with rapid recruitment	29	56	44%, (7/16)	62%, (5/8)	60%, (6/10)	59%, (10/17)	100%, (1/1)	0%, (0/4)
Program areas do not include budget for deployments	25	56	62%, (10/16)	75%, (6/8)	40%, (4/10)	18%, (3/17)	100%, (1/1)	25%, (1/4)
Other, please specify	3	56	6%, (1/16)	12%, (1/8)	0%, (0/10)	6%, (1/17)	0%, (0/1)	0%, (0/4)

Table Q36C: By NPHI Size

Options	n	total	<=500	>500	Unknown
Lack of plan or protocol for deployment of staff	27	56	59%, (19/32)	30%, (7/23)	100%, (1/1)
Delayed identification of surge needs	22	56	47%, (15/32)	30%, (7/23)	0%, (0/1)
Issues with the coordination of deployments	19	56	56%, (18/32)	4%, (1/23)	0%, (0/1)
Unclear decision-making authority around deployment	20	56	41%, (13/32)	26%, (6/23)	100%, (1/1)
Challenges with logistics required to deploy staff	34	56	66%, (21/32)	57%, (13/23)	0%, (0/1)
Communication between NPHI and stakeholders to enable collaboration	19	56	41%, (13/32)	26%, (6/23)	0%, (0/1)
Lack of staff to deploy	30	56	50%, (16/32)	57%, (13/23)	100%, (1/1)
Lack of required skillset in staff available to deploy	24	56	47%, (15/32)	39%, (9/23)	0%, (0/1)
Issues such as medical and wellbeing support for deployed personnel	16	56	41%, (13/32)	13%, (3/23)	0%, (0/1)
Challenges with modifying existing contracts to enable deployment	16	56	28%, (9/32)	26%, (6/23)	100%, (1/1)
Challenges with rapid recruitment	29	56	47%, (15/32)	57%, (13/23)	100%, (1/1)
Program areas do not include budget for deployments	25	56	53%, (17/32)	35%, (8/23)	0%, (0/1)
Other, please specify	3	56	3%, (1/32)	9%, (2/23)	0%, (0/1)

8.3.4.2 Subsection, Regional and International Health Emergency

Question 38 In the event of a national publice health emergency, where would your NPHI drew staff from to respond?

Figure Q38

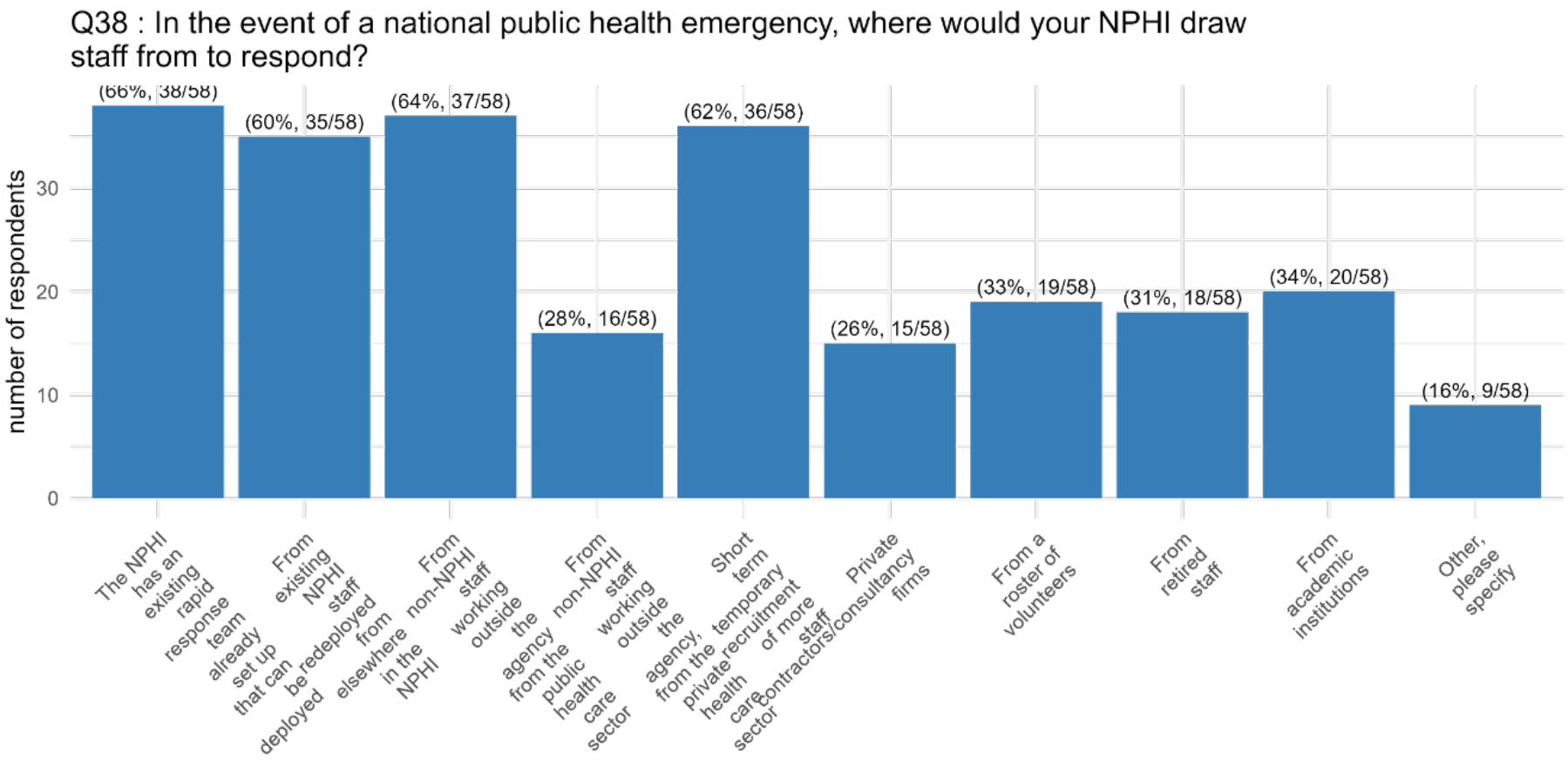


Table Q38A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
The NPHI has an existing rapid response team already set up that can be deployed	38	58	82%, (9/11)	54%, (7/13)	69%, (9/13)	62%, (13/21)
From existing NPHI staff redeployed from elsewhere in the NPHI	35	58	45%, (5/11)	54%, (7/13)	69%, (9/13)	67%, (14/21)
From non-NPHI staff working outside the agency from the public health care sector	37	58	82%, (9/11)	62%, (8/13)	69%, (9/13)	52%, (11/21)
From non-NPHI staff working outside the agency, from the private health care sector	16	58	27%, (3/11)	23%, (3/13)	31%, (4/13)	29%, (6/21)
Short term temporary recruitment of more staff	36	58	73%, (8/11)	46%, (6/13)	54%, (7/13)	71%, (15/21)
Private contractors/consultancy firms	15	58	27%, (3/11)	23%, (3/13)	8%, (1/13)	38%, (8/21)
From a roster of volunteers	19	58	45%, (5/11)	38%, (5/13)	15%, (2/13)	33%, (7/21)
From retired staff	18	58	18%, (2/11)	15%, (2/13)	15%, (2/13)	57%, (12/21)
From academic institutions	20	58	36%, (4/11)	38%, (5/13)	31%, (4/13)	33%, (7/21)
Other, please specify	9	58	18%, (2/11)	15%, (2/13)	23%, (3/13)	10%, (2/21)

Table Q38B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
The NPHI has an existing rapid response team already set up that can be deployed	38	58	75%, (12/16)	75%, (6/8)	55%, (6/11)	53%, (9/17)	100%, (1/1)	80%, (4/5)
From existing NPHI staff redeployed from elsewhere in the NPHI	35	58	31%, (5/16)	88%, (7/8)	45%, (5/11)	71%, (12/17)	100%, (1/1)	100%, (5/5)
From non-NPHI staff working outside the agency from the public health care sector	37	58	75%, (12/16)	50%, (4/8)	55%, (6/11)	53%, (9/17)	100%, (1/1)	100%, (5/5)
From non-NPHI staff working outside the agency, from the private health care sector	16	58	31%, (5/16)	0%, (0/8)	36%, (4/11)	29%, (5/17)	0%, (0/1)	40%, (2/5)
Short term temporary recruitment of more staff	36	58	75%, (12/16)	88%, (7/8)	36%, (4/11)	59%, (10/17)	0%, (0/1)	60%, (3/5)
Private contractors/consultancy firms	15	58	19%, (3/16)	25%, (2/8)	27%, (3/11)	35%, (6/17)	0%, (0/1)	20%, (1/5)
From a roster of volunteers	19	58	31%, (5/16)	12%, (1/8)	55%, (6/11)	29%, (5/17)	0%, (0/1)	40%, (2/5)
From retired staff	18	58	19%, (3/16)	38%, (3/8)	27%, (3/11)	41%, (7/17)	0%, (0/1)	40%, (2/5)
From academic institutions	20	58	31%, (5/16)	38%, (3/8)	45%, (5/11)	35%, (6/17)	0%, (0/1)	20%, (1/5)
Other, please specify	9	58	25%, (4/16)	38%, (3/8)	0%, (0/11)	12%, (2/17)	0%, (0/1)	0%, (0/5)

Table Q38C: By NPHI Size

Options	n	total	<=500	>500	Unknown
The NPHI has an existing rapid response team already set up that can be deployed	38	58	62%, (20/32)	72%, (18/25)	0%, (0/1)
From existing NPHI staff redeployed from elsewhere in the NPHI	35	58	53%, (17/32)	72%, (18/25)	0%, (0/1)
From non-NPHI staff working outside the agency from the public health care sector	37	58	66%, (21/32)	64%, (16/25)	0%, (0/1)
From non-NPHI staff working outside the agency, from the private health care sector	16	58	34%, (11/32)	20%, (5/25)	0%, (0/1)
Short term temporary recruitment of more staff	36	58	62%, (20/32)	64%, (16/25)	0%, (0/1)
Private contractors/consultancy firms	15	58	25%, (8/32)	28%, (7/25)	0%, (0/1)
From a roster of volunteers	19	58	34%, (11/32)	28%, (7/25)	100%, (1/1)
From retired staff	18	58	19%, (6/32)	48%, (12/25)	0%, (0/1)
From academic institutions	20	58	31%, (10/32)	40%, (10/25)	0%, (0/1)
Other, please specify	9	58	12%, (4/32)	20%, (5/25)	0%, (0/1)

Question 39 Which type of regional or international health emergencies would your NPHI respond to?

Figure Q39

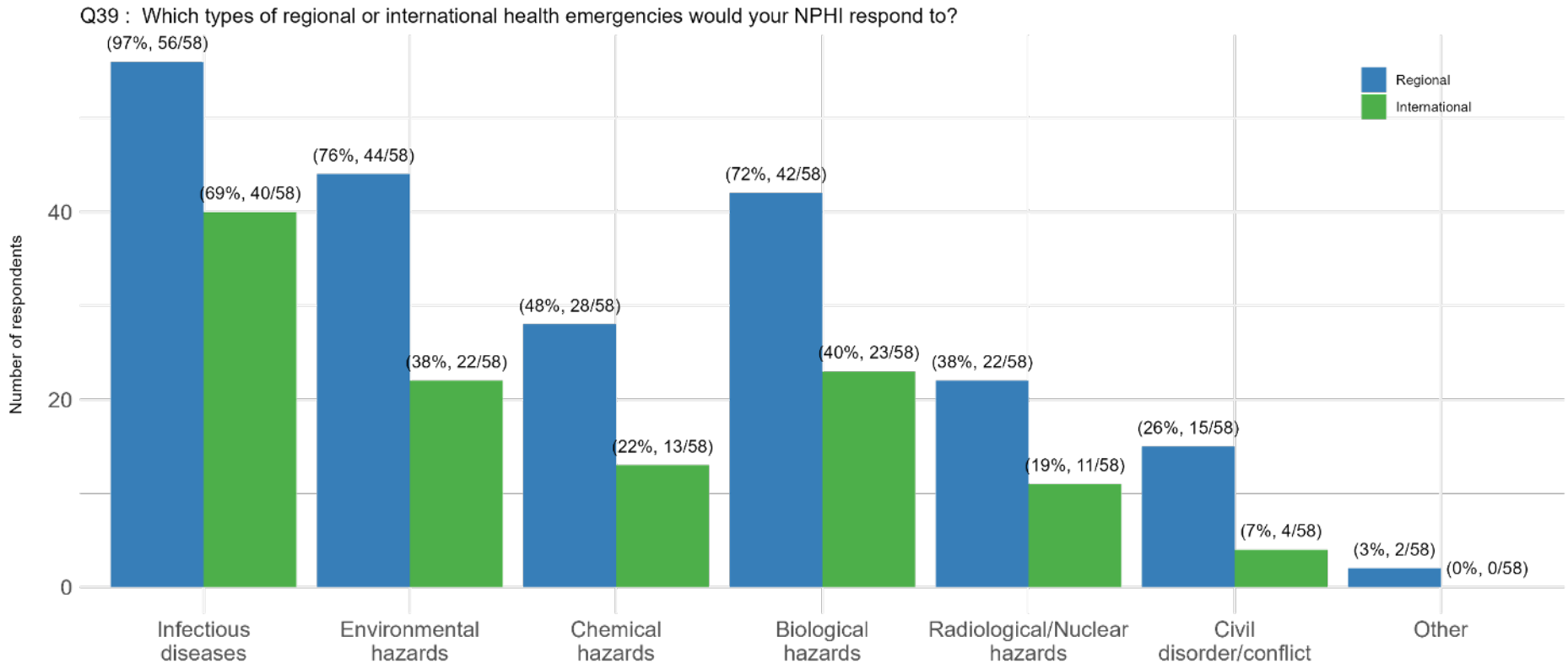


Table Q39A: By Income Group

Options	Level	n	total	Low income	Lower middle income	Upper middle income	High income
Infectious diseases	Regional	56	58	(11/11) 100%	(13/13) 100%	(13/13) 100%	(19/21) 90.48%
Infectious diseases	International	40	58	(5/11) 45.45%	(8/13) 61.54%	(9/13) 69.23%	(18/21) 85.71%
Environmental hazards	Regional	44	58	(9/11) 81.82%	(9/13) 69.23%	(11/13) 84.62%	(15/21) 71.43%
Environmental hazards	International	22	58	(4/11) 36.36%	(3/13) 23.08%	(5/13) 38.46%	(10/21) 47.62%
Chemical hazards	Regional	28	58	(2/11) 18.18%	(6/13) 46.15%	(6/13) 46.15%	(14/21) 66.67%
Chemical hazards	International	13	58	(1/11) 9.09%	(3/13) 23.08%	(2/13) 15.38%	(7/21) 33.33%
Biological hazards	Regional	42	58	(4/11) 36.36%	(10/13) 76.92%	(11/13) 84.62%	(17/21) 80.95%
Biological hazards	International	23	58	(2/11) 18.18%	(4/13) 30.77%	(4/13) 30.77%	(13/21) 61.9%
Radiological/Nuclear hazards	Regional	22	58	(2/11) 18.18%	(4/13) 30.77%	(5/13) 38.46%	(11/21) 52.38%
Radiological/Nuclear hazards	International	11	58	(0/11) 0%	(2/13) 15.38%	(3/13) 23.08%	(6/21) 28.57%
Civil disorder/conflict	Regional	15	58	(2/11) 18.18%	(3/13) 23.08%	(5/13) 38.46%	(5/21) 23.81%
Civil disorder/conflict	International	4	58	(0/11) 0%	(0/13) 0%	(1/13) 7.69%	(3/21) 14.29%
Other	Regional	2	58	(0/11) 0%	(0/13) 0%	(2/13) 15.38%	(0/21) 0%
Other	International	0	58	0	0	0	0

Table Q39B: By WHO Regions

Options	Level	n	total	Africa	Americas	Eastern Mediterranean	Europe	South-East Asia	Western Pacific
Infectious diseases	Regional	56	58	(16/16) 100%	(7/8) 87.5%	(11/11) 100%	(16/17) 94.12%	(1/1) 100%	(5/5) 100%
Infectious diseases	International	40	58	(7/16) 43.75%	(7/8) 87.5%	(7/11) 63.64%	(15/17) 88.24%	(1/1) 100%	(3/5) 60%
Environmental hazards	Regional	44	58	(11/16) 68.75%	(6/8) 75%	(9/11) 81.82%	(14/17) 82.35%	(1/1) 100%	(3/5) 60%
Environmental hazards	International	22	58	(4/16) 25%	(3/8) 37.5%	(4/11) 36.36%	(10/17) 58.82%	(0/1) 0%	(1/5) 20%
Chemical hazards	Regional	28	58	(2/16) 12.5%	(5/8) 62.5%	(7/11) 63.64%	(13/17) 76.47%	(0/1) 0%	(1/5) 20%
Chemical hazards	International	13	58	(2/16) 12.5%	(2/8) 25%	(1/11) 9.09%	(8/17) 47.06%	(0/1) 0%	(0/5) 0%
Biological hazards	Regional	42	58	(7/16) 43.75%	(7/8) 87.5%	(9/11) 81.82%	(15/17) 88.24%	(1/1) 100%	(3/5) 60%
Biological hazards	International	23	58	(3/16) 18.75%	(4/8) 50%	(2/11) 18.18%	(13/17) 76.47%	(0/1) 0%	(1/5) 20%
Radiological/Nuclear hazards	Regional	22	58	(2/16) 12.5%	(4/8) 50%	(5/11) 45.45%	(10/17) 58.82%	(0/1) 0%	(1/5) 20%
Radiological/Nuclear hazards	International	11	58	(1/16) 6.25%	(2/8) 25%	(0/11) 0%	(8/17) 47.06%	(0/1) 0%	(0/5) 0%
Civil disorder/conflict	Regional	15	58	(2/16) 12.5%	(0/8) 0%	(5/11) 45.45%	(7/17) 41.18%	(0/1) 0%	(1/5) 20%
Civil disorder/conflict	International	4	58	(0/16) 0%	(1/8) 12.5%	(0/11) 0%	(3/17) 17.65%	(0/1) 0%	(0/5) 0%
Other	Regional	2	58	(0/16) 0%	(2/8) 25%	(0/11) 0%	(0/17) 0%	(0/1) 0%	(0/5) 0%
Other	International	0	58	0	0	0	0	0	0

Table Q39C: By NPHI Size

Options	Level	n	total	<=500	>500	Unknown
Infectious diseases	Regional	56	58	(31/32) 96.88%	(24/25) 96%	(1/1) 100%
Infectious diseases	International	40	58	(18/32) 56.25%	(21/25) 84%	(1/1) 100%
Environmental hazards	Regional	44	58	(23/32) 71.88%	(20/25) 80%	(1/1) 100%
Environmental hazards	International	22	58	(9/32) 28.12%	(13/25) 52%	(0/1) 0%
Chemical hazards	Regional	28	58	(12/32) 37.5%	(15/25) 60%	(1/1) 100%
Chemical hazards	International	13	58	(4/32) 12.5%	(9/25) 36%	(0/1) 0%
Biological hazards	Regional	42	58	(21/32) 65.62%	(20/25) 80%	(1/1) 100%
Biological hazards	International	23	58	(9/32) 28.12%	(14/25) 56%	(0/1) 0%
Radiological/Nuclear hazards	Regional	22	58	(10/32) 31.25%	(11/25) 44%	(1/1) 100%
Radiological/Nuclear hazards	International	11	58	(4/32) 12.5%	(7/25) 28%	(0/1) 0%
Civil disorder/conflict	Regional	15	58	(8/32) 25%	(6/25) 24%	(1/1) 100%
Civil disorder/conflict	International	4	58	(2/32) 6.25%	(2/25) 8%	(0/1) 0%
Other	Regional	2	58	(0/32) 0%	(2/25) 8%	(0/1) 0%
Other	International	0	58		0	

Question 40 Since 2014, has your NPHI deployed any workforce regionally, or internationally, following a call for assistance in a public health emergency?

Figure Q40

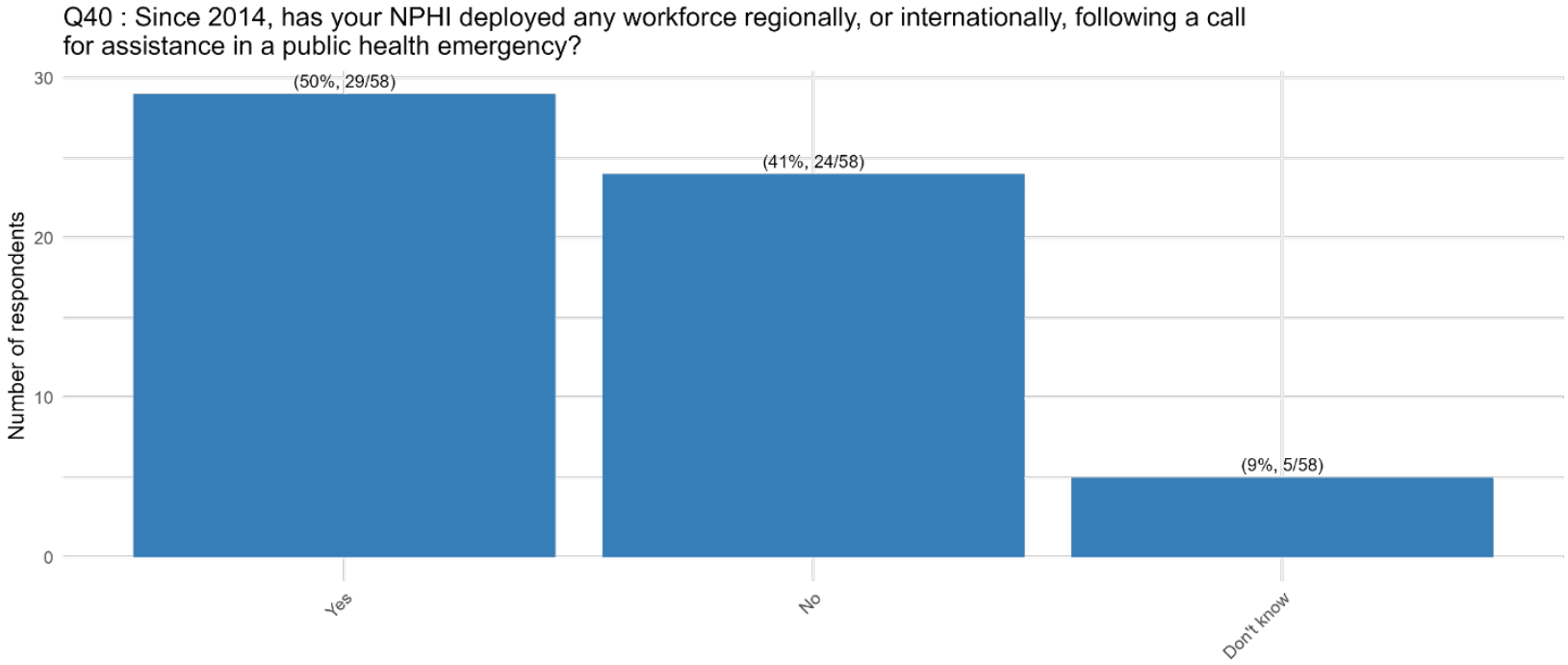


Table Q40A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Yes	29	58	73%, (8/11)	38%, (5/13)	38%, (5/13)	52%, (11/21)
No	24	58	18%, (2/11)	46%, (6/13)	54%, (7/13)	43%, (9/21)
Don't know	5	58	9%, (1/11)	15%, (2/13)	8%, (1/13)	5%, (1/21)

Table Q40B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Yes	29	58	69%, (11/16)	62%, (5/8)	18%, (2/11)	47%, (8/17)	0%, (0/1)	60%, (3/5)
No	24	58	25%, (4/16)	38%, (3/8)	73%, (8/11)	47%, (8/17)	100%, (1/1)	0%, (0/5)
Don't know	5	58	6%, (1/16)	0%, (0/8)	9%, (1/11)	6%, (1/17)	0%, (0/1)	40%, (2/5)

Table Q40C: By NPHI Size

Options	n	total	<=500	>500	Unknown
Yes	29	58	38%, (12/32)	68%, (17/25)	0%, (0/1)
No	24	58	50%, (16/32)	32%, (8/25)	0%, (0/1)
Don't know	5	58	12%, (4/32)	0%, (0/25)	100%, (1/1)

Question 41 If yes, which type of workforce did your NPHI deploy?

Figure Q41

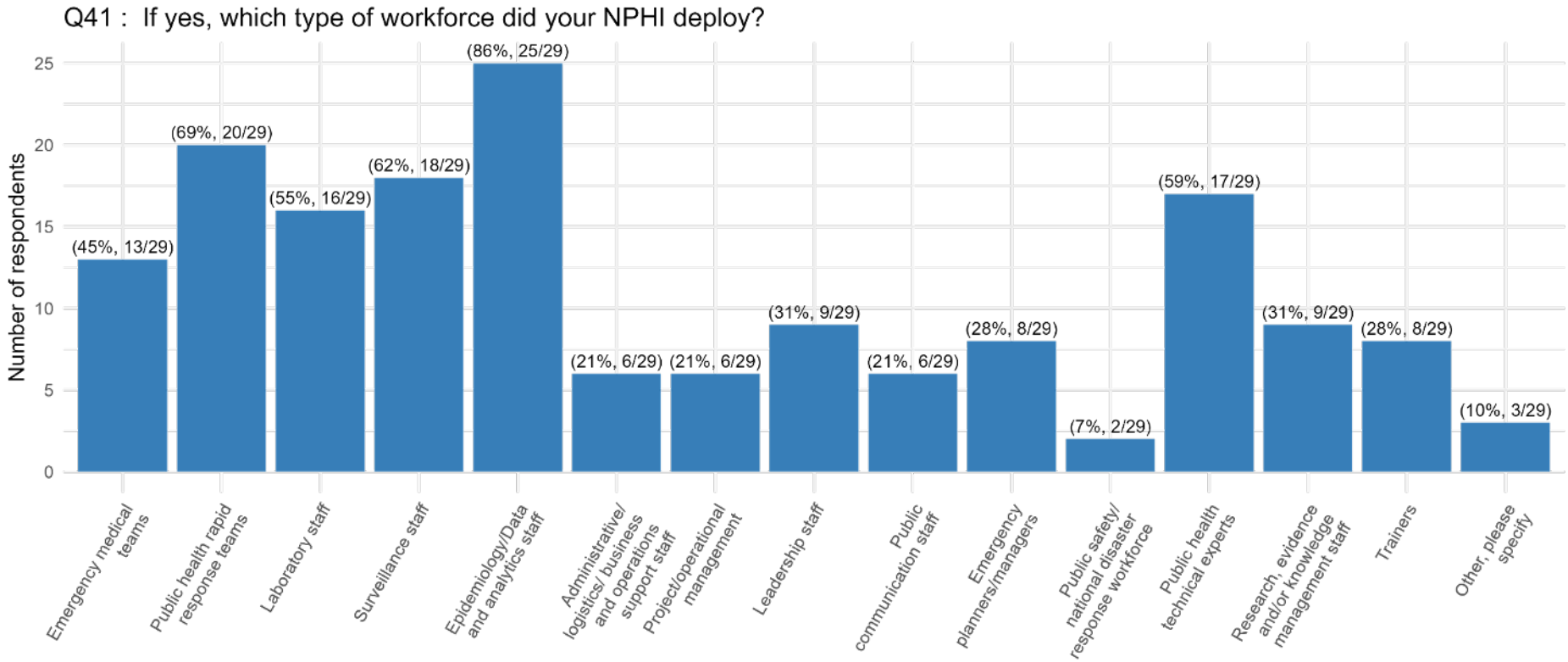


Table Q41A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Emergency medical teams	13	29	38%, (3/8)	60%, (3/5)	60%, (3/5)	36%, (4/11)
Public health rapid response teams	20	29	62%, (5/8)	80%, (4/5)	100%, (5/5)	55%, (6/11)
Laboratory staff	16	29	25%, (2/8)	60%, (3/5)	60%, (3/5)	73%, (8/11)
Surveillance staff	18	29	38%, (3/8)	60%, (3/5)	80%, (4/5)	73%, (8/11)
Epidemiology/Data and analytics staff	25	29	62%, (5/8)	100%, (5/5)	100%, (5/5)	91%, (10/11)
Administrative/ logistics/ business and operations support staff	6	29	12%, (1/8)	20%, (1/5)	40%, (2/5)	18%, (2/11)
Project/operational management	6	29	0%, (0/8)	20%, (1/5)	40%, (2/5)	27%, (3/11)
Leadership staff	9	29	12%, (1/8)	40%, (2/5)	60%, (3/5)	27%, (3/11)
Public communication staff	6	29	12%, (1/8)	20%, (1/5)	40%, (2/5)	18%, (2/11)
Emergency planners/managers	8	29	0%, (0/8)	40%, (2/5)	40%, (2/5)	36%, (4/11)
Public safety/ national disaster response workforce	2	29	0%, (0/8)	20%, (1/5)	20%, (1/5)	0%, (0/11)
Public health technical experts	17	29	25%, (2/8)	40%, (2/5)	80%, (4/5)	82%, (9/11)
Research, evidence and/or knowledge management staff	9	29	0%, (0/8)	40%, (2/5)	60%, (3/5)	36%, (4/11)
Trainers	8	29	12%, (1/8)	40%, (2/5)	40%, (2/5)	27%, (3/11)
Other, please specify	3	29	12%, (1/8)	20%, (1/5)	20%, (1/5)	0%, (0/11)

Table Q41B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	WPRO
Emergency medical teams	13	29	45%, (5/11)	60%, (3/5)	50%, (1/2)	38%, (3/8)	33%, (1/3)
Public health rapid response teams	20	29	64%, (7/11)	80%, (4/5)	50%, (1/2)	75%, (6/8)	67%, (2/3)
Laboratory staff	16	29	36%, (4/11)	80%, (4/5)	100%, (2/2)	62%, (5/8)	33%, (1/3)
Surveillance staff	18	29	45%, (5/11)	100%, (5/5)	50%, (1/2)	62%, (5/8)	67%, (2/3)
Epidemiology/Data and analytics staff	25	29	73%, (8/11)	100%, (5/5)	100%, (2/2)	88%, (7/8)	100%, (3/3)
Administrative/ logistics/ business and operations support staff	6	29	18%, (2/11)	40%, (2/5)	0%, (0/2)	12%, (1/8)	33%, (1/3)
Project/operational management	6	29	9%, (1/11)	40%, (2/5)	0%, (0/2)	25%, (2/8)	33%, (1/3)
Leadership staff	9	29	18%, (2/11)	60%, (3/5)	50%, (1/2)	25%, (2/8)	33%, (1/3)
Public communication staff	6	29	18%, (2/11)	40%, (2/5)	0%, (0/2)	12%, (1/8)	33%, (1/3)
Emergency planners/managers	8	29	18%, (2/11)	60%, (3/5)	0%, (0/2)	25%, (2/8)	33%, (1/3)
Public safety/ national disaster response workforce	2	29	9%, (1/11)	0%, (0/5)	0%, (0/2)	0%, (0/8)	33%, (1/3)
Public health technical experts	17	29	36%, (4/11)	80%, (4/5)	50%, (1/2)	75%, (6/8)	67%, (2/3)
Research, evidence and/or knowledge management staff	9	29	18%, (2/11)	80%, (4/5)	0%, (0/2)	38%, (3/8)	0%, (0/3)
Trainers	8	29	27%, (3/11)	40%, (2/5)	0%, (0/2)	25%, (2/8)	33%, (1/3)
Other, please specify	3	29	18%, (2/11)	20%, (1/5)	0%, (0/2)	0%, (0/8)	0%, (0/3)

Table Q41C: By NPHI Size

Options	n	total	<=500	>500
Emergency medical teams	13	29	33%, (4/12)	53%, (9/17)
Public health rapid response teams	20	29	58%, (7/12)	76%, (13/17)
Laboratory staff	16	29	33%, (4/12)	71%, (12/17)
Surveillance staff	18	29	42%, (5/12)	76%, (13/17)
Epidemiology/Data and analytics staff	25	29	75%, (9/12)	94%, (16/17)
Administrative/ logistics/ business and operations support staff	6	29	17%, (2/12)	24%, (4/17)
Project/operational management	6	29	8%, (1/12)	29%, (5/17)
Leadership staff	9	29	17%, (2/12)	41%, (7/17)
Public communication staff	6	29	17%, (2/12)	24%, (4/17)
Emergency planners/managers	8	29	17%, (2/12)	35%, (6/17)
Public safety/ national disaster response workforce	2	29	8%, (1/12)	6%, (1/17)
Public health technical experts	17	29	33%, (4/12)	76%, (13/17)
Research, evidence and/or knowledge management staff	9	29	8%, (1/12)	47%, (8/17)
Trainers	8	29	17%, (2/12)	35%, (6/17)
Other, please specify	3	29	17%, (2/12)	6%, (1/17)

Question 42 Which mechanisms has your NPHI used to deploy staff to regional or international health emergencies?

Figure Q42

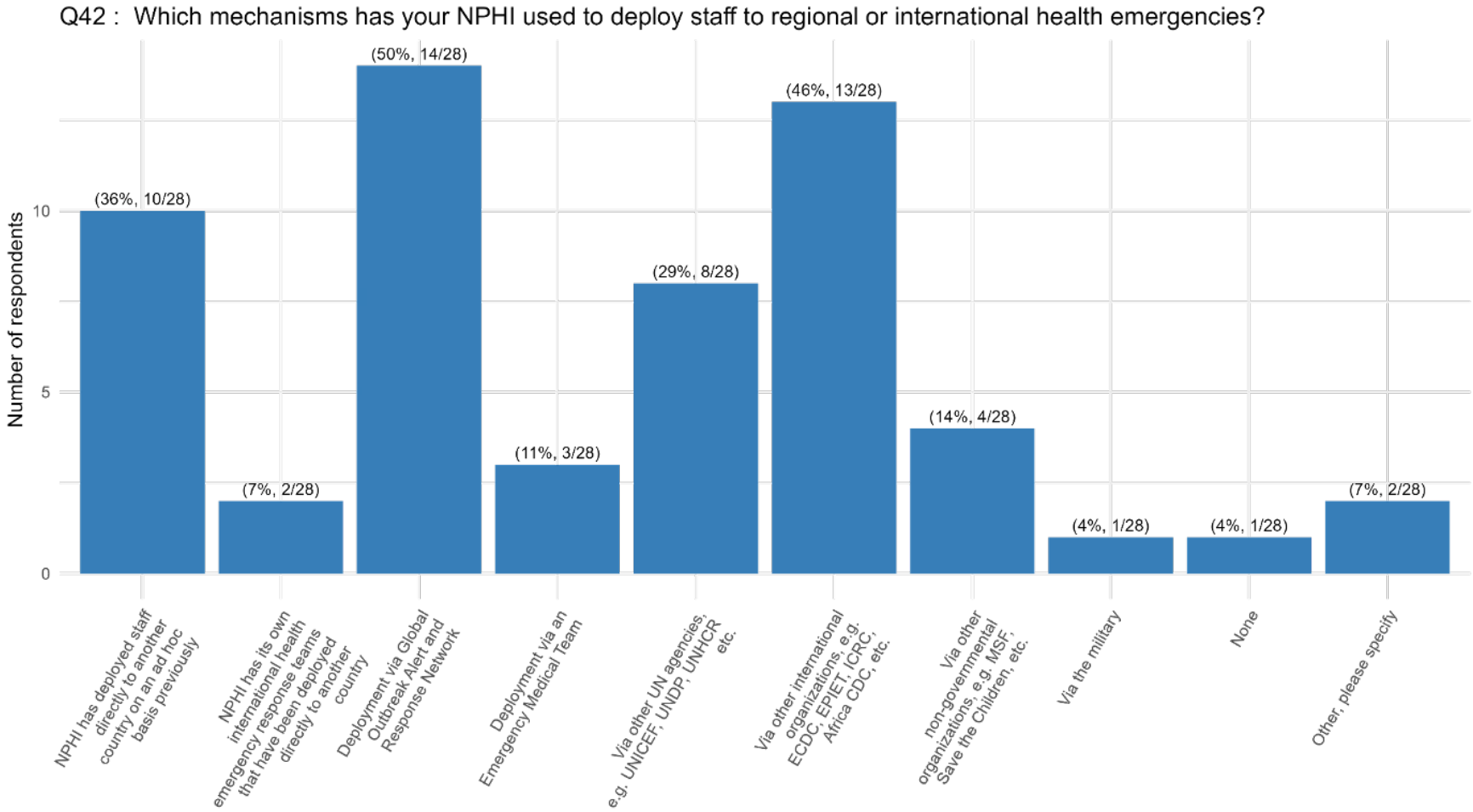


Table Q42A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
NPHI has deployed staff directly to another country on an ad hoc basis previously	10	28	50%, (4/8)	20%, (1/5)	20%, (1/5)	40%, (4/10)
NPHI has its own international health emergency response teams that have been deployed directly to another country	2	28	12%, (1/8)	0%, (0/5)	0%, (0/5)	10%, (1/10)
Deployment via Global Outbreak Alert and Response Network	14	28	25%, (2/8)	60%, (3/5)	40%, (2/5)	70%, (7/10)
Deployment via an Emergency Medical Team	3	28	12%, (1/8)	0%, (0/5)	20%, (1/5)	10%, (1/10)
Via other UN agencies, e.g., UNICEF, UNDP, UNHCR etc.	8	28	50%, (4/8)	0%, (0/5)	20%, (1/5)	30%, (3/10)
Via other international organizations, e.g., ECDC, EPIET, ICRC, Africa CDC, etc.	13	28	38%, (3/8)	60%, (3/5)	40%, (2/5)	50%, (5/10)
Via other non-governmental organizations, e.g., MSF, Save the Children, etc.	4	28	0%, (0/8)	20%, (1/5)	20%, (1/5)	20%, (2/10)
Via the military	1	28	0%, (0/8)	20%, (1/5)	0%, (0/5)	0%, (0/10)
None	1	28	0%, (0/8)	20%, (1/5)	0%, (0/5)	0%, (0/10)
Other, please specify	2	28	0%, (0/8)	0%, (0/5)	20%, (1/5)	10%, (1/10)

Table Q42B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	WPRO
NPHI has deployed staff directly to another country on an ad hoc basis previously	10	28	45%, (5/11)	25%, (1/4)	50%, (1/2)	38%, (3/8)	0%, (0/3)
NPHI has its own international health emergency response teams that have been deployed directly to another country	2	28	9%, (1/11)	0%, (0/4)	0%, (0/2)	12%, (1/8)	0%, (0/3)
Deployment via Global Outbreak Alert and Response Network	14	28	36%, (4/11)	25%, (1/4)	50%, (1/2)	75%, (6/8)	67%, (2/3)
Deployment via an Emergency Medical Team	3	28	9%, (1/11)	25%, (1/4)	0%, (0/2)	12%, (1/8)	0%, (0/3)
Via other UN agencies, e.g., UNICEF, UNDP, UNHCR etc.	8	28	36%, (4/11)	25%, (1/4)	0%, (0/2)	25%, (2/8)	33%, (1/3)
Via other international organizations, e.g., ECDC, EPIET, ICRC, Africa CDC, etc.	13	28	55%, (6/11)	25%, (1/4)	0%, (0/2)	62%, (5/8)	33%, (1/3)
Via other non-governmental organizations, e.g., MSF, Save the Children, etc.	4	28	9%, (1/11)	25%, (1/4)	0%, (0/2)	25%, (2/8)	0%, (0/3)
Via the military	1	28	9%, (1/11)	0%, (0/4)	0%, (0/2)	0%, (0/8)	0%, (0/3)
None	1	28	0%, (0/11)	0%, (0/4)	0%, (0/2)	12%, (1/8)	0%, (0/3)
Other, please specify	2	28	0%, (0/11)	25%, (1/4)	0%, (0/2)	12%, (1/8)	0%, (0/3)

Table Q42C: By NPHI Size

Options	n	total	<=500	>500
NPHI has deployed staff directly to another country on an ad hoc basis previously	10	28	42%, (5/12)	31%, (5/16)
NPHI has its own international health emergency response teams that have been deployed directly to another country	2	28	8%, (1/12)	6%, (1/16)
Deployment via Global Outbreak Alert and Response Network	14	28	42%, (5/12)	56%, (9/16)
Deployment via an Emergency Medical Team	3	28	8%, (1/12)	12%, (2/16)
Via other UN agencies, e.g., UNICEF, UNDP, UNHCR etc.	8	28	33%, (4/12)	25%, (4/16)
Via other international organizations, e.g., ECDC, EPIET, ICRC, Africa CDC, etc.	13	28	50%, (6/12)	44%, (7/16)
Via other non-governmental organizations, e.g., MSF, Save the Children, etc.	4	28	0%, (0/12)	25%, (4/16)
Via the military	1	28	8%, (1/12)	0%, (0/16)
None	1	28	8%, (1/12)	0%, (0/16)
Other, please specify	2	28	0%, (0/12)	12%, (2/16)

Question 43 Within which geographical regions did your NPHI respond to health emergencies?

Figure Q43

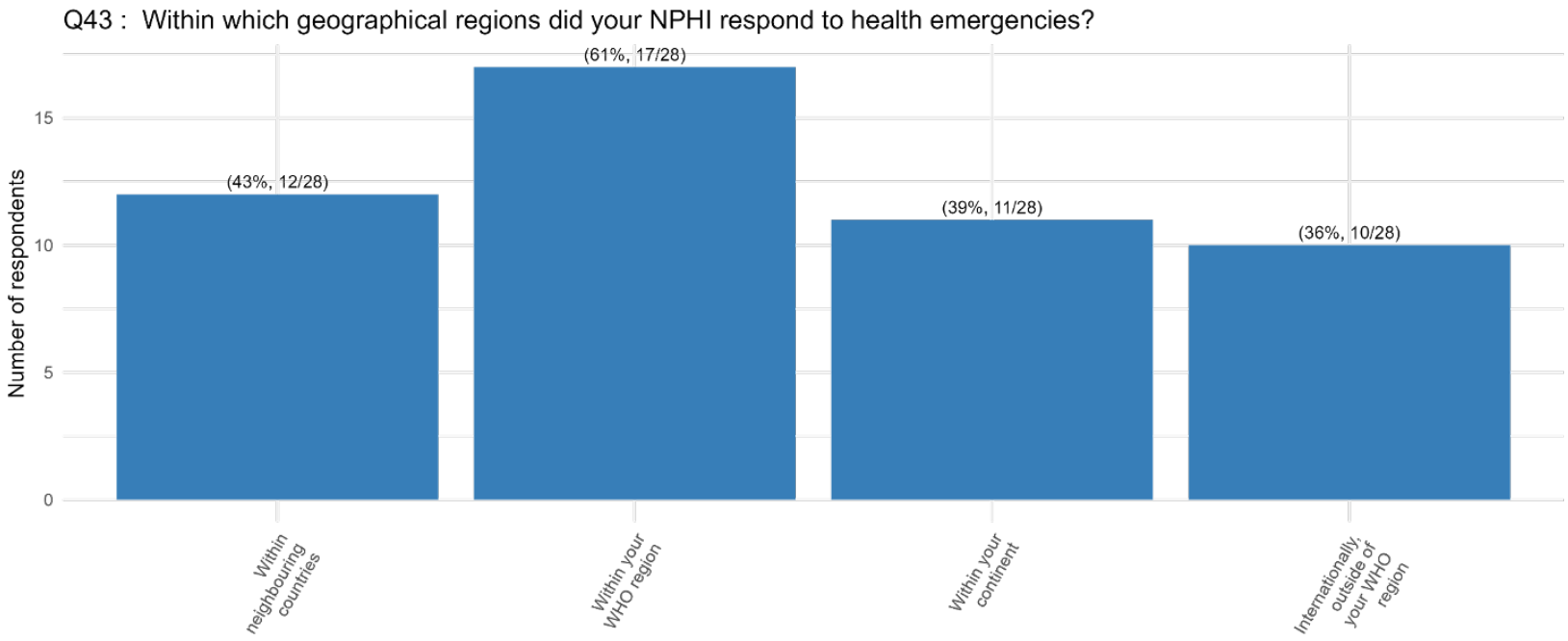


Table Q43A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Within neighbouring countries	12	28	62%, (5/8)	40%, (2/5)	80%, (4/5)	10%, (1/10)
Within your WHO region	17	28	75%, (6/8)	80%, (4/5)	80%, (4/5)	30%, (3/10)
Within your continent	11	28	38%, (3/8)	60%, (3/5)	60%, (3/5)	20%, (2/10)
Internationally, outside of your WHO region	10	28	0%, (0/8)	0%, (0/5)	40%, (2/5)	80%, (8/10)

Table Q43B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	WPRO
Within neighbouring countries	12	28	64%, (7/11)	50%, (2/4)	50%, (1/2)	12%, (1/8)	33%, (1/3)
Within your WHO region	17	28	82%, (9/11)	75%, (3/4)	0%, (0/2)	50%, (4/8)	33%, (1/3)
Within your continent	11	28	45%, (5/11)	50%, (2/4)	50%, (1/2)	25%, (2/8)	33%, (1/3)
Internationally, outside of your WHO region	10	28	0%, (0/11)	50%, (2/4)	0%, (0/2)	62%, (5/8)	100%, (3/3)

Table Q43C: By NPHI Size

Options	n	total	<=500	>500
Within neighbouring countries	12	28	58%, (7/12)	31%, (5/16)
Within your WHO region	17	28	67%, (8/12)	56%, (9/16)
Within your continent	11	28	33%, (4/12)	44%, (7/16)
Internationally, outside of your WHO region	10	28	0%, (0/12)	62%, (10/16)

Question 44 What are the current challenges to increasing surge capacity to respond to regional and international emergencies experienced by your NPHI?

Figure Q44

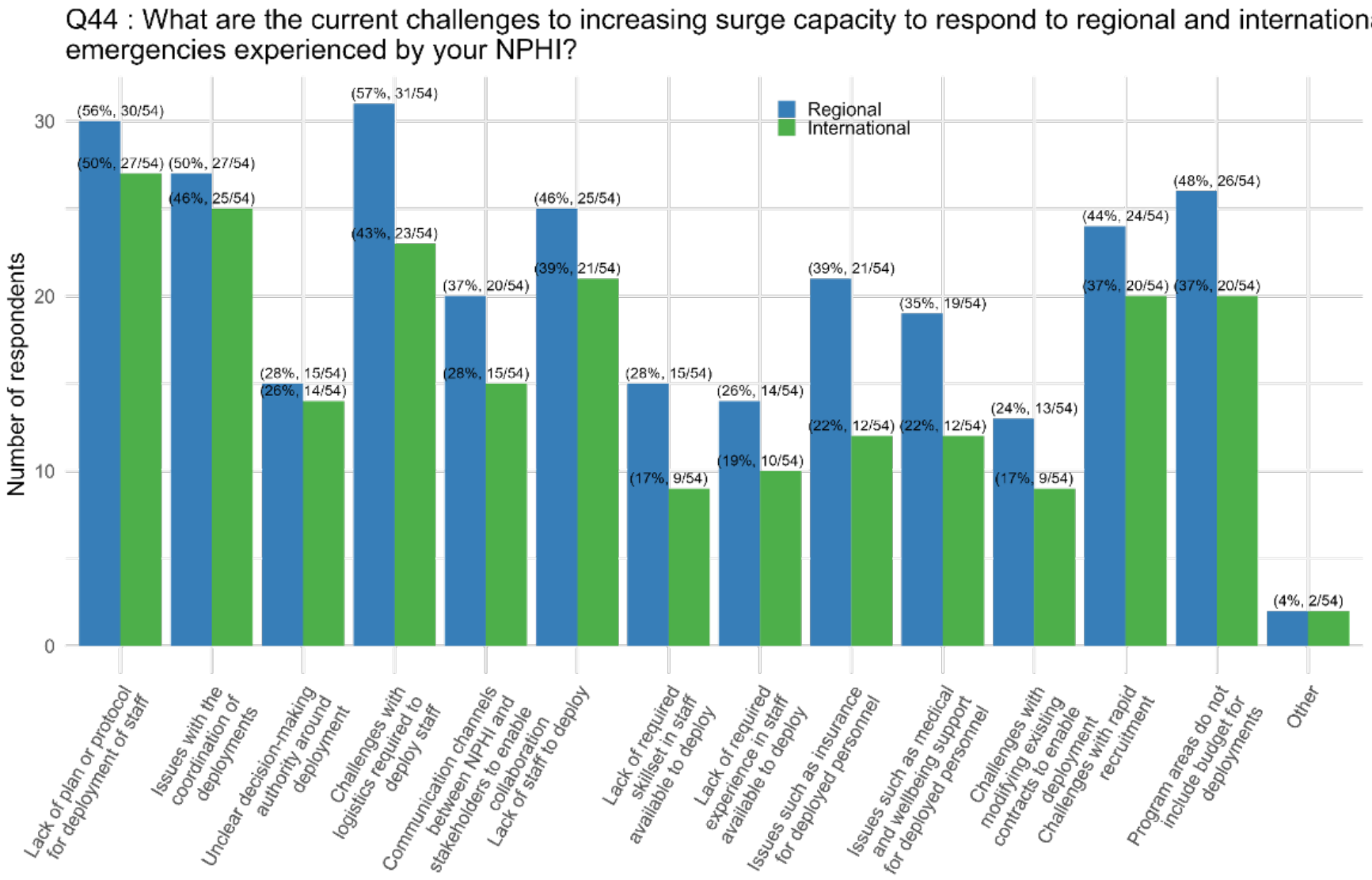


Table Q44A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Lack of plan or protocol for deployment of staff	Regional	30	54	73%, (8/11)	67%, (8/12)	58%, (7/12)	37%, (7/19)
Lack of plan or protocol for deployment of staff	International	27	54	36%, (4/11)	67%, (8/12)	50%, (6/12)	47%, (9/19)
Issues with the coordination of deployments	Regional	27	54	55%, (6/11)	58%, (7/12)	50%, (6/12)	42%, (8/19)
Issues with the coordination of deployments	International	25	54	27%, (3/11)	58%, (7/12)	42%, (5/12)	53%, (10/19)
Unclear decision-making authority around deployment	Regional	15	54	36%, (4/11)	58%, (7/12)	17%, (2/12)	11%, (2/19)
Unclear decision-making authority around deployment	International	14	54	18%, (2/11)	75%, (9/12)	8%, (1/12)	11%, (2/19)
Challenges with logistics required to deploy staff	Regional	31	54	55%, (6/11)	75%, (9/12)	75%, (9/12)	37%, (7/19)
Challenges with logistics required to deploy staff	International	23	54	27%, (3/11)	67%, (8/12)	50%, (6/12)	32%, (6/19)
Communication channels between NPHI and stakeholders to enable collaboration	Regional	20	54	36%, (4/11)	58%, (7/12)	33%, (4/12)	26%, (5/19)
Communication channels between NPHI and stakeholders to enable collaboration	International	15	54	18%, (2/11)	50%, (6/12)	25%, (3/12)	21%, (4/19)
Lack of staff to deploy	Regional	25	54	36%, (4/11)	42%, (5/12)	58%, (7/12)	47%, (9/19)
Lack of staff to deploy	International	21	54	9%, (1/11)	50%, (6/12)	42%, (5/12)	47%, (9/19)
Lack of required skillset in staff available to deploy	Regional	15	54	18%, (2/11)	25%, (3/12)	50%, (6/12)	21%, (4/19)
Lack of required skillset in staff available to deploy	International	9	54	0%, (0/11)	17%, (2/12)	33%, (4/12)	16%, (3/19)
Lack of required experience in staff available to deploy	Regional	14	54	18%, (2/11)	33%, (4/12)	42%, (5/12)	16%, (3/19)
Lack of required experience in staff available to deploy	International	10	54	0%, (0/11)	17%, (2/12)	42%, (5/12)	16%, (3/19)
Issues such as insurance for deployed personnel	Regional	21	54	55%, (6/11)	67%, (8/12)	33%, (4/12)	16%, (3/19)

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Issues such as insurance for deployed personnel	International	12	54	27%, (3/11)	33%, (4/12)	25%, (3/12)	11%, (2/19)
Issues such as medical and wellbeing support for deployed personnel	Regional	19	54	55%, (6/11)	67%, (8/12)	33%, (4/12)	5%, (1/19)
Issues such as medical and wellbeing support for deployed personnel	International	12	54	36%, (4/11)	33%, (4/12)	25%, (3/12)	5%, (1/19)
Challenges with modifying existing contracts to enable deployment	Regional	13	54	9%, (1/11)	50%, (6/12)	33%, (4/12)	11%, (2/19)
Challenges with modifying existing contracts to enable deployment	International	9	54	0%, (0/11)	25%, (3/12)	25%, (3/12)	16%, (3/19)
Challenges with rapid recruitment	Regional	24	54	55%, (6/11)	42%, (5/12)	42%, (5/12)	42%, (8/19)
Challenges with rapid recruitment	International	20	54	18%, (2/11)	50%, (6/12)	33%, (4/12)	42%, (8/19)
Program areas do not include budget for deployments	Regional	26	54	64%, (7/11)	67%, (8/12)	42%, (5/12)	32%, (6/19)
Program areas do not include budget for deployments	International	20	54	18%, (2/11)	42%, (5/12)	50%, (6/12)	37%, (7/19)
Other	Regional	2	54	0%, (0/11)	0%, (0/12)	8%, (1/12)	5%, (1/19)
Other	International	2	54	0%, (0/11)	0%, (0/12)	0%, (0/12)	11%, (2/19)

Table Q44B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Lack of plan or protocol for deployment of staff	Regional	30	54	75%, (12/16)	50%, (4/8)	60%, (6/10)	33%, (5/15)	100%, (1/1)	50%, (2/4)
Lack of plan or protocol for deployment of staff	International	27	54	50%, (8/16)	50%, (4/8)	50%, (5/10)	53%, (8/15)	100%, (1/1)	25%, (1/4)
Issues with the coordination of deployments	Regional	27	54	50%, (8/16)	50%, (4/8)	60%, (6/10)	40%, (6/15)	100%, (1/1)	50%, (2/4)
Issues with the coordination of deployments	International	25	54	38%, (6/16)	50%, (4/8)	50%, (5/10)	47%, (7/15)	100%, (1/1)	50%, (2/4)
Unclear decision-making authority around deployment	Regional	15	54	50%, (8/16)	0%, (0/8)	30%, (3/10)	13%, (2/15)	100%, (1/1)	25%, (1/4)
Unclear decision-making authority around deployment	International	14	54	44%, (7/16)	0%, (0/8)	30%, (3/10)	13%, (2/15)	100%, (1/1)	25%, (1/4)
Challenges with logistics required to deploy staff	Regional	31	54	56%, (9/16)	50%, (4/8)	80%, (8/10)	47%, (7/15)	100%, (1/1)	50%, (2/4)
Challenges with logistics required to deploy staff	International	23	54	38%, (6/16)	38%, (3/8)	50%, (5/10)	40%, (6/15)	100%, (1/1)	50%, (2/4)
Communication channels between NPHI and stakeholders to enable collaboration	Regional	20	54	50%, (8/16)	25%, (2/8)	20%, (2/10)	40%, (6/15)	100%, (1/1)	25%, (1/4)
Communication channels between NPHI and stakeholders to enable collaboration	International	15	54	25%, (4/16)	25%, (2/8)	20%, (2/10)	33%, (5/15)	100%, (1/1)	25%, (1/4)
Lack of staff to deploy	Regional	25	54	31%, (5/16)	38%, (3/8)	70%, (7/10)	47%, (7/15)	100%, (1/1)	50%, (2/4)
Lack of staff to deploy	International	21	54	25%, (4/16)	38%, (3/8)	40%, (4/10)	53%, (8/15)	100%, (1/1)	25%, (1/4)

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Lack of required skillset in staff available to deploy	Regional	15	54	19%, (3/16)	38%, (3/8)	60%, (6/10)	0%, (0/15)	100%, (1/1)	50%, (2/4)
Lack of required skillset in staff available to deploy	International	9	54	0%, (0/16)	38%, (3/8)	40%, (4/10)	0%, (0/15)	100%, (1/1)	25%, (1/4)
Lack of required experience in staff available to deploy	Regional	14	54	25%, (4/16)	25%, (2/8)	50%, (5/10)	7%, (1/15)	100%, (1/1)	25%, (1/4)
Lack of required experience in staff available to deploy	International	10	54	6%, (1/16)	38%, (3/8)	30%, (3/10)	13%, (2/15)	100%, (1/1)	0%, (0/4)
Issues such as insurance for deployed personnel	Regional	21	54	50%, (8/16)	38%, (3/8)	50%, (5/10)	27%, (4/15)	100%, (1/1)	0%, (0/4)
Issues such as insurance for deployed personnel	International	12	54	25%, (4/16)	38%, (3/8)	10%, (1/10)	20%, (3/15)	100%, (1/1)	0%, (0/4)
Issues such as medical and wellbeing support for deployed personnel	Regional	19	54	50%, (8/16)	38%, (3/8)	30%, (3/10)	20%, (3/15)	100%, (1/1)	25%, (1/4)
Issues such as medical and wellbeing support for deployed personnel	International	12	54	25%, (4/16)	38%, (3/8)	10%, (1/10)	13%, (2/15)	100%, (1/1)	25%, (1/4)
Challenges with modifying existing contracts to enable deployment	Regional	13	54	6%, (1/16)	38%, (3/8)	40%, (4/10)	27%, (4/15)	100%, (1/1)	0%, (0/4)
Challenges with modifying existing contracts to enable deployment	International	9	54	0%, (0/16)	38%, (3/8)	10%, (1/10)	27%, (4/15)	100%, (1/1)	0%, (0/4)
Challenges with rapid recruitment	Regional	24	54	44%, (7/16)	50%, (4/8)	50%, (5/10)	40%, (6/15)	100%, (1/1)	25%, (1/4)
Challenges with rapid recruitment	International	20	54	31%, (5/16)	50%, (4/8)	40%, (4/10)	33%, (5/15)	100%, (1/1)	25%, (1/4)
Program areas do not include budget for deployments	Regional	26	54	56%, (9/16)	62%, (5/8)	40%, (4/10)	33%, (5/15)	100%, (1/1)	50%, (2/4)

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Program areas do not include budget for deployments	International	20	54	19%, (3/16)	62%, (5/8)	20%, (2/10)	47%, (7/15)	100%, (1/1)	50%, (2/4)
Other	Regional	2	54	0%, (0/16)	12%, (1/8)	0%, (0/10)	7%, (1/15)	0%, (0/1)	0%, (0/4)
Other	International	2	54	0%, (0/16)	0%, (0/8)	0%, (0/10)	13%, (2/15)	0%, (0/1)	0%, (0/4)

Table Q44C: By NPHI Size

Options	Level	n	total	<=500	>500	Unknown
Lack of plan or protocol for deployment of staff	Regional	30	54	60%, (18/30)	48%, (11/23)	100%, (1/1)
Lack of plan or protocol for deployment of staff	International	27	54	50%, (15/30)	48%, (11/23)	100%, (1/1)
Issues with the coordination of deployments	Regional	27	54	57%, (17/30)	39%, (9/23)	100%, (1/1)
Issues with the coordination of deployments	International	25	54	47%, (14/30)	43%, (10/23)	100%, (1/1)
Unclear decision-making authority around deployment	Regional	15	54	37%, (11/30)	17%, (4/23)	0%, (0/1)
Unclear decision-making authority around deployment	International	14	54	30%, (9/30)	22%, (5/23)	0%, (0/1)
Challenges with logistics required to deploy staff	Regional	31	54	60%, (18/30)	52%, (12/23)	100%, (1/1)
Challenges with logistics required to deploy staff	International	23	54	43%, (13/30)	39%, (9/23)	100%, (1/1)
Communication channels between NPHI and stakeholders to enable collaboration	Regional	20	54	40%, (12/30)	30%, (7/23)	100%, (1/1)
Communication channels between NPHI and stakeholders to enable collaboration	International	15	54	20%, (6/30)	35%, (8/23)	100%, (1/1)
Lack of staff to deploy	Regional	25	54	50%, (15/30)	43%, (10/23)	0%, (0/1)
Lack of staff to deploy	International	21	54	40%, (12/30)	39%, (9/23)	0%, (0/1)
Lack of required skillset in staff available to deploy	Regional	15	54	37%, (11/30)	17%, (4/23)	0%, (0/1)
Lack of required skillset in staff available to deploy	International	9	54	17%, (5/30)	17%, (4/23)	0%, (0/1)
Lack of required experience in staff available to deploy	Regional	14	54	40%, (12/30)	9%, (2/23)	0%, (0/1)
Lack of required experience in staff available to deploy	International	10	54	23%, (7/30)	13%, (3/23)	0%, (0/1)
Issues such as insurance for deployed personnel	Regional	21	54	40%, (12/30)	35%, (8/23)	100%, (1/1)

Options	Level	n	total	<=500	>500	Unknown
Issues such as insurance for deployed personnel	International	12	54	20%, (6/30)	22%, (5/23)	100%, (1/1)
Issues such as medical and wellbeing support for deployed personnel	Regional	19	54	40%, (12/30)	30%, (7/23)	0%, (0/1)
Issues such as medical and wellbeing support for deployed personnel	International	12	54	23%, (7/30)	22%, (5/23)	0%, (0/1)
Challenges with modifying existing contracts to enable deployment	Regional	13	54	23%, (7/30)	22%, (5/23)	100%, (1/1)
Challenges with modifying existing contracts to enable deployment	International	9	54	17%, (5/30)	13%, (3/23)	100%, (1/1)
Challenges with rapid recruitment	Regional	24	54	40%, (12/30)	48%, (11/23)	100%, (1/1)
Challenges with rapid recruitment	International	20	54	30%, (9/30)	43%, (10/23)	100%, (1/1)
Program areas do not include budget for deployments	Regional	26	54	53%, (16/30)	43%, (10/23)	0%, (0/1)
Program areas do not include budget for deployments	International	20	54	30%, (9/30)	48%, (11/23)	0%, (0/1)
Other	Regional	2	54	0%, (0/30)	9%, (2/23)	0%, (0/1)
Other	International	2	54	3%, (1/30)	4%, (1/23)	0%, (0/1)

Question 46 What pre-deployment training does your NPHI offer to staff who are being deployed out of country?

Figure Q46

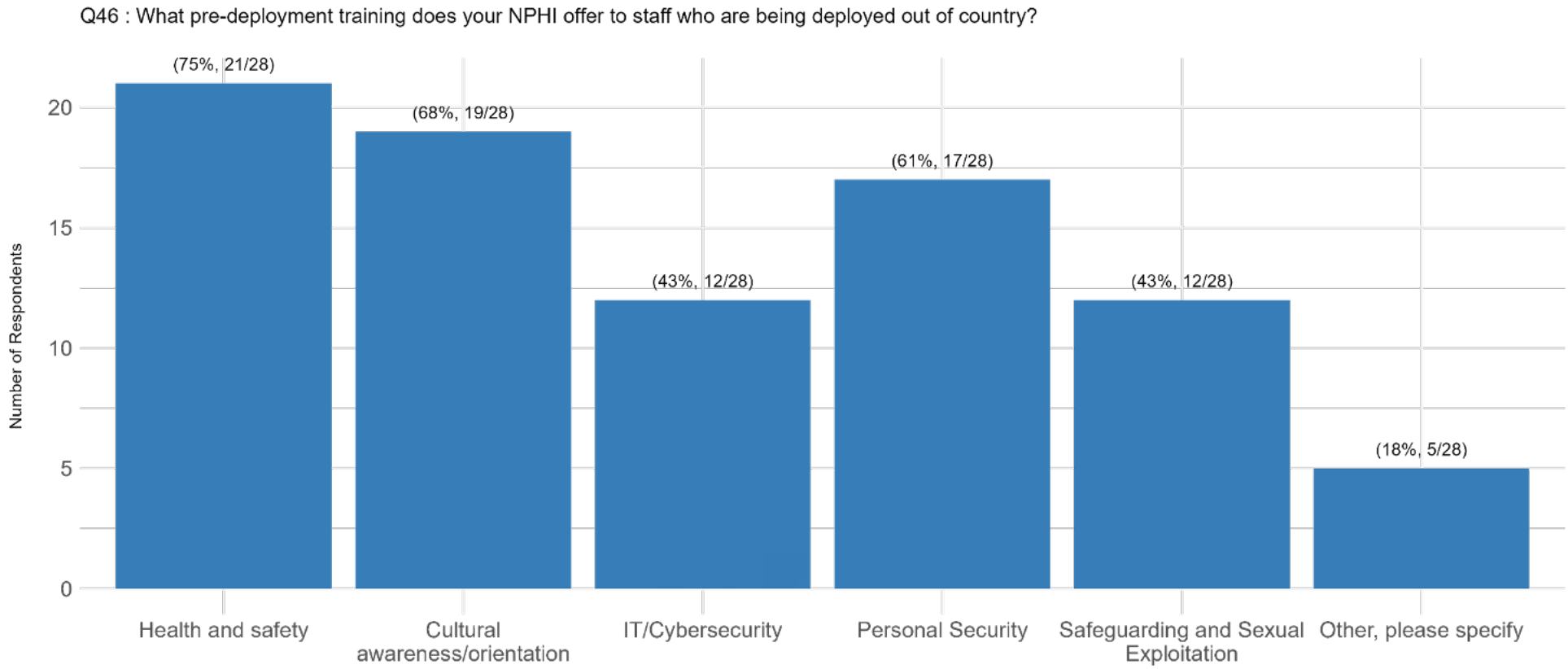


Table Q46A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Health and safety	21	28	57%, (4/7)	100%, (5/5)	100%, (5/5)	64%, (7/11)
Cultural awareness/orientation	19	28	57%, (4/7)	80%, (4/5)	100%, (5/5)	55%, (6/11)
IT/Cybersecurity	12	28	29%, (2/7)	20%, (1/5)	40%, (2/5)	64%, (7/11)
Personal Security	17	28	57%, (4/7)	100%, (5/5)	40%, (2/5)	55%, (6/11)
Safeguarding and Sexual Exploitation	12	28	43%, (3/7)	60%, (3/5)	20%, (1/5)	45%, (5/11)
Other, please specify	5	28	29%, (2/7)	0%, (0/5)	0%, (0/5)	27%, (3/11)

Table Q46B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	WPRO
Health and safety	21	28	70%, (7/10)	100%, (5/5)	100%, (2/2)	50%, (4/8)	100%, (3/3)
Cultural awareness/orientation	19	28	70%, (7/10)	100%, (5/5)	50%, (1/2)	50%, (4/8)	67%, (2/3)
IT/Cybersecurity	12	28	30%, (3/10)	60%, (3/5)	0%, (0/2)	50%, (4/8)	67%, (2/3)
Personal Security	17	28	70%, (7/10)	40%, (2/5)	50%, (1/2)	62%, (5/8)	67%, (2/3)
Safeguarding and Sexual Exploitation	12	28	50%, (5/10)	40%, (2/5)	50%, (1/2)	25%, (2/8)	67%, (2/3)
Other, please specify	5	28	20%, (2/10)	0%, (0/5)	0%, (0/2)	38%, (3/8)	0%, (0/3)

Table Q46C: By NPHI Size

Options	n	total	<=500	>500
Health and safety	21	28	73%, (8/11)	76%, (13/17)
Cultural awareness/orientation	19	28	55%, (6/11)	76%, (13/17)
IT/Cybersecurity	12	28	18%, (2/11)	59%, (10/17)
Personal Security	17	28	64%, (7/11)	59%, (10/17)
Safeguarding and Sexual Exploitation	12	28	45%, (5/11)	41%, (7/17)
Other, please specify	5	28	18%, (2/11)	18%, (3/17)

Question 47 What support do staff get on deployment?

Figure Q47

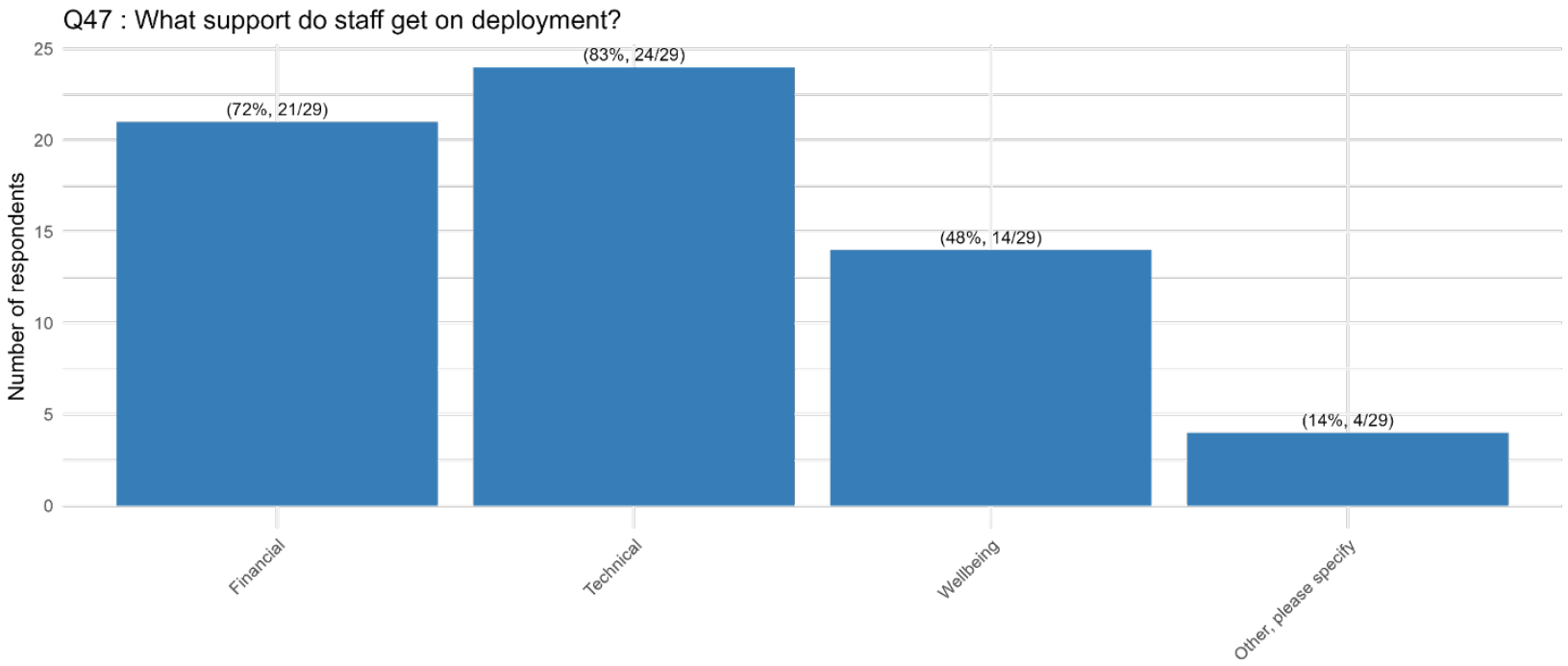


Table Q47A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
Financial	21	29	50%, (4/8)	80%, (4/5)	100%, (5/5)	73%, (8/11)
Technical	24	29	75%, (6/8)	100%, (5/5)	80%, (4/5)	82%, (9/11)
Wellbeing	14	29	38%, (3/8)	60%, (3/5)	40%, (2/5)	55%, (6/11)
Other, please specify	4	29	12%, (1/8)	0%, (0/5)	0%, (0/5)	27%, (3/11)

Table Q47B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	WPRO
Financial	21	29	64%, (7/11)	100%, (5/5)	50%, (1/2)	75%, (6/8)	67%, (2/3)
Technical	24	29	82%, (9/11)	100%, (5/5)	100%, (2/2)	62%, (5/8)	100%, (3/3)
Wellbeing	14	29	45%, (5/11)	60%, (3/5)	0%, (0/2)	50%, (4/8)	67%, (2/3)
Other, please specify	4	29	9%, (1/11)	0%, (0/5)	0%, (0/2)	38%, (3/8)	0%, (0/3)

Table Q47C: By NPHI Size

Options	n	total	<=500	>500
Financial	21	29	75%, (9/12)	71%, (12/17)
Technical	24	29	75%, (9/12)	88%, (15/17)
Wellbeing	14	29	42%, (5/12)	53%, (9/17)
Other, please specify	4	29	8%, (1/12)	18%, (3/17)

8.3.5 Connected Leadership

Question 48 How long can you usually deploy your staff to health emergencies for?

Figure Q48

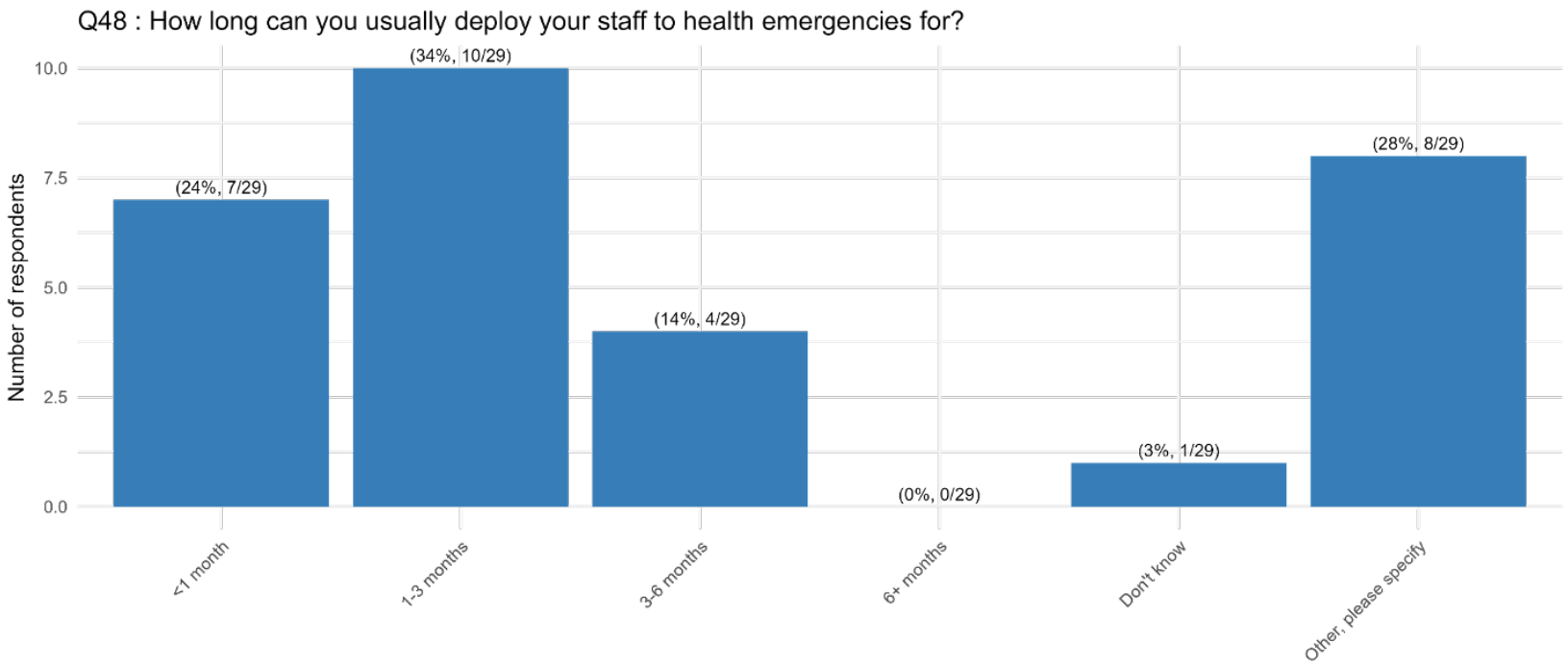


Table Q48A: By Income Group

Options	n	total	LIC	LMIC	UMIC	HIC
<1 month	7	29	38%, (3/8)	40%, (2/5)	0%, (0/5)	18%, (2/11)
1-3 months	10	29	25%, (2/8)	40%, (2/5)	20%, (1/5)	45%, (5/11)
3-6 months	4	29	25%, (2/8)	0%, (0/5)	40%, (2/5)	0%, (0/11)
6+ months	0	29	0	0	0	0
Don't know	1	29	0%, (0/8)	0%, (0/5)	0%, (0/5)	9%, (1/11)
Other, please specify	8	29	25%, (2/8)	20%, (1/5)	40%, (2/5)	27%, (3/11)

Table Q48B: By WHO Regions

Options	n	total	AFRO	AMRO	EMRO	EURO	WPRO	SEARO
<1 month	7	29	36%, (4/11)	0%, (0/5)	50%, (1/2)	12%, (1/8)	33%, (1/3)	
1-3 months	10	29	36%, (4/11)	40%, (2/5)	0%, (0/2)	50%, (4/8)	0%, (0/3)	
3-6 months	4	29	18%, (2/11)	20%, (1/5)	0%, (0/2)	0%, (0/8)	33%, (1/3)	
6+ months	0	29	0	0	0	0	0	0
Don't know	1	29	0%, (0/11)	0%, (0/5)	50%, (1/2)	0%, (0/8)	0%, (0/3)	
Other, please specify	8	29	18%, (2/11)	40%, (2/5)	0%, (0/2)	38%, (3/8)	33%, (1/3)	

Table Q48C: By NPHI Size

Options	n	total	<=500	>500
<1 month	7	29	17%, (2/12)	29%, (5/17)
1-3 months	10	29	42%, (5/12)	29%, (5/17)
3-6 months	4	29	17%, (2/12)	12%, (2/17)
6+ months	0	29	0	0
Don't know	1	29	8%, (1/12)	0%, (0/17)
Other, please specify	8	29	25%, (3/12)	29%, (5/17)

Question 49 Does your NPHI have a senior level lead for national health emergencies?

Figure Q49

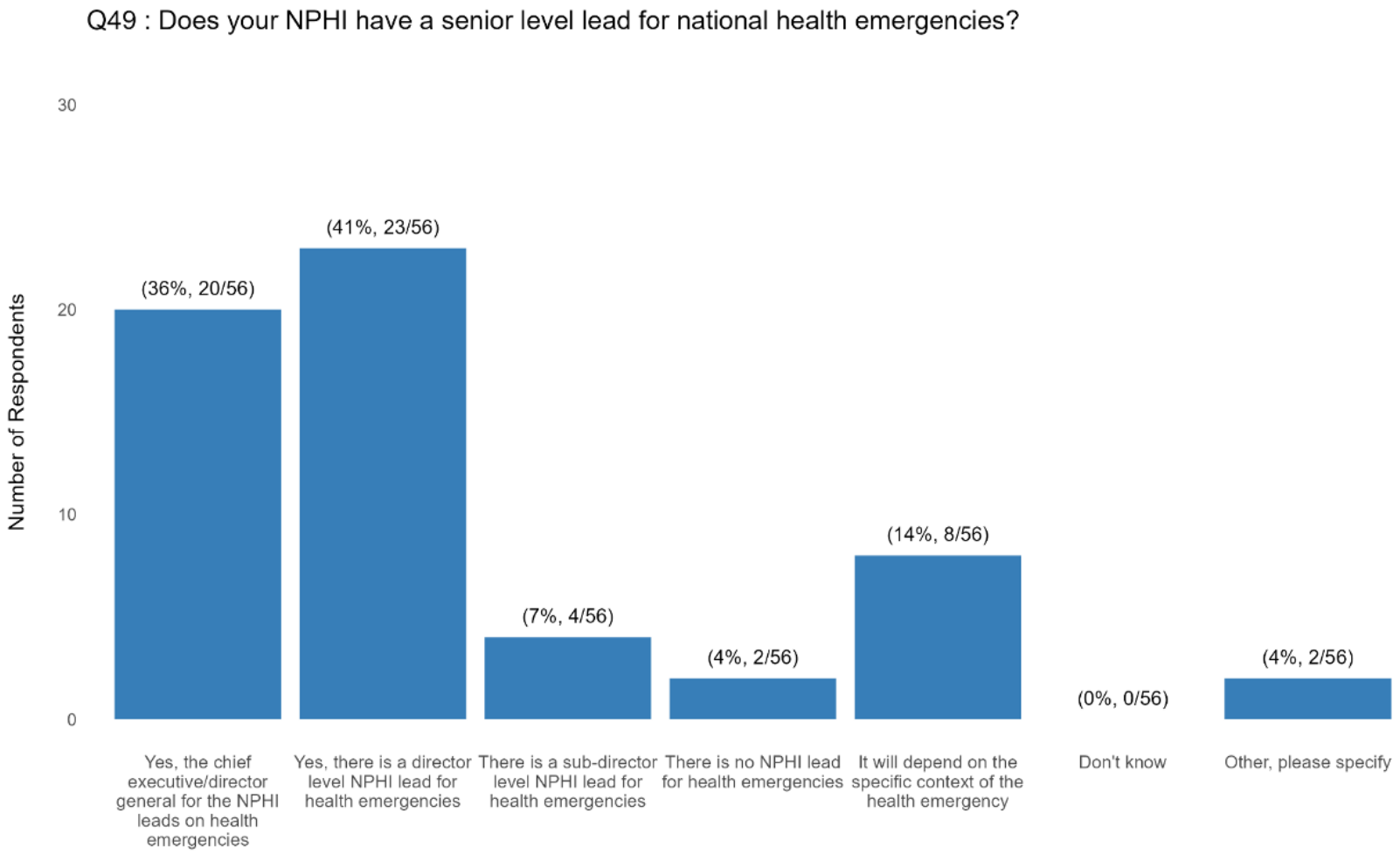


Table Q49A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Yes, the chief executive/director general for the NPHI leads on health emergencies		20	56	36% (4/11)	33% (4/12)	58% (7/12)	24% (5/21)
Yes, there is a director level NPHI lead for health emergencies		23	56	55% (6/11)	50% (6/12)	33% (4/12)	33% (7/21)
There is a sub-director level NPHI lead for health emergencies		4	56	9% (1/11)	8% (1/12)	8% (1/12)	5% (1/21)
There is no NPHI lead for health emergencies		2	56	0% (0/11)	0% (0/12)	8% (1/12)	5% (1/21)
It will depend on the specific context of the health emergency		8	56	0% (0/11)	8% (1/12)	8% (1/12)	29% (6/21)
Don't know		0	56	0	0	0	0
Other, please specify		2	56	0% (0/11)	8% (1/12)	0% (0/12)	5% (1/21)

Table Q49B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Yes, the chief executive/director general for the NPHI leads on health emergencies		20	56	27% (4/15)	62% (5/8)	40% (4/10)	24% (4/17)	0% (0/1)	60% (3/5)
Yes, there is a director level NPHI lead for health emergencies		23	56	60% (9/15)	50% (4/8)	20% (2/10)	35% (6/17)	100% (1/1)	20% (1/5)
There is a sub-director level NPHI lead for health emergencies		4	56	13% (2/15)	12% (1/8)	0% (0/10)	6% (1/17)	0% (0/1)	0% (0/5)
There is no NPHI lead for health emergencies		2	56	0% (0/15)	0% (0/8)	10% (1/10)	6% (1/17)	0% (0/1)	0% (0/5)
It will depend on the specific context of the health emergency		8	56	7% (1/15)	0% (0/8)	30% (3/10)	18% (3/17)	0% (0/1)	20% (1/5)
Don't know		0	56	0	0	0	0	0	0
Other, please specify		2	56	0% (0/15)	0% (0/8)	0% (0/10)	12% (2/17)	0% (0/1)	0% (0/5)

Table Q49C: By NPHI Size

Options	Level	n	total	<=500	>500
Yes, the chief executive/director general for the NPHI leads on health emergencies		20	56	33% (10/30)	38% (10/26)
Yes, there is a director level NPHI lead for health emergencies		23	56	40% (12/30)	42% (11/26)
There is a sub-director level NPHI lead for health emergencies		4	56	7% (2/30)	8% (2/26)
There is no NPHI lead for health emergencies		2	56	7% (2/30)	0% (0/26)
It will depend on the specific context of the health emergency		8	56	13% (4/30)	15% (4/26)
Don't know		0	56	0	0
Other, please specify		2	56	3% (1/30)	4% (1/26)

Question 50 Which stakeholders would you consider to be key partners for your NPHI in a response to health emergencies?

Figure Q50

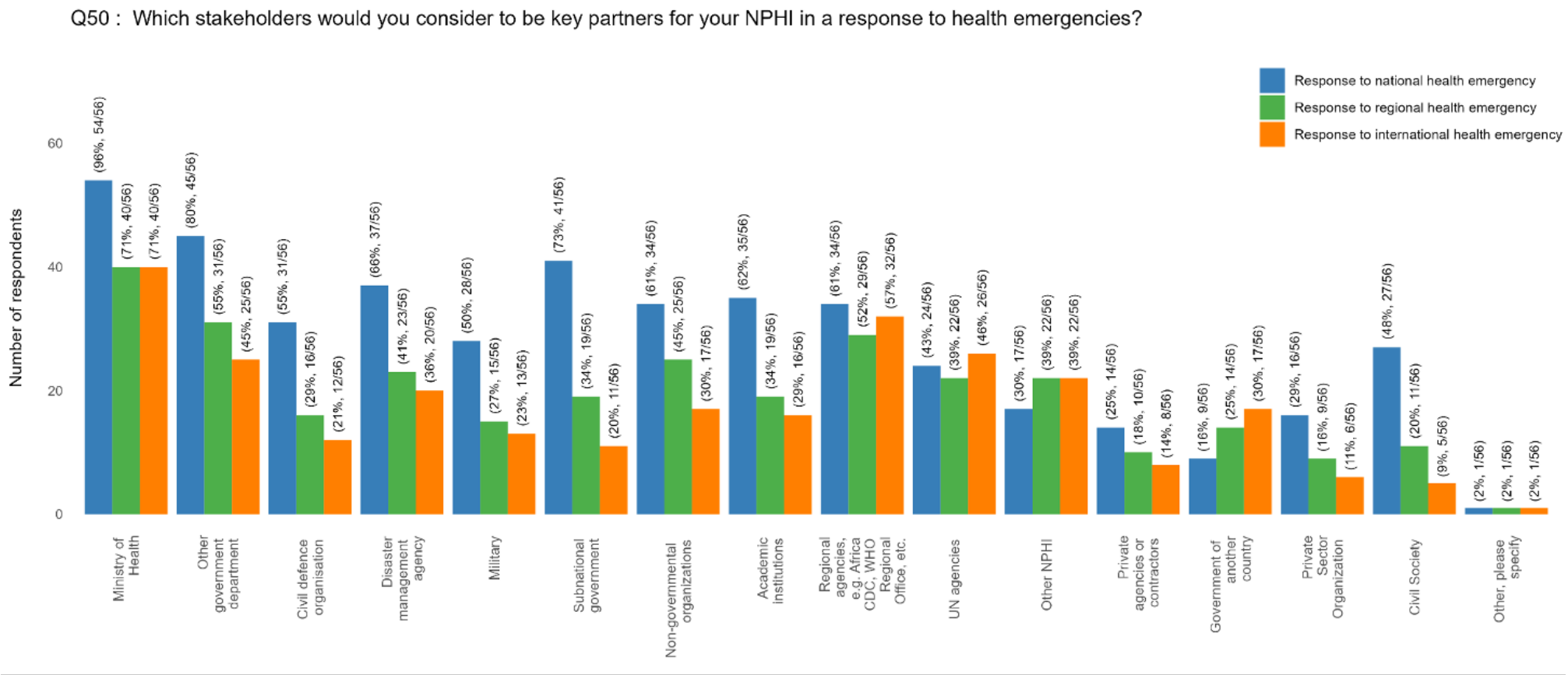


Table Q50A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Ministry of Health	Response to national health emergency	54	56	91% (10/11)	100% (12/12)	100% (12/12)	95% (20/21)
Other government department	Response to national health emergency	45	56	82% (9/11)	83% (10/12)	75% (9/12)	81% (17/21)
Civil defence organisation	Response to national health emergency	31	56	45% (5/11)	75% (9/12)	42% (5/12)	57% (12/21)
Disaster management agency	Response to national health emergency	37	56	64% (7/11)	83% (10/12)	67% (8/12)	57% (12/21)
Military	Response to national health emergency	28	56	45% (5/11)	75% (9/12)	42% (5/12)	43% (9/21)
Subnational government	Response to national health emergency	41	56	55% (6/11)	92% (11/12)	75% (9/12)	71% (15/21)
Non-governmental organizations	Response to national health emergency	34	56	73% (8/11)	75% (9/12)	42% (5/12)	57% (12/21)
Academic institutions	Response to national health emergency	35	56	55% (6/11)	75% (9/12)	50% (6/12)	67% (14/21)
Regional agencies, e.g., Africa CDC, WHO Regional Office, etc.	Response to national health emergency	34	56	82% (9/11)	92% (11/12)	67% (8/12)	29% (6/21)
UN agencies	Response to national health emergency	24	56	64% (7/11)	58% (7/12)	50% (6/12)	19% (4/21)
Other NPHI	Response to national health emergency	17	56	27% (3/11)	42% (5/12)	25% (3/12)	29% (6/21)
Private agencies or contractors	Response to national health emergency	14	56	27% (3/11)	42% (5/12)	8% (1/12)	24% (5/21)

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Government of another country	Response to national health emergency	9	56	27% (3/11)	8% (1/12)	17% (2/12)	14% (3/21)
Private Sector Organization	Response to national health emergency	16	56	27% (3/11)	33% (4/12)	25% (3/12)	29% (6/21)
Civil Society	Response to national health emergency	27	56	55% (6/11)	58% (7/12)	50% (6/12)	38% (8/21)
Other, please specify	Response to national health emergency	1	56	0% (0/11)	0% (0/12)	0% (0/12)	5% (1/21)
Ministry of Health	Response to regional health emergency	40	56	64% (7/11)	67% (8/12)	75% (9/12)	76% (16/21)
Other government department	Response to regional health emergency	31	56	36% (4/11)	67% (8/12)	50% (6/12)	62% (13/21)
Civil defence organisation	Response to regional health emergency	16	56	27% (3/11)	33% (4/12)	25% (3/12)	29% (6/21)
Disaster management agency	Response to regional health emergency	23	56	36% (4/11)	33% (4/12)	50% (6/12)	43% (9/21)
Military	Response to regional health emergency	15	56	18% (2/11)	33% (4/12)	25% (3/12)	29% (6/21)
Subnational government	Response to regional health emergency	19	56	18% (2/11)	42% (5/12)	17% (2/12)	48% (10/21)
Non-governmental organizations	Response to regional health emergency	25	56	36% (4/11)	58% (7/12)	25% (3/12)	52% (11/21)
Academic institutions	Response to regional health emergency	19	56	27% (3/11)	50% (6/12)	17% (2/12)	38% (8/21)
Regional agencies, e.g. Africa CDC, WHO Regional Office, etc.	Response to regional health emergency	29	56	45% (5/11)	75% (9/12)	67% (8/12)	33% (7/21)

Options	Level	n	total	LIC	LMIC	UMIC	HIC
UN agencies	Response to regional health emergency	22	56	55% (6/11)	58% (7/12)	42% (5/12)	19% (4/21)
Other NPHI	Response to regional health emergency	22	56	27% (3/11)	42% (5/12)	42% (5/12)	43% (9/21)
Private agencies or contractors	Response to regional health emergency	10	56	18% (2/11)	17% (2/12)	8% (1/12)	24% (5/21)
Government of another country	Response to regional health emergency	14	56	27% (3/11)	25% (3/12)	17% (2/12)	29% (6/21)
Private Sector Organization	Response to regional health emergency	9	56	9% (1/11)	17% (2/12)	17% (2/12)	19% (4/21)
Civil Society	Response to regional health emergency	11	56	9% (1/11)	25% (3/12)	17% (2/12)	24% (5/21)
Other, please specify	Response to regional health emergency	1	56	0% (0/11)	0% (0/12)	0% (0/12)	5% (1/21)
Ministry of Health	Response to international health emergency	40	56	64% (7/11)	50% (6/12)	75% (9/12)	86% (18/21)
Other government department	Response to international health emergency	25	56	27% (3/11)	25% (3/12)	50% (6/12)	62% (13/21)
Civil defence organisation	Response to international health emergency	12	56	27% (3/11)	25% (3/12)	8% (1/12)	24% (5/21)
Disaster management agency	Response to international health emergency	20	56	36% (4/11)	25% (3/12)	42% (5/12)	38% (8/21)
Military	Response to international health emergency	13	56	18% (2/11)	33% (4/12)	17% (2/12)	24% (5/21)

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Non-governmental organizations	Response to international health emergency	17	56	36% (4/11)	25% (3/12)	17% (2/12)	38% (8/21)
Academic institutions	Response to international health emergency	16	56	27% (3/11)	25% (3/12)	17% (2/12)	38% (8/21)
Regional agencies, e.g., Africa CDC, WHO Regional Office, etc.	Response to international health emergency	32	56	45% (5/11)	67% (8/12)	67% (8/12)	52% (11/21)
UN agencies	Response to international health emergency	26	56	55% (6/11)	50% (6/12)	42% (5/12)	43% (9/21)
Other NPHI	Response to international health emergency	22	56	27% (3/11)	33% (4/12)	33% (4/12)	52% (11/21)
Private agencies or contractors	Response to international health emergency	8	56	18% (2/11)	0% (0/12)	8% (1/12)	24% (5/21)
Government of another country	Response to international health emergency	17	56	27% (3/11)	25% (3/12)	17% (2/12)	43% (9/21)
Private Sector Organization	Response to international health emergency	6	56	9% (1/11)	0% (0/12)	17% (2/12)	14% (3/21)
Civil Society	Response to international health emergency	5	56	9% (1/11)	0% (0/12)	17% (2/12)	10% (2/21)
Other, please specify	Response to international health emergency	1	56	0% (0/11)	0% (0/12)	0% (0/12)	5% (1/21)

Table Q50B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Ministry of Health	Response to national health emergency	54	56	100% (15/15)	100% (8/8)	90% (9/10)	94% (16/17)	100% (1/1)	100% (5/5)
Other government department	Response to national health emergency	45	56	80% (12/15)	88% (7/8)	70% (7/10)	88% (15/17)	100% (1/1)	60% (3/5)
Civil defence organisation	Response to national health emergency	31	56	53% (8/15)	62% (5/8)	70% (7/10)	53% (9/17)	100% (1/1)	20% (1/5)
Disaster management agency	Response to national health emergency	37	56	73% (11/15)	75% (6/8)	50% (5/10)	53% (9/17)	100% (1/1)	100% (5/5)
Military	Response to national health emergency	28	56	60% (9/15)	38% (3/8)	40% (4/10)	53% (9/17)	100% (1/1)	40% (2/5)
Subnational government	Response to national health emergency	41	56	80% (12/15)	88% (7/8)	40% (4/10)	88% (15/17)	100% (1/1)	40% (2/5)
Non-governmental organizations	Response to national health emergency	34	56	73% (11/15)	50% (4/8)	40% (4/10)	71% (12/17)	100% (1/1)	40% (2/5)
Academic institutions	Response to national health emergency	35	56	73% (11/15)	75% (6/8)	40% (4/10)	65% (11/17)	100% (1/1)	40% (2/5)
Regional agencies, e.g. Africa CDC, WHO Regional Office, etc.	Response to national health emergency	34	56	93% (14/15)	62% (5/8)	40% (4/10)	41% (7/17)	100% (1/1)	60% (3/5)
UN agencies	Response to national health emergency	24	56	47% (7/15)	38% (3/8)	50% (5/10)	41% (7/17)	0% (0/1)	40% (2/5)
Other NPHI	Response to national health emergency	17	56	27% (4/15)	50% (4/8)	20% (2/10)	29% (5/17)	0% (0/1)	40% (2/5)
Private agencies or contractors	Response to national health emergency	14	56	40% (6/15)	12% (1/8)	30% (3/10)	12% (2/17)	0% (0/1)	40% (2/5)

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Government of another country	Response to national health emergency	9	56	13% (2/15)	12% (1/8)	20% (2/10)	12% (2/17)	0% (0/1)	40% (2/5)
Private Sector Organization	Response to national health emergency	16	56	40% (6/15)	38% (3/8)	30% (3/10)	18% (3/17)	0% (0/1)	20% (1/5)
Civil Society	Response to national health emergency	27	56	67% (10/15)	50% (4/8)	20% (2/10)	53% (9/17)	100% (1/1)	20% (1/5)
Other, please specify	Response to national health emergency	1	56	0% (0/15)	0% (0/8)	0% (0/10)	6% (1/17)	0% (0/1)	0% (0/5)
Ministry of Health	Response to regional health emergency	40	56	67% (10/15)	75% (6/8)	50% (5/10)	76% (13/17)	100% (1/1)	100% (5/5)
Other government department	Response to regional health emergency	31	56	53% (8/15)	62% (5/8)	40% (4/10)	65% (11/17)	100% (1/1)	40% (2/5)
Civil defence organisation	Response to regional health emergency	16	56	27% (4/15)	25% (2/8)	30% (3/10)	29% (5/17)	100% (1/1)	20% (1/5)
Disaster management agency	Response to regional health emergency	23	56	33% (5/15)	50% (4/8)	30% (3/10)	35% (6/17)	100% (1/1)	80% (4/5)
Military	Response to regional health emergency	15	56	27% (4/15)	12% (1/8)	20% (2/10)	35% (6/17)	100% (1/1)	20% (1/5)
Subnational government	Response to regional health emergency	19	56	27% (4/15)	38% (3/8)	20% (2/10)	47% (8/17)	100% (1/1)	20% (1/5)
Non-governmental organizations	Response to regional health emergency	25	56	33% (5/15)	25% (2/8)	50% (5/10)	59% (10/17)	100% (1/1)	40% (2/5)
Academic institutions	Response to regional health emergency	19	56	40% (6/15)	25% (2/8)	20% (2/10)	35% (6/17)	100% (1/1)	40% (2/5)
Regional agencies, e.g., Africa CDC, WHO Regional Office, etc.	Response to regional health emergency	29	56	73% (11/15)	75% (6/8)	20% (2/10)	35% (6/17)	100% (1/1)	60% (3/5)

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
UN agencies	Response to regional health emergency	22	56	53% (8/15)	50% (4/8)	20% (2/10)	29% (5/17)	100% (1/1)	40% (2/5)
Other NPHI	Response to regional health emergency	22	56	40% (6/15)	50% (4/8)	20% (2/10)	35% (6/17)	100% (1/1)	60% (3/5)
Private agencies or contractors	Response to regional health emergency	10	56	20% (3/15)	12% (1/8)	30% (3/10)	6% (1/17)	0% (0/1)	40% (2/5)
Government of another country	Response to regional health emergency	14	56	27% (4/15)	12% (1/8)	10% (1/10)	24% (4/17)	100% (1/1)	60% (3/5)
Private Sector Organization	Response to regional health emergency	9	56	13% (2/15)	12% (1/8)	30% (3/10)	18% (3/17)	0% (0/1)	0% (0/5)
Civil Society	Response to regional health emergency	11	56	20% (3/15)	12% (1/8)	10% (1/10)	35% (6/17)	0% (0/1)	0% (0/5)
Other, please specify	Response to regional health emergency	1	56	0% (0/15)	0% (0/8)	0% (0/10)	6% (1/17)	0% (0/1)	0% (0/5)
Ministry of Health	Response to international health emergency	40	56	60% (9/15)	75% (6/8)	40% (4/10)	88% (15/17)	100% (1/1)	100% (5/5)
Other government department	Response to international health emergency	25	56	27% (4/15)	50% (4/8)	20% (2/10)	71% (12/17)	100% (1/1)	40% (2/5)
Civil defence organisation	Response to international health emergency	12	56	27% (4/15)	12% (1/8)	10% (1/10)	24% (4/17)	100% (1/1)	20% (1/5)
Disaster management agency	Response to international health emergency	20	56	27% (4/15)	38% (3/8)	20% (2/10)	35% (6/17)	100% (1/1)	80% (4/5)
Military	Response to international health emergency	13	56	20% (3/15)	25% (2/8)	20% (2/10)	24% (4/17)	100% (1/1)	20% (1/5)
Subnational government	Response to international health emergency	11	56	20% (3/15)	25% (2/8)	0% (0/10)	24% (4/17)	100% (1/1)	20% (1/5)

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Non-governmental organizations	Response to international health emergency	17	56	20% (3/15)	25% (2/8)	10% (1/10)	41% (7/17)	100% (1/1)	60% (3/5)
Academic institutions	Response to international health emergency	16	56	27% (4/15)	25% (2/8)	10% (1/10)	35% (6/17)	100% (1/1)	40% (2/5)
Regional agencies, e.g., Africa CDC, WHO Regional Office, etc.	Response to international health emergency	32	56	60% (9/15)	88% (7/8)	30% (3/10)	53% (9/17)	100% (1/1)	60% (3/5)
UN agencies	Response to international health emergency	26	56	47% (7/15)	62% (5/8)	20% (2/10)	47% (8/17)	100% (1/1)	60% (3/5)
Other NPHI	Response to international health emergency	22	56	33% (5/15)	50% (4/8)	10% (1/10)	47% (8/17)	100% (1/1)	60% (3/5)
Private agencies or contractors	Response to international health emergency	8	56	13% (2/15)	12% (1/8)	10% (1/10)	12% (2/17)	0% (0/1)	40% (2/5)
Government of another country	Response to international health emergency	17	56	27% (4/15)	38% (3/8)	10% (1/10)	29% (5/17)	100% (1/1)	60% (3/5)
Private Sector Organization	Response to international health emergency	6	56	7% (1/15)	12% (1/8)	10% (1/10)	18% (3/17)	0% (0/1)	0% (0/5)
Civil Society	Response to international health emergency	5	56	7% (1/15)	12% (1/8)	0% (0/10)	18% (3/17)	0% (0/1)	0% (0/5)
Other, please specify	Response to international health emergency	1	56	0% (0/15)	0% (0/8)	0% (0/10)	6% (1/17)	0% (0/1)	0% (0/5)

Table Q50C: By NPHI Size

Options	Level	n	total	<=500	>500
Ministry of Health	Response to national health emergency	54	56	100% (30/30)	92% (24/26)
Other government department	Response to national health emergency	45	56	77% (23/30)	85% (22/26)
Civil defence organisation	Response to national health emergency	31	56	60% (18/30)	50% (13/26)
Disaster management agency	Response to national health emergency	37	56	73% (22/30)	58% (15/26)
Military	Response to national health emergency	28	56	57% (17/30)	42% (11/26)
Subnational government	Response to national health emergency	41	56	73% (22/30)	73% (19/26)
Non-governmental organizations	Response to national health emergency	34	56	70% (21/30)	50% (13/26)
Academic institutions	Response to national health emergency	35	56	60% (18/30)	65% (17/26)
Regional agencies, e.g., Africa CDC, WHO Regional Office, etc.	Response to national health emergency	34	56	73% (22/30)	46% (12/26)
UN agencies	Response to national health emergency	24	56	57% (17/30)	27% (7/26)
Other NPHI	Response to national health emergency	17	56	23% (7/30)	38% (10/26)
Private agencies or contractors	Response to national health emergency	14	56	37% (11/30)	12% (3/26)
Government of another country	Response to national health emergency	9	56	17% (5/30)	15% (4/26)
Private Sector Organization	Response to national health emergency	16	56	37% (11/30)	19% (5/26)
Civil Society	Response to national health emergency	27	56	53% (16/30)	42% (11/26)
Other, please specify	Response to national health emergency	1	56	0% (0/30)	4% (1/26)
Ministry of Health	Response to regional health emergency	40	56	60% (18/30)	85% (22/26)
Other government department	Response to regional health emergency	31	56	43% (13/30)	69% (18/26)

Options	Level	n	total	<=500	>500
Civil defence organisation	Response to regional health emergency	16	56	23% (7/30)	35% (9/26)
Disaster management agency	Response to regional health emergency	23	56	33% (10/30)	50% (13/26)
Military	Response to regional health emergency	15	56	27% (8/30)	27% (7/26)
Subnational government	Response to regional health emergency	19	56	17% (5/30)	54% (14/26)
Non-governmental organizations	Response to regional health emergency	25	56	47% (14/30)	42% (11/26)
Academic institutions	Response to regional health emergency	19	56	30% (9/30)	38% (10/26)
Regional agencies, e.g., Africa CDC, WHO Regional Office, etc.	Response to regional health emergency	29	56	60% (18/30)	42% (11/26)
UN agencies	Response to regional health emergency	22	56	57% (17/30)	19% (5/26)
Other NPHI	Response to regional health emergency	22	56	37% (11/30)	42% (11/26)
Private agencies or contractors	Response to regional health emergency	10	56	17% (5/30)	19% (5/26)
Government of another country	Response to regional health emergency	14	56	30% (9/30)	19% (5/26)
Private Sector Organization	Response to regional health emergency	9	56	17% (5/30)	15% (4/26)
Civil Society	Response to regional health emergency	11	56	13% (4/30)	27% (7/26)
Other, please specify	Response to regional health emergency	1	56	0% (0/30)	4% (1/26)
Ministry of Health	Response to international health emergency	40	56	60% (18/30)	85% (22/26)
Other government department	Response to international health emergency	25	56	37% (11/30)	54% (14/26)
Civil defence organisation	Response to international health emergency	12	56	27% (8/30)	15% (4/26)
Disaster management agency	Response to international health emergency	20	56	37% (11/30)	35% (9/26)
Military	Response to international health emergency	13	56	23% (7/30)	23% (6/26)

Options	Level	n	total	<=500	>500
Subnational government	Response to international health emergency	11	56	13% (4/30)	27% (7/26)
Non-governmental organizations	Response to international health emergency	17	56	33% (10/30)	27% (7/26)
Academic institutions	Response to international health emergency	16	56	30% (9/30)	27% (7/26)
Regional agencies, e.g., Africa CDC, WHO Regional Office, etc.	Response to international health emergency	32	56	60% (18/30)	54% (14/26)
UN agencies	Response to international health emergency	26	56	50% (15/30)	42% (11/26)
Other NPHI	Response to international health emergency	22	56	33% (10/30)	46% (12/26)
Private agencies or contractors	Response to international health emergency	8	56	17% (5/30)	12% (3/26)
Government of another country	Response to international health emergency	17	56	30% (9/30)	31% (8/26)
Private Sector Organization	Response to international health emergency	6	56	13% (4/30)	8% (2/26)
Civil Society	Response to international health emergency	5	56	7% (2/30)	12% (3/26)
Other, please specify	Response to international health emergency	1	56	0% (0/30)	4% (1/26)

Question 51 How does your NPHI collaborate with other NPHIs before, during and after health emergencies?

Figure Q51

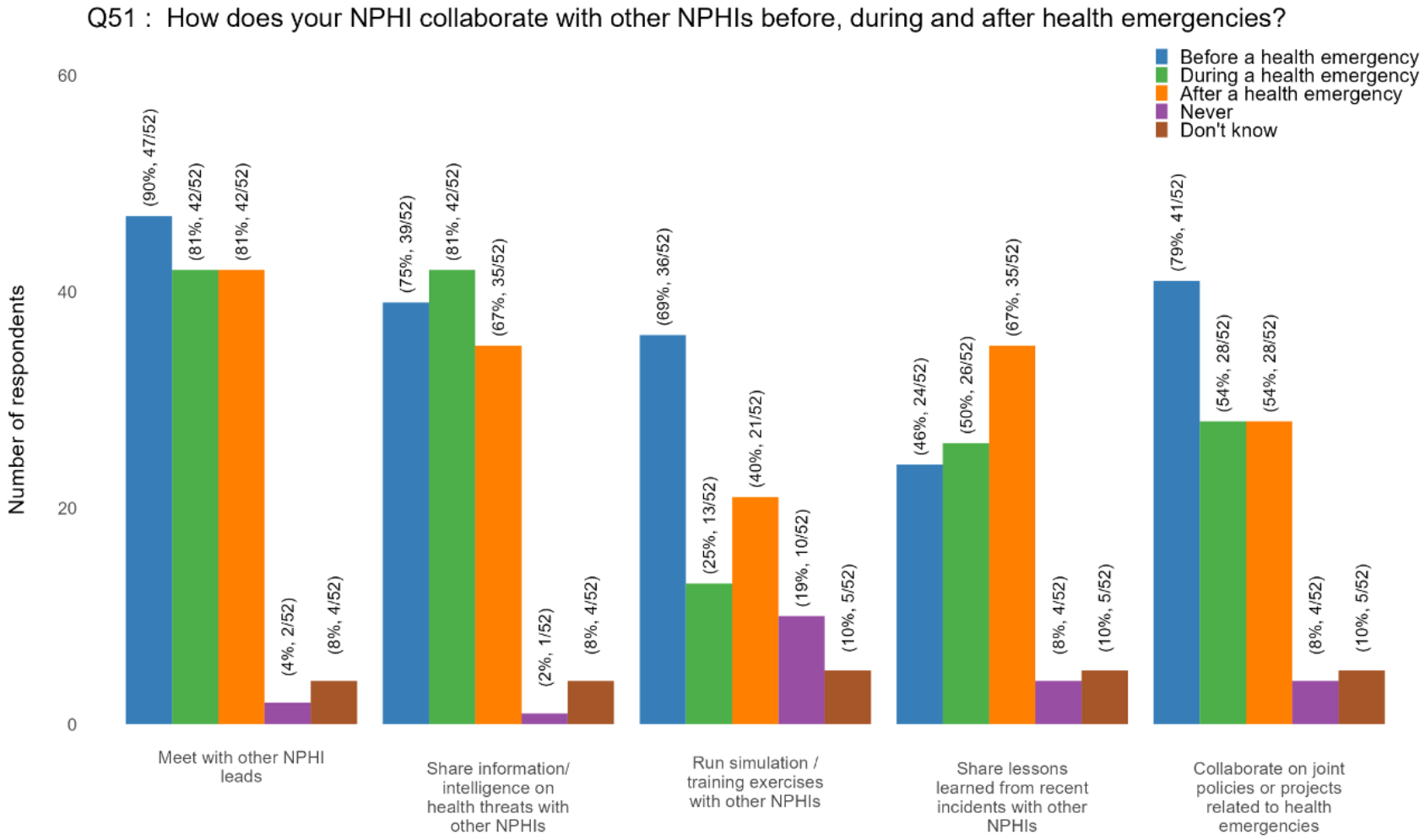


Table Q51A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Meet with other NPHI leads	Before a health emergency	47	52	82% (9/11)	92% (11/12)	100% (8/8)	90% (19/21)
Meet with other NPHI leads	During a health emergency	42	52	55% (6/11)	92% (11/12)	100% (8/8)	81% (17/21)
Meet with other NPHI leads	After a health emergency	42	52	55% (6/11)	83% (10/12)	100% (8/8)	86% (18/21)
Meet with other NPHI leads	Never	2	52	9% (1/11)	8% (1/12)	0% (0/8)	0% (0/21)
Meet with other NPHI leads	Don't know	4	52	9% (1/11)	0% (0/12)	0% (0/8)	14% (3/21)
Share information/ intelligence on health threats with other NPHIs	Before a health emergency	39	52	55% (6/11)	75% (9/12)	100% (8/8)	76% (16/21)
Share information/ intelligence on health threats with other NPHIs	During a health emergency	42	52	64% (7/11)	92% (11/12)	100% (8/8)	76% (16/21)
Share information/ intelligence on health threats with other NPHIs	After a health emergency	35	52	45% (5/11)	75% (9/12)	100% (8/8)	62% (13/21)
Share information/ intelligence on health threats with other NPHIs	Never	1	52	9% (1/11)	0% (0/12)	0% (0/8)	0% (0/21)
Share information/ intelligence on health threats with other NPHIs	Don't know	4	52	9% (1/11)	8% (1/12)	0% (0/8)	10% (2/21)
Run simulation / training exercises with other NPHIs	Before a health emergency	36	52	82% (9/11)	75% (9/12)	75% (6/8)	57% (12/21)
Run simulation / training exercises with other NPHIs	During a health emergency	13	52	27% (3/11)	25% (3/12)	50% (4/8)	14% (3/21)

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Run simulation / training exercises with other NPHIs	After a health emergency	21	52	36% (4/11)	33% (4/12)	62% (5/8)	38% (8/21)
Run simulation / training exercises with other NPHIs	Never	10	52	9% (1/11)	25% (3/12)	12% (1/8)	24% (5/21)
Run simulation / training exercises with other NPHIs	Don't know	5	52	9% (1/11)	0% (0/12)	0% (0/8)	19% (4/21)
Share lessons learned from recent incidents with other NPHIs	Before a health emergency	24	52	45% (5/11)	33% (4/12)	62% (5/8)	48% (10/21)
Share lessons learned from recent incidents with other NPHIs	During a health emergency	26	52	45% (5/11)	42% (5/12)	75% (6/8)	48% (10/21)
Share lessons learned from recent incidents with other NPHIs	After a health emergency	35	52	45% (5/11)	75% (9/12)	75% (6/8)	71% (15/21)
Share lessons learned from recent incidents with other NPHIs	Never	4	52	9% (1/11)	17% (2/12)	0% (0/8)	5% (1/21)
Share lessons learned from recent incidents with other NPHIs	Don't know	5	52	18% (2/11)	0% (0/12)	0% (0/8)	14% (3/21)
Collaborate on joint policies or projects related to health emergencies	Before a health emergency	41	52	73% (8/11)	75% (9/12)	100% (8/8)	76% (16/21)
Collaborate on joint policies or projects related to health emergencies	During a health emergency	28	52	45% (5/11)	58% (7/12)	88% (7/8)	43% (9/21)
Collaborate on joint policies or projects related to health emergencies	After a health emergency	28	52	36% (4/11)	58% (7/12)	88% (7/8)	48% (10/21)
Collaborate on joint policies or projects related to health emergencies	Never	4	52	18% (2/11)	17% (2/12)	0% (0/8)	0% (0/21)
Collaborate on joint policies or projects related to health emergencies	Don't know	5	52	0% (0/11)	8% (1/12)	0% (0/8)	19% (4/21)

Table Q51B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Meet with other NPHI leads	Before a health emergency	47	52	87% (13/15)	100% (4/4)	90% (9/10)	88% (15/17)	100% (1/1)	100% (5/5)
Meet with other NPHI leads	During a health emergency	42	52	73% (11/15)	100% (4/4)	80% (8/10)	76% (13/17)	100% (1/1)	100% (5/5)
Meet with other NPHI leads	After a health emergency	42	52	67% (10/15)	100% (4/4)	80% (8/10)	82% (14/17)	100% (1/1)	100% (5/5)
Meet with other NPHI leads	Never	2	52	13% (2/15)	0% (0/4)	0% (0/10)	0% (0/17)	0% (0/1)	0% (0/5)
Meet with other NPHI leads	Don't know	4	52	0% (0/15)	0% (0/4)	20% (2/10)	12% (2/17)	0% (0/1)	0% (0/5)
Share information/ intelligence on health threats with other NPHIs	Before a health emergency	39	52	67% (10/15)	100% (4/4)	60% (6/10)	76% (13/17)	100% (1/1)	100% (5/5)
Share information/ intelligence on health threats with other NPHIs	During a health emergency	42	52	80% (12/15)	100% (4/4)	70% (7/10)	76% (13/17)	100% (1/1)	100% (5/5)
Share information/ intelligence on health threats with other NPHIs	After a health emergency	35	52	60% (9/15)	100% (4/4)	50% (5/10)	65% (11/17)	100% (1/1)	100% (5/5)
Share information/ intelligence on health threats with other NPHIs	Never	1	52	7% (1/15)	0% (0/4)	0% (0/10)	0% (0/17)	0% (0/1)	0% (0/5)
Share information/ intelligence on health threats with other NPHIs	Don't know	4	52	0% (0/15)	0% (0/4)	20% (2/10)	12% (2/17)	0% (0/1)	0% (0/5)
Run simulation / training exercises with other NPHIs	Before a health emergency	36	52	67% (10/15)	75% (3/4)	80% (8/10)	53% (9/17)	100% (1/1)	100% (5/5)
Run simulation / training exercises with other NPHIs	During a health emergency	13	52	20% (3/15)	25% (1/4)	20% (2/10)	29% (5/17)	0% (0/1)	40% (2/5)

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Run simulation / training exercises with other NPHIs	After a health emergency	21	52	27% (4/15)	50% (2/4)	30% (3/10)	53% (9/17)	100% (1/1)	40% (2/5)
Run simulation / training exercises with other NPHIs	Never	10	52	33% (5/15)	25% (1/4)	0% (0/10)	24% (4/17)	0% (0/1)	0% (0/5)
Run simulation / training exercises with other NPHIs	Don't know	5	52	0% (0/15)	0% (0/4)	20% (2/10)	18% (3/17)	0% (0/1)	0% (0/5)
Share lessons learned from recent incidents with other NPHIs	Before a health emergency	24	52	47% (7/15)	75% (3/4)	10% (1/10)	59% (10/17)	100% (1/1)	40% (2/5)
Share lessons learned from recent incidents with other NPHIs	During a health emergency	26	52	53% (8/15)	75% (3/4)	10% (1/10)	53% (9/17)	100% (1/1)	80% (4/5)
Share lessons learned from recent incidents with other NPHIs	After a health emergency	35	52	47% (7/15)	75% (3/4)	60% (6/10)	76% (13/17)	100% (1/1)	100% (5/5)
Share lessons learned from recent incidents with other NPHIs	Never	4	52	20% (3/15)	25% (1/4)	0% (0/10)	0% (0/17)	0% (0/1)	0% (0/5)
Share lessons learned from recent incidents with other NPHIs	Don't know	5	52	7% (1/15)	0% (0/4)	20% (2/10)	12% (2/17)	0% (0/1)	0% (0/5)
Collaborate on joint policies or projects related to health emergencies	Before a health emergency	41	52	73% (11/15)	75% (3/4)	90% (9/10)	76% (13/17)	0% (0/1)	100% (5/5)
Collaborate on joint policies or projects related to health emergencies	During a health emergency	28	52	60% (9/15)	75% (3/4)	20% (2/10)	47% (8/17)	100% (1/1)	100% (5/5)
Collaborate on joint policies or projects related to health emergencies	After a health emergency	28	52	53% (8/15)	75% (3/4)	40% (4/10)	53% (9/17)	0% (0/1)	80% (4/5)
Collaborate on joint policies or projects related to health emergencies	Never	4	52	20% (3/15)	0% (0/4)	10% (1/10)	0% (0/17)	0% (0/1)	0% (0/5)
Collaborate on joint policies or projects related to health emergencies	Don't know	5	52	7% (1/15)	25% (1/4)	0% (0/10)	18% (3/17)	0% (0/1)	0% (0/5)

Table Q51C: By NPHI Size

Options	Level	n	total	<=500	>500
Meet with other NPHI leads	Before a health emergency	47	52	93% (26/28)	88% (21/24)
Meet with other NPHI leads	During a health emergency	42	52	86% (24/28)	75% (18/24)
Meet with other NPHI leads	After a health emergency	42	52	82% (23/28)	79% (19/24)
Meet with other NPHI leads	Never	2	52	4% (1/28)	4% (1/24)
Meet with other NPHI leads	Don't know	4	52	7% (2/28)	8% (2/24)
Share information/ intelligence on health threats with other NPHIs	Before a health emergency	39	52	71% (20/28)	79% (19/24)
Share information/ intelligence on health threats with other NPHIs	During a health emergency	42	52	75% (21/28)	88% (21/24)
Share information/ intelligence on health threats with other NPHIs	After a health emergency	35	52	64% (18/28)	71% (17/24)
Share information/ intelligence on health threats with other NPHIs	Never	1	52	4% (1/28)	0% (0/24)
Share information/ intelligence on health threats with other NPHIs	Don't know	4	52	7% (2/28)	8% (2/24)
Run simulation / training exercises with other NPHIs	Before a health emergency	36	52	71% (20/28)	67% (16/24)
Run simulation / training exercises with other NPHIs	During a health emergency	13	52	25% (7/28)	25% (6/24)
Run simulation / training exercises with other NPHIs	After a health emergency	21	52	32% (9/28)	50% (12/24)

Options	Level	n	total	<=500	>500
Meet with other NPHI leads	Before a health emergency	47	52	93% (26/28)	88% (21/24)
Meet with other NPHI leads	During a health emergency	42	52	86% (24/28)	75% (18/24)
Meet with other NPHI leads	After a health emergency	42	52	82% (23/28)	79% (19/24)
Meet with other NPHI leads	Never	2	52	4% (1/28)	4% (1/24)
Meet with other NPHI leads	Don't know	4	52	7% (2/28)	8% (2/24)
Share information/ intelligence on health threats with other NPHIs	Before a health emergency	39	52	71% (20/28)	79% (19/24)
Share information/ intelligence on health threats with other NPHIs	During a health emergency	42	52	75% (21/28)	88% (21/24)
Share information/ intelligence on health threats with other NPHIs	After a health emergency	35	52	64% (18/28)	71% (17/24)
Share information/ intelligence on health threats with other NPHIs	Never	1	52	4% (1/28)	0% (0/24)
Share information/ intelligence on health threats with other NPHIs	Don't know	4	52	7% (2/28)	8% (2/24)
Run simulation / training exercises with other NPHIs	Before a health emergency	36	52	71% (20/28)	67% (16/24)
Run simulation / training exercises with other NPHIs	During a health emergency	13	52	25% (7/28)	25% (6/24)
Run simulation / training exercises with other NPHIs	After a health emergency	21	52	32% (9/28)	50% (12/24)

Question 52 Which international organizations and associations would you consider contacting in a health emergency of potential international concern?

Figure Q52

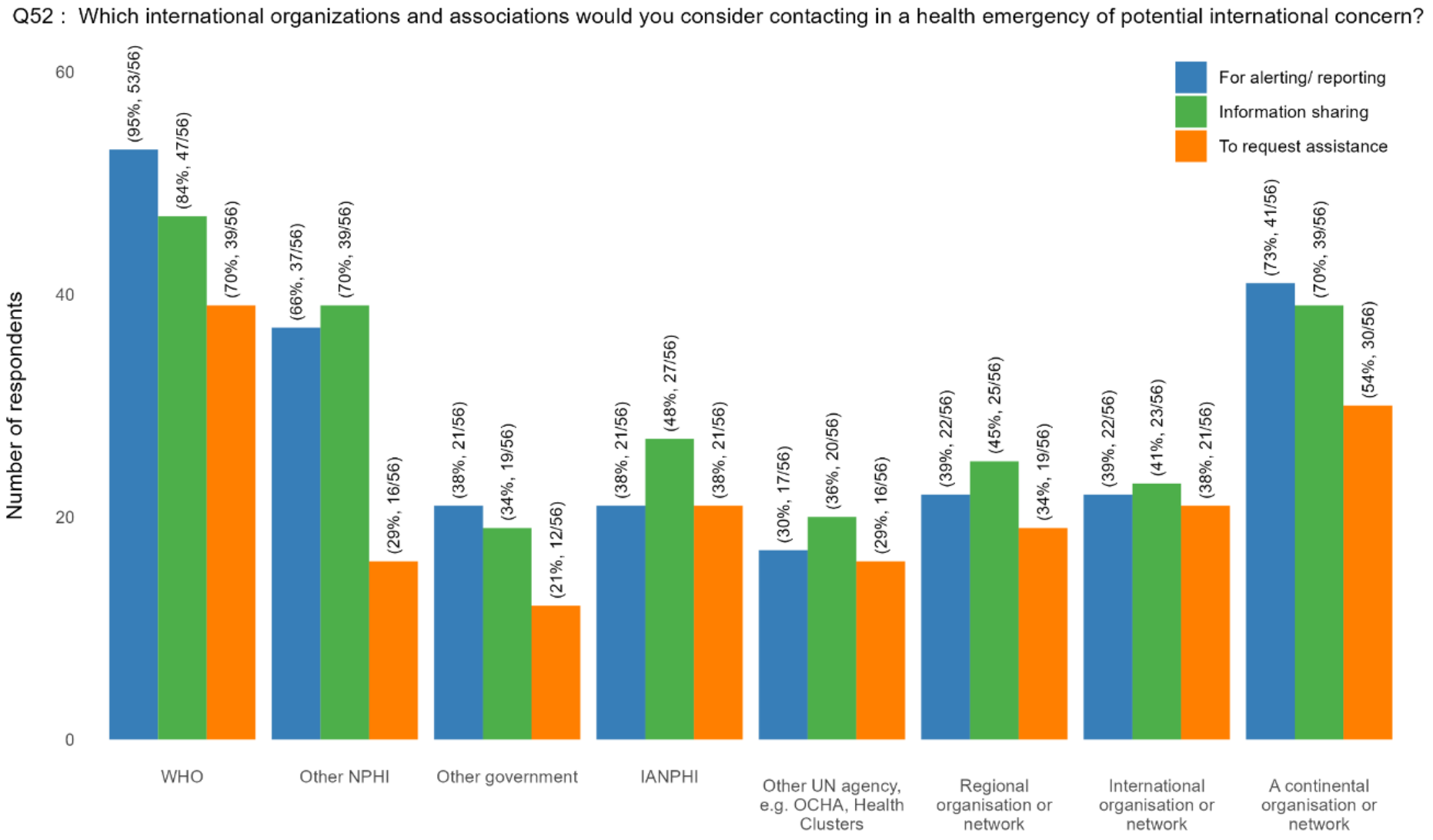


Table Q52A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
WHO	For alerting/ reporting	53	56	100% (11/11)	100% (12/12)	92% (11/12)	90% (19/21)
Other NPHI	For alerting/ reporting	37	56	55% (6/11)	67% (8/12)	58% (7/12)	76% (16/21)
Other government	For alerting/ reporting	21	56	45% (5/11)	50% (6/12)	8% (1/12)	43% (9/21)
IANPHI	For alerting/ reporting	21	56	55% (6/11)	50% (6/12)	33% (4/12)	24% (5/21)
Other UN agency, e.g., OCHA, Health Clusters	For alerting/ reporting	17	56	45% (5/11)	33% (4/12)	42% (5/12)	14% (3/21)
Regional organisation or network	For alerting/ reporting	22	56	73% (8/11)	50% (6/12)	33% (4/12)	19% (4/21)
International organisation or network	For alerting/ reporting	22	56	36% (4/11)	58% (7/12)	42% (5/12)	29% (6/21)
A continental organisation or network	For alerting/ reporting	41	56	91% (10/11)	92% (11/12)	67% (8/12)	57% (12/21)
WHO	Information sharing	47	56	82% (9/11)	75% (9/12)	100% (12/12)	81% (17/21)
Other NPHI	Information sharing	39	56	55% (6/11)	42% (5/12)	67% (8/12)	95% (20/21)
Other government	Information sharing	19	56	18% (2/11)	25% (3/12)	17% (2/12)	57% (12/21)
IANPHI	Information sharing	27	56	55% (6/11)	50% (6/12)	50% (6/12)	43% (9/21)

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Other UN agency, e.g., OCHA, Health Clusters	Information sharing	20	56	55% (6/11)	33% (4/12)	42% (5/12)	24% (5/21)
Regional organisation or network	Information sharing	25	56	73% (8/11)	50% (6/12)	33% (4/12)	33% (7/21)
International organisation or network	Information sharing	23	56	36% (4/11)	50% (6/12)	42% (5/12)	38% (8/21)
A continental organisation or network	Information sharing	39	56	73% (8/11)	58% (7/12)	67% (8/12)	76% (16/21)
WHO	To request assistance	39	56	82% (9/11)	83% (10/12)	83% (10/12)	48% (10/21)
Other NPHI	To request assistance	16	56	18% (2/11)	25% (3/12)	42% (5/12)	29% (6/21)
Other government	To request assistance	12	56	18% (2/11)	33% (4/12)	8% (1/12)	24% (5/21)
IANPHI	To request assistance	21	56	73% (8/11)	50% (6/12)	42% (5/12)	10% (2/21)
Other UN agency, e.g. OCHA, Health Clusters	To request assistance	16	56	55% (6/11)	42% (5/12)	42% (5/12)	0% (0/21)
Regional organisation or network	To request assistance	19	56	64% (7/11)	50% (6/12)	33% (4/12)	10% (2/21)
International organisation or network	To request assistance	21	56	45% (5/11)	42% (5/12)	42% (5/12)	29% (6/21)
A continental organisation or network	To request assistance	30	56	73% (8/11)	58% (7/12)	67% (8/12)	33% (7/21)

Table Q52B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
WHO	For alerting/ reporting	53	56	100% (15/15)	88% (7/8)	90% (9/10)	94% (16/17)	100% (1/1)	100% (5/5)
Other NPHI	For alerting/ reporting	37	56	67% (10/15)	75% (6/8)	60% (6/10)	76% (13/17)	0% (0/1)	40% (2/5)
Other government	For alerting/ reporting	21	56	53% (8/15)	25% (2/8)	40% (4/10)	29% (5/17)	0% (0/1)	40% (2/5)
IANPHI	For alerting/ reporting	21	56	33% (5/15)	38% (3/8)	50% (5/10)	29% (5/17)	100% (1/1)	40% (2/5)
Other UN agency, e.g., OCHA, Health Clusters	For alerting/ reporting	17	56	27% (4/15)	50% (4/8)	30% (3/10)	24% (4/17)	0% (0/1)	40% (2/5)
Regional organisation or network	For alerting/ reporting	22	56	60% (9/15)	50% (4/8)	40% (4/10)	18% (3/17)	0% (0/1)	40% (2/5)
International organisation or network	For alerting/ reporting	22	56	47% (7/15)	75% (6/8)	20% (2/10)	18% (3/17)	100% (1/1)	60% (3/5)
A continental organisation or network	For alerting/ reporting	41	56	93% (14/15)	75% (6/8)	70% (7/10)	65% (11/17)	100% (1/1)	40% (2/5)
WHO	Information sharing	47	56	67% (10/15)	88% (7/8)	100% (10/10)	82% (14/17)	100% (1/1)	100% (5/5)
Other NPHI	Information sharing	39	56	47% (7/15)	100% (8/8)	60% (6/10)	88% (15/17)	0% (0/1)	60% (3/5)
Other government	Information sharing	19	56	20% (3/15)	25% (2/8)	20% (2/10)	53% (9/17)	0% (0/1)	60% (3/5)
IANPHI	Information sharing	27	56	40% (6/15)	62% (5/8)	50% (5/10)	47% (8/17)	100% (1/1)	40% (2/5)

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Other UN agency, e.g., OCHA, Health Clusters	Information sharing	20	56	33% (5/15)	50% (4/8)	30% (3/10)	29% (5/17)	0% (0/1)	60% (3/5)
Regional organisation or network	Information sharing	25	56	53% (8/15)	50% (4/8)	50% (5/10)	29% (5/17)	0% (0/1)	60% (3/5)
International organisation or network	Information sharing	23	56	20% (3/15)	75% (6/8)	50% (5/10)	29% (5/17)	100% (1/1)	60% (3/5)
A continental organisation or network	Information sharing	39	56	60% (9/15)	75% (6/8)	50% (5/10)	88% (15/17)	100% (1/1)	60% (3/5)
WHO	To request assistance	39	56	73% (11/15)	50% (4/8)	70% (7/10)	71% (12/17)	100% (1/1)	80% (4/5)
Other NPHI	To request assistance	16	56	7% (1/15)	50% (4/8)	30% (3/10)	47% (8/17)	0% (0/1)	0% (0/5)
Other government	To request assistance	12	56	20% (3/15)	0% (0/8)	30% (3/10)	29% (5/17)	0% (0/1)	20% (1/5)
IANPHI	To request assistance	21	56	47% (7/15)	50% (4/8)	50% (5/10)	18% (3/17)	100% (1/1)	20% (1/5)
Other UN agency, e.g., OCHA, Health Clusters	To request assistance	16	56	40% (6/15)	38% (3/8)	30% (3/10)	18% (3/17)	100% (1/1)	0% (0/5)
Regional organisation or network	To request assistance	19	56	47% (7/15)	25% (2/8)	40% (4/10)	24% (4/17)	100% (1/1)	20% (1/5)
International organisation or network	To request assistance	21	56	40% (6/15)	50% (4/8)	20% (2/10)	41% (7/17)	100% (1/1)	20% (1/5)
A continental organisation or network	To request assistance	30	56	67% (10/15)	62% (5/8)	40% (4/10)	53% (9/17)	100% (1/1)	20% (1/5)

Table Q52C: By NPHI Size

Options	Level	n	total	<=500	>500
WHO	For alerting/ reporting	53	56	97% (29/30)	92% (24/26)
Other NPHI	For alerting/ reporting	37	56	63% (19/30)	69% (18/26)
Other government	For alerting/ reporting	21	56	33% (10/30)	42% (11/26)
IANPHI	For alerting/ reporting	21	56	43% (13/30)	31% (8/26)
Other UN agency, e.g., OCHA, Health Clusters	For alerting/ reporting	17	56	40% (12/30)	19% (5/26)
Regional organisation or network	For alerting/ reporting	22	56	47% (14/30)	31% (8/26)
International organisation or network	For alerting/ reporting	22	56	43% (13/30)	35% (9/26)
A continental organisation or network	For alerting/ reporting	41	56	80% (24/30)	65% (17/26)
WHO	Information sharing	47	56	87% (26/30)	81% (21/26)
Other NPHI	Information sharing	39	56	60% (18/30)	81% (21/26)
Other government	Information sharing	19	56	17% (5/30)	54% (14/26)
IANPHI	Information sharing	27	56	47% (14/30)	50% (13/26)
Other UN agency, e.g. OCHA, Health Clusters	Information sharing	20	56	40% (12/30)	31% (8/26)
Regional organisation or network	Information sharing	25	56	43% (13/30)	46% (12/26)
International organisation or network	Information sharing	23	56	33% (10/30)	50% (13/26)
A continental organisation or network	Information sharing	39	56	63% (19/30)	77% (20/26)
WHO	To request assistance	39	56	83% (25/30)	54% (14/26)

Options	Level	n	total	<=500	>500
Other NPHI	To request assistance	16	56	27% (8/30)	31% (8/26)
Other government	To request assistance	12	56	20% (6/30)	23% (6/26)
IANPHI	To request assistance	21	56	50% (15/30)	23% (6/26)
Other UN agency, e.g., OCHA, Health Clusters	To request assistance	16	56	40% (12/30)	15% (4/26)
Regional organisation or network	To request assistance	19	56	40% (12/30)	27% (7/26)
International organisation or network	To request assistance	21	56	40% (12/30)	35% (9/26)
A continental organisation or network	To request assistance	30	56	63% (19/30)	42% (11/26)

Question 53 Which international organizations and associations would you consider contacting in a health emergency of potential international concern?

Figure Q53

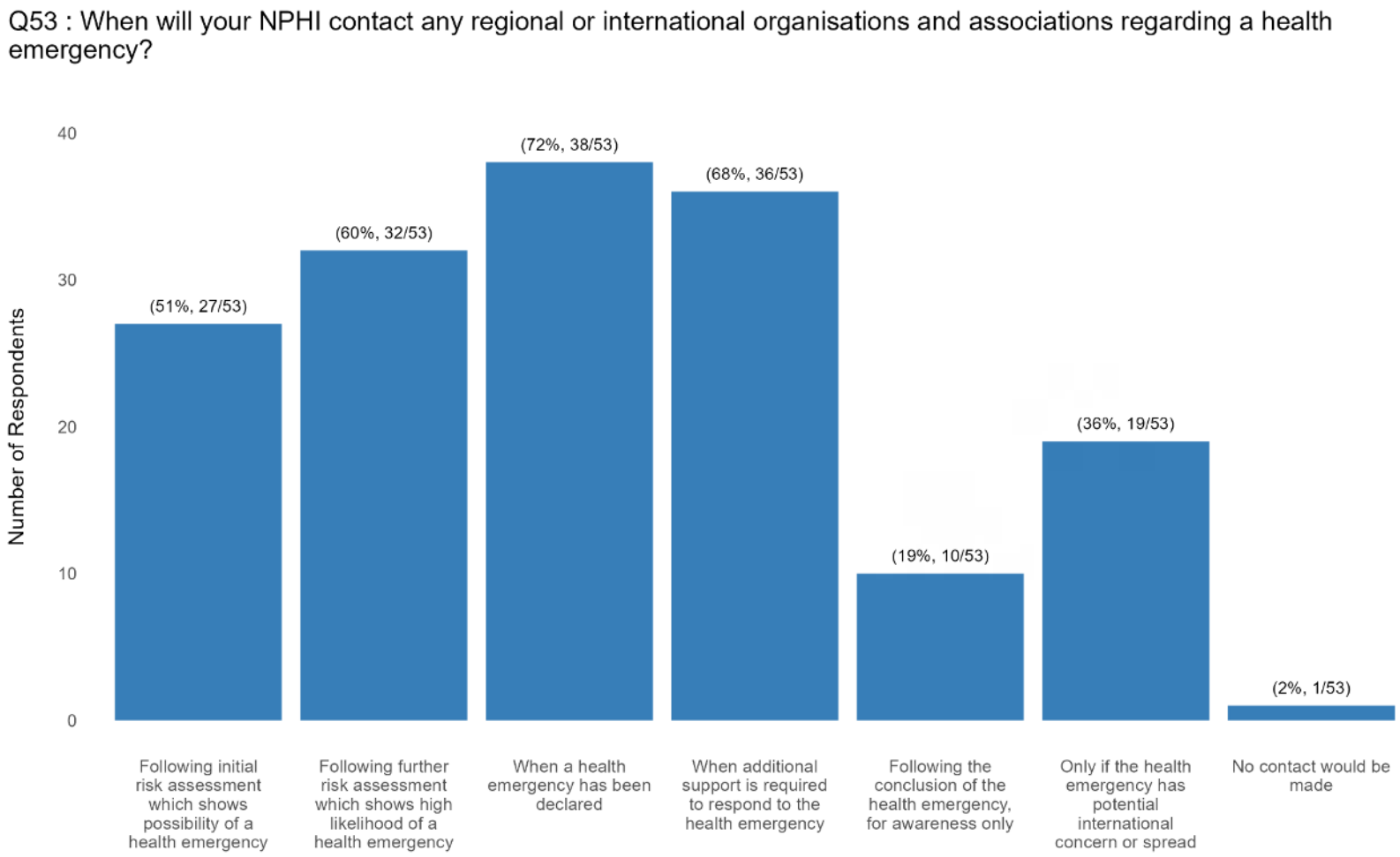


Table Q53A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Following initial risk assessment which shows possibility of a health emergency		27	53	30% (3/10)	50% (6/12)	45% (5/11)	65% (13/20)
Following further risk assessment which shows high likelihood of a health emergency		32	53	70% (7/10)	67% (8/12)	55% (6/11)	55% (11/20)
When a health emergency has been declared		38	53	90% (9/10)	83% (10/12)	64% (7/11)	60% (12/20)
When additional support is required to respond to the health emergency		36	53	90% (9/10)	83% (10/12)	73% (8/11)	45% (9/20)
Following the conclusion of the health emergency, for awareness only		10	53	20% (2/10)	8% (1/12)	27% (3/11)	20% (4/20)
Only if the health emergency has potential international concern or spread		19	53	30% (3/10)	33% (4/12)	36% (4/11)	40% (8/20)
No contact would be made		1	53	10% (1/10)	0% (0/12)	0% (0/11)	0% (0/20)

Table Q53B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Following initial risk assessment which shows possibility of a health emergency		27	53	20% (3/15)	62% (5/8)	56% (5/9)	62% (10/16)	100% (1/1)	75% (3/4)
Following further risk assessment which shows high likelihood of a health emergency		32	53	60% (9/15)	62% (5/8)	56% (5/9)	56% (9/16)	100% (1/1)	75% (3/4)
When a health emergency has been declared		38	53	80% (12/15)	62% (5/8)	89% (8/9)	56% (9/16)	100% (1/1)	75% (3/4)
When additional support is required to respond to the health emergency		36	53	73% (11/15)	50% (4/8)	78% (7/9)	62% (10/16)	100% (1/1)	75% (3/4)
Following the conclusion of the health emergency, for awareness only		10	53	7% (1/15)	38% (3/8)	11% (1/9)	19% (3/16)	0% (0/1)	50% (2/4)
Only if the health emergency has potential international concern or spread		19	53	20% (3/15)	12% (1/8)	67% (6/9)	44% (7/16)	0% (0/1)	50% (2/4)
No contact would be made		1	53	7% (1/15)	0% (0/8)	0% (0/9)	0% (0/16)	0% (0/1)	0% (0/4)

Table Q53C: By NPHI Size

Options	Level	n	total	<=500	>500
Following initial risk assessment which shows possibility of a health emergency		27	53	38% (11/29)	67% (16/24)
Following further risk assessment which shows high likelihood of a health emergency		32	53	59% (17/29)	62% (15/24)
When a health emergency has been declared		38	53	83% (24/29)	58% (14/24)
When additional support is required to respond to the health emergency		36	53	83% (24/29)	50% (12/24)
Following the conclusion of the health emergency, for awareness only		10	53	14% (4/29)	25% (6/24)
Only if the health emergency has potential international concern or spread		19	53	38% (11/29)	33% (8/24)
No contact would be made		1	53	3% (1/29)	0% (0/24)

Question 54 In a health emergency, if your NPHI contected other organizations for support, what kind of support would you be seeking?

Figure Q54

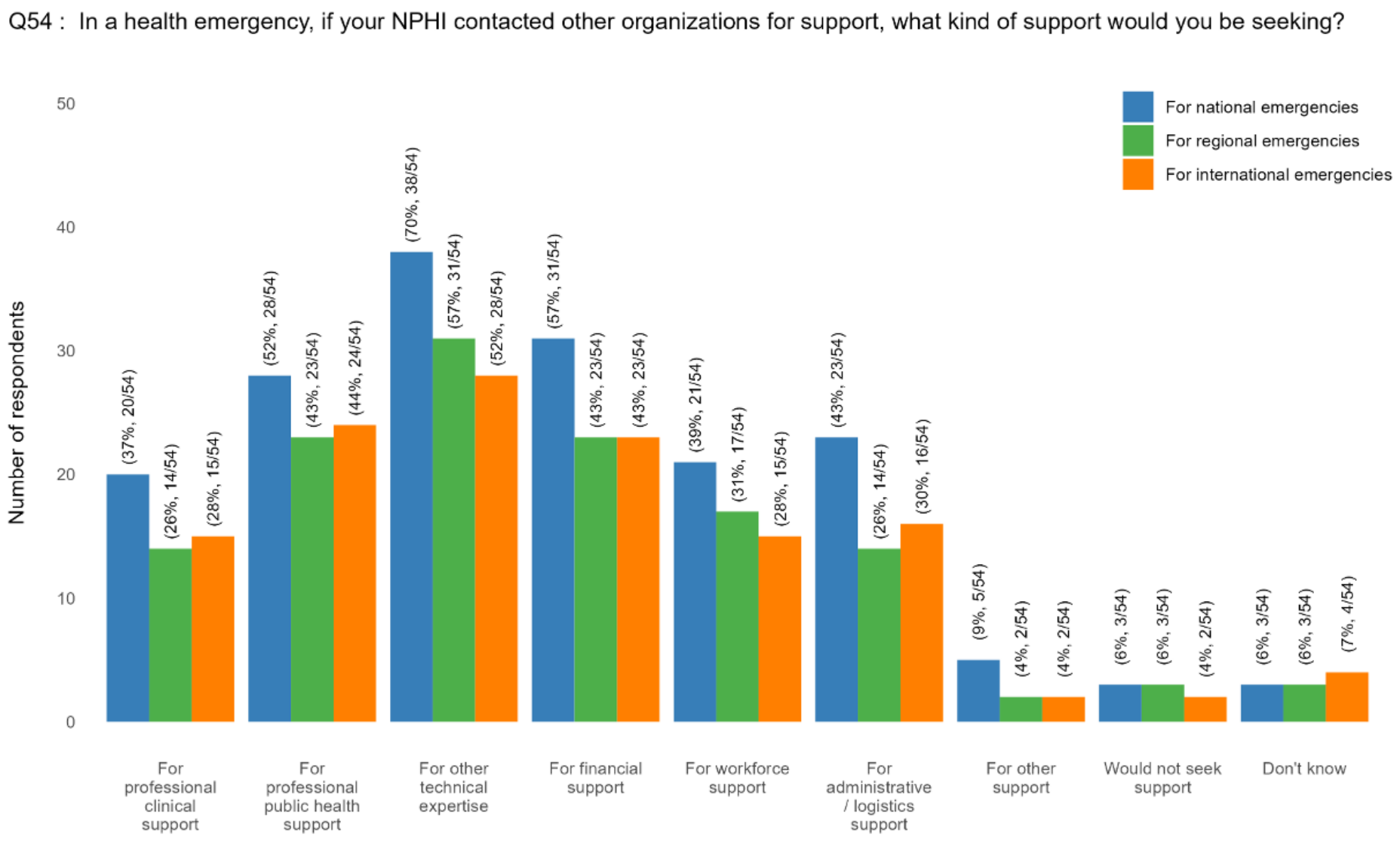


Table Q54A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
For professional clinical support	For national emergencies	20	54	55% (6/11)	58% (7/12)	42% (5/12)	11% (2/19)
For professional public health support	For national emergencies	28	54	36% (4/11)	67% (8/12)	67% (8/12)	42% (8/19)
For other technical expertise	For national emergencies	38	54	82% (9/11)	83% (10/12)	83% (10/12)	47% (9/19)
For financial support	For national emergencies	31	54	100% (11/11)	67% (8/12)	75% (9/12)	16% (3/19)
For workforce support	For national emergencies	21	54	45% (5/11)	67% (8/12)	33% (4/12)	21% (4/19)
For administrative / logistics support	For national emergencies	23	54	64% (7/11)	67% (8/12)	50% (6/12)	11% (2/19)
For other support	For national emergencies	5	54	9% (1/11)	8% (1/12)	0% (0/12)	16% (3/19)
Would not seek support	For national emergencies	3	54	0% (0/11)	0% (0/12)	0% (0/12)	16% (3/19)
Don't know	For national emergencies	3	54	0% (0/11)	0% (0/12)	0% (0/12)	16% (3/19)
For professional clinical support	For regional emergencies	14	54	36% (4/11)	33% (4/12)	25% (3/12)	16% (3/19)
For professional public health support	For regional emergencies	23	54	36% (4/11)	67% (8/12)	42% (5/12)	32% (6/19)
For other technical expertise	For regional emergencies	31	54	45% (5/11)	75% (9/12)	67% (8/12)	47% (9/19)
For financial support	For regional emergencies	23	54	55% (6/11)	83% (10/12)	50% (6/12)	5% (1/19)
For workforce support	For regional emergencies	17	54	36% (4/11)	42% (5/12)	42% (5/12)	16% (3/19)
For administrative / logistics support	For regional emergencies	14	54	45% (5/11)	33% (4/12)	33% (4/12)	5% (1/19)
For other support	For regional emergencies	2	54	9% (1/11)	0% (0/12)	0% (0/12)	5% (1/19)
Would not seek support	For regional emergencies	3	54	0% (0/11)	0% (0/12)	0% (0/12)	16% (3/19)
Don't know	For regional emergencies	3	54	0% (0/11)	0% (0/12)	0% (0/12)	16% (3/19)

Options	Level	n	total	LIC	LMIC	UMIC	HIC
For professional clinical support	For international emergencies	15	54	36% (4/11)	42% (5/12)	25% (3/12)	16% (3/19)
For professional public health support	For international emergencies	24	54	45% (5/11)	58% (7/12)	42% (5/12)	37% (7/19)
For other technical expertise	For international emergencies	28	54	36% (4/11)	58% (7/12)	67% (8/12)	47% (9/19)
For financial support	For international emergencies	23	54	55% (6/11)	75% (9/12)	50% (6/12)	11% (2/19)
For workforce support	For international emergencies	15	54	55% (6/11)	33% (4/12)	25% (3/12)	11% (2/19)
For administrative / logistics support	For international emergencies	16	54	45% (5/11)	42% (5/12)	33% (4/12)	11% (2/19)
For other support	For international emergencies	2	54	9% (1/11)	0% (0/12)	0% (0/12)	5% (1/19)
Would not seek support	For international emergencies	2	54	0% (0/11)	0% (0/12)	0% (0/12)	11% (2/19)
Don't know	For international emergencies	4	54	0% (0/11)	0% (0/12)	0% (0/12)	21% (4/19)

Table Q54B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
For professional clinical support	For national emergencies	20	54	53% (8/15)	12% (1/8)	40% (4/10)	31% (5/16)	0% (0/1)	50% (2/4)
For professional public health support	For national emergencies	28	54	40% (6/15)	50% (4/8)	40% (4/10)	69% (11/16)	100% (1/1)	50% (2/4)
For other technical expertise	For national emergencies	38	54	93% (14/15)	75% (6/8)	40% (4/10)	62% (10/16)	100% (1/1)	75% (3/4)
For financial support	For national emergencies	31	54	93% (14/15)	62% (5/8)	30% (3/10)	31% (5/16)	100% (1/1)	75% (3/4)
For workforce support	For national emergencies	21	54	40% (6/15)	25% (2/8)	60% (6/10)	31% (5/16)	100% (1/1)	25% (1/4)
For administrative / logistics support	For national emergencies	23	54	60% (9/15)	38% (3/8)	40% (4/10)	25% (4/16)	100% (1/1)	50% (2/4)
For other support	For national emergencies	5	54	7% (1/15)	0% (0/8)	10% (1/10)	19% (3/16)	0% (0/1)	0% (0/4)
Would not seek support	For national emergencies	3	54	0% (0/15)	38% (3/8)	0% (0/10)	0% (0/16)	0% (0/1)	0% (0/4)
Don't know	For national emergencies	3	54	0% (0/15)	0% (0/8)	10% (1/10)	12% (2/16)	0% (0/1)	0% (0/4)
For professional clinical support	For regional emergencies	14	54	33% (5/15)	12% (1/8)	20% (2/10)	19% (3/16)	100% (1/1)	50% (2/4)
For professional public health support	For regional emergencies	23	54	47% (7/15)	50% (4/8)	30% (3/10)	38% (6/16)	100% (1/1)	50% (2/4)
For other technical expertise	For regional emergencies	31	54	67% (10/15)	75% (6/8)	40% (4/10)	44% (7/16)	100% (1/1)	75% (3/4)
For financial support	For regional emergencies	23	54	60% (9/15)	62% (5/8)	40% (4/10)	19% (3/16)	100% (1/1)	25% (1/4)

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
For workforce support	For regional emergencies	17	54	40% (6/15)	25% (2/8)	40% (4/10)	19% (3/16)	100% (1/1)	25% (1/4)
For administrative / logistics support	For regional emergencies	14	54	40% (6/15)	38% (3/8)	20% (2/10)	12% (2/16)	100% (1/1)	0% (0/4)
For other support	For regional emergencies	2	54	7% (1/15)	0% (0/8)	0% (0/10)	6% (1/16)	0% (0/1)	0% (0/4)
Would not seek support	For regional emergencies	3	54	0% (0/15)	38% (3/8)	0% (0/10)	0% (0/16)	0% (0/1)	0% (0/4)
Don't know	For regional emergencies	3	54	0% (0/15)	0% (0/8)	10% (1/10)	12% (2/16)	0% (0/1)	0% (0/4)
For professional clinical support	For international emergencies	15	54	33% (5/15)	12% (1/8)	30% (3/10)	19% (3/16)	100% (1/1)	50% (2/4)
For professional public health support	For international emergencies	24	54	47% (7/15)	50% (4/8)	20% (2/10)	50% (8/16)	100% (1/1)	50% (2/4)
For other technical expertise	For international emergencies	28	54	53% (8/15)	88% (7/8)	20% (2/10)	44% (7/16)	100% (1/1)	75% (3/4)
For financial support	For international emergencies	23	54	60% (9/15)	62% (5/8)	30% (3/10)	25% (4/16)	100% (1/1)	25% (1/4)
For workforce support	For international emergencies	15	54	40% (6/15)	25% (2/8)	10% (1/10)	25% (4/16)	100% (1/1)	25% (1/4)
For administrative / logistics support	For international emergencies	16	54	40% (6/15)	38% (3/8)	10% (1/10)	25% (4/16)	100% (1/1)	25% (1/4)
For other support	For international emergencies	2	54	7% (1/15)	0% (0/8)	0% (0/10)	6% (1/16)	0% (0/1)	0% (0/4)
Would not seek support	For international emergencies	2	54	0% (0/15)	12% (1/8)	0% (0/10)	6% (1/16)	0% (0/1)	0% (0/4)
Don't know	For international emergencies	4	54	0% (0/15)	0% (0/8)	10% (1/10)	19% (3/16)	0% (0/1)	0% (0/4)

Table Q54C: By NPHI Size

Options	Level	n	total	<=500	>500
For professional clinical support	For national emergencies	20	54	43% (13/30)	29% (7/24)
For professional public health support	For national emergencies	28	54	50% (15/30)	54% (13/24)
For other technical expertise	For national emergencies	38	54	77% (23/30)	62% (15/24)
For financial support	For national emergencies	31	54	70% (21/30)	42% (10/24)
For workforce support	For national emergencies	21	54	47% (14/30)	29% (7/24)
For administrative / logistics support	For national emergencies	23	54	60% (18/30)	21% (5/24)
For other support	For national emergencies	5	54	3% (1/30)	17% (4/24)
Would not seek support	For national emergencies	3	54	0% (0/30)	12% (3/24)
Don't know	For national emergencies	3	54	3% (1/30)	8% (2/24)
For professional clinical support	For regional emergencies	14	54	33% (10/30)	17% (4/24)
For professional public health support	For regional emergencies	23	54	53% (16/30)	29% (7/24)
For other technical expertise	For regional emergencies	31	54	57% (17/30)	58% (14/24)
For financial support	For regional emergencies	23	54	53% (16/30)	29% (7/24)
For workforce support	For regional emergencies	17	54	47% (14/30)	12% (3/24)
For administrative / logistics support	For regional emergencies	14	54	40% (12/30)	8% (2/24)
For other support	For regional emergencies	2	54	3% (1/30)	4% (1/24)
Would not seek support	For regional emergencies	3	54	0% (0/30)	12% (3/24)
Don't know	For regional emergencies	3	54	3% (1/30)	8% (2/24)

Options	Level	n	total	<=500	>500
For professional clinical support	For international emergencies	15	54	33% (10/30)	21% (5/24)
For professional public health support	For international emergencies	24	54	47% (14/30)	42% (10/24)
For other technical expertise	For international emergencies	28	54	47% (14/30)	58% (14/24)
For financial support	For international emergencies	23	54	53% (16/30)	29% (7/24)
For workforce support	For international emergencies	15	54	40% (12/30)	12% (3/24)
For administrative / logistics support	For international emergencies	16	54	47% (14/30)	8% (2/24)
For other support	For international emergencies	2	54	3% (1/30)	4% (1/24)
Would not seek support	For international emergencies	2	54	0% (0/30)	8% (2/24)
Don't know	For international emergencies	4	54	7% (2/30)	8% (2/24)

Question 55 In a health emergency, does your NPHI have standard protokols for who to contact?

Figure Q55

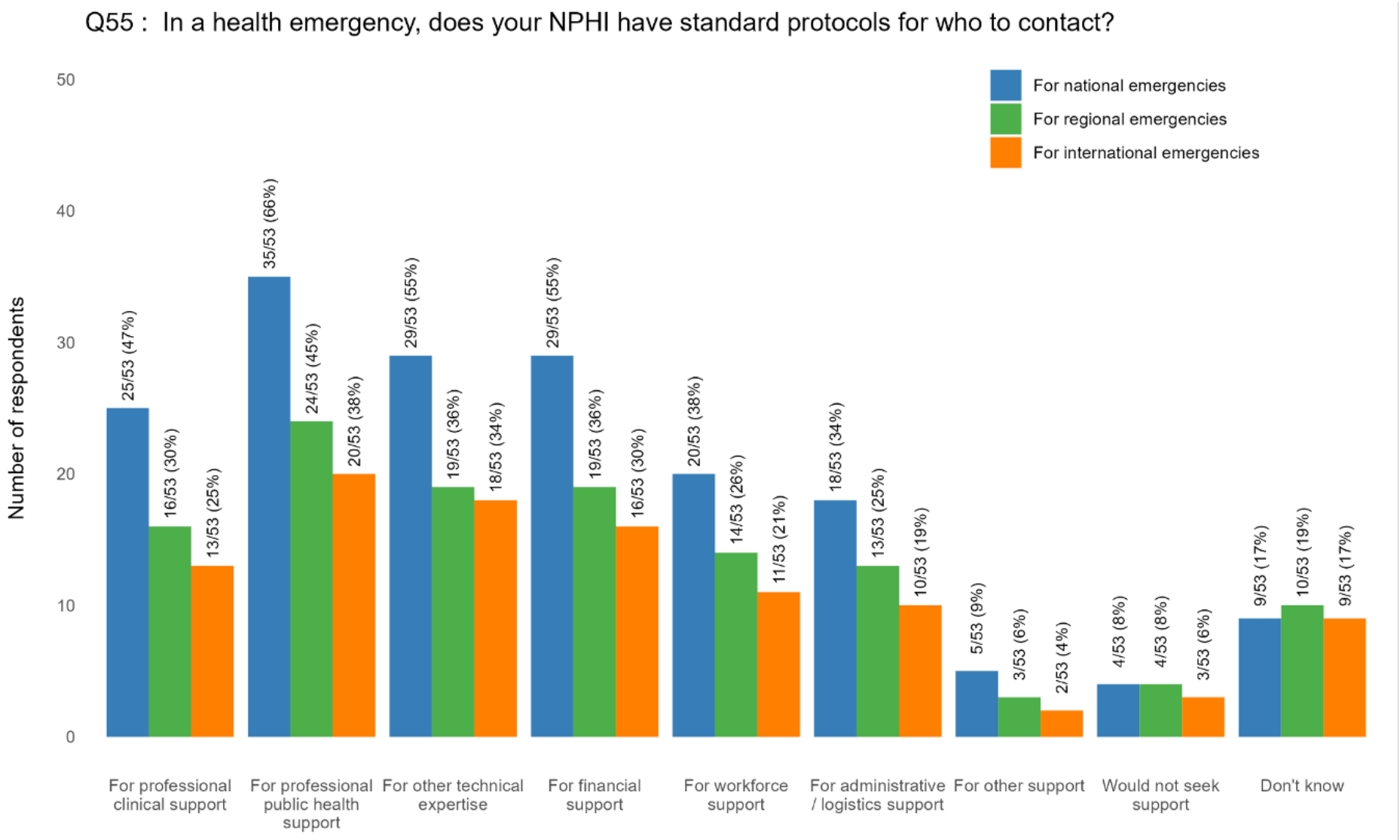


Table Q55A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
For professional clinical support	For national emergencies	25	53	80% (8/10)	50% (6/12)	30% (3/10)	38% (8/21)
For professional public health support	For national emergencies	35	53	90% (9/10)	58% (7/12)	60% (6/10)	62% (13/21)
For other technical expertise	For national emergencies	29	53	70% (7/10)	50% (6/12)	50% (5/10)	52% (11/21)
For financial support	For national emergencies	29	53	70% (7/10)	58% (7/12)	40% (4/10)	52% (11/21)
For workforce support	For national emergencies	20	53	30% (3/10)	67% (8/12)	10% (1/10)	38% (8/21)
For administrative / logistics support	For national emergencies	18	53	40% (4/10)	50% (6/12)	20% (2/10)	29% (6/21)
For other support	For national emergencies	5	53	10% (1/10)	8% (1/12)	20% (2/10)	5% (1/21)
Would not seek support	For national emergencies	4	53	0% (0/10)	8% (1/12)	0% (0/10)	14% (3/21)
Don't know	For national emergencies	9	53	10% (1/10)	25% (3/12)	10% (1/10)	19% (4/21)
For professional clinical support	For regional emergencies	16	53	50% (5/10)	33% (4/12)	10% (1/10)	29% (6/21)
For professional public health support	For regional emergencies	24	53	40% (4/10)	58% (7/12)	40% (4/10)	43% (9/21)
For other technical expertise	For regional emergencies	19	53	40% (4/10)	42% (5/12)	30% (3/10)	33% (7/21)
For financial support	For regional emergencies	19	53	50% (5/10)	42% (5/12)	30% (3/10)	29% (6/21)
For workforce support	For regional emergencies	14	53	30% (3/10)	42% (5/12)	10% (1/10)	24% (5/21)
For administrative / logistics support	For regional emergencies	13	53	40% (4/10)	33% (4/12)	10% (1/10)	19% (4/21)
For other support	For regional emergencies	3	53	10% (1/10)	8% (1/12)	0% (0/10)	5% (1/21)
Would not seek support	For regional emergencies	4	53	0% (0/10)	8% (1/12)	0% (0/10)	14% (3/21)
Don't know	For regional emergencies	10	53	0% (0/10)	33% (4/12)	10% (1/10)	24% (5/21)

Options	Level	n	total	LIC	LMIC	UMIC	HIC
For professional clinical support	For international emergencies	13	53	50% (5/10)	25% (3/12)	10% (1/10)	19% (4/21)
For professional public health support	For international emergencies	20	53	50% (5/10)	33% (4/12)	30% (3/10)	38% (8/21)
For other technical expertise	For international emergencies	18	53	40% (4/10)	33% (4/12)	30% (3/10)	33% (7/21)
For financial support	For international emergencies	16	53	50% (5/10)	25% (3/12)	30% (3/10)	24% (5/21)
For workforce support	For international emergencies	11	53	30% (3/10)	25% (3/12)	10% (1/10)	19% (4/21)
For administrative / logistics support	For international emergencies	10	53	40% (4/10)	8% (1/12)	10% (1/10)	19% (4/21)
For other support	For international emergencies	2	53	10% (1/10)	0% (0/12)	0% (0/10)	5% (1/21)
Would not seek support	For international emergencies	3	53	0% (0/10)	0% (0/12)	0% (0/10)	14% (3/21)
Don't know	For international emergencies	9	53	0% (0/10)	25% (3/12)	10% (1/10)	24% (5/21)

Table Q55B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
For professional clinical support	For national emergencies	25	53	57% (8/14)	25% (2/8)	50% (5/10)	38% (6/16)	100% (1/1)	75% (3/4)
For professional public health support	For national emergencies	35	53	71% (10/14)	50% (4/8)	60% (6/10)	62% (10/16)	100% (1/1)	100% (4/4)
For other technical expertise	For national emergencies	29	53	57% (8/14)	50% (4/8)	60% (6/10)	50% (8/16)	100% (1/1)	50% (2/4)
For financial support	For national emergencies	29	53	57% (8/14)	50% (4/8)	50% (5/10)	56% (9/16)	100% (1/1)	50% (2/4)
For workforce support	For national emergencies	20	53	36% (5/14)	25% (2/8)	50% (5/10)	31% (5/16)	100% (1/1)	50% (2/4)
For administrative / logistics support	For national emergencies	18	53	36% (5/14)	38% (3/8)	30% (3/10)	25% (4/16)	100% (1/1)	50% (2/4)
For other support	For national emergencies	5	53	7% (1/14)	25% (2/8)	10% (1/10)	6% (1/16)	0% (0/1)	0% (0/4)
Would not seek support	For national emergencies	4	53	0% (0/14)	25% (2/8)	10% (1/10)	6% (1/16)	0% (0/1)	0% (0/4)
Don't know	For national emergencies	9	53	21% (3/14)	12% (1/8)	20% (2/10)	19% (3/16)	0% (0/1)	0% (0/4)
For professional clinical support	For regional emergencies	16	53	36% (5/14)	25% (2/8)	40% (4/10)	19% (3/16)	0% (0/1)	50% (2/4)
For professional public health support	For regional emergencies	24	53	36% (5/14)	50% (4/8)	40% (4/10)	38% (6/16)	100% (1/1)	100% (4/4)
For other technical expertise	For regional emergencies	19	53	36% (5/14)	50% (4/8)	20% (2/10)	31% (5/16)	100% (1/1)	50% (2/4)
For financial support	For regional emergencies	19	53	36% (5/14)	50% (4/8)	30% (3/10)	31% (5/16)	0% (0/1)	50% (2/4)
For workforce support	For regional emergencies	14	53	29% (4/14)	25% (2/8)	30% (3/10)	19% (3/16)	0% (0/1)	50% (2/4)
For administrative / logistics support	For regional emergencies	13	53	21% (3/14)	25% (2/8)	30% (3/10)	19% (3/16)	0% (0/1)	50% (2/4)
For other support	For regional emergencies	3	53	7% (1/14)	0% (0/8)	10% (1/10)	6% (1/16)	0% (0/1)	0% (0/4)
Would not seek support	For regional emergencies	4	53	0% (0/14)	25% (2/8)	10% (1/10)	6% (1/16)	0% (0/1)	0% (0/4)
Don't know	For regional emergencies	10	53	14% (2/14)	12% (1/8)	40% (4/10)	19% (3/16)	0% (0/1)	0% (0/4)

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
For professional clinical support	For international emergencies	13	53	36% (5/14)	25% (2/8)	20% (2/10)	12% (2/16)	0% (0/1)	50% (2/4)
For professional public health support	For international emergencies	20	53	36% (5/14)	38% (3/8)	10% (1/10)	38% (6/16)	100% (1/1)	100% (4/4)
For other technical expertise	For international emergencies	18	53	29% (4/14)	50% (4/8)	30% (3/10)	25% (4/16)	100% (1/1)	50% (2/4)
For financial support	For international emergencies	16	53	36% (5/14)	50% (4/8)	20% (2/10)	25% (4/16)	0% (0/1)	25% (1/4)
For workforce support	For international emergencies	11	53	21% (3/14)	25% (2/8)	20% (2/10)	19% (3/16)	0% (0/1)	25% (1/4)
For administrative / logistics support	For international emergencies	10	53	21% (3/14)	25% (2/8)	10% (1/10)	19% (3/16)	0% (0/1)	25% (1/4)
For other support	For international emergencies	2	53	7% (1/14)	0% (0/8)	0% (0/10)	6% (1/16)	0% (0/1)	0% (0/4)
Would not seek support	For international emergencies	3	53	0% (0/14)	25% (2/8)	0% (0/10)	6% (1/16)	0% (0/1)	0% (0/4)
Don't know	For international emergencies	9	53	14% (2/14)	12% (1/8)	30% (3/10)	19% (3/16)	0% (0/1)	0% (0/4)

Table Q55C: By NPHI Size

Options	Level	n	total	<=500	>500
For professional clinical support	For national emergencies	25	53	52% (14/27)	42% (11/26)
For professional public health support	For national emergencies	35	53	67% (18/27)	65% (17/26)
For other technical expertise	For national emergencies	29	53	52% (14/27)	58% (15/26)
For financial support	For national emergencies	29	53	59% (16/27)	50% (13/26)
For workforce support	For national emergencies	20	53	44% (12/27)	31% (8/26)
For administrative / logistics support	For national emergencies	18	53	48% (13/27)	19% (5/26)
For other support	For national emergencies	5	53	11% (3/27)	8% (2/26)
Would not seek support	For national emergencies	4	53	0% (0/27)	15% (4/26)
Don't know	For national emergencies	9	53	15% (4/27)	19% (5/26)
For professional clinical support	For regional emergencies	16	53	22% (6/27)	38% (10/26)
For professional public health support	For regional emergencies	24	53	41% (11/27)	50% (13/26)
For other technical expertise	For regional emergencies	19	53	30% (8/27)	42% (11/26)
For financial support	For regional emergencies	19	53	37% (10/27)	35% (9/26)
For workforce support	For regional emergencies	14	53	26% (7/27)	27% (7/26)
For administrative / logistics support	For regional emergencies	13	53	30% (8/27)	19% (5/26)
For other support	For regional emergencies	3	53	7% (2/27)	4% (1/26)
Would not seek support	For regional emergencies	4	53	0% (0/27)	15% (4/26)
Don't know	For regional emergencies	10	53	15% (4/27)	23% (6/26)

Options	Level	n	total	<=500	>500
For professional clinical support	For international emergencies	13	53	22% (6/27)	27% (7/26)
For professional public health support	For international emergencies	20	53	37% (10/27)	38% (10/26)
For other technical expertise	For international emergencies	18	53	30% (8/27)	38% (10/26)
For financial support	For international emergencies	16	53	33% (9/27)	27% (7/26)
For workforce support	For international emergencies	11	53	26% (7/27)	15% (4/26)
For administrative / logistics support	For international emergencies	10	53	22% (6/27)	15% (4/26)
For other support	For international emergencies	2	53	7% (2/27)	0% (0/26)
Would not seek support	For international emergencies	3	53	0% (0/27)	12% (3/26)
Don't know	For international emergencies	9	53	15% (4/27)	19% (5/26)

Question 55 Is your NPHI involved in simulations, drills and excercises to aid preparedness for health emergencies?

Figure Q56

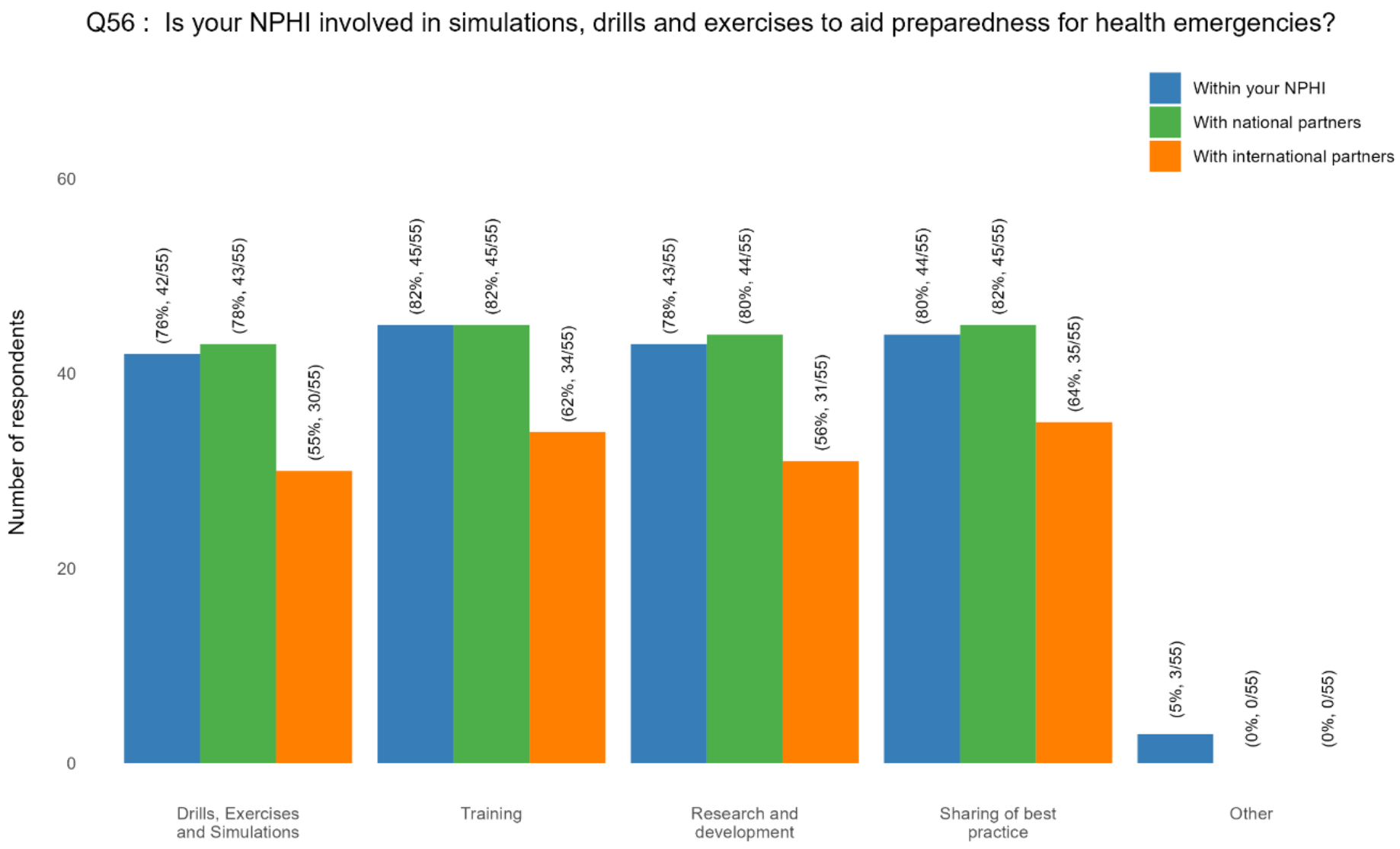


Table Q56A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Drills, Exercises and Simulations	Within your NPHI	42	55	73% (8/11)	83% (10/12)	67% (8/12)	80% (16/20)
Drills, Exercises and Simulations	With national partners	43	55	82% (9/11)	67% (8/12)	58% (7/12)	95% (19/20)
Drills, Exercises and Simulations	With international partners	30	55	45% (5/11)	67% (8/12)	50% (6/12)	55% (11/20)
Training	Within your NPHI	45	55	82% (9/11)	83% (10/12)	83% (10/12)	80% (16/20)
Training	With national partners	45	55	91% (10/11)	83% (10/12)	83% (10/12)	75% (15/20)
Training	With international partners	34	55	73% (8/11)	67% (8/12)	67% (8/12)	50% (10/20)
Research and development	Within your NPHI	43	55	73% (8/11)	83% (10/12)	75% (9/12)	80% (16/20)
Research and development	With national partners	44	55	73% (8/11)	83% (10/12)	92% (11/12)	75% (15/20)
Research and development	With international partners	31	55	55% (6/11)	50% (6/12)	67% (8/12)	55% (11/20)
Sharing of best practice	Within your NPHI	44	55	91% (10/11)	75% (9/12)	75% (9/12)	80% (16/20)
Sharing of best practice	With national partners	45	55	91% (10/11)	67% (8/12)	92% (11/12)	80% (16/20)
Sharing of best practice	With international partners	35	55	73% (8/11)	58% (7/12)	67% (8/12)	60% (12/20)
Other	Within your NPHI	3	55	9% (1/11)	8% (1/12)	8% (1/12)	0% (0/20)
Other	With national partners	0	55	0	0	0	0
Other	With international partners	0	55	0	0	0	0

Table Q56B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Drills, Exercises and Simulations	Within your NPHI	42	55	80% (12/15)	75% (6/8)	70% (7/10)	75% (12/16)	100% (1/1)	80% (4/5)
Drills, Exercises and Simulations	With national partners	43	55	73% (11/15)	62% (5/8)	60% (6/10)	94% (15/16)	100% (1/1)	100% (5/5)
Drills, Exercises and Simulations	With international partners	30	55	33% (5/15)	50% (4/8)	50% (5/10)	69% (11/16)	100% (1/1)	80% (4/5)
Training	Within your NPHI	45	55	80% (12/15)	100% (8/8)	70% (7/10)	81% (13/16)	100% (1/1)	80% (4/5)
Training	With national partners	45	55	80% (12/15)	88% (7/8)	80% (8/10)	75% (12/16)	100% (1/1)	100% (5/5)
Training	With international partners	34	55	60% (9/15)	62% (5/8)	50% (5/10)	62% (10/16)	100% (1/1)	80% (4/5)
Research and development	Within your NPHI	43	55	73% (11/15)	75% (6/8)	80% (8/10)	81% (13/16)	100% (1/1)	80% (4/5)
Research and development	With national partners	44	55	67% (10/15)	75% (6/8)	100% (10/10)	81% (13/16)	100% (1/1)	80% (4/5)
Research and development	With international partners	31	55	40% (6/15)	75% (6/8)	50% (5/10)	69% (11/16)	100% (1/1)	40% (2/5)
Sharing of best practice	Within your NPHI	44	55	80% (12/15)	88% (7/8)	70% (7/10)	88% (14/16)	100% (1/1)	60% (3/5)
Sharing of best practice	With national partners	45	55	73% (11/15)	75% (6/8)	90% (9/10)	88% (14/16)	100% (1/1)	80% (4/5)
Sharing of best practice	With international partners	35	55	60% (9/15)	62% (5/8)	60% (6/10)	75% (12/16)	100% (1/1)	40% (2/5)

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Table Q56C: By NPHI Size

Options	Level	n	total	<=500	>500
Drills, Exercises and Simulations	Within your NPHI	42	55	76% (22/29)	77% (20/26)
Drills, Exercises and Simulations	With national partners	43	55	76% (22/29)	81% (21/26)
Drills, Exercises and Simulations	With international partners	30	55	45% (13/29)	65% (17/26)
Training	Within your NPHI	45	55	76% (22/29)	88% (23/26)
Training	With national partners	45	55	83% (24/29)	81% (21/26)
Training	With international partners	34	55	62% (18/29)	62% (16/26)
Research and development	Within your NPHI	43	55	76% (22/29)	81% (21/26)
Research and development	With national partners	44	55	79% (23/29)	81% (21/26)
Research and development	With international partners	31	55	45% (13/29)	69% (18/26)
Sharing of best practice	Within your NPHI	44	55	83% (24/29)	77% (20/26)
Sharing of best practice	With national partners	45	55	90% (26/29)	73% (19/26)
Sharing of best practice	With international partners	35	55	59% (17/29)	69% (18/26)
Other	Within your NPHI	3	55	7% (2/29)	4% (1/26)
Other	With national partners	0	55	0	0
Other	With international partners	0	55	0	0

Question 57 Following a health emergency, does your NPHI undertake an experience or lessons learned sharing activity, e.g. after-action review?

Figure Q57

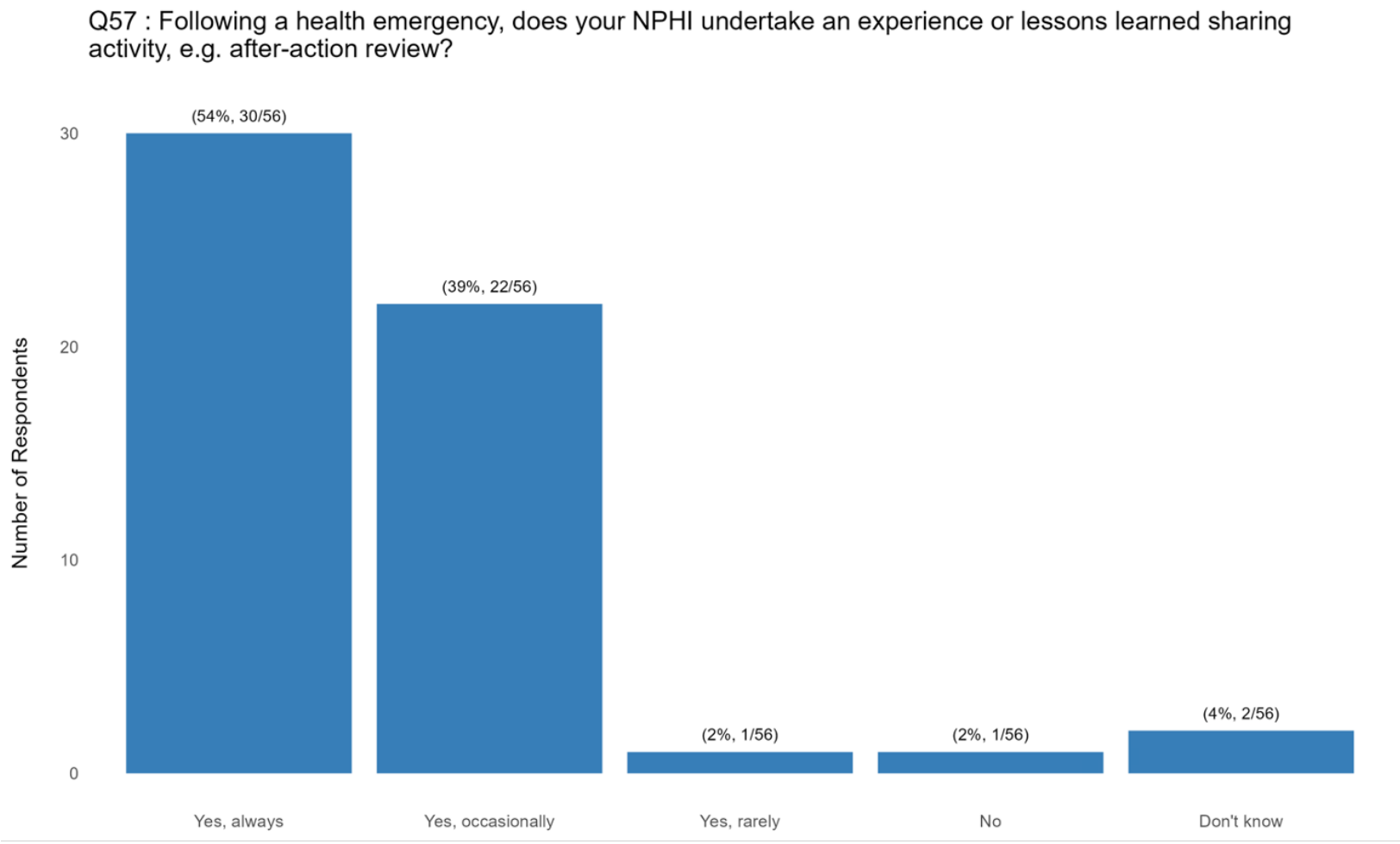

Table Q57A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Yes, always		30	56	55% (6/11)	67% (8/12)	50% (6/12)	48% (10/21)
Yes, occasionally		22	56	36% (4/11)	33% (4/12)	42% (5/12)	43% (9/21)
Yes, rarely		1	56	9% (1/11)	0% (0/12)	0% (0/12)	0% (0/21)
No		1	56	0% (0/11)	0% (0/12)	8% (1/12)	0% (0/21)
Don't know		2	56	0% (0/11)	0% (0/12)	0% (0/12)	10% (2/21)

Table Q57B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Yes, always		30	56	67% (10/15)	38% (3/8)	40% (4/10)	47% (8/17)	0% (0/1)	100% (5/5)
Yes, occasionally		22	56	27% (4/15)	50% (4/8)	60% (6/10)	41% (7/17)	100% (1/1)	0% (0/5)
Yes, rarely		1	56	7% (1/15)	0% (0/8)	0% (0/10)	0% (0/17)	0% (0/1)	0% (0/5)
No		1	56	0% (0/15)	12% (1/8)	0% (0/10)	0% (0/17)	0% (0/1)	0% (0/5)
Don't know		2	56	0% (0/15)	0% (0/8)	0% (0/10)	12% (2/17)	0% (0/1)	0% (0/5)

Table Q57C: By NPHI Size

Options	Level	n	total	<=500	>500
Yes, always		30	56	50% (15/30)	58% (15/26)
Yes, occasionally		22	56	43% (13/30)	35% (9/26)
Yes, rarely		1	56	3% (1/30)	0% (0/26)
No		1	56	3% (1/30)	0% (0/26)
Don't know		2	56	0% (0/30)	8% (2/26)

Question 58 Following a health emergency, does your NPHI undertake an experience or lessons learned sharing activity, e.g. after-action review?

Figure Q58

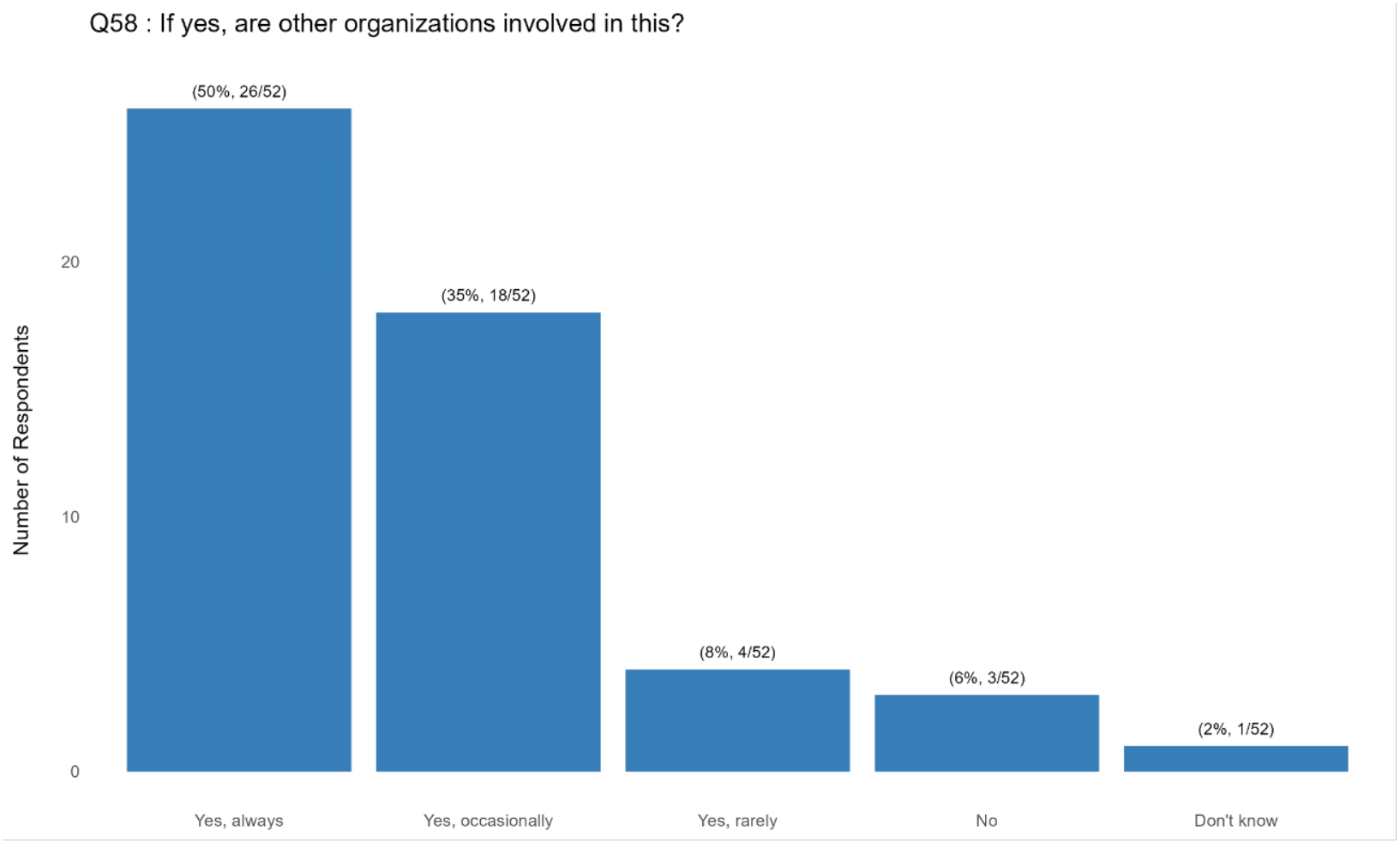

Table Q58A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Yes, always		26	52	70% (7/10)	42% (5/12)	70% (7/10)	35% (7/20)
Yes, occasionally		18	52	20% (2/10)	42% (5/12)	20% (2/10)	45% (9/20)
Yes, rarely		4	52	0% (0/10)	8% (1/12)	10% (1/10)	10% (2/20)
No		3	52	10% (1/10)	8% (1/12)	0% (0/10)	5% (1/20)
Don't know		1	52	0% (0/10)	0% (0/12)	0% (0/10)	5% (1/20)

Table Q58B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Yes, always		26	52	67% (10/15)	57% (4/7)	38% (3/8)	31% (5/16)	0% (0/1)	80% (4/5)
Yes, occasionally		18	52	27% (4/15)	29% (2/7)	38% (3/8)	44% (7/16)	100% (1/1)	20% (1/5)
Yes, rarely		4	52	0% (0/15)	14% (1/7)	12% (1/8)	12% (2/16)	0% (0/1)	0% (0/5)
No		3	52	7% (1/15)	0% (0/7)	12% (1/8)	6% (1/16)	0% (0/1)	0% (0/5)
Don't know		1	52	0% (0/15)	0% (0/7)	0% (0/8)	6% (1/16)	0% (0/1)	0% (0/5)

Table Q58C: By NPHI Size

Options	Level	n	total	<=500	>500
Yes, always		26	52	56% (15/27)	44% (11/25)
Yes, occasionally		18	52	30% (8/27)	40% (10/25)
Yes, rarely		4	52	11% (3/27)	4% (1/25)
No		3	52	4% (1/27)	8% (2/25)
Don't know		1	52	0% (0/27)	4% (1/25)

Question 59 Following a health emergency, does your NPHI Implement changes based on recommendations from a review?

Figure Q59

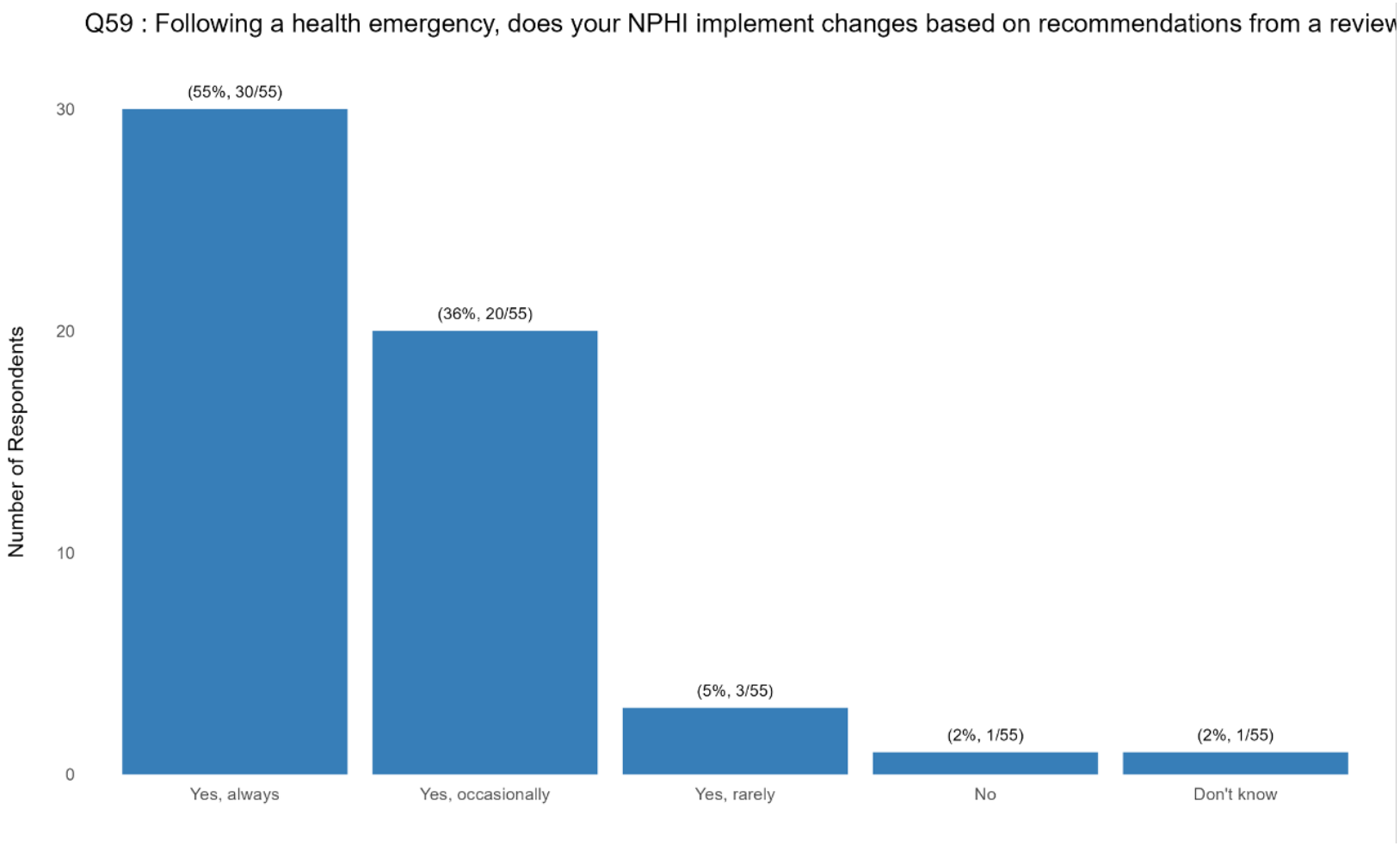

Table Q59A: By Income Group

Options	Level	n	total	LIC	LMIC	UMIC	HIC
Yes, always		30	55	36% (4/11)	67% (8/12)	55% (6/11)	57% (12/21)
Yes, occasionally		20	55	27% (3/11)	33% (4/12)	45% (5/11)	38% (8/21)
Yes, rarely		3	55	27% (3/11)	0% (0/12)	0% (0/11)	0% (0/21)
No		1	55	9% (1/11)	0% (0/12)	0% (0/11)	0% (0/21)
Don't know		1	55	0% (0/11)	0% (0/12)	0% (0/11)	5% (1/21)

Table Q59B: By WHO Regions

Options	Level	n	total	AFRO	AMRO	EMRO	EURO	SEARO	WPRO
Yes, always		30	55	47% (7/15)	57% (4/7)	50% (5/10)	59% (10/17)	0% (0/1)	80% (4/5)
Yes, occasionally		20	55	40% (6/15)	43% (3/7)	30% (3/10)	35% (6/17)	100% (1/1)	20% (1/5)
Yes, rarely		3	55	7% (1/15)	0% (0/7)	20% (2/10)	0% (0/17)	0% (0/1)	0% (0/5)
No		1	55	7% (1/15)	0% (0/7)	0% (0/10)	0% (0/17)	0% (0/1)	0% (0/5)
Don't know		1	55	0% (0/15)	0% (0/7)	0% (0/10)	6% (1/17)	0% (0/1)	0% (0/5)

Table Q59C: By NPHI Size

Options	Level	n	total	<=500	>500
Yes, always		30	55	45% (13/29)	65% (17/26)
Yes, occasionally		20	55	45% (13/29)	27% (7/26)
Yes, rarely		3	55	7% (2/29)	4% (1/26)
No		1	55	3% (1/29)	0% (0/26)
Don't know		1	55	0% (0/29)	4% (1/26)


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