PAHO

Pan American Health Organization

World Health Organization

REGIONAL OFFICE FOR THE Americas

CARICOM

Policy brief

Strengthening Human Resources for Health (HRH) to respond to COVID-19 and other emerging pandemics in the Caribbean

HRH - ACTION TASK FORCE

27 November 2021

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List of Abbreviations

CARICOM	Caribbean Community
CDC	Centers for Disease Control and Prevention
CMS	CARICOM Member State
COHSOD	Council for Human and Social Development
COVID-19	Coronavirus disease of 2019
HCW	Healthcare Worker
HRH	Human Resources for Health
HRH-ATF	Human Resources for Health Action Task Force
MDG	Millenium Development Goals
NIOSH	National Institute for Occupational Safety and Health
PAHO	Pan American Health Organization
PESTLE	Political, Economic, Social, Technological, Legal, Environmental
PoA-WH 2015-2025	Pan American Health Organization Plan of Action on Workers' Health 2015-2025
SWOT	Strengths, Weaknesses, Opportunities, Threats
TWH	Total Worker Health
WHM	Workplace Health Model
WHO	World Health Organization
WPRO/RTC	Western Pacific Regional Office, Regional Training Centre
WWPT	Western Pacific Workforce Projection Tool
iHRIS	Integrated Human Resource Information System
WISN	Workload Indicators of Staffing Needs

Policy Brief Executive Summary

Interventions to strengthen HRH in responding to COVID-19 and other emerging pandemics in the Caribbean

KEY INFORMATION

COVID-19 has directly and indirectly affected healthcare workers (HCW) across CARICOM.

The burden of this disease among HCW has compromised the countries in sustaining health services delivery to the wider population.

A study conducted by PAHO in 2020 identified that within Caribbean member states:

- Surge needs associated with the COVID-19 pandemic add further stress to existing HCW challenges.
- Delivery of primary care services was affected as HCW were redistributed and facilities repurposed.
- Improving HCW availability, as well as protecting and supporting HCW were needs highlighted by the COVID-19 pandemic.
- Member states applied the following measures to strengthen human resources for health (HRH) in response to the COVID-19 pandemic:
    - Public-private sector agreements – used by 8 countries.
    - Multilateral (country) agreements – used by 11 countries.
    - Recruitment of additional staff – used by 7 countries.
    - Re-hiring retired HCWs – used by 5 countries.
    - Diverting/deploying staff within institutions – used by 11 countries.
    - Diverting/deploying staff across regions/institutions – used by 9 countries.
    - Expansion of roles – used by 7 countries.
    - Task-sharing – used by 8 countries.
    - Task-shifting – used by 10 countries.
    - Re-organization of shifts – used by 10 countries.

Purpose

To support CARICOM's regional response to the evolving COVID-19 pandemic by strengthening HRH within member states. Strengthening HRH in the Caribbean will address the HRH challenges such as staff shortages, uneven distribution of existing staff and gaps in skills and competencies which were highlighted in appropriately responding to the COVID-19 pandemic. It would also set the stage for robust response to other emerging pandemics.

A policy recommendation stands out strongly for CARICOM and its member states to consider in addressing COVID-19:

RECOMMENDATION

Strengthen HRH in Member States to respond to COVID-19 and other emerging pandemics by enhancing supply, capacity, training, and development.

This policy recommendation includes four components that are described below:

1. **Planning and forecasting of HRH staffing needs to respond to COVID-19 and other emerging pandemics.**
2. **Protecting and supporting HRH in the context of pandemics.**
3. **Training and communication related to HRH responding to COVID-19 and other emerging pandemics.**
4. **Developing and consolidating mechanisms to enable rapid HRH response.**

- Component 1: Planning and forecasting of HRH staffing needs to respond to COVID-19 and other emerging pandemics.
  - Interventions within this component shall include establishing a process to forecast the HRH staffing needs to respond to the COVID-19 and other emerging pandemics. These processes shall also extend to guiding possible mobilization of HRH through mapping availability, needs and gaps in health workforce capacity as well as the reorganization and role distribution, as part of the COVID-19 response.

- Component 2: Protecting and supporting HRH in the context of pandemics.
  - Interventions within this component shall relate to protecting and supporting HRH in health institutions, including consideration for their mental health, psychosocial, and personal and family needs and ensuring monitoring of health workers for illness, stress and burn-out.

- Component 3: Training and communication related to HRH responding to COVID-19 and other emerging pandemics.
  - Intervention within this component shall be targeted at providing appropriate and up-to-date training, maintaining communication with HRH, and development of systems to monitor and ensure the proper acquisition and practice of the knowledge, skills and competencies needed to respond to COVID-19. These interventions will also extend to evaluating alternative models for delivery of care, including identification of simple high-impact clinical interventions for which rapid up-training would facilitate safe task sharing and expansion of scope of practice.

- Component 4: Developing and consolidating mechanisms to enable rapid HRH response.
  - Interventions within this component shall support member states in identifying and developing contractual, legal, administrative, and related issues to enable rapid response to the evolving COVID-19 pandemic. They will also extend to supporting member states in identifying and consolidating administrative procedures and

contractual mechanisms currently available or which can be adapted as necessary to facilitate the hiring and/or mobilization of personnel and/or changes in the worker profile (such as task shifting, task sharing, role expansion), in responding to the COVID-19 pandemic.

CARICOM gains from strengthening HRH to respond to COVID-19 and other emerging pandemics

- A health workforce resilient to COVID-19.
- Sustained health services delivery during COVID-19 and other pandemics.
- Strengthened health systems to respond to COVID-19 and other pandemics
- Health protection and health security of CARICOM peoples
- Strengthened regional and national security.

Benefits extend beyond COVID-19 pandemic...to *preventing influenza outbreaks and other emerging pandemics.*

Why this policy recommendation:

1. HRH represent a fundamental component of health systems. In adequate HRH can compromise the delivery of health care services.
2. The COVID-19 pandemic highlighted the need for urgently addressing already existing HRH challenges.
3. There is the need to strategically prepare for responding to the evolving COVID-19 pandemic and to other emerging pandemics.
4. Using this multi-component strategy to strengthen HRH to respond to the COVID-19 pandemic provides for a comprehensive and systematic approach grounded in a solid evidence-base and best practices.

Value added by implementing this recommendation:

1. Strengthening of HRH to respond to the COVID-19 pandemic sets a foundation for CARICOM responding to other emerging pandemics.
2. The benefits gained from interventions specific to strengthening HRH to respond to the COVID-19 pandemic will percolate through the health workforce with potential to impact positively on health systems responding to other health priorities. They would also extend support to the Caribbean Cooperation in Health Phase IV strategic approaches, the HRH Caribbean Roadmap, and PAHO HRH Plan of Action.
3. Successes and lessons learnt can be applied to strengthen HRH as part of efforts towards universal health in CARICOM.

Risks/Challenges:

1. The degree of unionisation among categories/sub-categories of HRH would be an important driver in the design and implementation of interventions.

2. The units/departments within the Ministries of Health of member states which may be recruited to lead the in-country design and implementation of intervention may have competing priorities and limited resources.

Other implementation considerations:

1. The contractual, legal, administrative, and related issues to enable rapid response to the evolving COVID-19 pandemic may vary among member states.
2. The administrative procedures and contractual mechanisms related to the hiring and/or mobilization of personnel and/or changes in the worker profile (such as task shifting, task sharing, role expansion), vary among member states.

1: Introduction

HCW are critical to a resilient health workforce for local, national, and regional response to the COVID-19 pandemic.

The 39th meeting of the Council for Human and Social Development (COHSOD) in November 2020 mandated the Caribbean Community (CARICOM) Secretariat in collaboration with PAHO to establish a Human Resources for Health Action Task Force (HRH-ATF) to advise and monitor the development of public policy in the countries and territories of the Caribbean, recognising the critical role of a resilient health workforce to local, national, and regional response to the COVID-19 pandemic and the global challenges related to the health workforce labour market.[1,2] The launch of the HRH-ATF on April 20, 2021 brought forward concerted regional action to strengthening HRH relevant to the current international health context. It also set a trajectory towards securing that these efforts support local, national, and regional response to other emerging pandemics and health emergencies.

Subsequently, CARICOM through the 41st Meeting of the COHSOD agreed to the strengthening of HRH to respond to COVID-19 and other emerging pandemics by enhancing supply, capacity, training, and development actions through four policy actions. The objective of this policy brief is to provide CARICOM member states (CMS) with a practice-oriented review of these four policy actions with the aim of developing shared understanding and action among CMS on the core approaches, tools, frameworks, models, and perspectives related to policy interventions to strengthen HRH.

CARICOM gains from strengthening HRH to respond to COVID-19 and other emerging pandemics in the Caribbean

- A health workforce resilient to COVID-19.
- Sustained health services delivery during COVID-19 and other pandemics.
- Strengthened health systems to respond to COVID-19 and other pandemics
- Health protection and health security of CARICOM peoples, including against other vaccine-preventable diseases as national immunization programs are strengthened.
- Strengthened regional and national security.

Benefits extend beyond COVID-19 pandemic…

The policy brief begins with a presentation of findings describing the regional response to the COVID-19 pandemic obtained using a HRH lens to set the stage for the policy options in Section 2. Section 3 and Section 4 respectively, provides an understanding what and who are HRH as well as the broader frame within which interventions to strengthen HRH to respond to COVID-19 sit. The overarching policy recommendation agreed to by COHSOD along with an exploration of the approaches, tools, frameworks, models, and perspectives related to each of the four policy actions recommended to strengthen HRH is presented in Section 5. The policy brief ends with an overview

of key general implementation considerations, broad CARICOM gain, and value added through interventions aligned to the four policy actions.

2: Describing the problem

COVID-19 has directly and indirectly affected healthcare workers (HCW) across CARICOM. The burden of this disease among HCW has impacted on countries sustaining health services delivery specific to control and prevention of COVID-19, as well as those necessary for health of the wider population. A study conducted by PAHO in 2020 identified that within the Caribbean:

- Surge needs associated with the COVID-19 pandemic added further stress to existing HCW challenges.[3]
- Delivery of primary care services was affected as HCW were redistributed and facilities repurposed.[3]
- Improving HCW availability, as well as protecting and supporting HCW were needs highlighted by the COVID-19 pandemic.[3]

The study also highlighted that member states applied a set of ten measures to strengthen human resources for health (HRH) in response to the COVID-19 pandemic.[3] These were:

- Public-private sector agreements.
- Multilateral (country) agreements.
- Recruitment of additional staff.
- Re-hiring retired HCWs.
- Diverting/deploying staff within institutions.
- Diverting/deploying staff across regions/institutions.
- Expansion of roles.
- Task-sharing.
- Task-shifting.
- Re-organization of shifts.

Figure 1 below presents the frequency distribution of these measures across the countries which participated in the study.

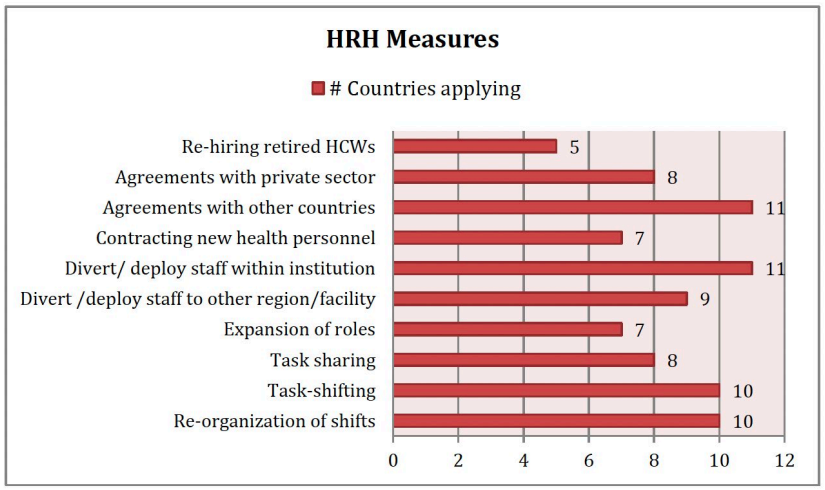

Figure 1: Distribution of measures to strengthen HRH to respond to COVID-19 among 12 participating Caribbean countries.

Source: Pan American Health Organization. Human Resources for Health and the COVID-19 Response in the Caribbean. 2020.

While these mesaures have served to take the region through the past 22 months, given the evolving and dynamic COVID-19-related context (health, social, economic, political, and legal), and considering pre-existing challenges with health workforce labour market at national, regional and global levels, there is the need for systematic, comprehensive, evidence-based, and sustainable interventions to support current and future health service delivery tailored to the context within each CMS.[2]

3: Defining Human Resources for Health

The backbone of every health system is its human resources for health (HRH). The scope of this fundamental support is understood by appreciating that HRH represents "*all people engaged in actions whose primary intent is to enhance health, extending to people from different professions and occupations, trained and working in health, whether as paid staff or as volunteers in the public or private sector, working full- or part-time, regardless of whether they deliver health services, manage health system services, or address the social determinants of health*."[4]

Human resources for health represents "*all people engaged in actions whose primary intent is to enhance health, extending to people from different professions and occupations, trained and working in health, whether as paid staff or as volunteers in the public or private sector, working full- or part-time, regardless of whether they deliver health services, manage health system services, or address the social determinants of health*."[4]

Assimilating the breath of this multidimensional, intersectoral complex, into the activities of the human resource building block of health systems is the starting point to strengthening HRH for a sustained, robust response to the COVID-19 pandemic and other emerging pandemics in the Caribbean.[5] This assimilation sets the tone for a perspective transformation whereby HRH is not

equated with human resource management (HRM) but understood as specific to the healthcare context actioned through evidence-based principles and solutions tailored to the healthcare setting. HRH extends the understanding of HRM beyond traditional boundaries of viewing human resources as assets to strategic human resource management wherein the relationship between human resources and organizational strategic objectives are integrated.[6] Further, it allows for linking HRH to strategic planning activities/processes within CMS, thus leveraging strategic planning resources to support HRH-related policy actions.

4: Understanding the broader frame for HRH interventions for responding to COVID-19 and other emerging pandemics

Interventions to strengthen HRH to respond to COVID-19 and other emerging pandemics sit within a broader frame defined by several forces. This section spotlights ten key forces by introducing their contribution to this broader frame as well as key dynamics among them. Each serve as a lens through which CMS are urged to view policy actions for strengthening HRH towards achieving population health goals in the presence of the COVID-19 pandemic. Further, given their foundational value to HRH interventions in general, these lenses are equally applicable to other local, national, regional, or international health events, including emerging pandemics and other health emergencies.

Understanding the broader frame begins with considering that HRH systems sit at the confluence of leadership, policy, education, partnerships, and finance domains. This perspective allows for recognising that intervening to strengthen HRH, at any stage, requires the contribution of voices (in the least) from health-sector leadership and its policy makers, health financing authorities, institutions responsible for training the spectrum of healthcare workers as captured under the HRH umbrella, and partnerships among these actors. Building on the value of an HRH systems perspective lends itself to another important framing force – context. The spectrum of HRH systems actors brings important contextual factors from each of their domains thus creating an environment for tailoring policy actions to the local context. Given that context is a key element for taking policy through to action, adopting this HRH systems frame supports effective policy translation into action.[7]

Another framing force comes from recognising that health systems represent a complex, dynamic composite of units wherein each unit is vital to 'producing' health, especially considering that each requires inputs or outputs from the other to play their role.[5] Therefore no HRH unit sits or functions independently of others such as health technologies, financing, or governance. Layering this understanding with that of the above two forces highlights how a health systems perspective supports framing HRH interventions. Through the range of units and the dynamics among them, this perspective contributes valuable context-specific considerations in developing and implementing tailored policy actions. In doing so, it moves the HRH intervention even closer to the targeted implementation sites for policy action.

The above three lenses support incorporating a pivotal fourth perspective – that of improved health outcomes. There is variety when it comes to defining improved health outcomes as a construct.

One view is that it is an umbrella term, encompassing a set of desirable health-related qualities or characteristics at the individual, community, or national level. Another understands it as representative of the set of goals or targets for which health authorities act to achieve at the individual, community, or national level. Regarding intervening to strengthen HRH to respond to COVID-19 and other emerging pandemics, viewing improved health outcomes as a focusing force spotlights the necessary population-centeredness of any such efforts. This is a critical lens for HRH-oriented policy actions given its spectrum of drivers. Key among these is literature indicating that HRH planning and forecasting efforts can be driven by service-based approaches such as health facility capacity (using the number of in-patient beds or intensive care unit beds), or by a "*political necessity of hiring more workers*", or by separate forces and dynamics impacting on the functional and geographic distribution of healthcare workers.[8,9]

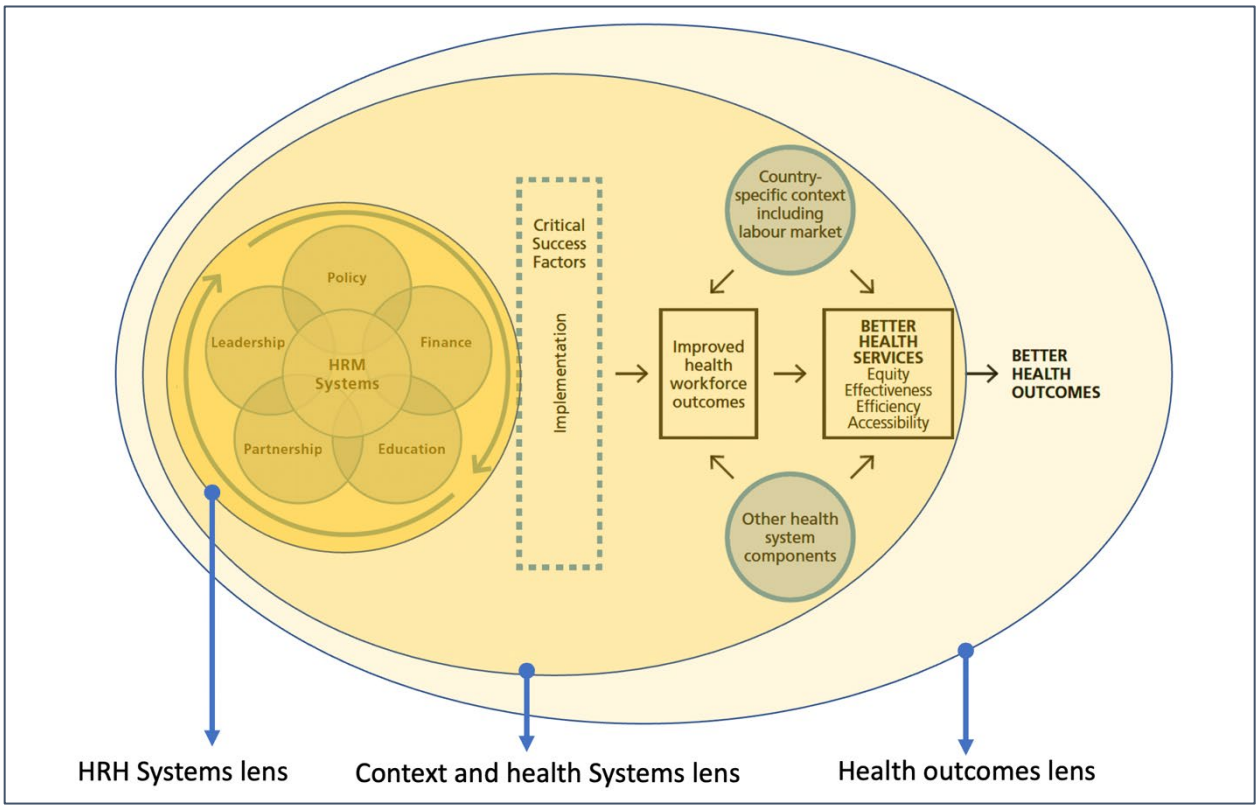

Figure 2: Understanding the broader HRH frame guiding policy actions. (Adopted from The Capacity Project HRH Action Framework)

Figure 2 above presents these four HRH framing-forces and seeks to conceptualise the relatedness among them. It builds on the HRH Action Framework developed by The Capacity Project funded by the United States Agency for International Development (USAID) to "*assist governments and health managers to develop and implement strategies to achieve an effective health workforce.*"[10]

Notwithstanding the above, there are other three additional notable forces influencing the broader HRH frame applicable to strengthening HRH to respond to COVID-19 and other emerging pandemics. Each adds value to robust and sustainable policy action in very much the same fashion as the four forces introduced above – through serving as layered lenses for CMS to apply when

designing and implementing policy actions. However, these three are introduced independently as follows.

- Referencing a 2020 study conducted by PAHO on the Caribbean HRH response early during the COVID-19 pandemic experience, some policy measures can have negative secondary corollaries.[3] Measures such as diverting or deploying staff to 'recipient' departments within institutions or across institutions, communities, or larger regions, as well as task-shifting, re-organising staff rosters, or repurposing health facilities, have had undesirable consequences on service delivery in 'donor' areas. Notably, primary care service delivery was negatively impacted, out-patient services at hospitals and other similar facilities were also negatively impacted.[3] It is therefore necessary for future policy action to consider the force behind the thrust of universal health and the commitments and primary care drivers outlined in the Declaration of Astana.[11]

- Incorporating a market forces lens introduces an econometric frame for HRH interventions. Appreciating that the dynamics between supply and demand as they relate to HRH extend beyond simply numbers of HRH to a complex of drivers spanning quantity, quality, training, finance, technology, functional distribution, and geographic distribution domains, is important. Historically, market forces have served as a major influencer of human resource interventions outside the health sector.[9] There is evidence suggesting that within the health sector, market forces have been a major influencer for existing HRH problems, especially among "*higher level personnel*" where the interplay between political celebration of health scholarship and institutions, as well as the encouragement of institutions to increase enrolment regardless of employment opportunities spotlights the power of market forces on HRH interventions.[9]

- The Pan American Health Organization and the World Health Organization have developed several documents outlining evidence-based targets and standards related to HRH.[4,12,13] These normative frameworks drive the HRH benchmarks selected by health authorities within CMS.

5: The policy recommendation and policy actions

Arising out of the 41st COHSOD meeting, CARICOM Ministers of Health unanimously agreed to the strengthening of HRH to respond to COVID-19 and other emerging pandemics by enhancing supply, capacity, training, and development actions. Extending further, COSHOD urged that member states take policy action in four areas towards developing a health workforce resilient to the dynamics of this COVID-19, to the emerging pandemics and the broader threat of health emergencies. These four policy action areas are:

Policy action 1: Planning and forecasting of HRH staffing needs to respond to COVID-19 and other emerging pandemics.
Policy action 2: Training and communication related to HRH responding to COVID-19 and other emerging pandemics.

Policy action 3: Protecting and supporting HRH in the context of pandemics.
Policy action 4: Developing and consolidating mechanisms to enable rapid HRH response.

Figure 3 presents these four policy actions aligned to the 41st COSHOD recommendation.

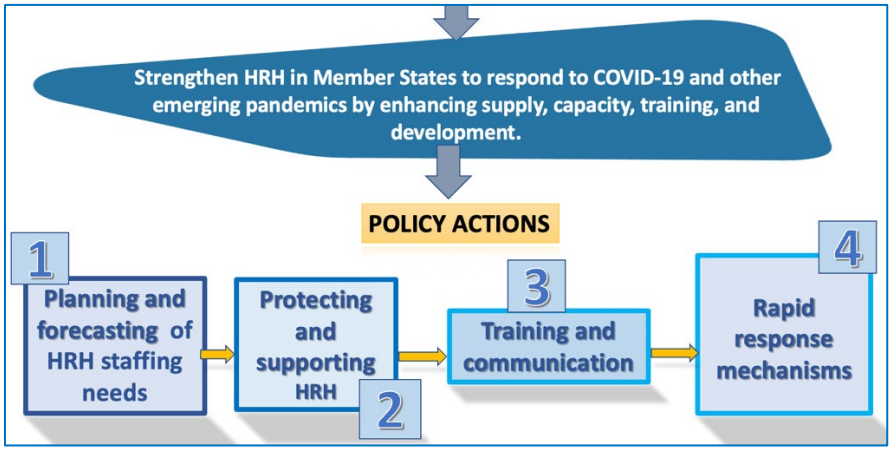

Figure 3: Schematic presentation of the 41st COHSOD recommendation on addressing COVID-19 vaccine acceptance and the four policy actions.

Within the context of the discussion above, this section explores each policy action presenting CMS with a base for understanding each and a package of broad approaches and tools for acting.

Value added by implementing this recommendation

- Interventions target specific groups of HCW with low vaccine acceptance.
- Increased efficiency and effectiveness of resources allocated for promoting COVID-19 vaccination.
- Successes and lessons learnt can be applied to strengthen national immunization programmes in addressing vaccine hesitancy in the wider public.

Benefits extend beyond COVID-19 pandemic…

Policy action 1: Planning and forecasting of HRH staffing needs to respond to COVID-19 and other emerging pandemics through

This policy action area focuses on routinely mapping availability, needs and gaps in health workforce capacity as well as the reorganization and role distribution, as part of the COVID-19 response. This section begins with developing a shared understanding of what is HRH planning and outlining a set of five approaches to HRH planning and forecasting. Six tools for HRH planning and forecasting are subsequently introduced. The section ends with key consideration related to incorporating these approaches and tools into action.

What is HRH planning?

Building on the appreciation of the scope of HRH and the broader frame presented in Section 4 above, planning and forecasting interventions require an understanding of what is HRH planning. Drawing from the work of Hall and Mejia:

> HRH planning "*is the process of estimating the number of persons and the kind of knowledge, skills and attitudes they need to achieve predetermined health targets and ultimately health status objectives. Such planning also involves specifying who is going to do what, when, where, how and with what resources for what population group or individuals, so that the knowledge and skills necessary for adequate performance can be made available according to predetermined policies and time schedules. This planning must be a continuing and not a sporadic process, and it requires continuous monitoring and evaluation.*"[14]

The dimensions presented in this definition set a firm stage for approaching HRH planning and forecasting. It highlights key features of HRH planning as a continuous, systematic process which sits within the "*inter-relationships and inter-dependencies between (health) services and categories of personnel.*"[8] It highlights the value of context-specific and context relevant evidence for informing/guiding interventions cognizant of the social, cultural, economic, political and legal health-related environment.[8,9,15] It also highlights opportunity to include HRH planning and forecasting into strategic planning processes at the local, national and regional levels. Intervening effectively to strengthen HRH to respond to COVID-19 and other emerging pandemics requires leveraging these features in the crafting and implementing of interventions tailored within CMS.

Approaches to HRH planning and forecasting

Planning and forecasting HRH draws from a variety of disciplines including demography, epidemiology, economics and industrial engineering producing population-based, econometric and simulation models.[16] Understanding the assumptions inherent in these provides a necessary base for interventions. Population-based models assume that workforce supply is influenced by demographic and utilization drivers.[16] Econometric models place market forces at their center and can be especially valuable for understanding the financial drivers of workforce supply relative to the policy, social, and quality of care drivers. Simulation models are grounded in 'what if' scenarios with analyses dependent on data related to "*population trends, health care needs and service efficiency.*"[16]

From these, five approaches present value for HRH planning and forecasting when intervening to strengthen HRH to respond to COVID-19 and other emerging pandemics. This section describes each of these approaches. The description focuses on the value/contribution of each in the evolving COVID-19 situation and highlighting key features as well as advantages and limitation of each. Additional details (descriptors, assumptions, advantages, and limitations) related to these approaches can be found in Appendix I.

Approach 1: The workforce-to-population ratio method provides for a simple approach to projecting the number of healthcare workers (*disaggregated by category of healthcare worker*) on the basis of proposed workforce density thresholds.[8,14,15] This method is not

data intensive, requiring measures of workforce supply among the various categories and the population to be served for executing it.[8,14,15]

Inherent in this method, are two key assumptions. First, it adopts the condition that all persons within each healthcare worker category will be equally and unchangingly productive.[8,14,15] Secondly, it views that all persons (within populations) are homogenous in their needs and that these will remain constant over the time of the projection.[8,14,15] Both assumptions are risky for obvious reasons. Opportunity does exist for strengthening this approach by coupling it with health scenarios planning approaches. This combination of methods can be valuable in settings with limited local data related to health workforce, health services utilization, and (sub)population health status measures.

Approach 2: The health needs method provides for a more robust approach to projecting HRH relative to using the workforce-to-population ratio only.[8,14,15] Reflective of its name, this method relies on a larger spectrum of data describing the health needs of a population. While the method aligns well with the global understanding of what is health, in the context of the COVID-19 pandemic, it provides a frame for addressing the realities of health needs on the ground within communities in the context of an evolving COVID-19-related local, national, and global experience. In this regard, its data-intensiveness can be managed by leveraging any locally available experiential data on health needs of specific sub-populations (such as age, sex, or disease/vulnerability-specific). Through this feature, it can narrow the time gap between 'situation-on-the-ground' and response, as well as strengthen the HRH response using a systematic, (locally driven) evidence-base that can be executed at the community level, using existing planning resources, and do so iteratively. Further, drawing from the literature on identifying and prioritizing health needs, this approach provides for short-range and long-range applicability to HRH planning and forecasting.

As with the workforce-to-population ratio method, this approach can be coupled with health scenarios planning approaches providing a frame for HRH planning to match a spectrum of health emergencies and emerging pandemics. It is to be noted that the health-needs method does not factor in variability in the efficiency of HRH allocated in responding to the health needs. It is also important to note that a health-needs driven approach may produce unattainable targets related to HRH, highlighting the role of compromises in HRH planning and that consideration must be given to the spectrum of approaches when planning and forecasting HRH.

Approach 3: The (health) service demand method values health services utilization in planning and forecasting HRH. Traditionally, this approach estimates *"HRH requirements based on current level of service utilization in relation to future projections of demographic profiles*."[14] Integrating this understanding with the COVID-19 pandemic experience illuminates its applicability to HRH strengthening interventions in the CARICOM context. It provides a frame for leveraging local, community-based experiential understanding of patterns of health services utilization over the pandemic thus far to project HRH requirements. While a traditional application of the service demand method would cast a wide net to scoping services demanded, the approach

provides opportunity for applying a focused, context-specific definition of services demanded. In so doing, it allows for applying this approach within communities and (sub)populations that can be executed at the community level, using existing planning resources, and do so iteratively.

The classic interpretation of the service demands method is driven by demand side factors of a market forces understanding. If coupled with health scenarios planning approaches, it provides opportunity for applying health-situations-specific service demand projections to forecasting HRH requirements. Here again, drawing from the literature on identifying and prioritizing health needs, this approach provides for short-range and long-range applicability to HRH planning and forecasting.

Approach 4: The service targets method applies specified "*targets for the production (and presumed utilization) of various types of health services and the institutions providing them based on a set of assumptions, and determines how they must evolve in number, size and staffing with productivity norms*."[8] Within this approach, targets are set by health authorities and can be grouped by levels of care, be applicable to the technological context, can reflect population demand for specific services, and be mindful of the historical performance of health workers.[14]

In the context of strengthening HRH to respond to COVID-19, other emerging pandemics or health emergencies, this approach provides opportunity for integrating normative frameworks based on regional and international evidence and experience such as those published by the World Health Organization and the Pan American Health Organization. The targets set out in these normative frameworks can either be adopted by CARICOM member states as national targets or used to inform local health authorities targets. As with the health needs and service demand methods, this approach can also be coupled with health scenarios planning, as well as be applied to short-range and long-range HRH planning and forecasting.

Approach 5: The adjusted service target method arose out of exploring approaches to estimate HRH requirements for priority health interventions in attempts to achieve the Millennium development goals (MDGs).[14] Within this approach, service needs are based on disease/illness incidence and prevalence as well as population demographics.[14] The approach builds on the perspectives of the functional job analysis or task analysis frameworks.[14] Through this complex of interaction, HRH requirements can be projected. The task-based perspectives allows for integrating the knowledge, skills and abilities involved in a job into HRH projections.[14] Given the high dependency on data, this approach may be relatively more applicable to those settings or programs for which the required data is available.

Tools for HRH planning and forecasting

Given the approaches and methods outlined above, several computer-aided tools are available to support HRH planning and forecasting policy actions. This section highlights those which are freely available to project HRH requirements within the CARICOM context, and which integrate existing services and staffing into its processes.

Tool 1: The World Health Organization's workforce supply and requirements projection model is a computer-based software designed to primarily to support long-range planning.[8] It provides users with flexibility based on existing technical capacity and political decisions and uses approaches such as the workforce-to-population ratio and the needs-based methods to estimate HRH requirements.[8] This tool has been cited as one of the most powerful freely available options given that it provides an "*automatic means for calculating the effects of changes between linked elements.*"[8] This ability also translates to the tool's value in planning for 'what if' or future pandemic or health emergency scenarios.[8]

Tool 2: The WHO Western Pacific Regional Office, Regional Training Centre (WPRO/RTC) health workforce planning model provides a stepwise computer-based tool for HRH planning and forecasting incorporating both text and spreadsheet files.[8] This model was originally created for developing island states and has been cited as highly applicable to contexts with small populations size with small HRH requirements.[8] This model has been used in countries within the Caribbean.[8]

Tool 3: The United Nations Development Programme's integrated health model is a spreadsheet computer-based application originally developed to support nations in achieving the MDGs. Given its origins and integrated nature, the model projects resources across a spectrum of health resources, including HRH requirements.

Tool 4: The Western Pacific Workforce Projection Tool (WWPT) is a computer aided tool to facilitate the "*production of comparative, cadre-specific and summary reports for health workforce projections and cost parameters.*"[8] This model factors in variables such as population change, health worker training costs, salaries, and attrition rates.

Tool 5: The Integrated Human Resource Information System (iHRIS) Plan software package is a product of funding from the USAID through its Capacity Project.[8] This is an open source package for human resources information systems strengthening and provides a suite of tools for tracking and managing "*health workforce data to improve access to services.*"[8,17]

Tool 6: The workload indicators of staffing needs (WISN) tool developed by the WHO supports "*setting activity (time) standards for health personnel and translating these into workloads as a rational method of setting staffing levels in health facilities.*"[8] This tool is presented here for consideration as it can support health authorities recruiting targets-based approaches presented earlier through integrating "*professional judgement and work activity*" measures to inform workload-based staffing targets.[8]

While the HRH Action Framework orients users to comprehensively address HRH for health systems, it is linked to deeper guidance specific to planning and forecasting HRH. Users can access a spectrum of resources through the Global Health Workforce Alliance Human resources for Health Toolkit knowledge portal found at: https://www.who.int/workforcealliance/knowledge/en/

Incorporating approaches and tools into an HRH planning and forecasting path

"*…health system planners and managers must determine which variables are the dominant ones in any consideration of future requirements, including which of them are most amenable to policy intervention.*"[8]

Three broader steps are critical to incorporating the approaches and tools presented above. First, it is vital to recognise the advantages and limitations of each approach presented above when planning and forecasting HRH. Important for the CARICOM context would be relating the data dependency of the approaches to the availability of local measures of variables specific to the approaches. This lends itself directly to valuing that identifying the variables which are most dominant or relevant to the local context is a critical step in planning and forecasting HRH to strengthen the response to COVID-19, emerging pandemics, or other health emergencies. This critical step precedes the selection of approaches and tools presented above.

Second, coupled with this is identifying the time frame within which the HRH actions are required and can be practicably translated into action at the frontlines of service delivery.[8,9] Clarifying any necessity of short-range policy actions and allowances for long-range ones is another critical step preceding the selection of approaches and tools. Much of the regional experience gained and policy actions taken thus far during the COVID-19 pandemic have centered around short-range actions.[3] The approaches and tools presented above can be incorporated to strengthen the evidence-base guiding existing short-range policy actions such as expansion of roles, task-sharing, task-shifting, re-organisation of shifts, and diverting/deploying staff.[3] However, considering the global COVID-19 context, especially the possibility for prolongation of the need for a pandemic-type HRH response, long-range planning and forecasting perspectives present themselves as having high probabilities.

Third, it remains a challenge to develop or identify a single model which is sufficiently comprehensive to guide HRH planning and forecasting despite the sound theoretical bases grounding the approaches and tools presented above. This is a third important consideration for the CARICOM context and is linked to the requisites of identifying dominant variables to be addressed and the time frame for doing so. It also spotlights embracing the systematic and continuous nature of HRH planning. An HRH intervention introduced at a given point in time must be linked to evaluating the outputs, outcomes and impacts of policy actions taken, and cycled into strengthening continued intervening actions. This iterative approach strengthens the context-specific evidence informing further interventions, contributing to building the understanding of the "*major characteristics of the health system and its labour market.*"[8] The limitations or pressures of resources in the CARICOM context can hinder member states engaging in such studies. Positioning that these need not be resource intensive allows for drawing upon principles of qualitative and quantitative investigative tools, tailoring them to both available resources and desired outputs.

Policy action 2: Training and communication to strengthen HRH to respond to COVID-19 and other emerging pandemics

This policy action area focuses on providing appropriate and up-to-date training and maintaining communication with HRH throughout the COVID-19 pandemic and in other health emergencies. It is necessary for CMS to incorporate six action perspectives when making policy interventions related to training and communication to strengthen HRH to respond to COVID-19. These are:

Key perspective 1: Understanding the training-related role of health authorities.
Key perspective 2: Differentiating education, learning, and training.
Key perspective 3: Training is not independent of but related to HRH planning and forecasting.
Key perspective 4: Valuing HRH training-related stakeholders.
Key perspective 5: Communication is a tool.
Key perspective 6: Multi-component approaches for using communication as a tool.

The following is an exploration of each of these designed to support their translation into policy action by CMS.

Key perspective 1: Understanding the training-related role of health authorities is a core consideration in strengthening HRH. While health authorities may not have the primary function to train or develop HRH, they can be viewed as perhaps the most key of stakeholders given their part in identifying the HRH required to support the health system. Across CARICOM, CMS will have differing expressions of this stakeholder role – as leaders, advisors, financiers, champions, employers etc. An appreciation of this responsibility is a firm base from which to intervene to strengthen HRH to respond to COVID-19 through training and communication. This translates into scanning the context within CMS to scope this role. Several tools drawing from wider health management disciplines are available to support this area of policy action. To this end, stakeholder analyses, SWOT (Strengths, Weaknesses, Opportunities, Threats) analyses, and PESTLE (Political, Economic, Social, Technological, Legal, Environmental) analyses are three which CMS can recruit.[18–20]

Key perspective 2: Differentiating among education, learning, and training is important for taking policy action. This perspective builds on the value of the role-based understanding introduced above. While exploring these three are beyond the scope of this document, it is the recognition that these are not synonymous that is promoted here. Education, learning and training represent a spectrum of activities required for HRH strengthening through training and communication. This perspective calls into focus appreciating that the tasks related to health service delivery as well as the skills and competencies required to execute these need to be integrated into the education, learning, and training activities appropriately. The Pan American Health Organization and the World Health Organization have developed several frameworks outlining skills and competencies necessary as part of the COVID-19 pandemic response.[21–23] These draw from a range of experiential evidence across various contexts. As such, they represent targets and standards related to HRH training available to support this area of policy

action. Beyond these are frameworks which speak to essential public health functions and core competencies related to these.[22,24] Collectively, these normative frameworks support health authorities in identifying training benchmarks.

Key perspective 3: Referencing Figure 2, it is vital to highlight that training is not independent of but related to HRH planning and forecasting. While the narrative related to Policy Action 1 carried a strong tone of HRH planning and forecasting in terms of numbers, these numbers do not only represent number of persons. They extend to the set of skills and competencies required for each individual under the HRH umbrella. Applying this perspective to Policy action 2 would support efforts towards ensuring the tasks related to health service delivery are executed through a balance between health workforce size with the right mix of skills and competencies. This calls into focus the HRH planning and forecasting methods and tools highlighted for Policy action area 1, highlighting their applicability to planning and forecasting the training-related HRH requirements. It is visible that a tailored approach to training HRH within each CMS context requires an eclectic mix of methods and tools.

Key perspective 4: Valuing the set of HRH training-related stakeholders is vital in intervening to strengthen HRH through training. A key stakeholder related to training HRH is the set of institutions or organizations which deliver or offer training services to HRH. These include those institutions or organizations which current and future HRH 'self-select' for enrolment and those which health authorities recruit, cooperate or collaborate with to deliver training services to HRH under their remit. This stakeholder is being highlighted to make two points. Firstly, returning to the market forces perspective presented in Section 4, health authorities have a vital role in driving the demand for specific skills and competencies of their HRH. They also have a part in driving the supply of HRH for example through incentivizing efforts. The linkages of this role to geographic and functional distribution of HRH is clear. The second point is that of establishing strong partnerships and communities of practice between health authorities and the set of institutions or organizations which deliver or offer training services to HRH is a critical step for Policy action 2. Included in this is engagement of the spectrum of interprofessional teams. Collectively, these partnerships can support the skills-based and competency-based training of HRH. It can also support innovative training delivery methods and tools allowing for HRH to deliver health services while simultaneously receiving training. In a resource limited environment such as CARICOM, such methods and tools support health systems.

Key perspective 5: Drawing from the communication-in-health literature, communication is a tool which health authorities can leverage towards achieving improved health outcomes.[25] Viewing communication as a tool shifts attention away from message delivery (on the part of health authorities) towards actively and iteratively engaging HRH. It opens the door to health authorities incorporating a range of tools (such as interpersonal communication, establishing communities of practice and social media platforms) to collaborate with HRH through the life course of the COVID-19 pandemic and beyond.[23] Thus, as for strengthening HRH through training, the value of partnership-building approaches is highlighted.

Key perspective 6: Recruiting multiple approaches when using communication as a tool is vital.[26,27] Drawing from organisational management literature, organization culture-based or values-based approaches can strengthen HRH through communication. Likewise, the communication-for-health literature contributes health-risk-based and behaviour change approaches under a health promotion umbrella. Further, communication, like training is not an independent element of HRH strengthening. Strengthening HRH through communication equally requires recruiting the Policy action 1 methods and tools outlined above.

Policy action 3: Protecting and supporting HRH to respond to COVID-19 and other emerging pandemics

This policy action area focuses on actively considering the mental health, personal and family needs, and ensuring monitoring of health workers for illness, stress and burn-out. Intervening successfully in this regard requires CMS to apply four key action perspectives:

Key perspective 1: Health of HRH.
Key perspective 2: Workplace health for HRH.
Key perspective 3: Mental health literacy.
Key perspective 4: HRH hierarchy of needs.

Before exploring these, understanding that a core responsibility of health authorities is to protect and support its staff is fundamental to intervening under Policy action 3. Referencing the spectrum of who are defined as HRH presented earlier highlights the scope of this area of policy action. There is heterogeneity in the structure of health systems among CMS which extends to the nature of health authorities' roles regarding protecting and supporting HRH. In some CMS, authorities such as Ministries of Health may bear primary responsibility. In others, this function may be devolved to regional/local authorities mirroring a provider-supplier relationship but with a centralised health agency maintaining oversight. At both ends of the spectrum, health authorities play a leadership role towards protecting and supporting HRH. This leadership position requires CMS to recognize and incorporate the value of the following four perspectives when intervening. As a corollary, a wide set of approaches and tools relevant to these perspectives become accessible, supporting CMS in developing tailored policy actions. Further, given that the subject of interventions within Policy action 3 are HRH, it is important to acknowledge the contribution of planning and forecasting approaches and tools as a foundation for protecting and supporting HRH.

Key perspective 1: The health of HRH is a primary driver of a resilient health workforce. Two constructs are important when approaching this dimension as it relates to protecting and supporting HRH: the definition of health and workers' health.

The globally accepted understanding that "*health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*" presents a

starting point to exploring the first construct identified.[28] This definition may present a challenge when applying Policy action 2 interventions, in part due to the question such as: "What constitutes a complete state of physical, mental, and social well-being of HRH?" and "How does a health authority protect and support a complete state of physical, mental, and social well-being?" However, applying additional interpretations of health to the task such health authorities should protect and support HRH to (at least) the extent that they can adequately cope with their duties and responsibilities provides a more practical orientation for approaching Policy action 2 interventions.[29] Equally applicable is the perspective that health authorities should protect and support HRH to (at least) the extent that they can perform their duties and responsibilities by maintaining balance between them and their environment.[28,29] WHO has identified a number of domains for supporting HRH at the individual level, for optimizing HRH in their roles, and at the organization level for protecting and supporting HRH.[23] Collectively, the frame provided by these three perspectives of health, support CMS by offering a practical approach to taking policy.

Workers' health as a construct provides CMS with a range of practice-oriented tools which can be applied to the task of protecting and supporting HRH in the context of the COVID-19 pandemics, and future health emergencies. The Pan American Health Organization Plan of Action on Workers' Health 2015-2025 (PoA-WH 2015-2025) provides a guide for policy interventions along five strategic lines spanning legislative, hazard-focused, health promotion and workers' health surveillance actions.[30] The United States of America National Institute for Occupational Safety and Health (NIOSH) promotes a Total Worker Health (TWH) model which integrates the traditional hazard-based approach with an understanding that work is a social determinant of health.[31] In so doing, drivers such as "*wages, work hours, workload, interactions with coworkers and supervisors, and access to paid leave*" are factored as important to workers' health.[31] The PoA-WH 2015-2025 and the TWH are introduced as examples of practice-oriented tools which CMS can use to strengthen policy interventions to protect and support HRH from a workers' health perspective.

Key perspective 2: <u>Workplace health for HRH</u> provides an additional layer to frame policy actions to protect and support HRH in the context of COVID-19. While there is overlap between this construct and workers' health, workplace health is treated separately as it allows for recruiting the WHO Health Workplace Framework and Model which values collaboration between workers and managers, continuous improvement processes, and "*sustainability of the workplace.*"[32] It also provides opportunity to reflect on the extensive evidence-base supporting the model and integrate best practices into tailored interventions within CMS. The Workplace Health Model (WHM) promoted by the Centers for Disease Control and Prevention (CDC) provides an equally valuable frame for Policy action 3 interventions. It offers guidance on systematically and comprehensively addressing workplace health through coordinated action.[33]

Key perspective 3: <u>Mental health literacy</u> provides a necessary perspective for developing and implementing policy actions to protect and support HRH in the

context of COVID-19. Considering the burden of mental health issues among HRH as part of the global pandemic experience, health authorities protecting and supporting the mental health of HRH is vital to developing and sustaining a resilient health workforce.[34,35] A definition of mental health literacy highlights its practice-based value to Policy action 3 interventions. Mental health literacy has been defined as "*understanding how to obtain and maintain positive mental health; understanding mental disorders and their treatments; decreasing stigma related to mental disorders; and, enhancing help-seeking efficacy (knowing when and where to seek help and developing competencies designed to improve one's mental health care and self-management capabilities).*"[36] The dimensions expressed in this definition lend themselves to a range of evidence-based tools which can be recruited towards interventions tailored to a CMS context.[36]

Key perspective 4: An HRH-centered hierarchy of needs is another invaluable perspective applicable to Policy action 3 interventions. Building on the approaches and tools presented earlier for Policy actions 1 and 2, wherein the value of partnerships was highlighted, here too, intervening to protect and support HRH requires partnership with the HRH. The starting point of the partnership is obtaining the needs of the HRH within their context as they relate to performing their duties and responsibilities. Several theoretical approaches are available to frame actioning this beginning. A commonly cited one is that of Maslow's Hierarchy of Needs. While questions surround the applicability of this pyramidal hierarchy (given that it was first proposed in 1943 when the global context was very different from that of today), other behavioural and motivational perspectives are available. The focus of this perspective is not prioritising one theoretical approach over others but on placing the consideration of motives (from the perspective of HRH) towards supporting health systems during the evolving pandemic and beyond. A functional perspective applied to identifying fundamental needs can highlight psychological motives, self-protection and safety motives, affiliation and belongingness motives, as well as status and esteem motives within HRH subgroups.[37] These in turn, provide keys for health authorities to use in protecting and supporting HRH and building a resilient health workforce.

Policy action 4: Rapid response mechanisms

This policy action area focuses on developing and consolidating mechanisms to enable rapid response to the evolving COVID-19 situation and other emerging pandemics or health emergencies.

CMS were (and are still being) called upon to recruit several tools to rapidly respond to the realities and changing dynamics of the COVID-19 pandemic, especially surge capacity. The study conducted by PAHO early in the pandemic highlighted the role of public-private sector agreements, recruitment of additional staff, engagement of retired health care workers, diverting/deploying staff within and across institutions and regions, task sharing, task shifting, and

re-organization of shifts.[3] The experiential learning gained by health authorities within CMS from executing these tools is invaluable to Policy action 4 as they represent pathways to new norms within individual CMS. It also provides a contextualised practical base that can be strengthened to develop a relatively more robust and sustainable response to the evolving pandemic (and other health emergencies) without compromise to the continuity of business within the health sector. This section seeks to provide CMS with a structured tool kit of developing and consolidating mechanisms related to Policy action 4 interventions drawing upon an evidence-based understanding of health workforce governance.

A health workforce governance lens allows for connecting the methodologies and methods related to decision making and taking action on health workforce issues by creating alignment among stakeholders.[38] Transparency, accountability, and participatory decision making are highlighted as attributes of good governance.[38] Recognising that engagement of stakeholders is vital to this set of policy actions calls to attention the importance of local, contextualised understanding of the positionality of these in relation to proposed interventions. Thus, the value of outputs from scans such as stakeholder analyses actioned under Policy action 2 extends to Policy action 4. It also spotlights the role of context-specific data on HRH needs to guide the selection of tools in mounting a rapid response. This brings to the fore the contribution of planning and forecasting outputs from Policy action 1 interventions to rapid response.

Within this context, two frameworks are introduced below to guide CMS in Policy action 4 intervention.

Rapid response framework 1: The work of a group of researchers on health workforce governance in the context of COVID-19 provides a structured frame and tool kit for CMS to approach Policy action 4. It proposes four levels for situating interventions ("*national/regional government policies, legislation, regulation, and the role and remit of employers and management*"), across three key health response areas ("*creating surge capacity, protecting workforce health and well-being, and rolling out vaccination programs"*).[38] Appendix II presents a table summarising the tools applicable to each action level matched to each health response area. Drawing from this tool kit can complement and strengthen the experiential gains within CMS in mounting a raid response.

Rapid response framework 2: The WHO 'Health workforce policy and management in the context of the COVID-19 pandemic response – Interim guidance' also presents a set of policy options related to action areas such as rationalising health workforce distribution, optimizing roles, and governance and intersectoral collaboration.[23] This framework presents interventions for policy makers, managers, and leaders drawing upon other broader rapid response model such as the WHO human resources for health surge toolkit. Additionally, PAHO 'Checklist for the Management of Human Resources for Health in Response to COVID-19' complement the actions and interventions related to the management of human resources for health (HRH) described in the document titled Framework for the response of integrated health services delivery networks to COVID-19.[39] Appendix III presents a link to policy options extracted from this framework

related to developing and consolidating mechanisms to enable rapid response to the evolving COVID-19 situation and other emerging pandemics or health emergencies.

6: Broader implementation considerations

The necessity for interventions tailored to the context of individual CMS is a core value inherent in the policy recommendation of strengthening of HRH to respond to COVID-19 and other emerging pandemics by enhancing supply, capacity, training, and development actions through the four policy actions presented. Considering this, aside from the context-related variables highlighted above, four additional factors require consideration when developing and implementing tailored interventions.

First, the degree of unionisation among categories/sub-categories of HRH would be an important driver in the design and implementation of interventions. Workers' unions are a key stakeholder which HCW may galvanise around. The positionality of the leadership of these organisations related to vaccine acceptance can percolate through their membership thus influencing the proportion of HCW vaccinated against COVID-19. This factor is especially relevant to planning and forecasting HRH, as well as protecting and supporting HRH to respond to COVID-19. However, it can be leveraged by applying the collaborative quality of HRH planning and embracing the stakeholder and participatory perspectives of the approaches and tools presented.

Second, awareness of the presence of competing priorities within health authorities and across the wider set of actors involved in developing and implementing policy interventions is vital. Multiple units/departments across multiple Ministries within CMS may be called upon to participate in the development and implementation of the policy action. While approaches call for embracing networks and stakeholder engagement, this can be accompanied by the competing priorities and limited resources within these actors. Identifying and capitalising on opportunities to support stakeholder engagement can reduce the weight of this factor on progress.

Third, CMS have varying broader legal and administrative machineries linked to strengthening HRH through these four policy actions. These may be particularly relevant to the rapid response options within Policy action 4. However, referencing the role of applying a short-range and long-range perspective (presented in subsection titled "Incorporating approaches and tools into an HRH planning and forecasting path") to interventions, can support timely action and use of resources.

Fourth, the natural process of policy interventions may not be linear. While the exploration of the policy actions is presented in the order beginning with Policy action 1 (planning and forecasting), and following through with each consecutively numbered policy action, it is important to appreciate their interrelatedness. This is especially evident with the contributory role of planning and forecasting across policy actions 2, 3, and 4. Equally important to consider is the balance between the product (the policy intervention) and the process (the path or steps taken within CMS).[9] The approaches and tools presented above highlight the need for resources to engage in them, one of which is time. Time as a resource can be limited, given the spectrum of

responsibilities of the variety of actors beyond HRH. Application of project management principles such as establishing critical pathways to action can be applied to address this factor.

7: Concluding thoughts

Health workforce resiliency is fundamental to responding to the COVID-19 pandemic and other health emergencies in the region. Acknowledging and integrating the forces and dynamics relevant to this building block of national and regional health systems into policy actions to strengthen HRH is equally fundamental to health workforce resiliency. While the experiential knowledge gained among CMS thus far has supported member states in health protection efforts, it must be leveraged using evidence-based approaches and tools reflective of the uniqueness of HRH and their related context.

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Appendix I

The table below is extracted from a peer-reviewed resource titled "An approach to estimating human resource requirements to achieve the Millennium Development Goals". It provides additional details (descriptors, assumptions, advantages, and limitations) related to Policy action 1 approaches. The full resource can be accessed using the link: https://academic.oup.com/heapol/article/20/5/267/579129

Method for estimating HRH requirements	Description	Assumptions	Advantages	Limitations
Needs-based	Estimates future requirements based on estimated health deficits of the population Projects age- and gender-specific 'service needs' based on service norms and morbidity trends Converts projected service needs to persons requirements using productivity norms and professional judgment	All health care needs can and should be met Cost-effective methods to address the needs can be identified and implemented Resources are used in accordance with needs	Has the potential of addressing the health needs of the population using a mix of HRH Is independent of the current health service utilization Is logical, consistent with professional ethics, easy to understand Is useful for some programmes such as prenatal and child care Is useful for advocacy	Ignores the question of efficiency in allocation of resources among other sectors Requires extensive data If technology changes, it requires norms update Is likely to project unattainable service and staff targets
Utilization-based (or demand-based)	Estimates future requirements based on current level of service utilization in relation to future projections of demographic profiles	Current level, mix, distribution of health services are appropriate Age- and sex-specific requirements remain constant in the future Size and demographic profile of the population changes in ways predictable by observed trends in age- and sex-specific rates of mortality, fertility and migration	Economically feasible targets due to no or little change in population-specific utilization rates (assumed)	Requires extensive data Overlooks the consequences of 'errors' arising from the assumptions proving to be invalid Produces a 'status quo' projection, since future population segments are assumed to have similar utilization rates as base year segments
Health workforce to population ratio	Specifies desired worker-to-population ratio	Often based on current best region ratio or a reference country, with a similar but presumably more developed health sector	Quick, easy to apply and to understand	Provides no insight into personnel utilization Does not allow to explore interactions between numbers, mix, distribution, productivity and outcome Base year maldistribution will likely continue in target year
Service target-based	Sets targets for the production and delivery of specific outcome oriented health services Converts these targets into HRH requirements by means of staffing and productivity standards	It assumes that the standards of each service covered are practicable and can be achieved within the timescale of the projection	Relatively easy and understandable Can assess interactions between variables	Potentially unrealistic assumptions
Adjusted service target approach	Identifies service needs based on epidemiological and demographic profile, and programmatic targets Identifies tasks and skills required to deliver the evidence-based strategic interventions for the specific programs, based on functional job analysis Estimates time requirements for each intervention, based on time-motion studies or expert opinion Translates the time requirements into adjusted *full-time equivalents*, based on productivity	Effective evidence-based interventions can be delivered in all settings/conditions	Useful for specific programmes Looks at efficiency issues and potential for combination of skills Useful to identify training needs Goes beyond the traditional occupation-based training/practice towards competency-based training and service	Requires detailed workflow studies or expert assessment and opinion Can only be effective if infrastructure, supplies and logistics are in place to support HRH

Source : Dreesch N. et al. An approach to estimating human resource requirements to achieve the Millennium Development Goals.

Appendix II

The table below is extracted from a peer-reviewed resource titled "Governing Health Workforce Responses During COVID-19". It provides insight into Rapid response framework 1 of Policy action 4. It summarises tools applicable to four levels for situating interventions ("*national/regional government policies, legislation, regulation, and the role and remit of employers and management*"), across three key health response areas ("*creating surge capacity, protecting workforce health and well-being, and rolling out vaccination programs"*). The full resource can be accessed using the link: https://apps.who.int/iris/bitstream/handle/10665/344948/Eurohealth-27-1-41-48-eng.pdf?sequence=1

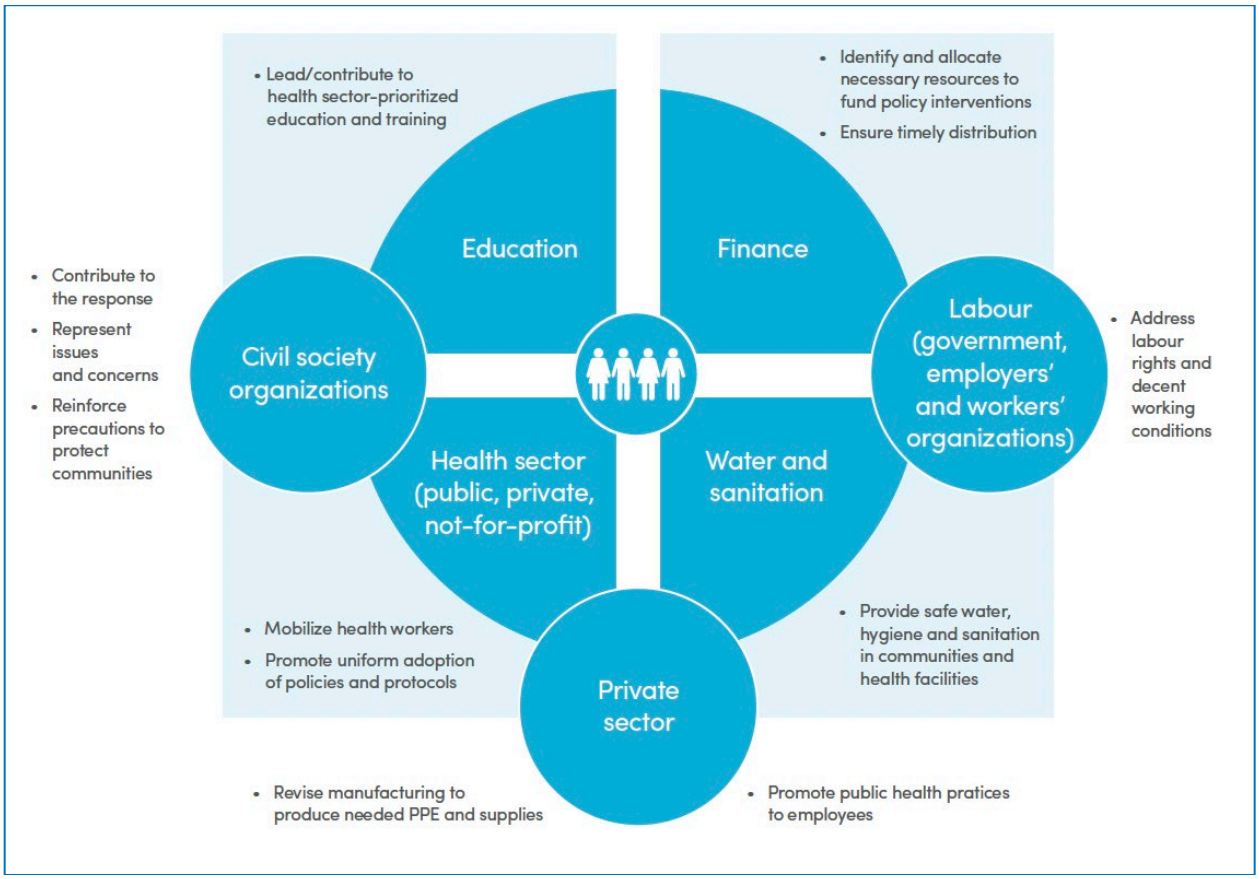
Governance areas	Examples for surge capacity	Examples for health and well-being	Examples for vaccination programmes
National/regional government polices	Authorisation for new staff to be hired National or regional recruitment campaigns to attract new or returning workers Agreements to temporarily employ private sector workers in the public sector Allocation of additional/new funding to provide support and remuneration and hiring of new workers Coordination between health facilities and regional or national government to assess rapidly and report workforce demand and supply Supporting implementation/adaption of IT systems to monitor supply and demand/project "surge" requirement for staff Authorisation for certain professions to take on new tasks	Ensuring sufficient supply and distribution of PPE Developing clinical guidelines, protocols and training programmes for using PPE Supporting implementation/adaption of IT systems to monitor supply of PPE through funding and policies Establishing strategies for mental health support and occupational health and safety Ensuring health and care workers have access to free mental health treatment and care Provide alternative accommodation for health workers to prevent infections of people living in the same household	Defining and authorising health and non-health workers permitted to vaccinate Developing clinical guidelines, protocols and training programmes and minimum standards for training for administering vaccines
Legislation	Emergency legislation to restrict or cancel leaves of absences Suspend legislation on working hours, change shift working or relax minimum staffing requirements Emergency legislation for public sector organisations to take over private sector hospitals and staff Emergency legislation to launch exceptional recruitment procedures Legislation to clarify or extend medical indemnification to health workers taking on new tasks	Suspending legislation restricting access to mental health services Updating legislation to direct effective use of PPE Calls for all countries to classify COVID-19 as an occupational disease, which can then trigger health worker compensation for, e.g. illness or death	Temporary legislation allowing additional/different types of workers to administer vaccines Legislative amendments to enable retired and foreign-trained staff to administer vaccines Legislation to clarify or extend medical indemnification to health workers newly vaccinating
Regulation	Building competencies through training and education Changing registration requirements to fast track new or "returner" workers Establishing registers of inactive workers Medical and nursing schools approve early graduation Reduce language requirements and waive fees for conversion exams for foreign-trained workers Suspending requirements for re-registration Relevant professional associations or health authorities to develop and offer temporary recruitment contracts Agreement from professional associations that certain professions could take on new tasks	Defining PPE requirements for different roles Establishing helplines/online services for mental health support	Defining professional competencies to administer vaccines

Governance areas	Examples for surge capacity	Examples for health and well-being	Examples for vaccination programmes
Employers and management	Modify contractual arrangements on work schedules, increase working hours, change night shift working or relax minimum staffing requirements Re-deploy health workers at higher risk of COVID-19 infection Put in place procedures and infrastructure to support remote working where possible Training for new workers or those being re-deployed to other roles Training on remote consultations Individual health facilities appealing to past employees to return	Training on use of PPE Meeting occupational health and safety requirements Monitoring and reporting PPE use and availability Monitoring and reporting on staff absenteeism Putting in place procedures for employees to report lack of PPE, other infection risks or mental health issues Providing mental health and psychosocial support and encouraging people to seek help Providing a supportive work environment and managing workloads Training managers in general psychosocial skills	Training for those administering vaccines Supervision (usually by a physician or nurse) in place for certain health workers to administer vaccines

Source : Buchan J. et al. Governing Health Workforce Responses During COVID-19.

Appendix III

The figure below is extracted from the WHO 'Health workforce policy and management in the context of the COVID-19 pandemic response – Interim guidance'. It highlights the intersectoral response required to mobilise health workforce in the context of COVID-19. This framework alsio presents policy options related to developing and consolidating mechanisms to enable rapid response to the evolving COVID-19 situation and other emerging pandemics or health emergencies. The full resource can be accessed using the link: https://apps.who.int/iris/handle/10665/337333



Source : WHO. Health workforce policy and management in the context of the COVID-19 pandemic response – Interim guidance. 2020.