

# Embedding viral hepatitis into primary healthcare: results of a strategic landscape analysis in Vietnam and the Philippines



Bethany Holt,<sup>a,b,\*</sup> Martin Fernandez,<sup>c</sup> Dang Nguyen,<sup>d</sup> Danica Delima,<sup>e</sup> Lam Dam Duy,<sup>f,j</sup> Manu Gaspar,<sup>c</sup> Geohari Hamoy,<sup>c</sup> Bao Ngoc Le,<sup>f,j</sup> Jan Llevado,<sup>g</sup> Joseph Michael D. Manlutac,<sup>h</sup> Jhaki Mendoza,<sup>c</sup> Timothy Mercado,<sup>c</sup> Hoang Nguyen,<sup>f</sup> Huyen Thu Nguyen,<sup>f,j</sup> Janus Ong,<sup>c</sup> Mary Rambaoa,<sup>e</sup> Jan Florendo,<sup>e</sup> Jose Mateo Dela Cruz,<sup>e</sup> Thuy Pham,<sup>f,j</sup> Pham Nam Thai,<sup>i</sup> Pham Xuan Truong,<sup>i</sup> Todd Pollack,<sup>f,j</sup> and David Duong<sup>a,b</sup>



<sup>a</sup>Program in Global Primary Care and Social Change, Harvard Medical School, Boston, USA

<sup>b</sup>Division of Global Health Equity, Brigham and Women's Hospital, Boston, USA

<sup>c</sup>College of Medicine, University of the Philippines, Manila, Philippines

<sup>d</sup>Massachusetts General Hospital, Corrigan Minehan Heart Center, Harvard Medical School, Boston, USA

<sup>e</sup>School of Health Sciences Tarlac, University of the Philippines, Tarlac, Philippines

<sup>f</sup>The Partnership for Health Advancement in Vietnam (HAIVN), Hanoi, Vietnam

<sup>g</sup>Department of Health, Disease Prevention & Control Bureau Specialty Care Division, Philippines

<sup>h</sup>Department of Health, Central Luzon Center for Health Development, Pampanga, Philippines

<sup>i</sup>Thai Binh Department of Health, Thai Binh, Vietnam

<sup>j</sup>Department of Medicine, Beth Israel Deaconess Medical Center, Boston, USA

## Summary

Chronic viral hepatitis is a significant public health concern in the Western Pacific, including in Vietnam and the Philippines. To accelerate progress toward meeting the 2030 elimination goals, the World Health Organization (WHO) encourages countries to adopt an integrated, people-centered health sector response to hepatitis, grounded in Primary Health Care (PHC). A review of the academic and grey literature, along with policy documents, was conducted to describe the national health system and PHC response to hepatitis B and C in Vietnam and the Philippines. Information was analyzed against the four strategic levers of the WHO Operational Framework for PHC to identify challenges and opportunities. The findings suggest that both countries have relatively robust policy frameworks, with some room for improvement. Vietnam may have stronger political commitment and funding than the Philippines, while the Philippines appears to be stronger in community engagement. Both countries share challenges and opportunities for learning to actualize viral hepatitis elimination utilizing a PHC approach.

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## Background

### Global and regional disease burden and policy context

Chronic viral hepatitis is a significant public health concern. Unlike most infectious diseases, mortality rose between 1990 and 2013. By 2040, it is projected to cause more deaths than HIV, malaria and tuberculosis combined.<sup>1,2</sup> In 2016, viral hepatitis was included within Sustainable Development Goal 3.3. The first Global Strategy with a goal of eliminating viral hepatitis as a public health threat by 2030 was also launched.<sup>3</sup> Advancements in diagnostics and therapeutics also came to the market with the potential to control progression of chronic hepatitis B and cure chronic hepatitis C.<sup>4</sup> Low- and middle income countries (LMICs) subsequently developed national hepatitis plans.

The Western Pacific accounts for approximately 40% of all HBV infections and more than 50% of viral-hepatitis related deaths globally.<sup>5,6</sup> Between 2014 and 2020, 16 Western Pacific countries launched national elimination strategies.<sup>4</sup> However, the region still lags in all global service coverage targets. Updated modeling estimates that 26% of people infected with hepatitis B virus (HBV) and 25% of those infected with hepatitis C (HCV) have been tested.<sup>5,6</sup> Furthermore only 14% of people eligible for HBV treatment have received it and less than 2% of those with HCV.<sup>6,7</sup> Disruptions due to COVID-19, including suspension of community outreach—essential for finding and treating at-risk groups—have exacerbated these challenges.<sup>4</sup>

In 2022, the World Health Organization (WHO) released a new integrated strategy on HIV, viral hepatitis and STIs for the period 2022–2030.<sup>8</sup> The strategy calls for “promoting integrated, person-centered approaches and linkages with primary health care services” (p. 6) and “where feasible and appropriate, including decentralized and community-based service delivery” (p. 35).

\*Corresponding author. Program in Global Primary Care and Social Change, Harvard Medical School, Boston, USA.

E-mail address: [bjholt@bwh.harvard.edu](mailto:bjholt@bwh.harvard.edu) (B. Holt).

Primary health care (PHC), an approach that calls for integrated service delivery with an emphasis on high-quality primary care and public health functions, multi-sectoral policy and action, and community empowerment,<sup>9</sup> is essential to incorporate in countries' national strategies on hepatitis elimination.

Guidance on the development and implementation of PHC is provided by the WHO Operational Framework for PHC (OFPHC)<sup>9</sup> and the PHC measurement framework and indicators (PHCMFI).<sup>10</sup> The OFPHC outlines 14 mutually reinforcing areas of action. Of these, four are strategic levers that are prerequisites.<sup>10</sup> These are: 1) political commitment and leadership 2) governance and policy frameworks 3) funding and allocation of resources and 4) engagement of communities and other stakeholders.<sup>9</sup> Each sets out a series of national, sub-national and community-level actions.

## Context in Vietnam and the Philippines

### *Hepatitis disease burden and policy response*

Vietnam and the Philippines are among the countries with the highest burden of viral hepatitis in the region and globally. According to recent updated modeling studies, Vietnam has the highest prevalence of HBV and fifth highest for HCV in South East Asia, while the Philippines ranks third for both HBV and HCV.<sup>6,7</sup> Both are among the 17 countries that comprise 75% of all HBV infections.<sup>6</sup> Vietnam has the fourth highest incidence of liver cancer globally, and the Philippines ranks tenth.<sup>11</sup> This suggests that many people in both countries may go undiagnosed or untreated until it is too late.<sup>12,13</sup> Full implementation of vaccination and treatment will be cost-saving for both Vietnam and the Philippines, estimated to return \$2.23 and \$1.70 for each dollar spent, respectively.<sup>14</sup>

In Vietnam, HCV affects approximately 1% of the population, and among people who inject drugs (PWID) the prevalence is as high as 60%.<sup>15,16</sup> In the Philippines, HCV is estimated to affect approximately 0.6% of the population, and up to 90% of PWID.<sup>17,18</sup> Approximately 9% of Vietnamese adults were found to be positive for HBsAg in a recent seroprevalence survey.<sup>16</sup> Other national estimates of chronic hepatitis B range from 7.5% to 25%<sup>15,19</sup> and the most up to date global modeling estimates 6.6% prevalence.<sup>6</sup> There have been no recent national prevalence studies of hepatitis B in the Philippines. National estimates of HBV range from 4% to 18% prevalence<sup>5,17</sup> and the latest global modeling suggests it is 4.9%.<sup>6</sup>

### *Health systems in Vietnam and the Philippines*

Vietnam's health system is highly centralized and mostly dominated by public sector service delivery. The facility network is hierarchically organized stretching from commune to district, provincial and central levels.<sup>20</sup> Vietnam's Ministry of Health (MOH) manages the healthcare sector through a system known as the

Direction of Healthcare Activities (DOHA). This mandates that healthcare facilities at higher levels of administration provide assistance to lower levels and facilitate service delivery in primary care settings. The widely distributed, relatively well-staffed network of Commune Health Centres (CHCs) are intended to be the first point of contact and provide primary care for a catchment of 5000–10,000 people. These are considered "grassroots care" alongside district health centers (DHC) and district hospitals (DH).<sup>21</sup>

The Philippines has a mixed public-private health-care system. Local government code (LGC) passed in 1991 decentralized many health service functions from the national Department of Health (DOH) to Local Government Units (LGUs). In 2021, the government passed the Mandanas-Garcia Ruling in order to increase local government accountability and authority for healthcare. This means that more functions were transferred to the LGUs.<sup>22–24</sup> Private facilities account for nearly 60% of all facilities and deliver at least 40% of outpatient care<sup>25</sup>). There is no single-entry point to the system or gatekeeping. This results in primary care services delivered at hospitals, municipal/city or rural health centers, social hygiene clinics (LGU operated clinics for managing sexually transmitted infections), barangay health stations and/or private clinics.<sup>26</sup> The Universal Health Coverage (UHC) Law intends to provide health services to all Filipinos, whether they seek care at government-owned or private health facilities, financed by the National Health Insurance Program.<sup>27</sup> Given the system's variable organization, UHC reforms in the Philippines are being rolled out in stages, starting in some provinces before others, with the intent of establishing a primary care gatekeeping mechanism.<sup>26–28</sup>

Both Vietnam and the Philippines have committed to an integrated, people-centered approach set out in the strategy at the 2022 World Hepatitis Summit<sup>29</sup> and both have committed to UHC through a PHC approach. This landscape analysis was conducted in collaboration with national and local governments in Vietnam and the Philippines with the aim to understand and evaluate each national health systems' response to hepatitis care and treatment through a primary healthcare approach, using the OFPHC Strategic Levers as the key analytical framework. Findings from the analysis will be used to inform subnational and national policy changes and guidelines to help support Vietnam's and the Philippines' commitments to an integrated, people-centered approach through PHC to achieve UHC.

## Methods

### Literature review

A scoping review of the peer-reviewed and grey literature (inclusive of a policy document review, herein referred to as peer-reviewed and grey literature review

for brevity) was conducted by a multinational team to address the following aims for both countries: 1) describe the strategic health system response to hepatitis B and C, from 2014 until the present, and 2) evaluate the extent to which it is consistent with a PHC approach as defined by the WHO OFPHC. The year 2014 was chosen because this is the year that many countries, including Vietnam, began to introduce national hepatitis strategies.

For the peer-reviewed literature, searches were performed on PubMed and Herdin (Philippines only) to access non-restricted English, Vietnamese and Filipino language publications related to national health systems' response to chronic viral hepatitis. The search included results from January 2014 to September 2022. Combinations of keywords were used for Vietnam and the Philippines, including the following: "hepatitis", "prevalence", "burden of disease", "intervention", "organization", "payment", "financing", and "regulations". Each citation retrieved proceeded to abstract review, and if inclusion criteria were met, to full-text review by a researcher from each country. Articles were retained after full text review if studies did not meet exclusion criteria (see Fig. 1), and shared with a third researcher to validate its relevance.

Peer-reviewed literature was supplemented by an extensive grey literature search. These were initially retrieved directly from government officials and technical experts within each country with whom the research team had contact and continued through a snowballing technique. All national-level document types dated from 2014 to current in English, Vietnamese or Filipino were included (e.g., laws and administrative orders, strategies, clinical guidelines, published and unpublished reports). If multiple versions were available, the most recent one was used.

The documents were analyzed by systematically extracting and organizing data from all documents retrieved. The data was centralized in a secure online excel file, exclusively accessible to the researchers. The data extraction process focused on the four primary thematic areas outlined in the WHO OFPHC framework: political commitment and leadership, governance and policy frameworks, funding and allocation of resources, and engagement of community and other (civil) stakeholders. To ensure the accuracy and rigor of the findings, all extracted data underwent a validation process by experts in the field of hepatitis and public health from each country.

### Matrix development and assessment

The four strategic levers from the WHO OFPHC were chosen as the main categories to assess each country's response to hepatitis. To achieve a more granular and nuanced assessment of each country and harmonize the findings of available documents across the two countries, the team developed a set of assessment criteria

that were drawn from three sources: relevant Tier 1 and 2 indicators from the PHCMFI, national-level actions from the OFPHC, and Measures from the PHC Performance Initiative (PHCPI) PHC Progression Model Assessment Tool (PHCPI Model).<sup>30,31</sup> It was necessary to harmonize parts of each source document so we could succinctly and consistently assess each country's primary healthcare response to viral hepatitis. While comprehensive in nature, these three source documents assess the primary healthcare system as a whole; on their own, none provide a granular assessment specific to a disease condition such as hepatitis or to enable nuanced comparison between two countries. Adaption to specific diseases is encouraged by the WHO within the OFPHC and an example provided of its application to non-communicable diseases. All potential criteria contained within these categories are listed in an Excel spreadsheet (please refer to [Supplementary Materials Annex A](#)).

To narrow down to a final list, criteria were excluded if they were considered (a) duplicative or overlapping and better suited to measure progress within another lever, (b) not practical or feasible to measure or comparable data was not available for both countries and (c) not applicable to hepatitis management in primary care specifically. This left up to three criteria per lever. One was designated as the 'core' measure. A progressive scale within the core lever was developed to distinguish between none, emerging and moderate ratings. The remaining 'supplemental' measures were used to distinguish between the moderate and strong categories. Based on the resulting matrix (Table 1), each country was categorized against the four strategic levers based on findings of the scoping review. The matrix and scoring were tested with the authors internally, including representatives from each government.

## Findings

### Search results

Documents retrieved in the scoping review are summarized in Fig. 1. Between the two countries, the search identified a total of 169 peer reviewed articles and 77 grey literature which included health sector articles, reports, legislations, and regulations. Of the 246 documents reviewed, 11 were excluded due to duplication of search results and 95 were excluded from the abstract review based on the exclusion criteria in Fig. 1. The remaining 140 documents were further evaluated through a full text review, resulting in 88 more documents being excluded. This left a total of 52 documents included in the scoping review.

Of the 52 included documents from both countries, 50 (~96%) of the documents ranged from 2015 to 2022 while the 2 (~4%) outlier documents are both philippine health regulations on the local government code in 1991 and a department of labor and employment guidelines

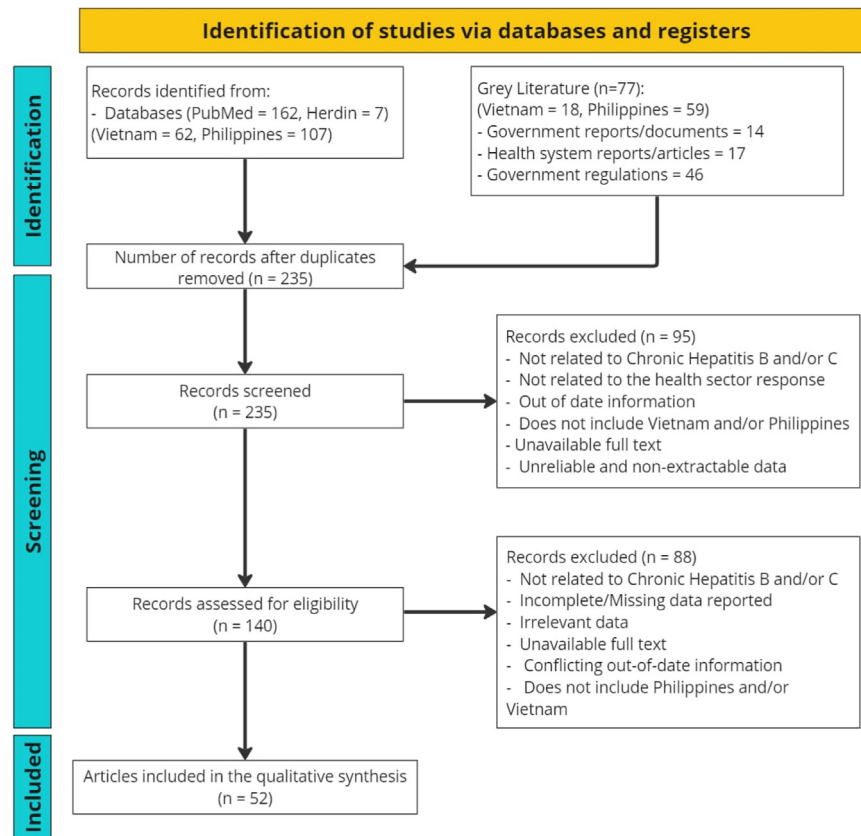


Fig. 1: PRISMA flow diagram of retrieved articles of scoping review.

on hepatitis B workplace policy in 2010. Of the reviewed documents, 8 of 52 (~15%) were focused on HBV, 17 of 52 (~33%) were focused on HCV, 11 of 52 (~21%) were focused on both diseases, and 20 of 52 (~39%) were focused on the public health system and relevant policies.

### Assessment outcomes for each country

The outcome of the assessment against the OFPHC is summarized in Table 2 and based on the findings for each strategic lever in each country. The specific ranking and rationale for each benchmark result is detailed below.

#### Political commitment and leadership

Vietnam is bench-marked as moderate; political commitment has been expressed in a national strategy on hepatitis prevention since 2014,<sup>32</sup> updated with a second five-year strategy issued in 2021.<sup>16</sup> The strategy emphasizes the expansion and decentralization of screening and access to testing and treatment to the primary care level. The latest strategy has coincided with a national pilot to manage people co-infected with HCV/HIV in district level hospitals, which are part of its primary care

infrastructure.<sup>33</sup> At the Ministry level, the General Department of Preventive Medicine (GDPM) and the Vietnam Administration for Medical Services (VAMS) are accountable for the implementation of the national hepatitis strategy. The former is responsible for preventive activities and the latter for clinical service delivery. Several other departments are responsible for or have input to the strategy. There is currently no national coordinating body.

The Philippines is bench-marked as emerging; national commitment to address hepatitis was first expressed in 2016 with establishment of a National Technical Working Group (TWG). It has since pursued an integrated approach to expanding access to care for hepatitis. In 2017, DOH institutionalized all prior and existing efforts on viral hepatitis at that time and provided policies on the prevention and control of viral hepatitis under the National HIV/AIDS and STI Program (NASPCP).<sup>34</sup> It subsequently launched sub-national demonstration projects for HBV in the National Capital Region (NCR) and Region III in 2019, and for HCV among high risk populations in Region VII. Services are delivered within these regions at Screening, Assessment, and Treatment Facilities (SATFs) and

PHC strategic levers	None	Emerging	Moderate	Strong
Political commitment and leadership	No evidence of formal commitments <sup>a</sup> to implementing care for hepatitis through a PHC approach <sup>b</sup>	Evidence of formal commitments at the national level but inconsistent or incomplete evidence of enacting them <sup>c</sup> , with or without an accountable public representative	Evidence of formal commitments at the national level followed by consistent actions to enact them, with the presence of an accountable public representative and coordinating body	Evidence of formal commitments at the national level, an accountable public representative, and well-resourced coordinating bodies with authority and sub-national reach
Governance and policy frameworks	No national policy, strategy and/or plan to address hepatitis	Presence of limited national policy, strategy or plan to address hepatitis (evidence of <5/7 key features <sup>d</sup> )	Comprehensive national policy, strategy or plan to address hepatitis (evidence of >5/7 key features <sup>d</sup> )	Comprehensive national policy, strategy or plan oriented to PHC to address hepatitis, with participatory processes (i.e., 7/7 key features <sup>d</sup> )
Funding and allocation of resources	No dedicated funding strategy or scheme to enable hepatitis management at the primary care level	Dedicated funding strategy or scheme (via SHI or program funding) in some restricted cases (e.g., sub-national, pilots, key populations)	Dedicated funding strategy or scheme that includes comprehensive SHI coverage but with gaps in service provision or financing that may result in high OOP spending by households	Dedicated funding strategy or scheme that includes comprehensive SHI coverage and M&E indicators, which minimizes OOP spending
Engagement of community and other (Civil) stakeholders	No engagement of community or multi-sectoral stakeholders in hepatitis service governance or delivery	Ad-hoc engagement of some community and multi-sectoral actors in hepatitis services with their input considered in governance and delivery	Formal engagement of community and multi-sectoral actors at the national level that is often incorporated into decisions and solutions	Formal engagement with community and multisectoral actors at the national level with capacity building to increase their efficacy and evidence of shared decision-making power

OOP, out-of-pocket; SHI, social health insurance; M&E, monitoring and evaluation. <sup>a</sup>Evidence of 'formal commitment': political declarations, national strategies or plans, laws, or an appointed Taskforce. <sup>b</sup>PHC approach: comprehensive integrated health services that prioritizes primary care and public health functions; multisectoral action to address the social and structural determinants; and engaging and empowering communities. <sup>c</sup>Evidence of enacting formal commitments includes the provision of financial, technical and/or programmatic support to ensure care for hepatitis is available at the primary care level nationally. <sup>d</sup>Key features are drawn from the PHCPI Measure 2 of PHC Policies and includes: 1) presence of an active National Health Plan related to hepatitis, 2) Plan is designed around PHC (separate plan or integrated principles), 3) policies are evidence-based, 4) policies are embedded in legal framework, 5) policies include the fundamentals (service package defined, financing mechanisms, M&E framework), 6) joint review or progress, 7) policies are formulated through participatory process.

**Table 1: Assessment matrix for strategic levers of the OFPHC.**

higher level End Referral Facilities (ERFs) as required. A policy for expanded national implementation was crafted, but has not yet been fully implemented, which has been attributed to the demands of the COVID-19 response. The Department of Health (DOH) Disease Prevention and Control Bureau (DPCB) is responsible for the oversight of the hepatitis program first within the NASPCP, supported by five DOH agencies with different technical and/or regulatory functions. However, in 2022 program management of viral hepatitis was moved to the Cancer Control Division from NASPCP as a result of a DOH restructuring for UHC implementation and post-COVID-19 pandemic response.

#### Governance and policy frameworks

Vietnam is bench-marked as moderate; since the adoption of the national strategy on hepatitis in 2014, nine viral hepatitis-related legal documents guide the health sector response to hepatitis at the primary healthcare

level. The legal framework clearly defines a hepatitis service delivery package down to the “grassroots” level (CHCs, DHCs and DHs). It also regulates financing and payment, and includes up-to-date, evidence-based clinical guidelines in accordance with WHO recommendations (Fig. 2). The latest national plan incorporates findings from a review undertaken to assess the extent to which the country had achieved goals set out in the first national plan (2014–2019). It also prioritized the creation of a joint monitoring and evaluation framework to measure progress with input from different stakeholders within the healthcare system. However, references to this being a participatory process incorporating community and civil society voices is limited.

The Philippines is bench-marked as moderate. The national policy framework for hepatitis comprises 15 documents (Fig. 2), which separately exist as either central and regional Administrative Orders (AOs) or Memoranda. There is no single document that streamlines them, nor connect it to a national action/operational

Strategic lever	Vietnam	Philippines
Political commitment and leadership	Moderate	Emerging
Governance and policy frameworks	Moderate	Moderate
Funding and allocation of resources	Moderate	Emerging
Engagement of community and other stakeholders	Emerging	Moderate

**Table 2: Status of Vietnam and the Philippines on embedding hepatitis into a PHC response.**

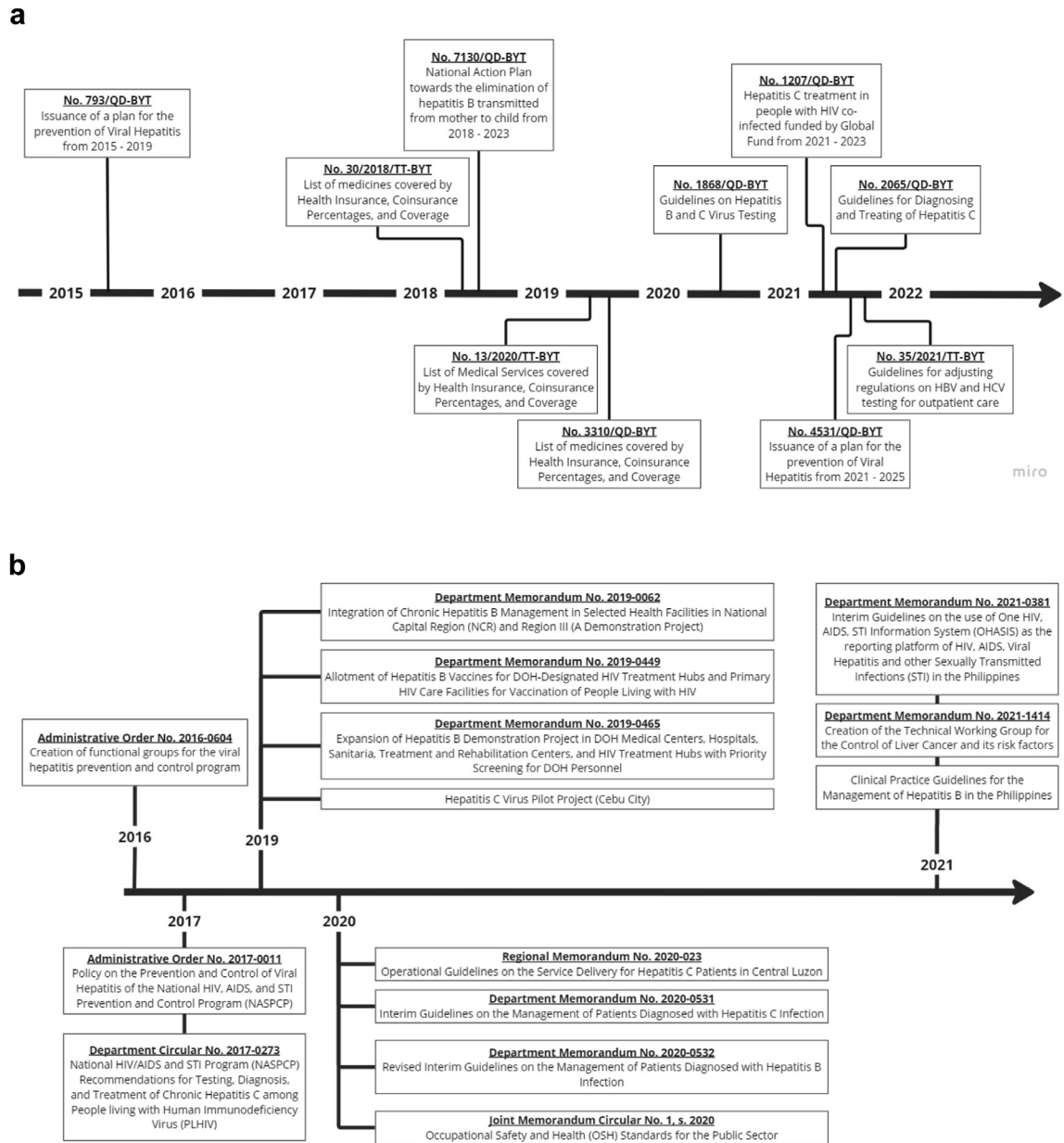


Fig. 2: National policies on viral hepatitis in Vietnam (a) and the Philippines (b).

plan and/or legislation at the present time. Nevertheless, the framework includes up-to-date, evidence-based clinical guidelines and a package of services within demonstration sites, but there is neither a national social health insurance policy that lists hepatitis outpatient services nor a specific financing mechanism or monitoring and evaluation framework for the program. There is evidence of joint reviews prior to the pandemic through regular multi-sectoral technical working group meetings which were held to determine the progress of the

demonstration project, as well as other activities on viral hepatitis, but were interrupted during the COVID-19 pandemic.

*Funding and allocation of resources*

Vietnam is bench-marked as moderate; a funding scheme exists where Vietnam Social Security (VSS), the national social health insurance (SHI) agency, pays for most services required for managing hepatitis at the primary care level in accredited public facilities. Please

see Table 3 for a summary of selected services, which are included in the Vietnam's guidelines as adapted from WHO guidelines. Reimbursements are provided on an income-adjusted scale ranging from 80% to 100%. However, gaps still exist. For example, screening tests are not reimbursed unless the result is positive, and antiviral drugs for hepatitis C are only reimbursed to 50%. To be eligible for reimbursement, facilities must be accredited, which means meeting requirements in terms of human resources, infrastructure, equipment, and management systems. Previously, hepatitis care was restricted to certain levels of health facilities. However, now any level of healthcare facility may establish a Hepatitis Treatment Unit (HTU) and be reimbursed for services by SHI if it can justify the population health need.<sup>35</sup> Some donor funding also contributes to hepatitis care (i.e., Global Fund supported the national HIV/HCV pilot).<sup>33</sup> Financing documents are not available to establish the size of the funding envelope allocated specifically to hepatitis nor monitoring and evaluation indicators to track spending. However, the latest national plan states that resource mobilization for hepatitis-specific programming is "limited compared to the very high burden of viral hepatitis" and that most prevention and control activities "are implemented primarily with the financial support of international agencies".<sup>16</sup>

The Philippines is bench-marked as emerging; there is no documented comprehensive national financing strategy/scheme to cover hepatitis management at the primary care level. PhilHealth, the Philippines' national health insurance, pays for hepatitis care for inpatients only. Please see Table 3 for a summary of selected services, which are included in the Philippines' guidelines as adapted from WHO guidelines. Medications to treat

HBV and HCV are included among medications that may be provided free-of-charge at specified DOH health facilities, but only if allocations are requested by LGUs.<sup>36</sup> Limited circumstances exist in which diagnostics are covered for outpatients or in primary care, including key populations (e.g., pregnant women and newborns, people living with HIV (PLHIV)) and people accessing care in subnational initiative sites (NCR, Region III for HBV, Region VII for Hep C). This means that most hepatitis-related primary care must be paid out-of-pocket (OOP). An exception is made for eligible Filipinos who receive care at *Malasakit* centers (safety net clinics) or other social welfare assistance. According to the National Accounts, national government support for hepatitis initiatives accounted for ₱ 1.28 bn out of the ₱ 296.54 bn funding toward infectious diseases in 2021.<sup>37</sup> Additionally, with the ongoing full devolution transition through the Mandanas-Garcia ruling, the DOH will transfer procurement of diagnostic materials to the LGUs but retain their responsibility to provide medications.<sup>18</sup>

#### Engagement of community and other stakeholders

Vietnam is bench-marked as emerging; there was previously a national guideline development group that was convened on an ad hoc basis to oversee the translation of the policy framework and WHO guidelines into national guidelines. This involved some coordination with large non-governmental organizations (NGOs) and technical agencies (e.g., WHO). This group is not currently active and few other mechanisms for public-private or community-based collaboration were identified.

The Philippines is bench-marked as moderate; a national TWG for Viral Hepatitis Prevention and Control has existed since 2016.<sup>38</sup> This TWG includes a range

Selected services	Vietnam	Philippines
Rapid tests	80–100% <sup>a</sup> covered for key populations or symptomatic (not general mass screening)	Not covered, except: <ul style="list-style-type: none"> <li>- Inpatient stay</li> <li>- Overlap in other programs (e.g., HIV)</li> <li>- Demonstration sites (NCR, Region III, IV) via direct funding from DOH (no PhilHealth)</li> </ul>
Viral load	80–100% <sup>a</sup> covered	
HCV medication	50% direct-acting antivirals covered (sofosbuvir, ledipasvir, velpatasvir, daclatasvir) 30% interferon-based treatment	100% via direct funding from DOH (no PhilHealth), subject to local LGU procurement and supply availability. HBV includes tenofovir only.
HBV medication	80–100% <sup>a</sup> covered (tenofovir, entecavir)	
Outpatient consult	80–100% <sup>a</sup> covered	Not covered except: <ul style="list-style-type: none"> <li>- Overlap in other programs (e.g., HIV)</li> <li>- Demonstration sites (NCR, Region III, IV) via direct funding from DOH (no PhilHealth)</li> </ul>
Inpatient case	80–100% <sup>a</sup> covered	Up to ~\$205 USD (case rate based)

<sup>a</sup>General population is eligible for 80% coverage at eligible health facilities, with a sliding scale of increasing cover for low income and other special population groups.

**Table 3: Hepatitis services included in national SHI benefits packages in Vietnam and the Philippines.**

of stakeholders from across government departments, private sector, and professional bodies (e.g., Hepatology Society of the Philippines) and civil society (e.g., Yellow Warriors Society of the Philippines (YWSP)). The TWG contributed to the development of a national program on the prevention and control of viral hepatitis as part of NASPCP in 2017.<sup>34</sup> It also developed recommendations to guide the care and treatment of patients co-infected with HIV and hepatitis C.<sup>39</sup>

## Discussion

### Comparison of the strategic foundations of the response to hepatitis

This review suggests that, to date, Vietnam's strategic response to hepatitis care and treatment through a PHC approach may be further along than the Philippines in relation to political commitment and financing. However, the Philippines appears to be better positioned in relation to community engagement. Both countries have relatively robust policy frameworks, each with opportunities for improvement. Strategic gaps and opportunities for both countries are discussed further below.

#### *Strategic gaps and opportunities: Vietnam*

Vietnam's existing policy and governance framework and emerging political commitment to address hepatitis may put it in a relatively strong position to operationalize its national strategy on hepatitis elimination through a PHC approach. It was one of the first countries in the Asia-Pacific to have a national strategic plan for hepatitis control. The government has since reviewed and updated the strategy and developed a robust policy framework to support. The strategic lever in need of most attention is engagement of community and other stakeholders. A national patient advocacy group for hepatitis or liver diseases does not yet exist in Vietnam. However, there are a range of community-based organizations (CBOs) and academic collaborations working in the space which could be more actively engaged in government-led efforts.<sup>12,19,40-43</sup> Additionally, experience applying local engagement strategies such as community advisory boards (CABs) within the context of HIV programs<sup>44-46</sup> may also serve as a useful model health system engagement. The involvement of such stakeholders in further strategy or policy development would strengthen governance from a PHC perspective.

Vietnam has allocated public financing through SHI for most primary care hepatitis services. However, there is still a gap in VSS coverage for screening tests, except for key population groups, which is likely to reduce community uptake. Small-scale projects have demonstrated the feasibility of community-based screening led by CBOs and clinics for key populations.<sup>12,19,40</sup> Challenges remain including ensuring linkage from screening to confirmatory testing and care. One positive development has been the introduction of regulations to

allow specimens to be transferred between facilities to enable HCV RNA confirmatory testing and HBV DNA testing for treatment eligibility.<sup>27</sup> This may facilitate increasing testing in the community and at primary care facilities.

Specific SHI requirements mean that screening is likely not the only source of OOP expenses incurred for hepatitis care in Vietnam. In general, OOP spending is ~40%.<sup>47</sup> Approximately 13% of people are not enrolled for SHI at any facility.<sup>48</sup> Of those who are enrolled at the primary care level, many bypass it in favor of higher level facilities.<sup>20</sup> This results in a higher co-payment. For people who seek care at the facility they are enrolled with, the co-payment remains relatively high (20% of VSS price, except for special groups). Beyond this, medicines used to treat HCV are only covered up to 50%, regardless of ability to pay. It costs up to an estimated \$4782 USD for a treatment cycle, even with voluntary license agreements that allow the use of generics.<sup>49</sup> For HBV, the direct medical costs of uncomplicated disease is approximately \$450 USD per patient, per year, increasing up to an estimated \$1900 USD for hepatocellular carcinoma.<sup>50</sup> This is substantial given the average income per capita in Vietnam is approximately \$3750.<sup>51</sup>

While comprehensive at the policy level, the implementation of Vietnam's hepatitis strategy through a PHC approach will remain a challenge given the system's orientation toward hospital-based, curative care. The national network of CHCs were originally established to deliver National Target Programs (NTPs) that either focused on a single intervention (e.g., vaccination) or acute disease (e.g., tuberculosis). Currently, less than 50% of CHCs are implementing more than 80% of items in the basic health package.<sup>32</sup> Therefore, comprehensive primary care has not historically been available, nor are facilities equipped to provide care for chronic diseases.<sup>21</sup> The system is gradually being reoriented to better respond to the growing burden of chronic disease.<sup>20</sup> A positive step in the reorientation of CHCs is their ability to be eligible for SHI registration and reimbursement, enabling CHCs to provide a wider range of services, including health promotion and prevention. Supporting investments in CHC infrastructure and provider capacity have also been made.

#### *Strategic gaps and opportunities: Philippines*

This review suggests that the Philippines' strategic response to hepatitis would benefit from a greater focus and harmonization of the various initiatives at the central and local levels. Siloed and intermittent implementation has limited the country's progress, which may reflect the formal albeit fragmented commitments made in various department orders and memoranda. A single national strategic plan may help coordinate the country's hepatitis response and clarify accountability. Responsibility for hepatitis has shifted several times



within the central government, from the NASPCP, and now to the Cancer Control Program. This has occurred amidst an ongoing restructuring of the DOH around a life-stage approach. This exposes the managers and technical personnel of the program to repetitive learning curves and disruption of program workflow.<sup>53,54</sup> A single national PHC-based strategy, integrated into the goal of UHC, may specify resourcing and technical responsibilities between central and local governments in the medium- and long-term, while ensuring compliance with the Mandanas-Garcias ruling.

The Philippines' subnational hepatitis initiatives have generated evidence that integration of hepatitis care into existing health care services such as HIV treatment facilities is practical and feasible. However, successful integration is dependent on existing HIV/STI caseloads and healthcare worker capacity and capability which can be a limiting factor in resource-limited settings.<sup>55</sup> A recent demonstration project in Uganda found integration to be a feasible and cost-effective approach to decentralizing care for hepatitis B, but concerns about worsened stigma were raised by patients.<sup>53,56</sup> This is an important consideration in the Philippines. Although progress has been made in reducing the stigma associated with accessing HIV services (e.g., integrated with coffee shops, youth services),<sup>54</sup> people with hepatitis are currently not fully protected in law from employment-based discrimination or discrimination in general.<sup>18</sup>

A strength within the Philippines strategic response to hepatitis is community engagement. The government has generally been supportive of engaging CBOs, and particularly patient voices (e.g., the Philippines Alliance of Patient Organizations, the parent organization of YWSP). The multi-sectoral TWG for hepatitis helps to ensure that all stakeholder perspectives are represented among policy decisions and that policies can be tailored to the context and emerging needs. Community involvement and representation in the policy arena are milestones for hepatitis initiatives that are aligned with the WHO's new Framework on Meaningful Engagement of People with Lived Experience.<sup>57</sup> However, there is still a potential for conflicting perspectives and agendas, which may lead to the government and other stakeholders with greater political influence holding greater sway over its outcomes.<sup>58–60</sup> Balancing power relations and dynamics is critical for active participation among community partners. At the subnational level, community engagement might be further strengthened with involvement of local CBOs and chapters of the YWSP in hepatitis services design, implementation, and monitoring.

### Study strengths, limitations, and future directions

This study contributes to the evolving literature focused on addressing the disproportionate burden of hepatitis in LMICs in the Asia-Pacific. This novel approach was

inspired by the recently published PHCMFI which provides an example of how progress on addressing specific communicable and non-communicable diseases can be measured through a PHC lens.<sup>10</sup> Multiple cycles of design, application and feedback were conducted to ensure that the assessment matrix was objective and reproducible. This approach may be helpful for assessment of the viral hepatitis landscape in other countries and with some adjustments, and may also be helpful to analysis of health systems and policy landscape for other disease conditions utilizing a PHC analytical framework. In order to minimize overlap and retain simplicity, some relevant indicators may have been left out. The chosen indicators may also be biased toward the type of information that was retrieved as part of the systematic review (e.g., policy documents but not budgets), which also varied between the two countries. For example, more documents were retrieved directly from government contacts than database search in the Philippines compared to Vietnam. Validation with further qualitative research exploring the perspectives and priorities of policymakers and health system managers in each would help to strengthen these findings. Further iterations in health service delivery areas may further simplify the process.

### Conclusion

There is growing momentum at the global and regional levels to accelerate action toward the elimination of viral hepatitis as a public health concern by 2030. The latest global strategy on HIV, viral hepatitis and sexually transmitted infections for the period 2022–2030 provides a helpful reorientation toward integrated, people-centered care for people living with hepatitis that fundamentally aligns with a PHC approach, and will help to strengthen underlying health systems. However, implementing this strategy may be challenging for country-level stakeholders in LMICs, like Vietnam and the Philippines. This work has been built upon the OFPHC and PHCMIF and developed a tool for benchmarking countries' progress toward embedding national strategic responses to viral hepatitis within a PHC approach. The findings suggest that while Vietnam may be further along in political commitment and funding and the Philippines further along in community engagement, both countries share many challenges and opportunities for learning and improvement to actualize hepatitis elimination utilizing a PHC approach.

### Contributors

The paper was conceptualized by Bethany Holt, and Todd Pollack and David Duong.

Bethany Holt, Martin Fernandez and Dang Nguyen played were the primary authors involved in data collection and analysis with the assistance of Timothy Mercado, Mary Rombaoa, Jan Florendo, Jose Mateo Dela Cruz.

All authors were involved in validation of the analysis and interpretation of the findings and their significance. Jan Llevado and Joseph

Manlutak of the Philippines and Pham Nam Thai and Pham Xuan Truong of Vietnam were particularly important contextualizing findings within each country's policy context.

Bethany Holt and Martin Fernandez wrote the first draft, with major revisions contributed by Manu Gaspar, Janus Ong, Todd Pollack and David Duong.

All authors agreed with decision and version to publish.

#### Declaration of interests

Janus Ong, Danica Dellima, and Mary Romboaoa's institution received funding from GSK for a clinical trial on hepatitis B infection. David Duong is also a member of the World Health Organization's Technical Advisory Group on Integrated Care Services (Primary Care) and has received travel support from them.

The remaining authors have no interests to declare. No author has received any form of material compensation in relation to this material, including no consulting fees, royalties or license payments, honoraria, expert testimonies, patents, participation in leadership roles or any other activities, stocks, receipt of equipment or other gifts.

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#### Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.lanwpc.2023.100990>.

#### References

- GBD 2013 Mortality and Causes of Death Collaborators. Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990-2013: a systematic analysis for the global burden of disease study 2013. *Lancet*. 2015;385(9963):117-171.
- Stanaway JD, Flaxman AD, Naghavi M, et al. The global burden of viral hepatitis from 1990 to 2013: findings from the global burden of disease study 2013. *Lancet*. 2016;388(10049):1081-1088.
- World Health Organization (WHO). Global health sector strategies on, respectively, HIV, viral hepatitis and sexually transmitted infections for the period [cited 2023 July 14]. Available from: <https://apps.who.int/iris/bitstream/handle/10665/360348/9789240053779-eng.pdf>.
- Chan PL, Le LV, Ishikawa N, Easterbrook P. Regional progress towards hepatitis C elimination in the Western Pacific region, 2015-2020. *Glob Health Med*. 2021;3(5):253-261.
- Regional hepatitis data [cited 2023 July 14]. Available from: <https://www.who.int/westernpacific/health-topics/hepatitis/regional-hepatitis-data>.
- Polaris Observatory Collaborators. Global prevalence, cascade of care, and prophylaxis coverage of hepatitis B in 2022: a modelling study. *Lancet Gastroenterol Hepatol*. 2023;8(10):879-907. [https://doi.org/10.1016/S2468-1253\(23\)00197-8](https://doi.org/10.1016/S2468-1253(23)00197-8).
- Blach S, Terrault NA, Tacke F, et al. Global change in hepatitis C virus prevalence and cascade of care between 2015 and 2020: a modelling study. *Lancet Gastroenterol Hepatol*. 2022;7(5):396-415.
- WHO. Global Hepatitis Programme. *Global Health Sector Strategy on viral hepatitis, 2016-2021: towards ending viral hepatitis*. World Health Organization; 2016:53.
- WHO. *Operational framework for primary health care: transforming vision into action*. Genève, Switzerland: World Health Organization; 2020:132.
- WHO. Primary health care measurement framework and indicators: monitoring health systems through a primary health care lens. Web annex: technical specifications [cited 2023 July 14]. Available from: <https://apps.who.int/iris/bitstream/handle/10665/352201/9789240044234-eng.pdf>.
- Zhang CH, Cheng Y, Zhang S, Fan J, Gao Q. Changing epidemiology of hepatocellular carcinoma in Asia. *Liver Int*. 2022;42(9):2029-2041.
- Vu BN, Tuan KD, Tran AK, et al. Community-based and HIV integrated testing for hepatitis B and C among key populations in Vietnam. *Clin Liver Dis*. 2022;19(4):131-137.
- Razavi-Shearer D, Gamkrelidze I, Nguyen MH, et al. Global prevalence, treatment, and prevention of hepatitis B virus infection in 2016: a modelling study. *Lancet Gastroenterol Hepatol*. 2018;3(6):383-403.
- National viral hepatitis programme financing strategy template. Investment case. [cited 2023 July 14]. Available from: <https://www.hepatitisfinance.org/investment%20case/>.
- Flower B, Du Hong D, Kim HVT, et al. Seroprevalence of hepatitis B, C and D in Vietnam: a systematic review and meta-analysis. *Lancet Reg Health West Pac*. 2022;24:100468. Available from: [https://www.thelancet.com/journals/lanwpc/article/PIIS2666-6065\(22\)00083-9/fulltext](https://www.thelancet.com/journals/lanwpc/article/PIIS2666-6065(22)00083-9/fulltext).
- Vietnam Ministry of Health. *Issuance of the national action plan for viral hepatitis prevention and control, period 2021-2025*. No. 4531/QD-BYT 2021.
- Ong J, Lam H. *Ending the silent epidemic of chronic hepatitis in the Philippines: establishing the burden of hepatitis in the Philippines*. University of the Philippines Manila; 2018. Report No.: 3.
- Innovations WAMI. *Situational analysis of the viral hepatitis response in the Philippines for evidence-informed policy-making in the context of Universal Healthcare Law*. WHO; 2022.
- Pham TND, Le DH, Dao DVB, et al. Establishing baseline framework for hepatitis B virus micro-elimination in Ho Chi Minh City, Vietnam - a community-based seroprevalence study. *Lancet Reg Health West Pac*. 2023;30:100620. <https://doi.org/10.1016/j.lanwpc.2022.100620>.
- Glinskaya EE, De Kleine Feige AI, Vu Thi LH, et al. *Vietnam - adapting to an aging society (Vietnamese)*; 2021 [cited 2023 July 17]. Available from: <https://policycommons.net/artifacts/1817350/vietnam/2554383/>.
- Duong DB, Van Minh H, Ngo LH, Ellner AL. Readiness, availability and utilization of rural Vietnamese health facilities for community based primary care of non-communicable diseases: a cross sectional survey of 3 provinces in Northern Vietnam. *Int J Health Policy Manag*. 2019;8(3):150-157.
- Local government code of 1991. Republic act no. 7160*; 1991. Available from: <https://www.officialgazette.gov.ph/1991/10/10/republic-act-no-7160/>.
- Full devolution of certain functions of the executive branch to local governments, creation of a committee on devolution, and for other purposes. Executive order no. 138*; 2020. Available from: <https://www.google.com/url?q=https://www.officialgazette.gov.ph/downloads/2021/06jun/20210601-EO-138-RRD.pdf&sa=D&source=docs&ust=1689729788179439&usq=A0vVaw3IN26ZMKNBUncSIgOBhoUr>.
- Department of Health. *National objectives for health Philippines, 2017-2022*. Department of Health Manila, Philippines; 2018.
- Department of Health. *Philippine health facility development plan 2020 - 2040*; 2020. Available from: [https://www.google.com/url?q=https://doh.gov.ph/sites/default/files/publications/DOH\\_PHILIPPINE%2520HEALTH%2520FACILITY%2520DEVELOPMENT%2520PLAN%25202020\\_2040\\_0.pdf&sa=D&source=docs&ust=1689729820176397&usq=A0vVaw36-9kkZFpw5XrdH5-yvGTs](https://www.google.com/url?q=https://doh.gov.ph/sites/default/files/publications/DOH_PHILIPPINE%2520HEALTH%2520FACILITY%2520DEVELOPMENT%2520PLAN%25202020_2040_0.pdf&sa=D&source=docs&ust=1689729820176397&usq=A0vVaw36-9kkZFpw5XrdH5-yvGTs).
- Dayrit MM, Lagrada LP, Picazo OF, Pons MC. The Philippines health system review. *Health Syst Transit*; 2018. Available from: <https://apps.who.int/iris/handle/10665/274579>.
- Implementing rules and regulations of the Universal Health Care act (Republic act no. 11223) [cited 2023 Jul 14]. Available from: [https://www.philhealth.gov.ph/about\\_us/UHC-IRR\\_Signed.pdf](https://www.philhealth.gov.ph/about_us/UHC-IRR_Signed.pdf).
- RonaldEchalasDiaz-CTO. Republic Act No. 11223 - an act instituting universal health care for all filipinos, prescribing reforms in the health care system, and appropriating funds therefor [cited 2023 Jul 14]. Available from: [https://lawlibrary.chanrobles.com/index.php?option=com\\_content&view=article&id=89731:86448&catid=2185:republic-act-nos-11201-11300&Itemid=738](https://lawlibrary.chanrobles.com/index.php?option=com_content&view=article&id=89731:86448&catid=2185:republic-act-nos-11201-11300&Itemid=738).
- World hepatitis summit 2024. World Hepatitis Summit 2022 statement*. World Hepatitis Alliance; 2022 [cited 2023 July 14]. Available from: <https://worldhepatitissummit.org/world-hepatitis-summit-2022-statement/>.

- 30 Ratcliffe HL, Schwarz D, Hirschhorn LR, et al. PHC progression model: a novel mixed-methods tool for measuring primary health care system capacity. *BMJ Glob Health*. 2019;4(5):e001822.
- 31 Primary Health Care Performance Initiative, Bill and Melinda Gates Foundation, World Bank Group, World Health Organization, Ariadne Labs, Results for Development. *Primary health care progression model assessment tool*. World Health Organization; 2019. Available from: [https://www.improvingphc.org/sites/default/files/PHC-Progression%20Model%202019-04-04\\_FINAL.pdf](https://www.improvingphc.org/sites/default/files/PHC-Progression%20Model%202019-04-04_FINAL.pdf).
- 32 Issuance of the national action plan for viral hepatitis prevention and control, period 2015 -2019. Decision No. 739/QĐ-BYT. 2015.
- 33 Ministry of Health. *More than 16,000 doses of hepatitis C medicine have been used to treat people living with HIV and methadone users*; 2022 [cited 2023 July 13]. Available from: [https://moh.gov.vn/tin-tong-hop/-/asset\\_publisher/k206Q9qkZOqn/content/hon-16-000-lieu-thuoc-chua-viem-gan-ca-uoc-iieu-tri-cho-nguoi-nhiem-hiv-nguoi-aug-uong-methadone](https://moh.gov.vn/tin-tong-hop/-/asset_publisher/k206Q9qkZOqn/content/hon-16-000-lieu-thuoc-chua-viem-gan-ca-uoc-iieu-tri-cho-nguoi-nhiem-hiv-nguoi-aug-uong-methadone).
- 34 Policy on the prevention and control of viral hepatitis of the national HIV, AIDS, and STI prevention and control program (NASPCP). Administrative order no. 2017-0011. 2017.
- 35 Promulgating the list, payment rate and conditions for pharmaceutical drugs, biological products and radioactive drugs and markers within the scope of benefits of health insurance participants. Circular No. 20/2022/TT-BYT. 2022.
- 36 Department of Health, Health Policy and Planning Bureau. *Health sector devolution transition plan 2022 - 2024*. 2021.
- 37 Philippine Statistics Authority. *Philippine national health accounts 2020*. Philippine National Health Accounts; 2020 [cited 2023 July 14]. Available from: [https://psa.gov.ph/system/files/%28for%20%20%20sig%29\\_3.-2020-PNHA-Report\\_ao12Oct2021\\_rev\\_protected\\_signed.pdf](https://psa.gov.ph/system/files/%28for%20%20%20sig%29_3.-2020-PNHA-Report_ao12Oct2021_rev_protected_signed.pdf).
- 38 Creation of functional groups for the viral hepatitis prevention and control program. Department Personnel Order No. 2016-0604. 2016.
- 39 National HIV/AIDS and STI Program (NASPCP) recommendations for testing, diagnosis, and treatment of chronic hepatitis C among people living with Human Immunodeficiency Virus (PLHIV). Department Circular No. 2017-0273. 2017.
- 40 Nguyen T, Pham T, Phan L, et al. Progressive scale-up of HBV AND HCV testing for hepatitis elimination in Vietnam. *Clin Liver Dis*. 2021;18(6):261–265.
- 41 Nguyen Quoc G, Nguyen Le Thao M, Bao A, et al. Mapping for engagement: setting up a community based participatory research project to reach underserved communities at risk for hepatitis C in Ho Chi Minh City, Vietnam. *Front Public Health*. 2022;10:795470. <https://www.frontiersin.org/articles/10.3389/fpubh.2022.795470>.
- 42 Rapoud D, Quillet C, Pham Minh K, et al. Towards HCV elimination among people who inject drugs in Hai Phong, Vietnam: study protocol for an effectiveness-implementation trial evaluating an integrated model of HCV care (DRIVE-C: DRug use & Infections in ViEtnam-hepatitis C). *BMJ Open*. 2020;10(11):e039234.
- 43 Nguyen Le Thao M, Nguyen Thi Hong Y, Dang Trong T, et al. Balancing uncertainty and proactivity in care seeking for hepatitis C: qualitative research with participants enrolled in a treatment trial in Ho Chi Minh City, Vietnam. *Int J Qual Stud Health Well-Being*. 2022;17(1):2126602.
- 44 Do TP, Nguyen A, Vo TTN, et al. *Addressing barriers to HIV care through community engagement and rapid service improvement: lessons from Vietnam's first Community Advisory Board [poster]*. Presented at the 23rd International AIDS Conference. 2020.
- 45 Thai HV, Dang TNV, Dao MT, et al. *Community advisory board ensures HIV service continuity in Binh Duong, Vietnam during COVID-19 pandemic [poster]*. Presented at the international AIDS conference. 2022.
- 46 VNA. *Community advisory boards make changes to Vietnam's HIV/AIDS response*. VietnamPlus; 2022 [cited 2023 July 14]. Available from: <https://en.vietnamplus.vn/community-advisory-boards-make-changes-to-vietnams-hiv-aids-response/240716.vnp>.
- 47 World Bank Open Data. Out-of-pocket expenditure (% of current health expenditure) - Vietnam [cited 2023 July 14]. Available from: <https://data.worldbank.org/indicator/SH.XPD.OOPC.CH.ZS?locations=VN>.
- 48 WHO. Health financing in Viet Nam [cited 2023 July 14]. Available from: <https://www.who.int/vietnam/health-topics/health-financing>.
- 49 Due OT, Thakkinian A, Thavorncharoensap M, et al. Cost-utility analysis of direct-acting antivirals for treatment of chronic hepatitis C genotype 1 and 6 in Vietnam. *Value Health*. 2020;23(9):1180–1190.
- 50 Tu HAT, Woerdenbag HJ, Riewpaiboon A, et al. Cost of illness of chronic hepatitis B infection in Vietnam. *Value Health Reg Issues*. 2012;1(1):23–28.
- 51 World Bank Open Data. GDP per capita (current US\$) - Vietnam [cited 2023 July 14]. Available from: <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=VN>.
- 52 Mai Oanh TT, Phuong NK, Tuan KA. *Sustainability and resilience in the Vietnamese health system*. World Economic Forum; 2021. Available from: [https://www3.weforum.org/docs/WEF\\_PHSSR\\_Vietnam\\_Report.pdf](https://www3.weforum.org/docs/WEF_PHSSR_Vietnam_Report.pdf).
- 53 Ejalu DL, Mutyoba JN, Wandera C, et al. Integrating hepatitis B care and treatment with existing HIV services is possible: cost of integrated HIV and hepatitis B treatment in a low-resource setting: a cross-sectional hospital-based cost-minimisation assessment. *BMJ Open*. 2022;12(7):e058722.
- 54 HIV/AIDS data hub for the Asia Pacific. *The Philippines people living with HIV (PLHIV) Stigma Index 2.0*; 2019 [cited 2023 July 14]. Available from: <https://www.aidsdatahub.org/resource/philippines-people-living-hiv-plhiv-stigma-index-2-0-2019>.
- 55 Hutin Y, Low-Beer D, Bergeri I, et al. Viral hepatitis strategic information to achieve elimination by 2030: key elements for HIV program managers. *JMIR Public Health Surveill*. 2017;3(4):e91.
- 56 Mutyoba JN, Wandera C, Ejalu D, et al. Feasibility and acceptability of integrating hepatitis B care into routine HIV services: a qualitative study among health care providers and patients in West Nile region, Uganda. *BMC Health Serv Res*. 2023;23(1):59.
- 57 WHO framework for meaningful engagement of people living with noncommunicable diseases, and mental health and neurological conditions [cited 2023 August 25]. Available from: <https://knowledge-action-portal.com/en/content/who-framework-meaningful-engagement-people-living-noncommunicable-diseases-and-mental-health>.
- 58 Syal R, van Wessel M, Sahoo S. Collaboration, co-optation or navigation? The role of civil society in disaster governance in India. *Voluntas*. 2021;32(4):795–808.
- 59 Van Wessel M, Hilhorst D, Schulpen L, Biekart K. Government and civil society organizations: close but comfortable? Lessons from creating the Dutch “Strategic Partnerships for Lobby and Advocacy”. *Dev Policy Rev*; 2020 (dpr.12453) <https://onlinelibrary.wiley.com/doi/10.1111/dpr.12453>.
- 60 Lazarus JV, Stumo SR, Harris M, et al. Hep-CORE: a cross-sectional study of the viral hepatitis policy environment reported by patient groups in 25 European countries in 2016 and 2017. *J Int AIDS Soc*. 2018;21(Suppl 2):e25052.