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Research

Determinants of the Initial setup of a national Public Health institute in Sub-Saharan Africa: Insights from Burkina Faso

Hervé Hien^{1,2*}, Claude Millogo³, Ellen Whitney³, Amandine Zoonekyndt³, Meda Nicolas⁴

¹National Public Health Institute, Ouagadougou, Burkina Faso,

²Health science research institute, Ouagadougou, Burkina Faso

³International Association of national public health institute

⁴Science of health department, university Joseph Ki Zerbo, Ouagadougou, Burkina Faso

* **Corresponding author:** Email: hien_herve@hotmail.com, Tel +22670245554

Abstract

The development of Burkina Faso's National Public Health Institute (NPHI) provided valuable insights for other countries seeking to enhance their health security. This paper aims to document the preliminary setup of the NPHI in Burkina Faso and share lessons learned and best practices with other African countries. From January to June 2023, we analysed the literature produced by the NPHI supplemented by semi-structured interviews. A total of 15 participants were included in the interviews. These participants were selected from individuals with firsthand experience implementing the NPHI. The documentation period ranged from 2017 to 2021. An analysis of the thematic content was carried out. The preliminary setup process was inclusive, participatory, and adaptive, leading to the development of foundational texts for the institution. Key factors favouring the preliminary setup included effective stakeholder involvement, strong leadership from the setup team, and valuable lessons learned from peer exchange visits with other NPHIs. Decision-makers and managers of NPHIs involved in creating their NPHI could draw inspiration from Burkina Faso's experience to achieve their goal effectively.

Keys words: National public health institute, preliminary setup, leadership, health security

Résumé

La mise en place de l'Institut national de santé publique (INSP) du Burkina Faso a permis à d'autres pays d'améliorer leur sécurité sanitaire. Ce document vise à documenter la mise en place préliminaire de l'INSP au Burkina Faso et à partager les leçons apprises et les meilleures pratiques avec d'autres pays africains. De janvier à juin 2023, nous avons réalisé une analyse de la littérature produite par l'INSP complétée par des entretiens semi structurés. Au total 15 participants ont été inclus pour les

entretiens. Ces participants ont été sélectionnés parmi les personnes qui ont vécu l'expérience de la mise en place de l'INSP. La période de documentation a concerné 2017-2021. Une analyse du contenu thématique a été réalisée. Le processus de mise en place préliminaire a été inclusif, participatif et adaptatif, ce qui a conduit à l'élaboration de textes fondamentaux pour l'institution. Les principaux facteurs qui ont favorisé la mise en place préliminaire comprenaient la participation efficace des intervenants, le leadership solide de l'équipe de mise en place et les précieuses leçons tirées des visites d'échange entre pairs avec d'autres INSP. Les décideurs et gestionnaires des INSP impliqués dans la création de leur institution pourraient s'inspirer de ces expériences du Burkina Faso pour réaliser leurs intentions.

Mots clés : Institut national de santé publique, phase préliminaire, leadership, sécurité sanitaire

1. Introduction

Health security is a current public health approach that changes the fight of public health issues like epidemics (Agyepong et al.;2023). The field of Public health is confronted with significant challenges, including emerging and re-emerging diseases, access to quality and equitable care, issues faced by internally displaced populations, and food and nutritional security (Abbas et al., 2018; Agyepong et al., 2023; Binder et al., 2021; Ejeromedoghene et al., 2020; Hien, 2020; Lufuke, Bai, Fan, & Tian, 2022).

Currently, one of the public health innovation that contributes to the worldwide health security is the establishment of national public health institutes (Clemente et al., 2020; Myhre et al., 2022). More and more international organizations increasingly promote NPHIs to address emerging and re-emerging epidemics worldwide. We can cite on a global scale, WHO, the international association of National Public Health Institutes (IANPHI) and since 2015 at the African level, Africa CDC. The promotion of these public health organizations stems from lessons learned during health disasters such as Ebola, COVID-19, Dengue (Binder et al., 2021), (Johnstone, Costa Eder, Newton, Bentley, & Rufus, 2019; Kapata et al., 2020; League et al., 2023).

The implementation of NPHI in African countries is different from that in other regions of the world. Common challenges have affected the countries' leadership and the strengthening of essential public health functions. During the past ten years, the NPHIs have demonstrated their leadership to face epidemics and the resilience of the health systems in the African context. These scientific structures are committed to developing tools and guidelines that assist the health systems of countries in detecting, alerting, and responding to major epidemics. Great efforts are currently being made to show the outcomes of countries' interventions in addressing epidemics and major public health problems (Myhre et al., 2022), (Chersich et al., 2020; Fekadu et al., 2023; Greiner et al., 2020; Heymann et al., 2015; Kapata et al., 2020). However, there is a lack of knowledge sharing in the African region regarding the creation of public health institutes. Such knowledge would be useful for political advocacy towards decision-makers in order to integrate NPHIs into their public health security development.

The Africa Centers for Disease Control and Prevention (Africa CDC) published a report at the end of 2022 on the development and maturation of African NPHIs (16). According to the report, only 70% of African NPHIs were in the process of being established or had been established to contribute to health security. This gap should constitute a major opportunity to motivate decision-makers and public health managers engaged in the transformation of their health system to achieve better health security.

The objectives of this paper are to provide data to assist countries in their efforts to implement NPHIs.

2. Materials and methods

2.1. Study design

This study used a cross-sectional qualitative design. The study has been conducted in the technical directorates of the NPHI, the technical directorates of the Ministry of Health in Burkina Faso, and other ministries and stakeholders involved in the NPHI development. NPHI of Burkina Faso is a public health operator mainly in charge of four missions: health monitoring, research, expertise/training, and reference central laboratory. This study concerned the preliminary setup.

The preliminary setup took place between 2017 and 2018. Participants involved in this phase were asked to participate in this study. The NPHI of Burkina Faso is a public organization of the Ministry of Health which has legal personality. It receives annual funding from the government. It employs permanent staff (around 250 agents), contractual staff, teacher-researchers, and expatriates (around 120 agents). All of these staff members participate in the management of essential public health functions led by the NPHI. The NPHI is composed of 6 technical directorates (MURAZ center, the Nouna health research center, the national training and research center on malaria, the central reference laboratory, the center of operations and responses to health emergencies, the national population health observatory). It also involves a scientific department coordinating all of the scientific activities, and a general secretariat coordinating all administrative and financial activities. These six (n=6) technical directorates produce scientific evidences that health programs of the MoH use to improve the health of the population.

2.2. Period of study

The study has been implemented from January to July 2023. The period of the study was 2017-2021. The study was exclusively based on a literature review added by interviews with key informants who participated or lived the experience (NPHI creation and operationalization).

2.3. Study population and selection

The study population were of all the documents produced during this preliminary phase and the participants. The list of the documents and their descriptions are presented in table 1.

Table 1: list of documents included in the study

Title	Description	Source
Report of prefiguration	Describes the synthesis of the five working group who produced the deliveries of the preliminary phase	https://www.insp.bf NPHI institutional numeric library
Report of peers to peers visit at NPHI Quebec and CDC Atlanta	Describes the advantages NPHI and collect the essentials functions of public health	https://www.insp.bf NPHI institutional numeric library
Decree of creation of NPHI	Describes le legal status the institution.	https://www.insp.bf NPHI institutional library
Particularity status of NPHI	Describes the essentials functions and missions of the NPHI and the scientific and administrative organization.	https://www.insp.bf NPHI institutional numeric library

NPHI Strategic plan 2020-2024	Presents the vision and perspectives of the institution. The document also presents the five years deliveries of the institution	https://www.insp.bf	NPHI institutional library	numeric
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The study population consisted of keys persons within the Ministry of Health who had working links with the NPHI. The inclusion criteria were:

- have participated in the technical working group for the prefiguration;
- have been or are currently in a strategic position in the direction of public health, health care, health information or planning management within the Ministry of Health;
- have participated in the development of the NPHI's 2020-2024 strategic plan
- have given verbal consent to participate of the interview

Three (3) keys persons interviewers were identified to select at least 20 participants for the semi-structured interviews. Taking into account the saturation of the data, a total of 15 participants were finally heard.

2.4. Data collection

We used literature review and interviews to collect data. Data extraction grid for the literature review (Table 2) and semi-structured questionnaires were used to collect data .

Table 2: Data extraction grid content

Documents	Items	Description
Report of prefiguration	Technical working group	Number and composition of the tehcnical working group
	Recommendations of each group	Each technical working group recommendations
		Final recommendation to create or not the NPHI
		Lessons learned
Report of peers to peers visit at NPHI Quebec and CDC Atlanta	Institutions visited essential functions of public health	Names, countries and missions of institutions visited List of essential functions of public health
Decree of creation of NPHI	Legal framework	Law, decree, or ministry decision
Particularity status of NPHI	Missions of NPHI	List of the missions of NPHI
	Organization of the institution	List of directorates in the institution and their missions
NPHI Strategic plan 2020-2024	Vision, objectives of the plan	List of the objectives of strategic plan Needs and financial previsions of the institution

The three (n=3) keys persons interviewers were familiar with the health system, the issues of governance and management of public health institutions, were mobilized for 3 months to contribute to interviews, analyzes and the presentation of the first results). The items of the interviews were : i) appreciation of this first phase : success, lessons learned, suggestions ,ii) the leadership of the ministry, the leadership of the working technical group, iii) the role of peers to peers visits, iv) benefits of the NPHI.

Data were collected from note-taking, accompanied by recordings and analyzed using R software version 4.0.3.

2.5. *Data analyses*

We used two components of analysis which were complementary using triangulation process of data.

- Documents reviews and data extraction ensured the description of the process of preliminary phase. These analyses presented the content of the technical working group and their deliveries, the organization of the institution and his legal framework and the early strategic plan.
- Interviews presented the perspectives of participants about some items documented during the document reviews. Theses interviews presented the keys success factors that allowed this first phase.

The analysis of the thematic content allowed the identification of the success factors of this phase. Verbatim language was used to illustrate some results done by the participants

2.6. *Administrative and ethical considerations*

Administrative agreements were obtained to allow keys persons interviewers to collect data from identified participants. Verbal consent from participants were obtained before recording the interviews. All interviews were anonymized.

3. **Results**

3.1. *The preliminary setup phases*

The idea of creating the NPHI in Burkina Faso emerged in 1998. The first attempt was a failure despite the existence of challenges faced by the country's health system. The challenges were: weak direction and coordination of sectoral health research, with little impact on national health development, limited availability of public health training and practice, limited coordination of surveillance structures, weak surveillance and alert system for public health threats, insufficient public health services, and need for intersectoral and multidisciplinary collaboration. The actors at this time were unable to agree on the benefits of an NPHI and on the leadership of a future NPHI which would bring together several essential functions of public health.

With the persistence of the challenges mentioned above, the new international context under the influence of epidemics and pressure from the research centers of the Ministry of Health for a definitive resolution of the institutional and professional problems (the careers of researchers), the idea of creating an NPHI was relaunched in January 2014 under the leadership of the Minister of Health. This minister also took the lead in drafting the health program of the party in power at the time and influenced the inclusion of the creation of an NPHI in the program of the future president. This is how this minister, who came to power, set up a commission which was to draft the texts for the creation of

an NPHI. The commission which led this preliminary setup started the discussion on the NPHI. But it was interrupted by the popular insurrection of October 2014 in Burkina Faso.

In 2015, with the lessons learned from the Ebola virus epidemic which affected Africa, the Heads of State of the African Union launched a call for the creation of an African CDC that would promote the importance of NPHIs in each member country. The same year, the country had a new elected head of state, who had already included the implementation of the National Institute of Public Health as a national priority in his electoral program. Also, during the same period, the enthusiasm of development partners such as US CDC, China CDC, *Santé Publique* France, and especially the availability of the International Association of National Public Health Institutes (IANPHI) was determinant in supporting the rapid creation of NPHI in Burkina Faso. It is therefore convinced of the interest of an NPHI for Burkina Faso that by decree n°2016/006/MS/CAB of February 19, 2016, the Minister of Health created a National Technical Committee with the mandate to prepare and to propose the texts for creating the NPHI. The members of the Committee were divided into five working groups to develop the preliminary setup deliverables.

Group 1 studied the missions of the future institution: its arguments the pertinence of NPHI creation and selects the essentials functions of public health to implement. Group 2 has worked on the status of the future NPHI: juridical and content of the status. Group 3 have worked on workforce status: identification of the carriers' plans and proposition the particular status of the workforce. Group 4 worked on economic sustainability. Group 5 worked in social appropriation and in identification of the theory of change.

The Technical Committee produced a general report which indicated the administrative, scientific, technical, economic, and professional models retained to create the NPHI of Burkina Faso. The Committee proposed the creation of a multi-organization NPHI with the status of a State public *establishment of a scientific and technical nature (EPSCT in French)*. This NPHI was expected to bring together on behalf of the Ministry of Health, the functions of scientific expertise, central reference laboratory expertise for health monitoring, technical expertise in evaluation, research, training, and data synthesis evidence to inform decision-making. However later, towards the end of the preliminary setup process, an opportunity was presented for group 3 which submitted a memorandum to challenge the Minister of Health of the moment. Public health policy linked to human resources management had just changed in form and substance. It was the hospital civil service which allowed all contractual, permanent, and seconded workers to benefit from civil servant status with possibly additional motivations. Exchanges and consensus were quickly found especially with the social partners to update the file which should go to the ministry in charge of the economy for the next stages of finalizing the process. The new status that the new NPHI should take was that of Public Health Establishment (EPS) replacing the status of Public Scientific and Technological Establishment (EPSCT) initially proposed and which seemed more favorable for scientific staff career management.

All regulatory texts to create the future NPHI of Burkina Faso have also been developed, approved, and transmitted to the Minister in charge of the economy and finance via the Ministry of Health. These texts were: the preliminary setup report, the project for the creation of the NPHI, and the project for special statutes of the NPHI. It was the ministry in charge of the economy which brought the file to the council of ministers for its adoption. The process of preparing the file between the actors of the

ministry in charge of the economy and the preliminary setup involved the holding of multiple meetings to clarify certain concepts, and producing certain additional financial information to justify the economic sustainability of the institute. These meetings took place at the ministry in charge of the economy before the inter-ministerial commission was set up for this purpose.

3.2. *Factors facilitating the success of preliminary setup*

We identified three relevant factors that could be considered as contributing factors to the success of the preliminary setup.

The major factors were:

- effective stakeholder involvement in the process
- strong leadership from the setup team
- valuable lessons learned from the peer exchange visits with other NPHI.

Description of these factors

- The preliminary setup was facilitated by the existence of an official framework with anchoring in the cabinet of the Ministry of Health, and a political will display since the programming of government public health policy. Indeed, the creation of the NPHI as a presidential project resonated during certain exchanges which had a counterproductive character. Also, in the meantime, the forerunner in charge was appointed as Minister of Health. From his new position, he facilitated programming and advocacy in councils of ministers for the adoption of the NPHI texts. This process was facilitated, as this actor says, by “01_PT ” *the establishment of an official working group made up of resource persons for the creation of the national public health institute with clear terms of reference and well-defined objectives*. Another actor thinks 08_IN that it was “*the political will that facilitated this because it was included in the presidential program*”. The process was continually supported by the leadership of the Minister of Health.
- The other factors enabling the involvement and support of staff in this preliminary setup phase were the perspective of taking in charge the careers of scientific staff through this merging of 3 research centers within the same Ministry of Health. Also, these 3 centers were well known in the field of public health research in Africa, America, Europe and elsewhere.
- Finally, the preliminary setup used data and experiences from other NPHIs. These peer-to-peer experiences were documented in the preliminary setup report. They came from *Santé publique* France, Sciensano in Belgium, NPHI du Quebec in Canada, CDC Atlanta in the USA, IANPHI and Africa CDC. This documentation allowed to quickly develop the rationale for creating the NPHI, necessary to propose a conceptual framework adapted to the socio-health context of the country.

During this process, there were feelings in the form of resistance from the participants who expressed their dissatisfaction, and their non-adherence to the process of creating the NPHI which should bring together 3 research centers according to the merger-absorption approach. These findings are illustrated by the words of these two participants. 04_IN : *It's the fear of losing their autonomy... I don't agree, because they lose their operational responsibilities*” or even this other person 07_IN who asserts that “*It's the fact that it was very research-oriented and there were structures that did not feel involved in research, particularly in the national public health laboratory (LNSP).*”

4. Discussion

This paper presents the process of preliminary setup which is often little discussed and to which little importance is often given in the development of new public health institutions. In the case of the NPHI of Burkina Faso, this phase was inclusive, participatory, and adaptive. It made it possible to understand the perspectives of all the stakeholders of the institutions which would be involved in the public health missions of the NPHI (Ministry of Health, Ministry of Research, Minister of the Public Service, the main beneficiaries of the creation of the NPHI etc.). This preliminary setup made it possible to develop and propose the texts for creating the structure. The factors favoring the success of this preliminary setup are: i) the effective involvement and participation of pre-existing structures in the creation, ii) anchoring and leadership of the preliminary setup group within the ministry in charge of health, iii) the support takes into account the lessons learned from the visit to exchange experiences in other NPHIs.

According to a recent report published by Africa CDC on NHIs in Africa 12/40 (30%) of NPHIs reported being fully established, 17/40 (42.5%) were at an advanced stage, 6/40 (15%) had started the process and 5/40 (12%). A total of 5% said they did not have a plan to develop their NPHI (Taame Desta, Mayet, Rioplexus Ario, & Tajudeen, 2022). These results show the gaps that African countries present in restoring their health systems in the race towards health security. Indeed, over 70% (28/40) of the countries of the continent must quickly make efforts to catch up with the delay in the entire development of their public health operator. This paper shows that 27.5 % (11/40) of countries need reinforced support to move quickly in establishing their NPHI. Recent emerging infectious diseases (Ebola, Covid-19 etc.), some of which are still prevalent (monkey pox, Ebola, Crimea - Congo, etc.) must attract more attention from the health authorities of these countries and their managers (Eteng et al., 2023; Excler et al., 2023; Schneidman et al., 2018).

All these arguments are in favor of the establishment and acceleration of the development of NPHIs in Africa. To reassure and engage decision-makers and health system managers that the process is possible and that they can successfully establish their NPHIs, these pieces of evidence provided in this paper can serve as guidance. This phase presented in this paper does not constitute a standard, nor lessons to be applied to strict census. These are the results of an experience of the NPHI of Burkina Faso which has its socio-political and economic health context. These are variables to take into account in the use of this evidence.

5. Conclusion

NPHIs are structures that could benefit countries facing epidemics. To success in the implementation of the NPHIs, efforts have to be made in order to integrate these keys factors identified. Key factors that favored the preliminary setup included effective stakeholder involvement, strong leadership from the setup team, and valuable lessons learned from the peer exchange visits with other NPHIs. The decision-makers and managers of NPHIs involved in the creation and implementation of their NPHI could consider these lessons learned from Burkina Faso to succeed their missions.

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Conflict of Interest

No conflict of interest

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