



An assessment of the core capacities of the Senegalese health system to deliver Universal Health Coverage



Elisabeth Paul^{a,*}, Youssoupha Ndiaye^b, Farba L. Sall^c, Fabienne Fecher^d, Denis Porignon^e

^a Université libre de Bruxelles, School of Public Health, Campus Erasme, Route de Lennik 808, CP 591, 1070 Brussels, Belgium

^b Ministry of Health and Social Affairs, Dept. of Planning, Research and Statistics (DPRS), 4 Rue Aimé Césaire, Fann Residence, Dakar, Senegal

^c World Health Organization, Senegal Country Office, BP 4039, Dakar, Senegal

^d Université de Liège, Department of Political Economics and Health Economics, Quartier Agora, Bat. B31, 4000 Liège, Belgium

^e Université de Liège, Department of Public Health, Bât. B23 Santé publique: aspects spécifiques, Quartier Hôpital, Avenue Hippocrate 13, 4000 Liège, Belgium

ARTICLE INFO

Article history:

Received 17 August 2019

Received in revised form 21 August 2020

Accepted 22 August 2020

Available online 2 September 2020

Keywords:

Universal health coverage

Health system strengthening

Senegal

Institutions

ABSTRACT

Senegal is firmly committed to the objective of universal health coverage (UHC). Various initiatives have been launched over the past decade to protect the Senegalese population against health hazards, but these initiatives are so far fragmented. UHC cannot be achieved without health system strengthening (HSS). Here we assess the core capacities of the Senegalese health systems to deliver UHC, and identify requirements for HSS in order to implement and facilitate progress towards UHC. Based on a critical review of existing data and documents, complemented by the authors' experience in supporting UHC policy making and implementation, we evaluate the main foundational and institutional bottlenecks relative to the six health system building blocks, together with an analysis of the demand-side of the health system, which facilitate or hamper progress towards UHC. Despite the fact that many institutions are now in place to deliver UHC, important weaknesses limit progress along the two dimensions of UHC. Substantial disparities characterise resource allocation in the health sector, and health risk protection schemes are highly fragmented. This spreads down to the rest of the health system including service delivery and consequently, impacts on health outcomes. These constraints are acknowledged by the authorities, solutions have been proposed, but these necessitate strong political will. Moreover, progress towards UHC is constrained by the difficulty to act on social determinants of health and a lack of fiscal space.

1. Introduction

Like others in sub-Saharan Africa, the Government of Senegal is firmly committed to the objectives of universal health coverage (UHC). According to the latest UHC Monitoring Report, the service coverage index (indicator 3.8.1) was at 45.4% in 2017, while the incidence of catastrophic expenditure (indicator 3.8.2) was 3.3% at 10% of household total consumption or income in 2011 [1]. Senegal performs quite similarly to other Western or Central African countries of comparable economic development with regard to service coverage (indicator 3.8.1 was 40% for Benin, 46% for Cameroon, 47% for Côte d'Ivoire, 41% for Mauritania), but far better than those countries with regard to financial protection (indicator 3.8.2, 10% threshold, was 10.9% in Benin, 10.8% in for Cameroon, 12.4% in Côte d'Ivoire, 11.7% in Mauritania) [1].

Various initiatives have been launched over the past decade to protect the Senegalese population against health hazards, comprising mul-

iple compulsory, voluntary and social assistance schemes [2]. The objective of UHC is mainly pursued through, on the one hand, a desire to expand service coverage in underserved areas and on the other hand, an improvement in terms of financial access through the Universal Health Insurance Policy (called *Couverture maladie universelle* – CMU). The latter was on top of the priorities of the political agenda of Senegal's president during his two electoral campaigns in 2012 and 2019. However, the proportion of the population actually covered is still below the planned objective. By the end of June 2019, an estimated 45.39% of the Senegalese population was covered by some form of social protection scheme for health [3].

The Senegalese health system has a pyramidal structure with three levels of care and a system of referral. Health facilities comprise various levels of hospitals, health centres, health posts, plus hygiene and social services. The administration of the health sector is also structured along three levels: central (Ministry of Health and Social Affairs – MoHSA), intermediate (14 regions) and peripheral (77 health districts) [4]. The public health care system is complemented (particularly in Dakar, the capital city) by a growing private sector which is estimated to represent nearly 70% of the total provision of health services and which is increasingly involved in the CMU policy [5]. The health sector has experienced a number

* Corresponding author at: Université libre de Bruxelles, School of Public Health, Campus Erasme, Route de Lennik 808, CP 591, 1070 Brussels, Belgium.

E-mail addresses: Elisabeth.Paul@ulb.ac.be, (E. Paul), youndiaye2000@gmail.com, (Y. Ndiaye), sallf@who.int, (F.L. Sall), ffecher@uliege.be, (F. Fecher), Denis.Porignon@uliege.be. (D. Porignon).

of reforms in the past decade, notably so as to facilitate the decentralisation policy whose implementation is still lagging behind [4].

In addition, the coordination of the financial protection arm of UHC has been assigned to a separate CMU Agency. The latter, which was initially created under the responsibility of MoHSA, was transferred to the responsibility of the Ministry of Community Development, Social and Territorial Equity in April 2019. This is meant to enable a separation of purchaser-provider functions and hence a strengthening of the control function, which is judged essential in the development of the social protection policy, as well as to improve the coherence of community development policies.

The concept of UHC is closely linked to that of health system strengthening (HSS). Indeed, HSS comprises the means (the policy instruments, i.e. “what we do”), while UHC is a way of framing the policy objectives (i.e. “what we want”) [6]. African countries face particular challenges with regard to the implementation of UHC because of substantial gaps characterising their health systems [7]. The objective of this paper is to assess the main capacities of the Senegalese health systems to deliver UHC, and as a corollary, to identify possible gaps and requirements in terms of HSS necessary to implement and facilitate progress towards UHC.

2. Materials and methods

Based on a critical review of existing data and documents, complemented by the authors' experience in supporting UHC policy making and implementation in Senegal, we apply the World Health Organization's conceptual framework based on six health system building blocks (leadership and governance; financing; health workforce; infrastructure, equipment, pharmaceuticals and medical products; health information; and service delivery) [8], enhanced by an analysis of the demand-side of the health system (characteristics and expectations of the Senegalese populations) [9]. Indeed, this framework is commonly used by practitioners in Francophone African countries, and was utilised to guide the situation analysis behind the elaboration of the recent national health sector development plan [4]. The main question we intend to answer is the following: how far are the core health system capacities in place in Senegal to deliver UHC? To do so, we have focused on the main foundational and institutional bases facilitating the implementation of the UHC policy and as a corollary, on the bottlenecks hampering progress towards UHC. Foundations are to be understood as the key basic health system related issues (like primary health care workforce, supply chains and diagnostic facilities, essential medicine, a unified information system, local health governance systems or emergency preparedness and response); while institutions are to be understood as the capacity of the health system to put in place, among other things, norms, laws and regulation, community involvement, management, and accountability [10]. The results are presented along the “six plus one” building blocks of the health system as conceptualised by the World Health Organization [9]. For each building block, we discuss a set of key indicators that have been identified by a working group within the World Health Organization as being critical for health system strengthening, for adequately delivering health services in an appropriate and equitable way, and therefore for contributing to UHC.

3. Results

3.1. Governance and leadership

At the policy level, Senegal adopted a national health policy in 1989, which recognizes the right to health and entrusts the Ministry of Health with its implementation [11]. It is implemented through a national health sector development plan, the third of which was adopted in 2019 and is called the *Plan National de Développement Sanitaire et Social* (PNDSS) 2019–2028. It is based on three major axes which are: (i) the governance and financing of the sector; (ii) the provision of health and social action services, and (iii) social protection in the sector. This decennial strategic plan is further declined in multi-annual expenditure programming documents, specific strategic plans and operational plans at various levels [4]. A draft Law aimed at instituting the CMU had been prepared as a specific legal

framework. Nonetheless, following the transfer of the CMU Agency to the responsibility of the Ministry of Community Development, Social and Territorial Equity, that draft law will be integrated into a more holistic legislation on social protection (under construction at the moment). It is planned to specify that all residents are entitled to a financial protection regime.

At the institutional level, a number of stakeholder coordination committees meet regularly and provide policy advice to the MoHSA. Other health-related sectors participate in the joint annual review at both the national and regional levels. At the local level, the former (and under-performing) “health management committees” were replaced in 2018 by “health development committees” which provide a consultation framework between communities and the local elected officials with responsibilities in the field of health [12]. Inter-sectoriality is facilitated at local level because the district working plans are integrated with the (intersectorial) annual local development plans. The district health management teams run monthly district coordination meetings, and communities participate in local health management committees [4]. Health development committees now exist in every health centre and health post.

At the operational level too, a number of institutions are in place to ensure clinical practice and quality control. Standards, norms and therapeutic protocols are in place in various fields, and are regularly updated. In addition, there are mechanisms to authorise, audit, monitor and evaluate providers according to standards. A reflection is led on how to improve the respect of norms and the quality of services provided in private health care facilities in the context of the public-private partnership, which has been developed to enable expansion of the CMU policy [13,14]. The CMU policy specifies that private health facilities and pharmacies can apply for recognition by the CMU Agency, which may subsequently withdraw or suspend accreditation. There are mechanisms to represent the interests of patients and the population in general, as well as the interests of providers in the health system, notably a Civil Society Organisation platform (called CONGAD) and trade unions.

Overall, the health sector in Senegal has appropriate policies and institutions in place to allow for good governance and to facilitate progress towards UHC – at least formally. However, based on our appraisal of the situation, two important issues weaken the governance of the health and social protection sectors in Senegal: on the one hand, severe disparities in the way in which resources are allocated and managed in the sector and across regions [2,15]; and on the other hand, the fragmentation of the institutions in charge of managing and implementing the various aspects of the overall UHC policy. Indeed, while the MoHSA is responsible for expanding the supply of health services, the CMU Agency is in charge of coordinating the various financial protection regimes. In practice, four regimes coexist – compulsory health insurance, medical assistance, community-based health insurance (CBHI) and commercial health insurance (see below) – but they are managed by various organisations without effective coordination to date. Yet, the CMU policy is constantly evolving so as to respond to the emerging challenges, especially to better integrate the various schemes (e.g., transfer of medical assistance schemes to State-subsidised CBHI affiliation) [16].

Finally, as for the outcomes of the CMU policy, by the end of June 2019, it was estimated that close to 50% of the Senegalese population was covered by some form of social protection regime, with close to 20% of the total population covered by CBHI [3].

3.2. Health financing

There are important issues and gaps regarding the financing of the health system in Senegal. Fig. 1 shows the evolution of selected health financing indicators since 2009, based on the *Global health expenditure database*. Despite some progress, notably a slight increase in per capita current health expenditure (amounting to 55 USD in 2017), the Current Health Expenditure (CHE) (4.13% in 2017) is below the international threshold of 5% of Gross Domestic Product (GDP) [17], and social health insurance continues to represent a very small portion of CHE (less than 4% in 2017). Other worrying trends characterise Senegal's financing profile:

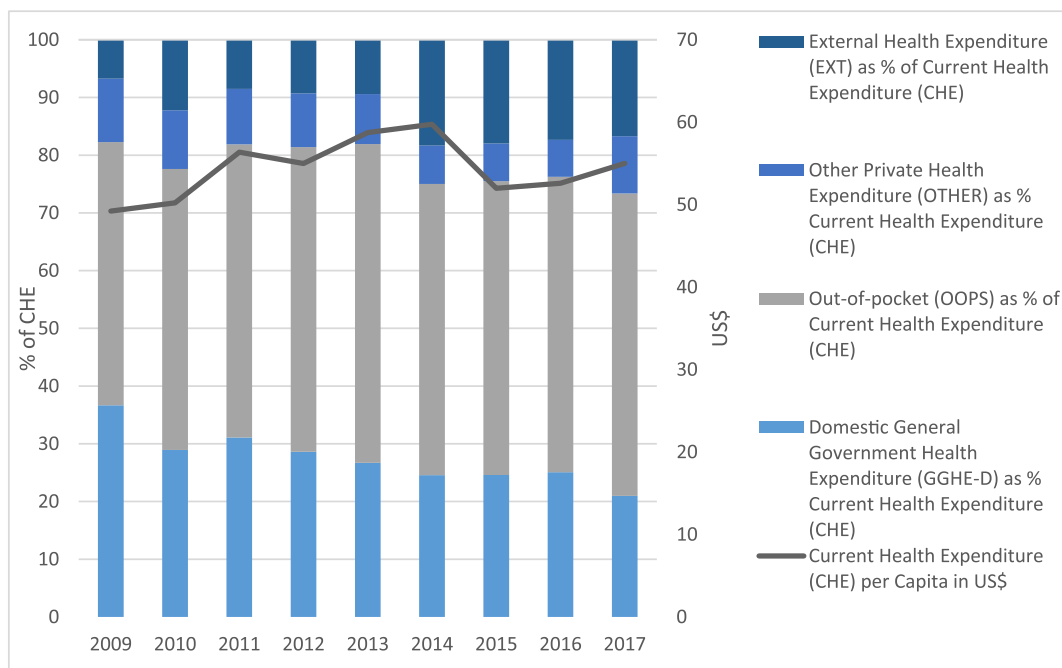


Fig. 1. Senegal, selected health financing indicators, 2009–2017.

Source: World Health Organization – Global Health Expenditure Database [<http://apps.who.int/nha/database/Select/Indicators/en>] consulted 15 May 2020.

- A still very important share of domestic private health expenditure in terms of total current expenditure (accounting for 62% in 2017) and particularly, of out-of-pocket expenditure (52% of CHE in 2017);
- A limited share of health insurance: Voluntary Health Insurance amounted to 8% of CHE in 2017, while Compulsory Health Insurance comprised less than 4% of CHE;
- A weak prioritisation with regard to health provision in the state budget: Domestic General Government Health Expenditure accounted for only 3.89% of General Government Expenditure in 2017, far from the Abuja target and below its 2009 level.

Regarding the purchasing of health services, the analysis conducted in preparation of the national health financing strategy concluded that the packages of services included were not adapted to the requirements of the extension of the CMU and to the evolution of the epidemiological profile – for instance, because insufficient funding (less than 10% of total current expenditure) was dedicated to reproductive health [2]. As regards the pooling of resources, the various health insurance and medical assistance schemes in Senegal are fragmented, each scheme has its own operating mechanism without interconnection [2], which reduces the overall efficiency of the system. This is compounded by a lack of progressivity of the health financing system and especially, insufficient targeting of the medical assistance system – for instance, all children under five and all people above 60 are entitled to free healthcare, whatever their socio-economic status [2]. The four major schemes are the following:

- Compulsory health insurance:** The compulsory schemes are mainly constituted, on the one hand, by a compulsory scheme for civil servants which is financed from the State budget (*imputation budgétaire* or budget item) which allows a partial coverage (80%) of medical care but not of drugs; while on the other hand, permanent employees of private companies and their beneficiaries are covered through *Institutions de Prévoyance Maladie*, which are a kind of social insurance and cover non-occupational diseases up to 50% to 80% of medical and pharmaceutical costs on social contributions. Other compulsory schemes comprise, among others, the Senegalese Pension Fund covering retired

employees and their dependents; the Social Security Fund covering accidents at work and occupational diseases; and a university fund that takes care of students for routine care [2].

- Medical assistance:** Medical assistance relates to health services subsidised by the State and implemented by the MoHSA as well as exemption mechanisms for some categories of the population. The latter include: the “Sesame Plan” which concerns people aged 60 and over; a package of free care for children under five (including consultation, medication and vaccination in public facilities, and emergencies in hospitals); and a solidarity fund to improve the state of health of poor people without medical and social coverage. In addition, several benefits and services are provided free of charge through government subsidies: free Caesarean section, dialysis, antiretroviral therapy and anti-tuberculosis drugs. Some expensive medical conditions, such as diabetes and cancer, are also subsidised to make their treatment more affordable [2].
- The voluntary health insurance scheme through community-based health insurance:** The target population for the CBHI is essentially households in the informal sector and in rural areas who are not affiliated to a compulsory health insurance scheme. Their benefit packages have been harmonised and extended thanks to 100% State subsidies for the poor (beneficiaries of family security grants, holders of equal opportunities cards) and 50% subsidies for the others. Some other indigent people are cared for by local authorities through mutual health insurance companies. Each municipality has at least one mutual health insurance company, and each department has a union of mutual health insurance companies. By the end of 2016, no less than 676 mutual health insurance companies were in place throughout the country [16]. In addition, supplementary health insurance schemes have been created by civil servants to enable them to benefit from guarantees broader than those provided by the budget allocation scheme [2].
- Commercial health insurance:** These schemes generally cover individuals with a relatively high level of income. Despite the attractiveness of the benefit packages offered and the professionalism of the management, they cover a very small part of the population, so that the fragmentation of the risks covered and the high premium levels limit the

potential for private for-profit health insurance to make a significant contribution to extending health risk coverage [2].

As mentioned above, efforts are being made to better integrate the various schemes, especially the CBHIs [16].

More generally, Senegal faces important issues in terms of public financial management. The most recent publicly available Public Expenditure and Financial Accountability (PEFA) analysis dates back to 2011 (another one was realised in 2020, but its report is not public); it showed worrying problems, including important extra-budgetary expenditure and multiple accounts [18]. For several years now, Senegal has strengthened its fiscal policy and its fiscal transparency, notably through revamping the legal framework governing public finance in line with West African Economic and Monetary Union directives, making an extensive array of budget documents available to the public, and making sure that the medium-term budgetary framework now better informs the budget process. However, a relative majority of public financial management practices are rated “basic” and many do not meet elementary requirements [19]. The International Monetary Fund reckons that reforms to increase revenue are needed to finance development in a sustainable way, and that efforts to contain current expenditure and improve the efficiency of investment should continue [20].

3.3. Health workforce

Many policies and institutions are in place to facilitate human resources management in the health sector in Senegal, which is positive news for the UHC agenda. The Human Resource Directorate of MoHSA, which was created in 2003, has data on health worker density and the geographic distribution of health workers, which enables the authorities to follow the application of the health map staffing norms [2]. The National Human Resources for Health Development Plan, covering the period 2011–2018, aimed to contribute to the achievement of UHC through a good supply of qualified human resources throughout the country [21]. Today, the computerisation of human resource management is a reality, with the appointment of human resource focal points at the district, medical region and hospital levels, and the use of the iHRIS software, although challenges persist in terms of its implementation in Dakar [2,22]. There have been a few wage delays: according to a survey undertaken in 2013, some 5% of staff reported a delay of at least two months in paying their wages [23].

However, there are also a number of problems in this regard. Human resource allocation is inequitable and does not reflect regional disparities in the burden of disease distribution [2]. Indeed, Senegal faces major problems with regard to the retention of human resources in disadvantaged areas. Moreover, efforts to produce human resources are not always followed by recruitment [21]. The latest PEFA evaluation in 2011 granted a poor D+ score for the indicator with regard to the effectiveness of payroll controls. Indeed, there is no integration, exchange of information or reconciliation between the staff files held by the Public Service Directorate and the balance held by the Directorate of Pensions and Annuities. Since the files are not linked and the exchange of information is not organised, the consistency of the files is neither ensured systematically, nor in a standard timeframe [18]. According to a World Bank survey, there are indications of high rates of absenteeism: one-fifth of the health workforce was absent during an unannounced visit [23].

3.4. Infrastructure, equipment, pharmaceuticals and medical products

The Directorate of Pharmaceuticals and Medicines is the national drug regulatory authority, whose mission is the preparation, implementation and monitoring of policy and programs in the field of pharmacy and medicines (<https://www.dirpharm.net/index.php/dpm/presentation>). The *Pharmacie Nationale d'Approvisionnement* (PNA – central medical store) is the wholesale distributor for the public sector, and also supplies the private sector with generic essential medicines. Over the past decade, the PNA has implemented several strategies to make medicines and essential products available and accessible. It has strengthened the territory's network by setting up eleven Regional Pharmacies, sales depots in health care facilities,

and piloted innovative initiatives aimed at bringing the services closer to clients and to improving the availability of medical products [2].

There are appropriate institutions in place to facilitate this building block's contribution to UHC. The selection of medicines is based mainly on the National List of Essential Medicines and Products established by level of care and under International Non-proprietary Name. It is a basic tool for purchases whose strict application allows the rationalisation of health care thanks to a good application of the different therapeutic directives elaborated. The List has traditionally been revised every two years since 1990; the current list dates back to 2013, but adequate medications are on it [24]. At the central, regional and health district levels, computerised input management tools are used; however, there are some errors and difficulties in operating these tools due to a lack of, or inadequate, training [25].

However, there are still a number of problems and challenges in this respect. There are difficulties in combating the illicit drug market [2]. A 2015 Effective Vaccine Management Assessment shows gaps in temperature, storage capacity, maintenance, inventory management, distribution, and the information and management system, with scores under 70% except at the central level [25]. The proportion of traceable products available increased from 77% in 2015 to 82% in 2016 [2]. Nevertheless, a service availability survey at the facility level showed that availability is good for certain drugs and essential products (e.g. antibiotics for adults) but not for others (e.g. antibiotics for children). Many essential drugs were available in less than half of the health facilities. Among the health facilities that provide infant immunisation services and routinely stockpile vaccines, for instance, 75% of the facilities had all the basic vaccines available on the day of the survey [15].

Finally, the balance between regulation and autonomy often hampers effective management as well as relationships between pharmaceutical private entities and national authorities. The Government of Senegal has already taken the necessary preliminary steps to engage the private sector in order to ensure the introduction of new models for collaboration [26].

3.5. Health information

The previous national health sector development plan 2009–2018 included a Monitoring and Evaluation (M&E) Plan. The list of M&E indicators was selected in line with a broad consensus among the various stakeholders; each of the 11 strategic orientations was represented by at least one relevant indicator [27]. The new plan (PNDSS 2019–2028) defines its review and evaluation processes and announces the elaboration of a further M&E plan with coherent indicators [4]. However, the National Health Information System is characterised by a high degree of fragmentation resulting in a multiplicity of collection tools and software, causing an operational overload. The MoHSA elaborated a Strategic Plan for the Senegal Health Information System 2012–2016 which acknowledged the multiplicity of data collection media due to a high number of priority health programs [28]. The integrated software for the management of health information DHIS2 has been under way since 2013 [29]. The process of integrating program data into DHIS2 has begun, but this has not yet been completed. In addition, the CMU Agency is developing its Integrated UHC Information and Management System, aiming to become an integrated window for following up health coverage and enabling transparency in terms of the services provided. A digital platform has recently been created to facilitate enrolment to CBHIs through electronic payment throughout the country (see <https://www.sunucmu.com/>). However, one can regret the lack of digital accounting systems at facility level, which would be critical to ensure good resource management.

There are national institutions with capacity in health data analysis that regularly generate reports: the National Statistics Agency has good capacities and it supports the MoHSA in regularly producing surveys which are available online. Senegal regularly produces population surveys that cover all priority health areas and risks – especially the Demographic and Health Survey (DHS) of which a continuous version has been released annually since 2012–2013; and more recently, the Continuous Survey on

the Delivery of Health Care Services [15,30]. However, routine health statistics are not yet publicly available. The Directorate of Planning, Research and Statistics of the MoHSA is in the process of setting up a Health Observatory but it is not yet operational. At this stage, there is no comprehensive M&E plan to monitor progress towards UHC [31].

3.6. Service delivery

Standards for the establishment of health infrastructures and personnel staffing were created during the development of the service availability mapping (2009–2013). Minimum packages of activities are defined by level of care. However, the health system is very hospital-centred, with hospital accounting for two thirds of public funding of health care providers in 2013 [2]. In 2016, there was one health centre (first level of referral) per 147,999 inhabitants, and one health post (first level of care) per 10,151 inhabitants. A recent survey revealed good availability of basic infrastructure at the level of health facilities. Overall, in 2017, 75% of health facilities offered all basic services to patients (which include curative outpatient care for sick children, facility-based childhood immunisation services, monitoring of child growth, provision of modern family planning methods, antenatal care and services for sexually transmitted infections), but there were variations in the supply of basic services by type of health structure, sector and region. Health posts (78%) more frequently provide all these basic services compared with other facilities, especially hospitals (31%), as expected by the national referral policy. Note however that this indicates that hospitals somewhat compete with lower-level facilities for provision of the basic package of care. In addition, the provision of a package of basic services is more likely to be found in public sector structures than in private ones (93% against 13%). The supply of all basic services in public structures has increased from 85% in 2012–2013 to 93% in 2017. In particular, the vast majority of facilities provide malaria diagnosis or treatment services (94%), sexually-transmitted disease diagnoses or treatment services (94%) and curative care services for sick children (91%). Antenatal care (86%), family planning (84%) and child growth monitoring services (82%) are available in more than 80% of facilities. However, there is a lower availability of specific services such as normal delivery and new-born care (75%) [15].

It has to be noted that in the context of the National Financing Strategy for UHC [2], public-private partnerships were developed in order to extend the range of services offered as a complement to the public health system. For instance, the Senegalese Sovereign Investment Fund enabled to upgrade the equipment of public and private hospitals. Moreover, as part of the medical assistance component of CMU, agreements have been concluded between the MoHSA and private actors to facilitate access to dialysis, which the public health system was unable to cover.

However, overall, health service delivery is characterised by important disparities. Among the main weaknesses of the Senegalese health care system is the virtual absence of specialised services outside of Dakar, which leads to inefficiency in the referral and counter-referral management system, contributing to the overloading of national hospitals. For instance, of all the specific services, the caesarean section is the least frequently-offered service, since only 3% of the structures have the capacity to perform this procedure – indeed Senegal's national policy provides for caesarean section only in hospitals and certain health centres. Note also that the norms and protocols for the Integrated Management of Childhood Illnesses were available in 83% of surveyed facilities in 2017; availability was better at the health post level (86%) than in hospitals (34%), which is consistent with the national policy [15].

Note however that health services must be of a sufficient quality to achieve impact. A recent study estimates that the effective coverage of primary health services – that is, adjusted to take quality into account – is only 19% on average in Senegal [32]. The World Bank estimated that clinicians do an accurate diagnosis only in 34% of cases on average [23]. This is despite survey results showing very high user satisfaction with regards to the services received [15].

3.7. Populations

The Senegalese government is aware of the importance of social determinants of health, and reckons that they should be an important part of the UHC policy. Indeed, the DHS shows important disparities in health care utilisation and health outcomes between regions, living environments, education levels, wealth quintiles, as well as according to individual behaviours. Despite the policies implemented to expand health service coverage and improve financial risk protection, 53% of surveyed women aged 15–49 have at least one problem with access to health care, including financial accessibility (45%), geographic accessibility related to distance (22%), not wanting to go alone (14%) and obtaining permission to seek care (7%) [30].

Three problems have been identified in this respect: (i) the non-functionality of multi-sectoral frameworks at national level does not significantly mitigate risks related to population health determinants; (ii) the ineffectiveness of health promotion initiatives contributes to increasing individuals' exposure to the effects of behavioural determinants; (iii) the lack of common and inclusive strategies with regard to health system determinants limits efforts to rationalise health expenditures [2].

4. Discussion

Experience worldwide shows that the path towards UHC is context-specific and path-dependent [33–40]. In particular, there is no generalizable evidence neither as to whether it is preferable to rely on a tax-based or social health insurance system so as to increase compulsory prepayment for UHC; nor as to whether service provision should be based on a national insurance system that purchases services from public and private providers, or on a public delivery system [38,41–43]. Moreover, since countries usually adopt mixed financing schemes, it is acknowledged that policies should approach the system as a whole, and not focus on individual schemes [44]. There is no “magic bullet” solution to achieve UHC, and there is no consensus on the effectiveness and feasibility of most individual strategies considered to achieve progress in terms of that objective [45]. The only two policy measures that seem consensual in the literature and which have been demonstrated to facilitate progress towards UHC in a number of contexts are (i) relying on compulsory or public funding [33,41,46–48]; and (ii) strengthening health systems, and especially primary health care systems [38,49–53]. In this paper, we have focused on the health system's foundations and institutional capacity of the health system in Senegal that should facilitate progress towards UHC, by considering each building block separately. However, all the health system building blocks are interrelated and “every health intervention, from the simplest to the most complex, has an effect on the overall system” – hence the need to view them together when designing policies and monitoring progress towards UHC [9]. For instance, substantial disparities characterise financing resource allocation in the health sector, and health risk protection schemes are highly fragmented (especially CBHIs) – which means that the pooling of funds is not carried out at a sufficiently high level to ensure cross-subsidisation and the reduction of financial risk [2]. These “upstream” constraints in terms of governance and resource allocation have negative effects on the rest of the health system – for instance, on the distribution of the health workforce – down to service delivery and consequently, health outcomes [30]. Moreover, by definition, a system is just as weak as its weakest element, so that the health system should be supported through all its elements. To apprehend the contribution of the various building blocks to UHC, other authors have developed a composite index comprising indicators of health service delivery, infrastructure, human resources, and health expenditures; using such an index, overall service coverage score is estimated at 38.7 in Senegal, compared to 38.3 for Benin, 37.5 for Cameroon, and 26.6 for Côte d'Ivoire [54].

Health systems comprise an infinity of dimensions. Consequently, this paper has focused on a number of institutional and foundational indicators that have been identified as being critical for HSS and thus for UHC, but which are, by definition, incomplete. The readers may therefore be a bit frustrated not to get more information on each building block. Moreover,

although all the authors have long experience in studying and/or supporting the health sector and UHC policies in Senegal and elsewhere, and have tried to make as objective an assessment as possible, our assessment could have been stronger if shared and discussed with a wider audience.

Despite these limitations, this paper offers interesting insights into a number of policy-relevant issues that may guide the Senegalese authorities – as well as inspire authorities from other countries with similar contexts – in the progressive adaptation of their UHC policy. Indeed, experience from other countries corroborates the view that similar systemic constraints hamper progress towards UHC. Regarding governance, the literature is quite consistent in pointing to the fact that progress towards UHC needs above all a strong political commitment – including pressure from civil society [37,38,55–57], which then has to translate into sound policy and planning documents, adequate supportive legislation, inclusive coordination mechanisms and intelligence based accountability. The financing aspects of UHC are also very much developed in the recent literature; indeed, a major challenge for many countries is to move away from out-of-pocket payments and develop prepayment and pooling, but also to shift to strategic purchasing and improve financial management systems in such a way as to improve health spending efficiency [33,41,44,58–61]. Reducing the fragmentation of financial protection regimes has also been identified as important when it comes to reducing disparities, even if difficult to implement – indeed, once different pools have been established, it is politically difficult to integrate or harmonise them because integration involves the redistribution of resources across organised interest groups [36,39,40,48]. Human resources for health are necessary for the availability and the quality of health services; yet, many countries facing human resource gaps ought to match their commitment to UHC with their capacity to deliver health services, depending on the availability of a qualified and motivated health workforce [39,62]. The health information system building block is particularly important when it comes to developing an ability to track equity issues and make sure the policies implemented in the name of UHC actually help reduce health inequities [63]. Finally, the service delivery building block is probably the one which is most studied in relation to UHC – both with respect to the service packages to be offered (see the recent debates on “priority setting” for UHC) [35,40,64–68] and the quality of health services. All these challenges are encountered in Senegal as is the case in many other countries.

5. Conclusions

This analysis shows that despite the fact that the Senegalese government is strongly committed to the objective of UHC, and despite the fact that many institutions are now in place to deliver UHC, important weaknesses limit progress along the two dimensions of UHC, originating in the governance and financing levels (resource allocation and fragmentation). These constraints are acknowledged by the Senegalese health authorities, notably in the recent National Health Financing Strategy and PNDSS 2019–2028. The recent Covid-19 crisis has also exacerbated the need to have a strong and resilient health system and a population protected from health hazards. Solutions have been proposed, especially those associated with expanding the supply of (specialised) health services to disadvantaged areas, and of harmonising, or possibly integrating, the different health insurance and medical assistance schemes. These are completely in line with a consistent HSS policy. However, this is a major challenge which necessitates strong political will, and is constrained by lack of fiscal space, continued disparities in resource allocation and resistance to merging existing fragmented schemes. For instance, while health sector policy documents in Senegal often intend to reduce disparities, equity is often referred to a rhetoric principle, without sufficient consideration for concrete ways for implementation [69]. In addition, other constraints to UHC are found on the demand side: the predominant influence of social determinants of health are difficult to tackle because they need inter-sectoral action [70] This can only be achieved if accountability is also envisioned in a multi-sectoral way – for instance, if all the departments contributing to the UHC policy receive a clear mission statement with well-defined roles and responsibilities, and are held accountable for their results in these respects.

CRedit authorship contribution statement

Elisabeth Paul: Conceptualization, Formal analysis, Investigation, Writing - original draft. **Youssoupha Ndiaye:** Formal analysis, Investigation, Writing - review & editing. **Farba L. Sall:** Formal analysis, Investigation, Writing - review & editing. **Fabienne Fecher:** Resources, Supervision, Project administration. **Denis Porignon:** Conceptualization, Methodology, Writing - review & editing.

Declaration of competing interest

The authors declare not conflict of interest.

Acknowledgments

The contribution of EP and FF was supported by the “Effi-Santé” project funded through the ARC grant for Concerted Research Actions, financed by the French Community of Belgium (Wallonia-Brussels Federation).

References

- [1] World Health Organization. Primary health care on the road to universal health coverage - 2019 monitoring report. World Health Organization; 2019.
- [2] République du Sénégal, Ministère de la Santé et de l'Action sociale (MSAS). Stratégie nationale de financement de la santé (SNFS) pour tendre vers la couverture sanitaire universelle; 2017.
- [3] Performances majeures de la CMU [Internet]. Agence de la Couverture Maladie Universelle. Available from: <http://www.agencecmu.sn/performances-majeures-de-la-cmu>; 2019. [cited 2020 May 22].
- [4] République du Sénégal, Ministère de la Santé et de l'Action sociale. Plan National de Développement Sanitaire et Social (PNDSS) 2019–2028. Available from: <http://www.sante.gouv.sn/publications/plan-national-de-developpement-sanitaire-et-social-2019-2028>; 2019. [Internet, cited 2020 May 18].
- [5] Gueye MA. Etat des lieux de l'implication des prestataires privés dans la couverture maladie universelle. SHOPS Plus pour le Ministère de la santé et de l'action sociale et l'USAID; Sep 2017.
- [6] Kutzin J, Sparkes SP. Health systems strengthening, universal health coverage, health security and resilience. *Bull World Health Organ.* Jan 1 2016;94(1):2.
- [7] Sambo LG, Kirigia JM. Investing in health systems for universal health coverage in Africa. *BMC Int Health Hum Rights.* 2014;14. <https://doi.org/10.1186/s12914-014-0028-5> [Internet].
- [8] World Health Organization. Everybody's business — strengthening health systems to improve health outcomes. WHO's framework for action; 2007.
- [9] de Savigny D, Adam T. Systems thinking for health systems strengthening. Available from: Alliance for Health Policy and Systems Research and World Health Organization <http://www.who.int/alliance-hpsr/resources/9789241563895/en/>; 2009.
- [10] World Health Organization. Thirteenth General Programme of Work 2019–2023. Promote health - keep the world safe - serve the vulnerable; 2019.
- [11] République du Sénégal, Ministère de la santé publique. Déclaration de la politique nationale de santé; 1989.
- [12] Ministère de la Santé et de l'Action sociale. Les Comités de gestion se muent en Comités de développement sanitaire (CDS). Site web du MSAS. Available from: <http://www.sante.gouv.sn/activites/les-comites-de-gestion-se-muent-en-comites-de-developpement-sanitaire-cds>; 2018. [Internet, cited 2020 May 22].
- [13] Cissé CAT. Identification d'une stratégie d'amélioration de la disponibilité et de l'utilisation des documents de politique, normes et protocoles de soins dans les structures sanitaires privées du Sénégal – SHOPS Plus Sénégal. Bethesda, Maryland: Sustaining Health Outcomes through the Private Sector Plus Project, Abt Associates Inc.; 2017.
- [14] Diop IL, Diop Touré I, Koita M, Diop M, El-Khoury M. Cartographie du Secteur Privé de la Santé au Sénégal 2016-2017. Sustaining Health Outcomes through the Private Sector Plus Project. Dakar, Senegal: Abt Associates Inc.; Mars; 2018.
- [15] Agence Nationale de la Statistique et de la Démographie (ANSD), The DHS Program, ICF. Sénégal: Enquête Continue sur la Prestation des Services de Soins de Santé (ECPSS). Dakar, Sénégal et Rockville, Maryland, USA: ANSD et ICF; 2017 Available from: <http://www.ansd.sn/ressources/rapports/Rapport%20Final%20ECPSS%202017.pdf> [Internet, 2018 Sep, cited 2019 May 21].
- [16] Daff BM, Diouf S, Diop ESM, Mano Y, Nakamura R, Sy MM, et al. Reforms for financial protection schemes towards universal health coverage, Senegal. *Bull World Health Organ.* Feb 1 2020;98(2):100–8.
- [17] McIntyre D, Meheus F, Rottingen J-A. What level of domestic government health expenditure should we aspire to for universal health coverage? *Health Econ Policy Law.* Apr 2017;12(2):125–37.
- [18] ADE. Cadre de Mesure de la Performance de la Gestion des Finances Publiques au Sénégal – Rapport sur la seconde évaluation du système de la GFP. Rapport final. Available from: Aide à la Décision Economique (ADE) <https://pefa.org/sites/default/files/assessments/comments/SN-Jun11-PFMPR-Public.pdf>; Jun 2011. [Internet, cited 2017 Nov 22].
- [19] Fouad M, Chamseddine N, Gonguet F, Imbert B, Samborski P, Tenne A. Senegal - fiscal transparency evaluation. Washington DC: International Monetary Fund; Jul 2018

- Available from: <https://www.imf.org/en/Publications/CR/Issues/2019/01/30/Senegal-Fiscal-Transparency-Evaluation-46569> [Internet, cited 2019 May 21].
- [20] International Monetary Fund (IMF). Staff report for the 2018 Article IV Consultation and Seventh Review Under the Policy Support Instrument and Request for Modification of Assessment Criteria—Debt Sustainability Analysis—press release; staff report; and statement by the Executive Director for Senegal. Washington DC: International Monetary Fund; Jan 2019 Report No.: IMF Country Report No. 19/27. Available from: <https://www.imf.org/en/Publications/CR/Issues/2019/01/28/Senegal-Staff-Report-for-the-2018-Article-IV-Consultation-and-Seventh-Review-Under-the-46553> [Internet, cited 2019 May 21].
- [21] République du Sénégal, Ministère de la Santé et de la Prévention (MSP) D des R humaines (DRH). Plan national de développement des ressources humaines en santé (PNDRHS); 2010.
- [22] Ministère de la Santé et de l'Action Sociale (MSAS). Rapport de performances de l'année 2016 du DPPD 2016–2018. Dakar; 2017.
- [23] World Bank. Service delivery indicators –education/health – Senegal. Washington DC: International Bank for Reconstruction and Development/The World Bank; 2013.
- [24] Organisation mondiale de la Santé (OMS). Liste Nationale des Médicaments et Produits Essentiels (LNMPE), Révision 2013 - Sénégal. Available from: Organisation mondiale de la santé (OMS)<http://apps.who.int/medicinedocs/fr/m/abstract/Js20181fr/>; 2013. [Internet].
- [25] Ministère de la Santé et de l'Action Sociale (MSAS). Rapport d'évaluation de la gestion efficace des vaccins (GEV) au Sénégal, 28 septembre au 30 octobre 2015, Résultats et recommandations de l'équipe d'évaluation, Draft Final V3; Oct 2015.
- [26] Barnes J, Bishop A, Cuellar C. Senegal Private Health Sector Rapid Assessment [Internet]. Bethesda, Maryland: Abt Associates Inc.; 2009 [cited 2020 Jul 18]. (Private Sector Partnerships-One project). Available from: https://www.shopsplusproject.org/sites/default/files/resources/5272_file_FINAL_Senegal_Assessment_rev.pdf.
- [27] République du Sénégal, Ministère de la Santé, de la Prévention et de l'Hygiène publique (MSPH). Plan de suivi et d'évaluation du PNDS. Available from: http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/senegal/plan_de_suivi_evaluation_du_pnds.pdf; 2009.
- [28] Ministère de la Santé et de la Prévention (MSP), Service National de l'Information Sanitaire (SNIS). Plan stratégique du Système d'Information Sanitaire du Sénégal 2012-2016. Available from: <http://www.sante.gouv.sn/sites/default/files/planstrasen.pdf>; 2012.
- [29] Ministère de la Santé et de l'Action sociale (MSAS). Projet de mise en place du logiciel DHIS2 au Sénégal; 2013.
- [30] Agence Nationale de la Statistique et de la Démographie (ANSD), ICF. Sénégal: Enquête Démographique et de Santé Continue au Sénégal (EDS-Continue 2017). Rockville, Maryland, USA: ANSD et ICF; 2018 Available from: <http://www.ansd.sn/ressources/rapports/Rapport%20Final%20EDS%202017.pdf> [Internet].
- [31] Tine J, Faye S, Nakhimovsky S, Hatt LE. Universal Health Coverage Measurement in a Lower-Middle-Income Context: A Senegalese Case Study. Bethesda, Maryland: Abt Associates Inc.; 2014 (Health Finance & Governance Project).
- [32] Leslie HH, Malata A, Ndiaye Y, Kruk ME. Effective coverage of primary care services in eight high-mortality countries. *BMJ Glob Health*. 2017;2(3):e000424.
- [33] World Health Organization. Health systems financing – the path to universal coverage, the world health report 2010. Available from: World Health Organization<http://www.who.int/whr/2010/en/>; 2010.
- [34] Giedion U, Alfonso EA, Diaz Y. The impact of universal coverage schemes in the developing world: a review of the existing evidence. Universal Health Coverage (UNICO) studies series; no. 25. Washington D.C.: The World Bank; 2013 Available from: <http://documents.worldbank.org/curated/en/349621468158382497/The-impact-of-universal-coverage-schemes-in-the-developing-world-a-review-of-the-existing-evidence> [Internet, cited 2017 Nov 13].
- [35] Cotlear D, Nagpal S, Smith O, Tandon A, Cortez R. Going universal – how 24 developing countries are implementing universal health coverage reforms from the bottom up. Washington, DC: The World Bank; 2015 Available from: <http://documents.worldbank.org/curated/en/936881467992465464/pdf/99455-PUB-Box393200B-O-UO-9-PUBDATE-9-28-15-DOI-10-1596-978-1-4648-0610-0-EPI-210610.pdf> [Internet, cited 2017 Nov 13].
- [36] McIntyre D, Ranson MK, Aulakh BK, Honda A. Promoting universal financial protection: evidence from seven low- and middle-income countries on factors facilitating or hindering progress. *Health Res Policy Syst*. 2013;11. <https://doi.org/10.1186/1478-4505-11-36> [Internet].
- [37] Atun R, de Andrade LOM, Almeida G, Cotlear D, Dmytraczenko T, Frenz P, et al. Health-system reform and universal health coverage in Latin America. *Lancet*. 2015;385(9974):1230–47.
- [38] Maeda A, Cashin C, Harris J, Ikegami N, Reich MR. Universal health coverage for inclusive and sustainable development: a synthesis of 11 country case studies. Directions in development; human development. Washington, DC: World Bank Group; 2014 Available from: <http://documents.worldbank.org/curated/en/575211468278746561/Universal-health-coverage-for-inclusive-and-sustainable-development-a-synthesis-of-11-country-case-studies> [Internet, cited 2017 Nov 13].
- [39] Reich MR, Harris J, Ikegami N, Maeda A, Cashin C, Araujo EC, et al. Moving towards universal health coverage: lessons from 11 country studies. *Lancet Lond Engl*. 2016 Feb 20;387(10020):811–6.
- [40] Dmytraczenko T, Almeida G. Toward universal health coverage and equity in Latin America and the Caribbean: evidence from selected countries. Directions in development. The World Bank; 2015 Available from: http://www.paho.org/hq/index.php?option=com_content&view=article&id=11065%3A2015-universal-health-coverage-latin-america-caribbean&catid=3316%3Apublications&Itemid=3562&lang=en [Internet, cited 2018 Mar 22].
- [41] Kutzin J. Anything goes on the path to universal health coverage? No. *Bull World Health Organ*. 2012 Nov 1;90(11):867–8.
- [42] Lagomarsino G, Garabrant A, Adyas A, Muga R, Otoo N. Moving towards universal health coverage: health insurance reforms in nine developing countries in Africa and Asia. *Lancet*. 2012;380. [https://doi.org/10.1016/S0140-6736\(12\)61147-7](https://doi.org/10.1016/S0140-6736(12)61147-7) [Internet].
- [43] Cheng T-M. Universal health coverage: an overview and lessons from Asia. *Harv Public Health Rev*. 2015;5 Available from: <http://harvardpublichealthreview.org/universal-health-coverage-an-overview-and-lessons-from-asia/>. [Internet].
- [44] Kutzin J. Health financing for universal coverage and health system performance: concepts and implications for policy. *Bull World Health Organ*. Aug 1 2013;91(8):602–11.
- [45] Paul E, Fecher F, Meloni R, van Lerberghe W. Universal health coverage in francophone Sub-Saharan Africa: assessment of Global Health Experts' confidence in policy options. *Glob Health Sci Pract*. 2018 Jun 27;6(2):260.
- [46] Kutzin J, Yip W, Cashin C. Alternative financing strategies for Universal Health Coverage. In: Scheffler RM, editor. World scientific handbook of global health economics and public policy. Hackensack, NJ: World Scientific Publishing; 2016. p. 267–309.
- [47] Moreno-Serra R, Smith PC. Does progress towards universal health coverage improve population health? *Lancet Lond Engl*. Sep 8 2012;380(9845):917–23.
- [48] Nicholson D, Yates R, Warburton W, Fontana G. Delivering Universal Health Coverage: a guide for policymakers. Report of the WISH Universal Health Coverage Forum 2015. World Innovation Summit for Health; 2015 Available from: <http://www.wish-qatar.org/summit/2015-summit/reports-en/universal-health-coverage-en> [Internet, cited 2017 Nov 13].
- [49] Hatt LE, Johns B, Connor C, Meline M, Kukla M, Moat K. Impact of health systems strengthening on health. Bethesda, MD: Health Finance & Governance Project, Abt Associates Inc.; 2015 Available from: <https://www.hfgproject.org/wp-content/uploads/2016/03/Impact-of-Health-Systems-Strengthening-on-Health-7-24-1.pdf> [Internet, cited 2017 Nov 13].
- [50] Kiény MP, Bekedam H, Dovlo D, Fitzgerald J, Habicht J, Harrison G, et al. Strengthening health systems for universal health coverage and sustainable development. *Bull World Health Organ*. Jul 1 2017;95(7):537–9.
- [51] Yip W, Hafez R. Reforms for improving the efficiency of health systems: lessons from 10 country cases. Synthesis report. WHO/HIS/HGF/SR/15.1. Geneva: World Health Organization; 2015 Available from: http://www.who.int/health_financing/documents/synthesis_report/en/ [Internet, cited 2017 Nov 13].
- [52] Stigler FL, Macinko J, Pettigrew LM, Kumar R, van Weel C. No universal health coverage without primary health care. *The Lancet*. 2016;387(10030):1811.
- [53] World Bank. Business unusual: accelerating Progress TOWARDS universal health coverage. Washington DC. Available from: <http://hdl.handle.net/10986/29730>; 2018.
- [54] Leegwater A, Wong W, Avila C. A concise, health service coverage index for monitoring progress towards universal health coverage. *BMC Health Serv Res*. Jun 12 2015;15:230.
- [55] Stuckler D, Feigl AB, Basu S, McKee M. The political economy of universal health coverage; background paper for the global symposium on health systems research 16–19 November 2010. Available from: <https://pdfs.semanticscholar.org/3261/5063a79a268af0aeea7fbab993fb609a78b1.pdf>; 2010.
- [56] Rosenquist R, Golichenko O, Roosen T, Ravenscroft J. A critical player: the role of civil society in achieving universal health coverage. *Glob Health Gov*. Summer 2013;6(2) Available from: <http://blogs.shu.edu/ggh/2013/09/18/a-critical-player-the-role-of-civil-society-in-achieving-universal-health-coverage/>. [Internet, cited 2019 May 22].
- [57] Gupta V, Kerry VB, Goosby E, Yates R. Politics and universal health coverage—the post-2015 global health agenda. *N Engl J Med*. Sep 24 2015;373(13):1189–92.
- [58] Carrin G, Mathauer I, Xu K, Evans DB. Universal coverage of health services: tailoring its implementation. *Bull World Health Organ*. Nov 2008;86(11):857–63.
- [59] Jowett M, Kutzin J. Raising revenues for health in support of UHC: strategic issues for policy makers. Health financing policy brief no. 1, WHO/HIS/HGF/PolicyBrief/15.1. Available from: World Health Organizationhttp://apps.who.int/iris/bitstream/10665/192280/1/WHO_HIS_HGF_PolicyBrief_15.1_eng.pdf?ua=1; 2015.
- [60] Mathauer I, Dale E, Jowett M, Kutzin J. Purchasing health services for universal health coverage: how to make it more strategic? Health financing policy brief no. 6. World Health Organization; 2019.
- [61] Cashin C, Bloom D, Sparkes S, Barroy H, Kutzin J, O'Dougherty S. Aligning public financial management and health financing – sustaining progress toward universal health coverage. Geneva, Switzerland: World Health Organization; 2017 [(Health Financing Working Paper No. 4. WHO/HIS/HGF/HF). Report No.: WorkingPaper/17.4].
- [62] Scheil-Adlung X, Behrendt T, Wong L. Health sector employment: a tracer indicator for universal health coverage in national social protection floors. *Hum Resour Health*. 2015 Aug 31;13:66.
- [63] World Health Organization, World Bank. Tracking Universal Health Coverage: 2017 global monitoring report; 2017.
- [64] Nakhimovsky S, Peterson L, Holtz J, Connor C, Mehtsun S, Folsom A, et al. Using evidence to design health benefit plans for stronger health systems: lessons from 25 countries. Bethesda: Abt Associates; 2015.
- [65] World Health Organization. Making fair choices on the path to universal health coverage. Final report of the WHO Consultative Group on Equity and Universal Health Coverage. Available from: World Health Organizationhttp://www.who.int/choice/documents/making_fair_choices/en/; 2014. [Internet, cited 2017 Nov 13].
- [66] Norheim OF. Ethical perspective: five unacceptable trade-offs on the path to universal health coverage. *Int J Health Policy Manag*. Oct 11 2015;4(11):711–4.
- [67] Chalkidou K, Glassman A, Marten R, Vega J, Teerawattananon Y, Tritasavit N, et al. Priority-setting for achieving universal health coverage. *Bull World Health Organ*. Jun 1 2016;94(6):462–7.
- [68] Glassman A, Giedion U, Smith P. What's in, what's out? Designing benefits for universal health coverage. Center for Global Development. 2017:376.
- [69] Paul E, Deville C, Bodson O, Sambieni NE, Thiam I, Bourgeois M, et al. How is equity approached in universal health coverage? An analysis of global and country policy documents in Benin and Senegal. *Int J Equity Health*. Dec 17 2019;18(1):195.
- [70] Jamison DT, Alwan A, Mock CN, Nugent R, Watkins D, Adeyi O, et al. Universal health coverage and intersectoral action for health: key messages from Disease Control Priorities, 3rd edition. *Lancet Lond Engl*. Mar 17 2018;391(10125):1108–20.