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# Effects of Health Insurance Schemes on Utilization of Healthcare Services and Financial Risk Protection: A Systematic Review

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**Abstract** Universal health coverage (UHC) assures healthcare utilization and financial risk protection. Health insurance schemes are highly variable in the scope of the benefits package, the magnitude of premiums, deductibles, copayments, and the range of providers and health facilities participating in the networks. The variability has different effects utilization and financial risk protection. This systematic review explores the effect of various models of health insurance on utilization of healthcare services, and financial risk protection. We included 22 studies conducted in 17 countries that implement different health insurance schemes. Overall, evidence on the impact of health insurance on financial protection varied across studies reviewed. Seven studies reported a reduction in out-of-pocket expenditure, two studies had no statistically significant effect; and one study reported an increase in out-of-pocket expenditure. While 14 studies found a positive effect on healthcare utilization, six studies had no statistically significant impact on utilization of healthcare. The findings of this review show that enrollment in various insurance schemes can protect households and individuals from catastrophic out-of-pocket spending and increase healthcare utilization. The consistent evidence of the positive effects of health insurance highlights the need to explore creative and responsive insurance schemes contextualized to meet the needs of different groups and achieve UHC.

**Keywords** Health insurance, Health financing, Universal Health Coverage, Access, Financial risk protection

## 1. Introduction

Universal health coverage (UHC) is driving the global health agenda [1]. It is anchored in the Sustainable Development Goal (SDG) 3, target 3.8 that aims at providing access to key promotive, preventive, curative, and rehabilitative health interventions for all at an affordable cost [2]. The World Health Report of 2010 is exclusively devoted to universal health coverage and provides recommendations for changing health financing systems to achieve UHC [3]. A suitable health financing mechanism enables the health sector to achieve its goal of ensuring access to quality and affordable health care for all while guaranteeing financial risk protection.

Health financing remains one of the key issues in both developed and developing countries. The Abuja declaration recommends governments to allocate 15% of the total national expenditure budget to health [4]. However, the level of spending on health for many developing countries remains below the Abuja Declaration threshold [5-8]. While many countries would like to have universal health coverage for their citizens, economic downturns experienced in the recent past, and the continued rise in healthcare costs have not provided an opportunity to do so. Therefore, many countries cannot provide quality health services to their citizens without enduring financial hardship, which is against the World Health Assembly resolution 58.33 (2005) on *"Sustainable health financing, universal coverage, and social health insurance"* [9].

Health financing systems include revenue collection, pooling, and purchasing functions, which are central to achieving universal coverage [10]. Health insurance is based on the principle of pooling of funds and entrusting the management of such funds to a third party that pays for healthcare costs of members who contribute to the pool. It secures financial access to health care for individuals and protects against potentially devastating economic shocks incurred while seeking health care. In addition to serving the typical functions of risk insurance, health insurance has developed as a mechanism for financing or pre-paying a variety of health care benefits, including routine preventive

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services, whose use is neither rare nor unexpected [11].

There are four main modalities of health insurance: (1) private health insurance, (2) national health insurance, (3) social health insurance, and (4) community health insurance. Private health insurance could be a mandatory or voluntary insurance system where the revenue is created by the premium paid by the insured whereas national health insurance covers the health care costs of all the citizens where the financing source is the national or state government [12]. The revenue for health insurance is usually funded by tax or fixed budget allocation [13]. The social health insurance scheme is a mandatory insurance plan where the financing source is the employer or employee from salary or wage [14]. Community-based health insurance is voluntary health insurance where the premium is paid out of pocket by the insured members and this the pool is generated within a defined community [15].

A mandatory health insurance scheme is one in which there is a legal requirement for certain groups or entire population to become members. The insured with the help of their employers can pay the whole cost of the services they use, not just a small part of the cost which in practice is all that user charges can collect. The Contributions are community rated, i.e. based on the average expected cost of health service for the entire insured group instead of individuals or groups risk of illness [16]. Examples include the National Health Insurance Fund (NHIF) in Kenya and Tanzania, and the National Health Insurance Scheme (NHIS) in Ghana.

Social health insurance (SHI) is another organizational mechanism for raising and pooling funds to finance health services, along with tax-financing, private health insurance, community insurance, and others [17]. Tax-funded systems use general revenue taxation to pay for the bulk of all healthcare services. While these services are delivered predominantly through a public sector delivery system, some private providers collect their fees from the government and private hospitals and clinics. This system is being implemented in the United Kingdom, Sweden, and New Zealand [18].

For voluntary health insurance schemes, the decision to join and/or pay for premiums is voluntary [19]. For instance, Community-Based Health Insurance (CBHI) is a form of micro health insurance which is mainly used in rural areas in developing countries [20]. It helps low-income households manage risks and reduce their vulnerability in the face of financial shocks. It is anchored on voluntary membership, non-profit objective, linked to a health care provider (often a hospital in the area), risk pooling and relies on an ethic of mutual aid/solidarity [21]. A low-income household is one whose income is low, relative to other households of the same size. A household is commonly classified as low-income, and can be eligible for certain types of government assistance, if its income is less than twice the poverty threshold. In 2012, a family of four would be considered low income if their taxable income was below $45,000 [22].

There is a growing need to take stock of the effects of different health insurance schemes on utilization of healthcare services and financial risk protection. This systematic review provides a more in-depth look at the effect of the different models of health insurance schemes on utilization of healthcare services, and financial risk protection. The results are essential for policymakers in their formulation of interventions to achieve UHC.

## 2. Methods

This review adopted the PRISMA guideline for systematic reviews to design the search for research articles in English. This systematic review was not registered with PROSPERO. See figure 1 below

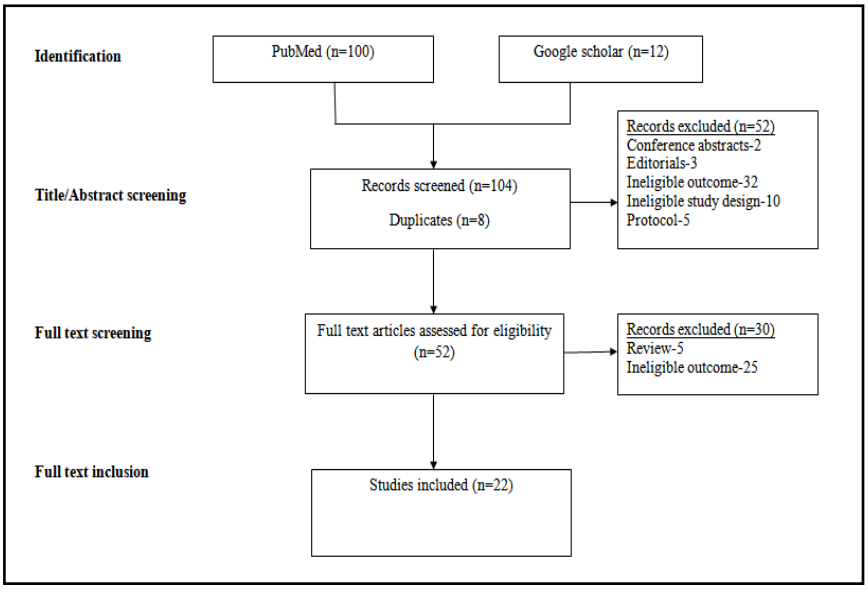


**Figure 1.** Literature screening process

***Search strategy*** systematic search for published literature in English was conducted in PubMed and Google Scholar. References of retrieved articles and reports were screened to identify additional published studies. The key words used in the search were health insurance, health financing, universal health coverage, access to healthcare, financial risk protection and their synonyms. The following search strategy was used; (((((((health) AND (medical)) AND (insurance)) OR (cover)) OR (demand)) OR (coverage)) AND (utilization)) OR (access)) AND (financial risk protection). The PubMed search yielded a total of 112 studies. Non-empirical studies (commentaries, editorials, etc.), protocols, conference abstracts, that were based on tertiary data, and studies that did not examine one of the three aspects, i.e., coverage prevalence, access to care, and utilization were excluded from the review.

***Study eligibility:*** Studies were included in this systematic review if they met all of the following criteria: (1) Empirical studies that were related to the goals of UHC. (2) The study provided clear and full information of research design and methods. (3) The study was in English or a translation was available.

The PICO was summarized as follows;

- **Population**: Households, Individuals.

There were no geographical restrictions (Globally).

- **Intervention:** Health insurance
- **Comparator:** There was no comparator for this review.
- **Outcome:** Utilization of health services.

***Study selection****:* The initial database search yielded 112 results. Two individuals independently reviewed these articles. All disagreements were re-examined jointly and after appropriate corrections were made reviewers selected the studies to be included in the review. Titles and abstracts of the identified articles were screened to exclude duplicates ($n = 8$) and studies not relevant to the topic ($n = 52$). The remaining articles ($n = 52$) were reviewed in full text. After the full review 22 studies met the eligibility criteria.

***Data extraction****:* The 22 articles that fit the inclusion criteria were extracted for the following implementation-related content: title, author, publication year, objective, country, study design, study setting, research instrument, type of drug, quality of publication, findings and recommendations. All information related to the study objective was then extracted from each publication reviewed into an extraction matrix (MS Excel file) then synthesized and presented in narrative form.

***Assessment of methodological quality:*** We assessed the risk of bias in included studies using recommended risk of bias tools. We summarized the certainty of evidence using the GRADE tool [23].

# 3. Findings

The studies included were published between 2004 and 2019. The 22 studies were conducted in 17 countries globally - seven from Africa, ten from Asia, three from Europe and two from America. These countries were selected to exhibit a range of income levels, UHC-related progress, and different health insurance schemes. The types of insurance schemes varied from CBHIs, National Health Insurance Schemes, voluntary, and subsidized schemes. Table 1 summarizes the study characteristics and the findings.

**Table 1.** Summary of Findings

| | Author | Country | Type of insurance | Objective | Findings |
|---|---|---|---|---|---|
| 1 | Robyn *et al.,* 2012 | Burkina Faso | CBHI | To examine the role of CBHI in influencing health-seeking behavior in Burkina Faso | • Many of the insured still continued to seek treatment through informal methods, such as traditional healers or purchase of drugs from local pharmacies (often with informal diagnosis/prescription from pharmacy merchants). |
| 2 | Robyn *et al.,* 2004 | Burkina Faso | CBHI | To test whether service utilization has indeed increased in response to insurance availability. | • The results provided only weak support for the hypothesis that the CHBI program increased access to facility-based professional health care.<br>• Odds ratios of 1.33 and 1.23 suggested that individuals residing in areas with insurance scheme were marginally more likely to seek treatment in general, and also to seek facility-based professional care. |
| 3 | Dalinjong *et al.,* 2017 | Ghana | National Health Insurance Scheme (NHIS) | To examine the association between health insurance status and utilization of outpatient and inpatient health services in rural poor communities. | • The insured had 2.51 and 2.78 increased odds of utilizing outpatient and inpatient healthcare services respectively.<br>• Respondents with a history of recent illness or injury, poor or very poor self-reported health status [32.4 (95% CI 29.4–35.8) and 5.72 (95% CI 4.6–7.1)], and those on chronic medication [2.79 (95% CI 2.2–3.5) and 3.48 (95% CI 2.5–4.8)] also had increased odds of utilizing both outpatient and inpatient health services.<br>• Compared to the uninsured, the insured are more likely to choose formal health facilities than informal care including self-medication when ill. |

| | Author | Country | Type of insurance | Objective | Findings |
|---|---|---|---|---|---|
| 4 | Goudge *et al.*, 2018 | South Africa | Voluntary health insurance scheme Government Employees Medical Scheme (GEMS) | To determine whether the new scheme has assisted in efforts to move towards UHC. | • GEMS increased utilization for the insured compared to the uninsured.<br>• The mean number of outpatient visits per month was 0.33 for the uninsured, 0.80 for the privately insured and 0.74 for GEMS members.<br>• This association was significant in multivariate analysis: the adjusted odds ratio [AOR] of an outpatient visit was 0.35 in the uninsured compared to GEMS members (95%CI = 0.25–0.48).<br>• The insured were twice as likely to be taking chronic medication in comparison to the uninsured (15% insured; 35.0% privately insured; 33.3% GEMS).<br>• Nearly three times as many of the insured had been admitted to hospital in the last 12 months compared to the uninsured (5.9% uninsured; 14.5% privately insured; 14.1% GEMS).<br>• Cross-subsidization within the scheme provided lower-paid civil servants with improved access to outpatient care at private facilities and chronic medication. Their outpatient (0.54 visits/month) and inpatient utilization (10.1%/year) approximates that of the overall population (29.4/month and 12.2% respectively). |
| 5 | Levine *et al.*, 2016 | Cambodia | CBHI SokapheapKrousatYeugn (SKY) | Examined the impact of SKY insurance on (i) economic outcomes (out-of-pocket medical spending and new debt to pay for health care), (ii) health care utilization (timely utilization of curative care and substitution of private health centers and traditional medicine by public facilities), and (iii) health outcomes (frequency of major health shocks, stunting and wasting). | • SKY did not increase the amount of care sought, the insured increased the use of public facilities for serious health problems and decreased the use of private care and local drug sellers<br>• SKY has the greatest impact on economic outcomes. Compared to the control mean of 52.2 percent, the insured were 10.8 percentage points less likely to have a large economic impact such as taking on new debt due to a health shock<br>• There was no statistically significant impact of SKY on health |
| 6 | Panpiemras *et al.*, 2011 | Thailand | Universal Coverage Scheme (UCS) (subsidized scheme) | To assess the impact of the UC in Thailand on the demand for health care services using hospital level data. | • The number of outpatient by 61.39% while the number of outpatient visits increased by 46.59% in the year 2002 |
| 7 | Prinja *et al.*, 2019 | India | National Health Insurance Scheme (RSBY) | To assess the association of health insurance schemes in general, and RSBY (National Health Insurance Scheme) in particular on (i) extent and pattern of healthcare utilization and (ii) the relationship of health insurance and RSBY on out-of-pocket expenditures and financial risk protection. | • There was higher overall private sector utilization for outpatient care among the insured population. Though, variations in utilization of health facilities among various HI schemes were observed.<br>• Public sector facilities were utilized at a higher rate by individuals enrolled under HI schemes of State Government (38%) followed by population enrolled under SHI and RSBY i.e. 24% and 17% respectively.<br>• Utilization of public sector facilities was minimum (6%) among population enrolled under private HI.<br>• There was no relationship between enrolment in thepublicly financed health insurance scheme financial risk protection |
| 8 | Sparrow *et al.*, 2013 | Indonesia | JKN (Voluntary and subsidized) | To assess the impact of a subsidized social health insurance for the informal sector and the poor in Indonesia. | • The Indonesian Askeskin program had a strong impact on the poor, as coverage increased utilization of public care for the poorest quartile by 0.055 visits; while for the richest was no impact. |
| 9 | Jian Hu *et al.*, 2009 | Thailand | Universal coverage | To explore the role of health insurance in influencing the | • In 2000, the insured respondents were more than once as likely as the uninsured respondents to use health services. |

| | Author | Country | Type of insurance | Objective | Findings |
|---|---|---|---|---|---|
| | | | health scheme (UC, commonly known as the "30 Baht Scheme") | use of health care for Thai, Thai ethnic minority, and ethnic minority migrants from 2000 to 2004. | • In 2004 the insured were 4 times more as likely as the uninsured to use health services.<br>• Insured Thais were nearly 7 times more likely than uninsured Thais to use health services in 2004, compared to in 2000, the insured Thais were 1.5 times more likely than uninsured Thais to use health services.<br>• This is largely attributable to the great increase in health insurance coverage from 2001 to 2004. This suggests that health insurance has a strong effect on the use of health services. |
| 10 | Raza *et al.*, 2016 | India | CBHI | To evaluate the impact of CBHI schemes offered to families of women belonging to Self-Help Groups SHGs in rural India on healthcare utilization and expenditures. | • There was no significant evidence that access to the CBHI scheme reduced out-of-pocket expenditures.<br>• The intention-to-treat (ITT) estimates show no significant effect of the offer of insurance on any utilization outcome, including care from rural medical practitioners (RMPs) who were intended to be the main source of outpatient care covered by CBHI in all three sites.<br>• Scheme uptake was about 23%, and the average treatment effect on the treated (ATET) estimates was about four times larger than the ITT estimates but was insignificant.<br>• At one of the sites (Pratapgarh) studied, access to insurance led to a decline in utilization of outpatient care.<br>• This may be partly due to the lack of initial coverage of outpatient care in this site. But it also appears indicative of the failure of the schemes examined to improve access and financial protection. |
| 11 | Liabsuetrakul *et al.*, 2011 | Thailand | Universal Coverage Scheme, Social Security Scheme, and Civil Servant Medical Benefit Scheme | To assess the effect of health insurance and other factors on maternal delivery care utilization and the perception of delays and barriers to delivery care among women living in Songkhla province, Thailand | • There was high utilization of delivery care in Thailand, but with inequality of access to health care since women who gave birth at home were mostly Muslim, low educated and had a lower family income compared to those who gave birth at a hospital.<br>• Of 2,847 women, 2,822 delivered at a hospital and 25 at home, of which 80% and 40% had health insurance for delivery care, respectively.<br>• The effect of health insurance was not significant in determining the place of delivery. It was only significant in relation to the perceptions of delays and barriers in women who had hospital-based delivery, especially among those who were insured. |
| 12 | Guindon *et al.*, 2014 | Vietnam | Subsidized scheme | To assess the impact of health insurance on health services utilization and health outcomes in Vietnam | • Providing free care to under six year old children had a statistically significant and substantial impact on the utilization of outpatient preventive services.<br>• The coverage of children below six years increased outpatient vaccination visits nearly two-fold.<br>• Difference-in-differences estimates also suggested that coverage for children below six years had a statistically significant and fairly substantial impact on the number of outpatient visits but not on the number of inpatient admissions (0.22, which represents an increase of about 17%).<br>• They did not find any significant effect on health outcomes (number of sickness or bed days and under‐5 mortality, respectively). |
| 13 | Lu *et al.*, 2012 | Rwanda | CBHI | To evaluate the impact of Mutuelles on achieving universal coverage of medical services and financial risk protection in its first eight years of implementation. | • The utilization for under-five children with an acute respiratory infection (ARI), diarrhea, or fever increased from 13% in 2000 to 33% in 2008, and the utilization of skilled-birth attendants rose from 39% in 2000 to 67% in 2008.<br>• Between 2000 and 2006, the average Rwandan annual household OOPS (in 2000 RWF) fell significantly from 16,883 to 7,967 RWF (in 2000 RWF) while the percentage of households incurring catastrophic health spending fell |

| | Author | Country | Type of insurance | Objective | Findings |
|---|---|---|---|---|---|
| | | | | | from 11.9% to 7.7%.<br>• In 2006, the average annual household OOPS for*Mutuelles* holders (5,744 RWF) was significantly lower than that of the uninsured households (8,755 RWF).<br>• The percentage of *Mutuelles* households with catastrophic spending (5.1%) was lower than that (10.5%) of uninsured households.<br>• Between 2000 and 2008, under-five child mortality, infant mortality, and maternal mortality also declined drastically and were lower than the average estimates in the sub-Saharan countries. |
| 14 | Zoidze *et al.*, 2013 | USA | Private -Medical Insurance for the Poor (MIP) | The impact of MIP on access to health services and financial protection of the MIP-targeted and general population. | • MIP insurance had almost no effect on health services utilization and the households' expenditure on outpatient drugs, including for those with MIP insurance, due to limited drug benefits in the package and a low claims ratio.<br>• The analysis of combined HUES 2007 and 2010 databases show that the overall level of utilization of health care, considered as contact with any type of health provider, appears to have declined slightly between 2007 and 2010, with 1.9 contacts per person per annum in 2010 compared with 2.0 in 2007 However, this difference is not statistically significant. |
| 15 | Chen *et al.*, 2014 | China | Urban Resident Basic Medical InsuranceURBMI (Voluntary) | To examine the effect of the URBMI on health services utilization in urban China. | • URBMI significantly increased the probability of both inpatient and outpatient health services utilization, whilst the effect on the likelihood to refuse inpatient treatment was insignificant.<br>• The analysis on the likelihood of refused inpatient treatment suggests an insignificant effect from URBMI, but further simple descriptive statistics showed that refused inpatient treatment owing to financial reasons were consistently lower in the URBMI enrollees.<br>• Compared to the uninsured, less healthy people were more likely to be enrollees -a sign of adverse selection. 20.4% of URBMI enrollees had at least one type of diagnosed chronic disease, compared with a figure of 13.7% among the uninsured. |
| 16 | Liu and Zhao 2014 | China | URBMI (Voluntary) | To estimate the impact of the URBMI on health care utilization and expenditure by a fixed effects approach with instrumental variable correction, using the 2006 and 2009 waves of the China Health and Nutrition Survey. | • This program has improved medical care utilization more for children, the members of the low-income families and the residents in the poor region. |
| 17 | Fenny *et al.*, 2015 | Ghana | NHIS (Voluntary) | To establish treatment-seeking behaviour of households in Ghana under the NHI policy. | • There was increased utilization. Out of the 1013 who sought care in the previous 4 weeks, 60% were insured and 71% of them sought care from a formal health facility.<br>• The results from the multinomial logit estimations show that health insurance and travel time to health facility are significant determinants of health care demand.<br>• Compared to the uninsured, the insured are more likely to choose formal health facilities than informal care including self-medication when ill. |
| 18 | Makhloufi *et al.*, 2014 | Tunisia | Mandatory Health Insurance(MHI)) and Medical Assistance Scheme (MAS)-(Subsidized) | To assess the effects of the reforms onaccess to healthcare. | • There was an increase in outpatient and inpatient services for the mandatory health insurance (MHI) enrollees at 19% and 26%, respectively, in urban areas. Among the beneficiaries of the state-subsidized medical assistance scheme (MAS) this increase was even more pronounced (28% and 75% in the urban areas compared with 27% and 46% in the rural areas for outpatient and inpatient services, respectively). |

| | Author | Country | Type of insurance | Objective | Findings |
|---|---|---|---|---|---|
| 19 | Gotsadze *et al.*, 2015 | USA | Medical Insurance for the Poor (MIP)-(Subsidized) | To assess the impact of MIP on access to health services and financial protection of the MIP-targeted and general population. | • The "Medical Insurance for the Poor (MIP)" implemented in Georgia, greatly reduced the costs of accessing services.<br>• Gel is the local currency. (1 GEL ~ 0.6 US$),<br>• The cost reductions were sizable and more pronounced among the poorest. There was less out-of-pocket expenditure for inpatient services (-227 Gel per episode) and total monthly health care payments (-27 Gel), and a higher probability of receiving free inpatient (by 14%) and outpatient (by 18%) benefits for MIP-insured.<br>• The magnitude of a positive MIP impact on the poorest was more significant where inpatient treatment costs decreased by 442 GEL, and MIP has significantly improved the probability of receiving free benefits of inpatient and outpatient services by around 23% for this group.<br>• However, MIP insurance had almost no effect on the beneficiary expenditure for outpatient drugs and chronic patients [24].<br>• MIP insurance had almost no effect on health services utilization |
| 20 | Buffel *et al.*, 2019 | Belgium | National Health Insurance Scheme | To describe the functioning of the country's healthcare system for access and to analyze the challenges in inequalities in access to healthcare in the country and the way they are tackled | • The compulsory national health insurance in Belgium nearly provides universal coverage, and only 2.4% of the population reported some unmet need for medical care. Problems concerning waiting times and geographical availability are also limited. |
| 21 | Roman-Urrestarazu *et al.*, 2018 | Germany & Chile | Private health insurance and statutory social health insurance | To conduct a systems design comparative policy analysis of the co-occurring private health insurance and statutory social health insurance systems in Germany and Chile. | • The segmentation of insurance markets in both Germany and Chile had significant consequences for equity, fairness, and financial protection.<br>• Due to market failures in health insurance and differences in the regulatory frameworks governing public and private insurers, the choice of public or private coverage produced strong incentives for private insurers to select for risks, compromising equity in health care funding, heightening the financial risk borne by public insurers and lowering incentives for private insurers to operate efficiently |
| 22 | Glorioso *et al.*, 2013 | Italy | National Health Service (ServizioSanitarioNazionale (SSN)) | To provide new evidence on whether and how patterns of health care utilization deviate from horizontal equity in a country with a universal and egalitarian public health care system: Italy. | • Generated inequities in favor of the people with low socio-economic status.<br>• While hospitalization was equitable, the use of outpatient specialist care, medical tests, and diagnostic services were inequitable in favor of the people with high socioeconomic status.<br>• Equity in hospitalization can be attributed to the fact that for the Italian SSN, hospitalization is free at the point of delivery for all patients, and only a small fraction of hospital admissions (around 5 percent) is paid out-of-pocket. Regarding the health status, the degree of inequity varied according to health status |

# 4. Discussion

The findings of this review show that enrollment in various insurance schemes can protect households and individuals from catastrophic out-of-pocket spending [25-29] [24] [30]. Policy makers and program implementers however need to take caution of the risk of moral hazard among the insured individuals [31]. It is also evident that utilization responds to price. The perceived cost saving to the insured households increases demand which constraints the health system. Reduced out of pocket expenditures leads to a sharp increase in the demand for health care resulting in resource and funding constraints [26]. Consequently, this affects the quality of services provided by the hospitals including long queue times, inadequate consulting time provided by doctors, poor quality services. These findings are supported by that of Timothy Besley who reported that receiving health insurance alone is not enough to ensure equal access to healthcare and the barriers to admission to healthcare services go beyond simple conceptions of monetary affordability. Indirect economic healthcare costs, such as long waiting times, loss of earnings when seeking

care or travel costs, can reduce the usage of healthcare even when it is free of charge [32]. The increased healthcare utilization defined in this context as access to healthcare, have financial repercussions for sustainability, especially for National insurance schemes. Those more likely to need care are registered and subsequently utilize health services. The URBMI scheme faced a conflict between the modest financing level and the increased healthcare demand it has created [33]. Program implementers need to consider trades-offs and strike a balance between the demand and supply sides before implementing any insurance scheme. Erlyana and others recommended interventions to reduce travel distance especially in areas with underdeveloped transportation infrastructure and less availability of public transportation in addition to expanding health insurance [34]. Moreover, governments need to strengthen the supply of health services can also increase to meet this demand. This can be achieved through provision of good quality, and effective health care.

However, some of the schemes implemented do not offer financial risk protection. The Belgian Health Care Knowledge Centre (KCE) report of 2019 revealed that the share of out-of-pocket payments account for 57.6% of expenditure on dental care, 29.8% on pharmaceutical, 13.1% on inpatient care, 7.5% on ancillary services and 5.6% on long-term care. The share of out-of-pocket payments on dental care expenditure was high but similar to the European average (57.6% in 2016, compared to a European average of 59.2% based on 10 countries). This share increased from 50% to 58% in the 2004-2016 period in Belgium [35]. Moreover, the strong impact of the Askeskin scheme for the poor lead to a slight increase in out-of-pocket health payments in urban areas. This is most likely due to an increase of relatively more expensive hospital care for which the cost has not been fully covered by the Askeskin insurance [36]. There is also no evidence that the Health Care Funds for the Poor (HCFP) insurance in Vietnam provided financial protection thus the anticipated out-of-pocket payments may deter even those with health insurance to seek health care. For the schemes studied in India, there was no relationship between enrolment in a publicly financed health insurance scheme and utilization of care or financial risk protection. The MIP insurance had almost no effect on health services utilization and the households' expenditure on outpatient drugs, including for those with MIP insurance, due to limited drug benefits in the package and a low claims ratio [24]. To ensure financial risk protection, policy makers should re-consider the design of the insurance benefit packages. Majority of the out-of-pocket expenditures is on account of outpatient consultation. However, the same is not covered under current publicly financed schemes. Policies should be realigned to ensuring financial risk protection and on strengthening provision of primary care. Besides, policy makers need to design health insurance schemes, which take into account the current socio-economic, socio-demographic and epidemiological profile of the population while reinforcing the financial and supply capacity of the health insurance system.

Lu et al also *reported that Mutuelles* enrollees from the poorest quintile in Rwanda still had significantly lower rates of utilization and higher rates of experiencing catastrophic health spending than *Mutuelles* enrollees in higher quintiles. The *Mutuelles* copayments may have prevented indigent enrollees, who live under the extreme poverty line of $0.32 per day, from seeking needed care, or placed a heavy economic burden on them when care was sought [29]. SSN in Italy has a universal and egalitarian public health care system but exhibits a significant degree of socioeconomic status related horizontal inequity in health services utilization [37]. Raising scheme uptake and reducing differentials between benefit packages for voluntary schemes can ameliorate inequities locally. Increasing the breadth, or the proportion of the population covered, would ensure more of the population benefit from any rise in the depth and scope of services available.

Some of the schemes implemented created new incentives for adverse selection. Open enrolment in Germany increased access in private health insurance but created new incentives for adverse selection when favorable risk users initially sought very low coverage and then changed to more comprehensive coverage when they developed unfavorable risk factors [38]. Moreover, adverse selection limited SKY's ability to grow [25]. Scaling up social health insurance needs to take into account possible behavioral response by providers, and consider adequate provider payment systems so as to avoid a backlash in the provision of public health care. Careful policy design and regulation including abolishing choice and making social health insurance compulsory for the whole population, or introducing more incremental measures to tackle risk selection and increasing access to coverage should be put in place. Integration of current fragmented pooling funds would also improve the anti-risk capability of insurance schemes.

While insurance should increase utilization, poor utilization was also observed. The effect of *Assurance Maladie à Base Communautaire (AMBC)*, on controlling self-treatment in this study was limited. Both the insured and uninsured populations maintained self-treatment rates of over 55% [39]. Policy makers should explore strategies to improve the quality of diagnosis, prescription and treatment within households and throughout the informal sector. There is need target and exempt a range of health services such as dental care, pharmaceutical goods, inpatient care, ancillary services and long-term care from official payments and deliver them free of charge. The low uptake of voluntary health insurance emphasizes the importance of other programs to increase access to health care for the rural poor.

## 5. Study Limitations

An important limitation of this review is that it combines studies from 17 countries, which are culturally and economically diverse. The studies also differ in their

objective. However, combining studies from various countries with heterogeneous objectives is not unusual for reviews on Health insurance coverage in SSA.

## 6. Conclusions

The findings of this review show that enrollment in various insurance schemes can protect households and individuals from catastrophic out-of-pocket spending. This body of research yields consistent and significant findings of the relationship between health insurance and, healthcare utilization and financial risk protection. Health insurance facilitates ongoing care with regular health care providers and reduces financial barriers to obtaining those services that constitute or contribute to appropriate care. Different settings may benefit from the different insurance schemes contextualized to meet the needs of their populations. This should give program planners more confidence to explore creative, responsive insurance schemes to best meet the needs of their populations and achieve UHC.

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