

# Does the implementation of national health insurance affect the workload of a doctor and have an impact on service quality? A systematic literature review

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## Abstract

National Health Insurance (NHI) was originally a health financing reform that eventually became a 'driver' for changes in all health care sectors. The burden on doctors in health facilities is likely to increase due to its changes in standard fees for medical services. This study aimed to describe NHI system changes that will affect doctor's professionalism. This is a systematic review taken from MEDLINE complete of EBSCOhost research database. The search period range covered between 1983 to October 19 2018. The results revealed 853 unique citations which globally stated about the potential impact of NHI implementation on doctors. The majority studies indicate that there is a relationship of the implementation of NHI, workload of doctors and quality of health care service. It can be concluded that NHI implementation requires a large quantity of human resources, especially doctors. Therefore, doctors are advised to adapt to their role and function in this era of NHI.

## Introduction

NHI or Universal Health Coverage (UHC) is a situation where all residents have been covered by health insurance scheme. It means that everyone can receive health services as they need without suffering any financial hardship.<sup>1</sup> According to World Health Organization (WHO), UHC includes the full spectrum of essential services from health promotion to prevention, treatment, rehabilitation and palliative care. Achieving UHC is one of the targets in the Sustainable Development Goals.<sup>2,3</sup> NHI or UHC can be interpreted as efforts to strengthen the health care system.<sup>4</sup> Health

center as part in the health care system and health insurance then shall complete each other.<sup>5</sup> In the health center, there are health workforce that can be defined as "all people engaged in actions whose primary interest is to enhance health". These human resources shall include clinical staffs, those are physicians, nurses, pharmacists and dentists, as well as management and support staffs, i.e. those who do not deliver services directly but are essential to the performance of health systems, those are managers, ambulance drivers and accountants.<sup>6,7</sup> Whereas in referral services such as in hospitals, the specialists are those doctors who respond for services.<sup>8</sup> The position of the doctor as the person in charge of treatment and patient care requires him to be able to work with other professionals and this is called as interprofessional collaboration.<sup>9</sup>

The increased number of patients on daily visit has consequently increases the workload of doctors.<sup>10</sup> Consequently, an effective therapeutic communication between doctors and patients is often not well achieved. Communication barrier such as limited language proficient and asymmetric information often causes misunderstandings between doctors and patients.<sup>11-13</sup> There are also many insurance-related issues those often lead to increased conflicts between doctors and patients. The existence of certain benefits those are expected to be received by the patient, such as special reference, particular actions and some other privileges, but cannot be fully accessed due to insurance regulations also put more burdens on doctors that they may face psychological problems like stress and burnout. The majority of studies have reported physician workload as one of the dominant causes of burnout.<sup>14</sup>

In this review we will find out how the implementation of national health insurance can affect the workload of doctors and have impact on service quality. This includes the correlation between workload and psychological problem of the physicians. Psychological problems will not only reduce the quality of services but also physician productivity.<sup>15-18</sup>

In this case, the poor quality of service, allegations of malpractice and lawsuits to doctors often occur and this surely require financing that sometimes quite much to be fully covered. There was an association between the occurrence and impact of 12 work-related stressors and involvement in adverse events across the groups of participants.<sup>19</sup> Medical errors and adverse events also affect the quality and cost of the health service.<sup>20,21</sup> Therefore, the effect of NHI to doctor's welfare, satisfaction and working environment should be well identified.<sup>22</sup>

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## Materials and Methods

This is a systematic review study which is aimed to identify the issues related to challenge and adversity among doctors in the era of universal health coverage. Data was searched from MEDLINE with period between 1983 to 2018 and it was limited to English language journals. This study used specific term and keywords such as NHI or UHC or national health service (NHS); physician or doctor or general practitioner (GP) or family doctor or primary care or specialist or clinician; job satisfaction or work satisfaction or employee satisfaction or job stress or occupational stress or workplace stressor professional burnout or exhaustion or longhours or workload;

Medical errors, malpractice or patient safety or patient outcome or quality of care (Table 1). The search engines generated a total of 856 unique citations. After applying the inclusion criteria, there were 717 articles excluded based on the criteria and remained 139 other articles. Then, 98 were dropped and 41 remain after abstract review. Meanwhile, based on full text, 37 articles were excluded. Full text retrieved 4 articles, and left only 3 articles with a more detailed discussion about how to implement National Health Insurance with respect to the workload of doctors and the impact thereof on service quality (Figure 1).

## Results and Discussion

### Physician characteristics

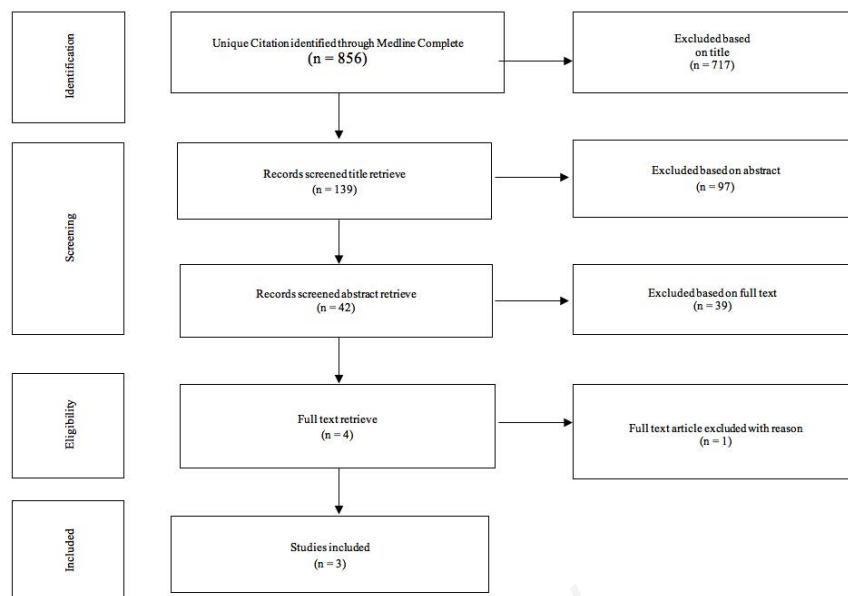
Physician characteristics are summarized in Table 2.

### Data synthesis and summary

Data synthesis of paper reviewed is presented in Table 3, while summary of articles is in Table 4.

## Discussion

Doctors' income is the first indicator in measuring their personal welfare. Each region or country has its own standard.<sup>23,24</sup> NHI has a potential impact on



**Figure 1. Flowchart of literature search result and inclusions/exclusions.**

doctors' earnings, the state would not be able to pay doctors at private-sector health

**Table 1. "PICOS" approach for selecting studies in the systematic review.**

PICOS	Characteristic of studies for the systematic search
1. Participants	Physician (doctors, general practitioner, primary care, specialist, clinician etc)
2. Intervention	NHI, UHC, NHS
3. Comparison	None
4. Outcomes	Medical errors, quality of health care etc
5. Study Design	Qualitative and Quantitative

NHI, National Health Insurance. UHC, Universal Health Coverage. NHS, National Health Services.

**Table 2. Respondents and their characteristics.**

Number of respondents	Characteristic of the responding physician
Planned sample size = 131 physician / hospital There are 136 hospital Total planned sample size = 17,680 Actual number of responding 17,975 physicians from 136 tertiary hospital across 31 provinces in China	Age, sex, education, academic rank, specialty, hospital type, region, monthly salary, medical malpractice liability insurance, average physician-patient communication time (minute), average daily working time (hour), average daily sleeping (hour) Sun J., <i>et al.</i> (2017) <sup>24</sup>
76 physician. private general practitioners (53); 8 hospital doctor; 10 public-sector GPs ; 6 SA medical association (SAMA) and Local independent practitioners association (IPA) in South Africa	District / metropole, the type of GPs (private GPs, Public-sector GPs. Hospital Specialist, Other /SAMA or IPA) , sex, origin of race (white, black, Indian), Surender R., <i>et al.</i> (2014) <sup>25</sup>
Staff and associate specialist (SAS) doctors working in NHS Scotland 30 September 2001 (n=1053). Included associate specialist, staff grades and clinical assistants	Age, Sex, specialty group, trained as GP, ethnicity, health state , distance to work, location (city), French, F <i>et al.</i> (2016) <sup>26</sup>

GP, general practitioner. SAMA, South Africa medical association. IPA, independent practitioners association. SAS, staff and associate specialist

**Table 3. Data synthesis of paper reviewed.**

Themes related	Papers
Ethical behavior, working environment, personal welfare, workload, health and well being , occupational identity and job satisfaction (factors associated with welfare, wellness and job satisfaction of Chinese physician public tertiary hospitals)	Sun J <i>et al.</i> (2017)
Scepticism about feasibility of NHI, Impact of NHI on remuneration, Impact of NHI on increased workload, professional and clinical autonomy, diminished quality of care and working condition (can cause in adequate public health services in private general practitioners)	Surender R <i>et al.</i> (2014)
Doctor characteristic, specialties, Staff grade , associate specialist, hours of work, work-life balance - (factors associated with job satisfaction of staff and associate specialist in hospital doctors)	French F <i>et al.</i> (2016)

services. Doctors told that cheaper remuneration would make the practice become non-viable.<sup>25</sup> Annual income for staff position were associated with higher level of job satisfaction. Doctors with annual income between £ 35,000 and £49,999 experience a higher level of job satisfaction. For associate specialist, there were not any significant effects on other income bands with respect to job satisfaction.<sup>26</sup> Other indicators of physician welfare are opportunities to further education, career promotion policy, hospital's responses to their voices on management.<sup>24</sup>

All of selected studies identified doctors' workload as significant item associated with implementation of NHI. Studies showed that a large portion of the physicians (62.91%) worked for 10 hours or more per day, and 24.05% of them worked for more than 12 hours every day. The responding physicians spent 10 minutes (average) with their patients per visit. These physicians slept an average of 6 hours daily. More than half of the surveyed physicians (54.18%) responded negatively to "I have time to do physical exercise." 24 The challenges and difficulties among doctors in the NHI era are increasing workload, long hour working of patients serviced per shift, patient overload, consultations per week/day, overnight duty, over time and schedule inflexibility, low personal welfare and wellness, and low remuneration.<sup>23,24,25</sup>

Conflict between patient and physician can be caused by misunderstandings, so that the possibility of doctors to be reported with malpractice allegations may increase. Patient felt dissatisfied due to limited time to interact with doctors and many complaints are due to breakdown in the doctor-patient relationships.<sup>27</sup>

All challenges and adversities due to the implementation of health insurance often cause doctors' dissatisfaction, work stress, and burnout. Previous study showed that half (44%) of male physicians and only a quarter (26%) of female physicians were very satisfied with their practices.<sup>28</sup> Another study showed that there was a positive association between increased time in the hospital and level of burnout.<sup>29</sup>

Burnout among doctors was associated with an increased risk of patient safety incidents, poorer quality of care due to low professionalism and reduced patient satisfaction. It was found that burnout and low professionalism were larger in residents and early-career (5 years post residency) physicians compared with those of middle-and late-career physicians.<sup>30</sup> Other factors such as gender, age, clinical experience, and working hours were not related to medical errors in any of the medical specialties. In

**Table 4. Summary of articles.**

Title (Type of Study)	Author(s)	Year	Location	Study population	Sample size and characteristic	Workload	Service Quality
1 <i>Welfare, wellness and job satisfaction of Chinese physicians: a national survey of public tertiary hospital in China.</i> (quantitative)	Sun, J <i>et al.</i> Int J Health Plan Mgmt 2017	2016	China	N=17,945 from 136 tertiary hospitals, 31 province - Internist (27,74%) -surgeon (18,74%) -gynaecologist (15,40%) -paediatricians (8,02%)	N = 17,945 physician Male 33,57% Female 55,43% Most of the participants: young to middle aged (71,78% were between 30n-49 nyears old	Long working hours (an average of 10 h), a heavy workload (claimed 64,51 % of the physician) short sleeping time an average 6 h and 13,89% slept less than 6 h. no time for exercise (54,18%); Worked 9-12 hours/day and slept less than 6 hours per day ---64,1% felt exhausted and 13, 78% poor health condition	Heavy workload and short sleeping time lead to anxiety, insomnia, memory deterioration---have negative implication for the quality of care
2 <i>The drive for universal healthcare in South Africa: views from private general practitioners.</i> (qualitative)	Surender, R <i>et al.</i> [Health Policy Plan] 2015 Jul; Vol. 30 (6), pp. 759-67. Date of Electronic Publication: 2014 Jun 25.)	2012	South Africa	South Africa medical Profession or clinician (particularity, private-sector GPs) (54) Public Sector GP (10) Hospital Specialist (8) Other (6)	N =71 private –sector GPs Male 61% Female 17%	If we need 15 minutes for patient, so in an hour only 4 patient. If in Some practice have 120 patient/day---their patients aren't getting satisfactory care	Never physically examined in meetings with a doctor. That's not healthcare care
3. <i>What influences the job satisfaction of staff and associate specialist hospital doctor.</i> (quantitative)	French, F <i>et al.</i> (health services Management Research 20: 153-161	2017	Scotland	Scotland physician - consultants and training grade doctors SAS (staff and associate specialist)			Dissatisfaction with work to affect: -productivity, worker behaviour, turnover, absenteeism and overall employment cost

surgeons, medical errors were negatively related to doctors' relationships, while teamwork and depersonalization (part of burnout) were the only predictive factors of frequent medical errors, in both pediatricians and internists.<sup>31</sup>

One of the challenges is having to harmonize between cost and quality. Quality should be improved as well as the cost of medical services, and it causes dilemma in health services. Doctors have difficulties to prescribe certain medicines as the drugs might not be covered by the health insurance. In the organizational level, health services management could improve doctors' resilience by allocating adequate resources, promote their career, maintain primary health services and enhanced staffing ratios.<sup>32,33,34,35</sup>

## Conclusions

Increasing workloads, low personal welfare, low remuneration and low job satisfaction can increase the risk of mental health issues in doctors. Stress and burnout can affect professional behaviours in doctor and leads to medical error and cost. In order to prevent doctor's burnout, health service management should address these issues through adaptation training for doctors as well as the team work in organizations.

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