

# Dynamics of Healthcare Utilization under the Civil Servant Medical Benefit Scheme of Thailand's Universal Health Coverage

## Introduction

Although Thailand is currently one of the few developing countries that achieved the Universal Health Coverage (UHC), new health systems problems have emerged since the policy was first implemented in 2001. One of the major concerns for the policymakers is the sustainability of three major publicly-funded health financing schemes under Thai UHC, namely the Civil Servant Medical Benefit Scheme (CSBMS), the Social Security Scheme (SSS) and the Universal Coverage Scheme (UCS). Over the past recent years, healthcare expenditures of the Civil Servant Medical Benefit Scheme (CSBMS) have been increasing rapidly and disproportionately when compared to the other two schemes [1, 2]. For instance, research shows different costs of hospital care across the three health financing systems, with the mean and the median found highest in the CSBMS (26,668; 10,209 Baht), followed by SSS (21,455; 9,713 Baht) and the UCS (13,086; 5,246 Baht) [3].

Many strategies aiming to control the CSBMS budgeting have been implemented in the past decade, including healthcare utilization review, utilization management, and direct electronic reimbursement. While the success of such policy interventions was limited, those regulations apparently created a tension between the Central Comptroller's Department (CDG) that regulates the CSBMS and healthcare organizations nationwide that serve the CSBMS beneficiaries [4]. It appears that compartmentalized solutions led us to nowhere, as they usually address existing problems while creating a new one.

The increasing healthcare expenditures are complicated by the country's epidemiological transition to non-communicable diseases (NCDs), the rapidly aging populations, and the limited range of available facilities that can effectively provide chronic care and elderly care [5]. Thus, besides coping with the rapidly rising cost, improving quality is still the ongoing agenda of healthcare reforms under Thailand's UHC. By law, the CSBMS beneficiaries are allowed to primarily use the outpatient departments (OPD) and the inpatient departments (IPDs) of hospitals as their main health care facilities without a requirement to consult with primary care providers. There are no gatekeepers of CSBMS healthcare systems. The existing hospital care, originally designed to cope with acute illness, however, would unlikely be able to deliver the desirable outcomes for the growing demands of chronically ill patients and aging CSBMS beneficiaries. Moreover, Thailand has become an aged society very rapidly [6], and if the increasing demands for elderly care and long-term care continue to be served by insufficient hospital services, disadvantaged populations could have more limited access to the existing healthcare facilities, and consequently worsen health quality and equity.

The burdens of chronic illness in the rapidly aging Thailand can reflect the similar situations in other lower- and middle-income countries (LMICs). The recommendations of health systems reforms in dealing with such health burdens include creating effective primary care services with linkages between the healthcare systems and other community agencies, aligning incentives for providers, empowering patients to get involved in their own care, and investing in disease prevention [7]. At the healthcare facilities level, the reorganization of clinical practices to provide for longer visits needed for patient education and follow-up, the consistent delivery of evidence-based healthcare, the responsiveness to the needs of patients when seeking lifestyle and other behavioral changes, and the implementation of supportive information systems are crucial interventions to cope with chronic illnesses [8]. With limited resources especially the health workforce in LMICs, however, each intervention could drain resources from one another and hence create adverse consequences.

Therefore, a comprehensive solution of healthcare reforms that can address multiple factors at the same time is needed. But the remain questions are how much the investments should be put into building new models of primary care services to deal with a greater demand of chronic care, how much the efforts should be put into quality improvement initiatives in existing facilities, particularly the outpatient departments of hospitals. It is also uncertain how early such systems interventions must be implemented to make them effective and efficient given the rapidly increasing health needs of chronically ill and elderly patients over time.

### **Applications of system dynamics to explore the healthcare utilization problems**

Using a system dynamics approach [9], this present study aimed to seek a better understanding of the current structure and behaviors of stakeholders of Thailand's healthcare delivery systems and the complex relationships among the factors related the problems of healthcare suboptimal quality and inefficiency that potentially contribute to financial unsustainability of the CSMBS and the UHC of Thailand. The dynamics of healthcare utilization was explored to see what has contributed to the rapidly increasing healthcare expenditures, what has caused behavioral change of stakeholders in Thailand's healthcare delivery systems over time, and how ones can influence such behaviors.

The group model building [10, 11] was used to collaboratively develop a conceptual model with the stakeholders. Quantitative data was collected from the CSMBS stakeholders to generate causal models of the problems using semi-structured interviews and focus groups. The ethnographic methodology was used as the protocols to interpret the qualitative data and to incorporate this information into the modeling process [12]. After conducting a review of related literature and engaging with the CSMBS stakeholders, the explicit assumptions were made and the hypotheses of why the burdens of rapidly increasing healthcare expenditures of the CSMBS

are still persisting have been identified. A casual loop diagram (CLD) was created to demonstrate how the CSMBS beneficiaries, the healthcare providers and other stakeholders interacts in the existing healthcare delivery systems of Thailand.

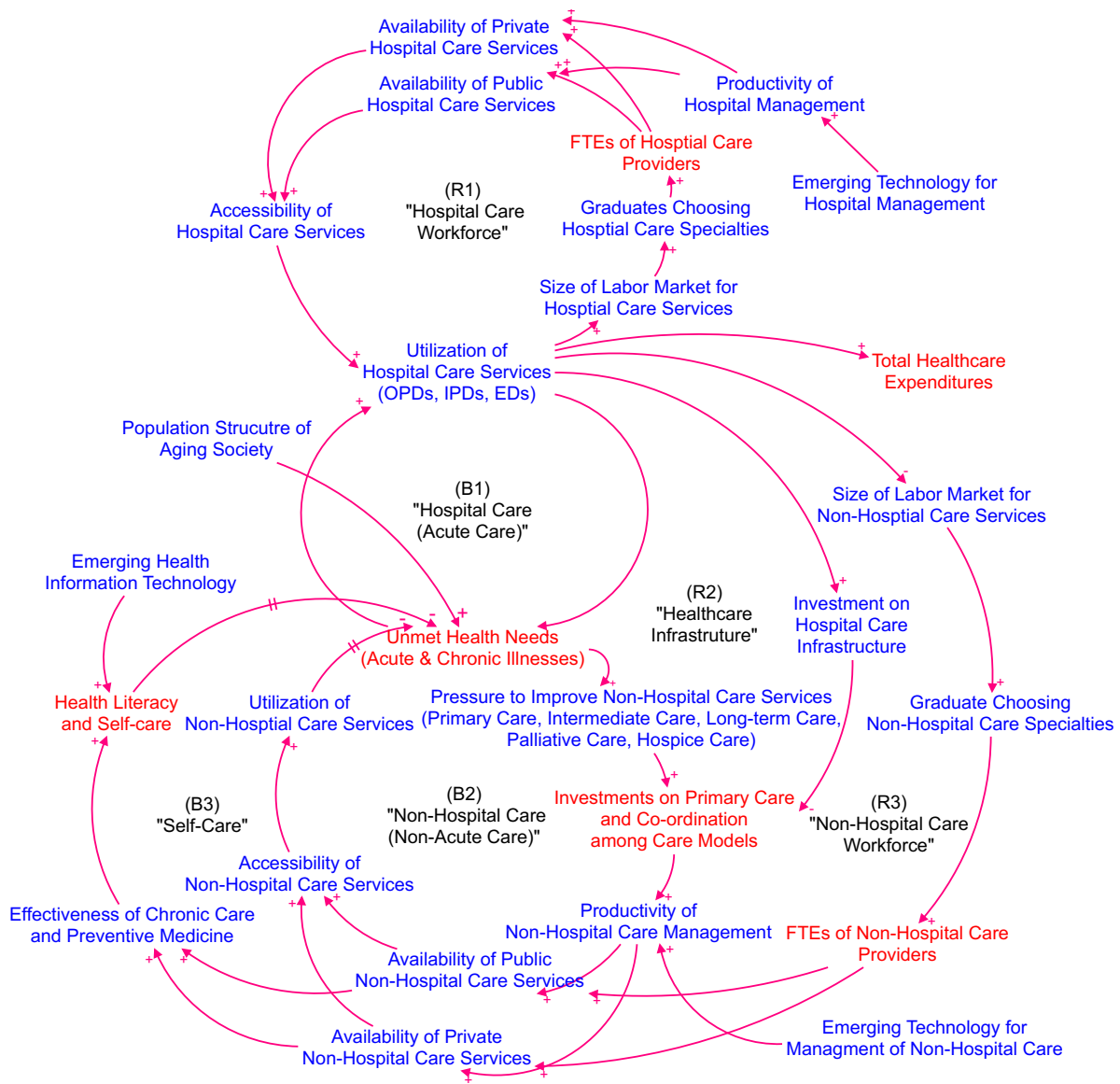


Figure 1 Causal loop diagram (CLD) demonstrating the shifting of the burdens of primary care to hospital care

The root causes of the CSMBS's rapidly and persistently increasing healthcare expenditures can be more clearly understood by walking through the hypothesized feedback loops as shown in Figure 1. Overall, it appears that the rising cost of care was a result of the shifting of the burdens of cheaper primary care services to more expensive hospital care over time.

- Loop B1 and B2 show how the demands generated by unmet health needs of the CSMBS beneficiaries should lead to utilization of primary care services. With effective

primary care services, health needs of the beneficiaries would be met. Moreover, chronic disease management by primary care providers could prevent costly complications and unnecessary utilization of healthcare services later on.

- Loop B3 shows that prevention measures and health promotion practices of primary care providers could also improve the health literacy of the beneficiaries, which can lead to a better self-care and less utilization of hospital care. As a result, there would be not much pressure to change the practices or systems of the existing primary care.
- Loop R1 reveal the facts that most health needs of the CSMBS beneficiaries are unmet, as there is adequate availability of primary care services or lacking of primary care services trusted by the beneficiaries. Hence, those chronically ill patients could bypass primary care services to see providers at the outpatient departments (OPDs) of hospitals, and patients with more complex illnesses would also receive healthcare at the inpatient departments (IPDs) of hospitals. When their health needs are met after receiving a costlier hospital care, there would be no incentives for the beneficiaries to go back and utilize a less costly primary care.
- Loops R1 show the size of labor market for hospital care is continuously increasing, as a result of an attempt to address the increasing demands for hospital care. Thus, the newly graduate health professionals are incentivized to working in hospital settings more than working in other care models.
- Loops R2 and R3 show that, because the hospital care usually costs more than primary care, an extensive utilization of healthcare at the OPDs and at the IPDs of the hospitals will have a direct impact on the rapidly increase of the total CSBMS expenditures. Moreover, the more resources are spent as healthcare expenditures, the less resources are left for research and development, particularly investments on innovative primary care models, policies and management practices that could prevent the unnecessary utilizations of hospital care from the beginning. Along the same lines, the newly graduate health professionals are incentivized to not working in primary care and other non-acute care settings compared to working in hospitals.

### **Next steps toward a formulation of policy interventions**

To help the decision-making process of the policymakers, a system dynamics modeling to quantitatively explore the consequences of behavioral changes in Thailand's healthcare delivery systems over the period of 20 years will be built. Then, policy options on comprehensive strategies to strengthen healthcare delivery systems for CSMBS will be developed. The preliminary data from the existing literature [3] and from the expert's opinions were used to build a stock and flow diagram (SFD) as shown in Figure 2. Although further research with an updated and validated data sets is still needed for building a more accurate system dynamics

model, the preliminary analysis reveals that strategies for budget controlling such as healthcare utilization review and management show a limited success, while the implementation of integrated primary care systems effectively dealing with the progress of chronic illnesses of the beneficiaries appears to be a fundamental solution.

The root causes of subpar quality and inefficiency of care under the governance of CSBMS apparently are derived from the stakeholders' behaviors embedded in the current systems structure that primary care, chronic care and long-term care are too dominated by hospital care. With extensive investments on primary care development, the cost of hospital care would be better controlled as shown by the preliminary results in Figure 3. This is consistent with the findings of Homer, Hirsch and Milstein (2007), as a lack of focus on primary care can lead to missing “upstream” interventions of managing risk factors and preventing illness onset of the chronic illness, while no “downstream” interventions focusing only at the currently over-utilized hospital care can solve the problems of an underperforming and expensive healthcare delivery systems [13, 14].

Scaling up the integrated primary care systems that can better coordinate with hospital care, as well as other care models such as long-term care for the elderly, is crucial to solving this persistent problem of rising cost of total healthcare expenditures. One of the policy implications is that the policymakers should emphasize on building a comprehensive strategy rather than a compartmentalized one—both upstream and downstream interventions are required. The downstream interventions alone such as controlling a resource utilization in hospital care are definitely not enough to cope with the feedback loops of increasing healthcare expenditures.

With more insights of the stakeholders' behaviors embedded in the current systems structure, policy options can be developed based on comprehensive strategies to strengthen healthcare delivery systems for the CSBMS beneficiaries and other people living under the Thailand's UHC policy. This knowledge gained could benefit not only the policymakers of the CSBMS or Thailand's UHC, but also the policymakers of healthcare reforms in LMICs during the epidemiological transition and the population aging as well.

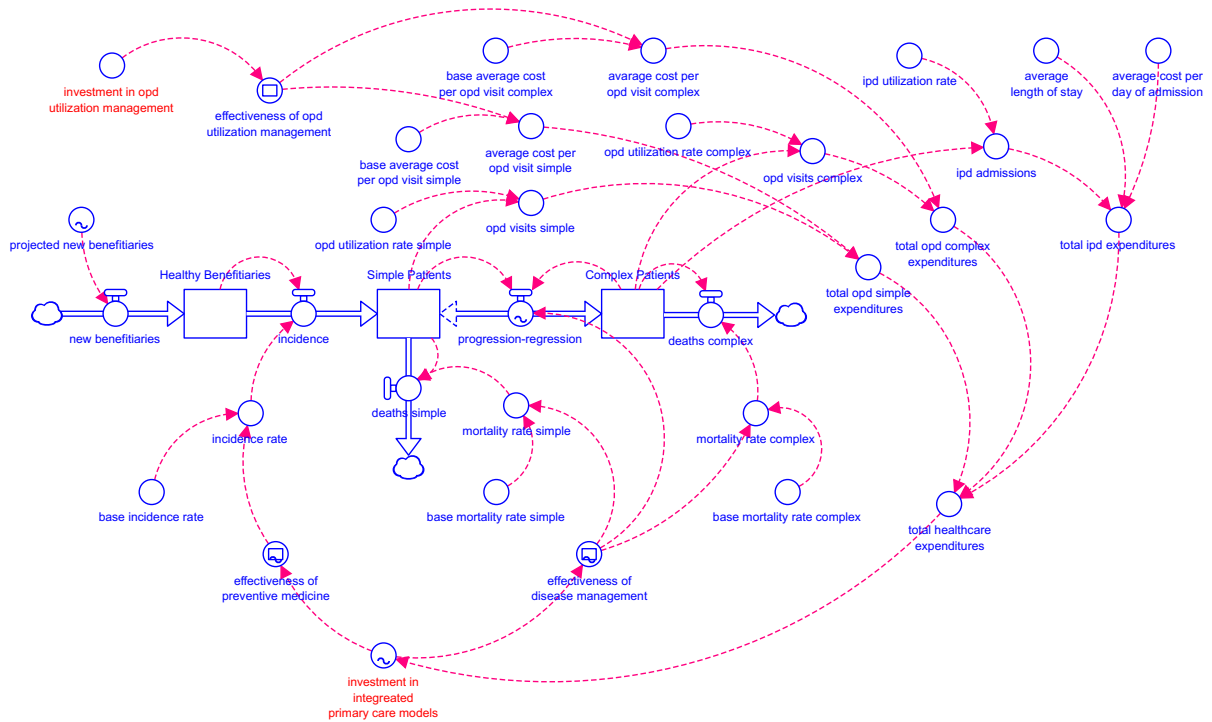


Figure 2 Stock and flow diagram (SFD) of disease progression and healthcare utilization of the CSBMS beneficiaries

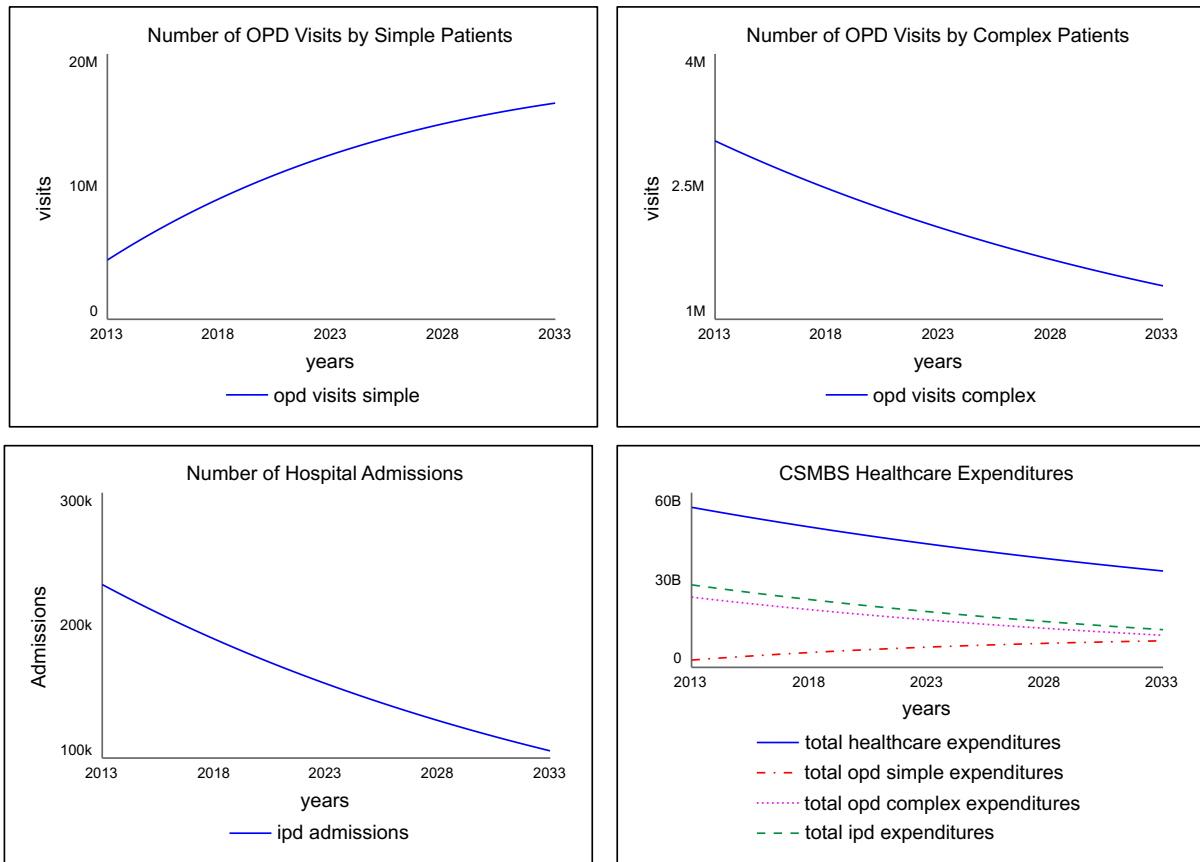


Figure 3 Preliminary findings from the system dynamics modeling of future CSBMS healthcare utilization

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