

Commentary

# Game Theory of Universal Health Coverage for Sustainable Development

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## 1. Introduction

According to our-world data in 2019, eight out of ten ASEAN countries have achieved a Universal Health Coverage (UHC) index higher than the UHC index in lower-middle-income countries. This index measures how well these countries have implemented the concept, which is considered a powerful concept in public health by Margaret Chan, the former Director-General of WHO. Chan defined UHC as a concept that guarantees access to needed health services like promotive, preventive, curative, and rehabilitative, complete with adequate and effective quality, while ensuring that accessing these services does not cause financial difficulties for anyone.

Margaret's concept of UHC faces challenges during its implementation, as several countries had unsatisfactory achievements before the pandemic ([World Health Organization \[WHO\], 2021](#)). The pandemic increased the demand for health services from vulnerable communities resulting in slower access and exclusive quality care. Financial risk protection was also inconsistent and unfair. It became even harder to achieve when UHC's broad community target was the entire community. However, successfully implementing UHC in certain communities, such as Muslim pilgrims with diverse backgrounds dominated by the elderly who require health services (promotive, preventive, curative, and rehabilitative), can create a positive image and reflect the state's resilience in the health sector.

The government is responsible for finding effective ways to ensure access to high-quality healthcare and address complex challenges fairly to make UHC a viable health system platform and reform. This paper aims to provide a perspective on how to contribute to Indonesia's UHC achievements by examining the successful implementation of UHC in some ASEAN countries. For many countries, achieving UHC

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requires improvements to their health financing systems to ensure people have financial protection and access to quality healthcare. As UHC is a key target of the Sustainable Development Goals (SDG), the declaration has likely affected health financing reforms making it important to learn from the methods and outcomes of those reforms to promote intercountry learning.

## 2. UHC index in the ASEAN countries

The UHC index was obtained from our world data website and measured through health indicators on a scale ranging from a score of 0 (worst) to 100 (best) based on the average coverage of essential health services such as infectious diseases, non-communicable diseases, including reproductive health services such as mothers, newborn and children health and capacity and access to services.

The UHC index during and after the COVID-19 pandemic is crucial for assessing a country's health resilience in dealing with infectious disease outbreaks. However, implementing UHC as a global agenda during the COVID-19 pandemic has been challenging, and disparities in quality, access, fairness, integrity, and financial risk protection have become more evident.

The UHC achievements of ASEAN countries have been measured since 2017, and in 2019, eight countries had an index higher than that of low-income countries ([Global Change Data Lab, 2023](#)). These countries include Indonesia, Myanmar, Cambodia, Vietnam, Malaysia, Brunei, Thailand, and Singapore, as shown in Figure 1.

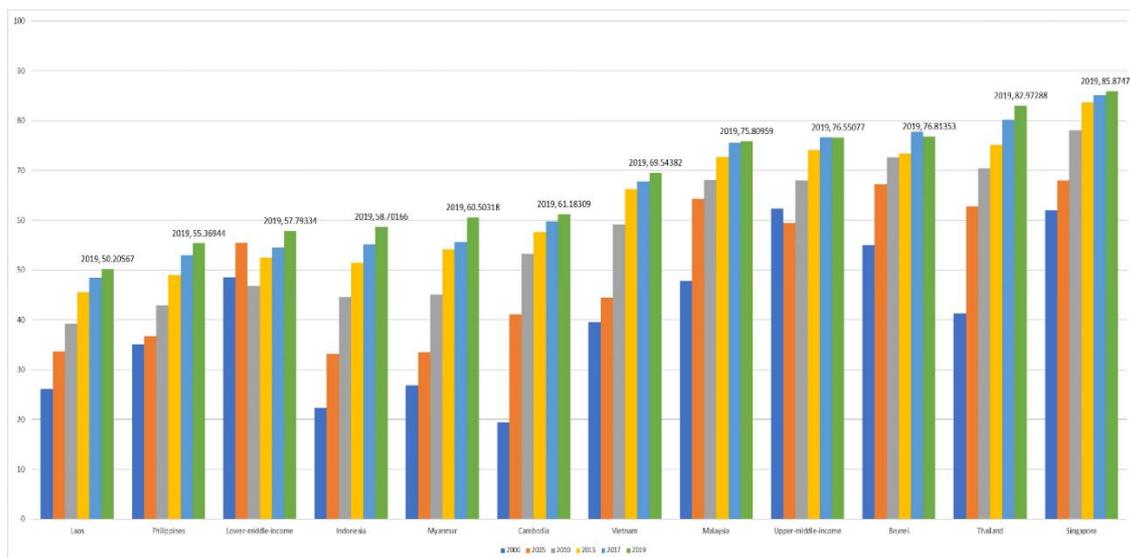


Figure 1. UHC Index in ASEAN Countries

Source: [www.ourworld-data.com](http://www.ourworld-data.com)

Figure 1 indicates that The Philippines' healthcare program needs improvement, particularly in governance management and accountability, as the UHC index is still lower than that of lower middle-income countries ([Venkateswaran et al., 2022](#)). The Indonesian Ministry of Health (MOH) has maintained the categorization of sources of pooled funds for the UHC program to identify the population fraction that must be paid for through tax revenue. In addition, remittance has significantly increased from self-enrolled members to the national health insurance (NHI) framework.

Thailand has significantly improved its healthcare services since 2016, as evidenced by the increase in its UHC index ([Sabiruzzaman & Golam, 2021](#)). This has been achieved, in part, by ensuring the equal distribution of high coverage in reproductive health services. However, some disparities in outcomes still exist, mainly due to socio-economic factors, particularly differences in the education level of mothers or

caregivers. On the other hand, Singapore has consistently performed well UHC index in the last six years due to strong commitment from the government and better achievement on socio-economic factors.

According to Brady's article published on November 2020, to improve health services and achieve UHC, an innovative approach through the concept of "Networks of Care" (NOC). This approach is being codified to become an option for implementation. NOC involves developing support from authorities, healthcare resources (including healthcare workers, hospitals, pharmaceuticals, and financing), and a health system reformed to improve the quality of care (Brady, 2020). These factors are essential to increase access to health services and reduce financial risk for vulnerable communities.

To set the UHC agenda within regional discussions, legislation plays a vital role in producing regulations that support health financing and budgets and updating or revising national health (financing) policies and plans (International Centre for Diarrhoeal Disease Research [ICDDR], 2011). Japan played a crucial role in advocating for UHC during the 2019 G20 Summit, resulting in an increased international commitment to UHC at the UN High-Level Meeting on UHC. This reflects the growing importance of global health as a priority agenda and emphasizes the efforts to promote universal health coverage (UHC). International partnerships, particularly UHC2030, have been strengthened as part of this endeavor (Orjingen et al., 2022).

The connection between UHC and other SDGs, particularly SDG 8 (decent work) and its Target 8.8 (promoting worker rights and safe working environments), is essential in ensuring healthy lives and well-being for all individuals. This requires a focus on occupational safety and health measures implemented domestically in each country. To achieve this, inter-sectoral collaboration and cooperation are crucial, particularly when addressing vulnerable communities and ensuring no one is left behind.

### 3. Game Theory of UHC on ASEAN Countries

Game theory is an effort to solve strategic situations that result in players (decision-makers) implementation (Chang et al., 2020). The aim is to reach an equilibrium condition where the players can successfully make decisions and achieve their goals. Game theory modeling is applied in UHC improvement, particularly in prevention, health promotion, and behavior change efforts to access health care.

Badia and Marchioro (2022) mentioned from their book that the participants in game theory can be individuals, communities, organizations, or health programs, and their goal is usually to optimize their welfare or utility (p.115-117). Each 'player' typically tries to optimize their welfare, known as the 'pay-off' or 'utility' of a player. To do so, each player will take an activity of action among available movements, termed 'strategies.' Typically, the selection of the best activity of action for mind mapping of players will decide to actions as model strategy. The modeling of strategy can be classified into (Bai, 2016):

- a. Modeling structure
- b. Game frequency
- c. Types of strategy adoption

Game Theory aims to develop profiles of the players, the utility of functions, and various combinations of action attempts. Comparing groups and integrating tools and/or game theory into the process will uncover the variables that can affect the healthcare process in the community. Game Theory considers the variables that must be considered to improve cooperation and the ability to implement policies to improve UHC (Agwu et al., 2021). The UHC concept, a common hope for quality health services, can be developed through four efforts, as shown in Figure 2 below.

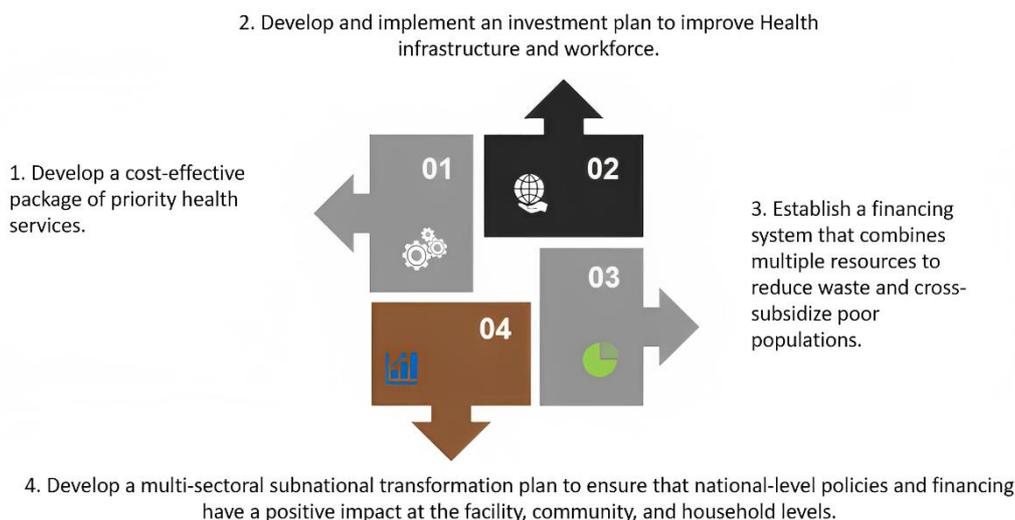


Figure 2. UHC Development Efforts

Brady (2020) proposed a strategy that encourages decision-makers to maximize their results at the end of the game. Moving forward, there are several recommended approaches to explore, such as changing resource parameters and assessing their impact on decision-makers, examining the long-term player pay-off condition and its effect on the game, and experimenting with different actor types in UHC improvement scenarios to develop new models of actions and outcomes. Game theory can be used with stakeholder theory and behavioral economics in microeconomics.

The game allows for reflection on topics such as balancing health, well-being, and sustainable development at the country or regional level. The world is interrelated, even if it seems otherwise; each country is a principal piece of the global puzzle, and steps taken now may conduct to a different future. The SDGs framework, which is structured around the “5 Ps” of People, Planet, Prosperity, Peace, and Partnerships, reflects the fundamental idea of the SDGs. The current economic model of production and consumption pursued by humans must consider the social needs of today's development objectives, such as employment, income, and quality of life, as well as the way economic activities depend on various factors and eventually cause environmental adversity.

## Conclusion

UHC, as an idea rooted in human rights of social justice, with health as a main factor, requires the participation of every citizen and stakeholder. Government commitments and policies must be aligned with a clear path to address perceived challenges that play a role in building a better social contract. UHC's achievements reflect the well-being of a country and the nation's health security. A region with a high UHC index indicates a good quality of life, which enhances the country's positive branding on the international stage. This potential can be an economic opportunity for the country and its citizens. UHC can achieve equilibrium within the region if inter-regional countries develop cooperation in terms of political support, knowledge, or grants. Implementing UHC in ASEAN countries has proven that this is not just a concept but a practical approach with support systems, which requires the support of health services, including human resources. The Southeast Asian region, through ASEAN, can maximize various potential cooperation between regional countries in the fields of education, health, economy, and trade to the military.

Indicators for achieving UHC are the condition of basic health services that are at least not constrained by financing and increasing coverage when resources improve and reach individual health. This includes health promotion, provision of clean water, source control of disease, leading to equilibrium, prioritized development, and social inclusion and cohesion.

All endeavors should be made to improve UHC, such as investing in human resources and enabling them to perform their work professionally, even when resources are limited. In this digital era, national health insurance requires human resources who are technology literate to intensify services not only at the center but also at the nearest community service level. Some professional organizations are contributing to the implementation of national health insurance.

The sustainable development agenda affects good health and people's well-being in two ways: keeping health reform on the national agenda and strengthening national health policies to accelerate national health security achievement.

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