Comparison of Health Information Systems Capacity among China and ASEAN Countries

Based on the WHO SCORE Assessment Tool

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Introduction

1. Access to accurate, reliable, and up-to-date health information is essential for individual and public health. Effective health information is pivotal in achieving universal health coverage (UHC) and the health-related Sustainable Development Goals (SDGs).

2. Health information systems(HIS) are the backbone of effective health data acquisition and management and have evolved in a fragmented manner due to administrative, economic, legal, and donor influences.

3. In recent years, China and ASEAN countries have made significant progress in HIS development, with China establishing a multi-tiered platform and ASEAN nations exhibiting diverse advancements.

Method and Data Resource

1. The WHO introduced the SCORE Assessment Tool in 2021 to help countries evaluate their HIS performance systematically.

2. "SCORE"represents five key interventions: Survey, Count, Optimize, Review, and Enable, linked to 14 secondary elements and a data accessibility indicator, which includes 52 health-related SDG indicators and the Universal Health Coverage index.

3. Scoring is based on five levels: Nascent (1), Limited (2), Moderate (3), Well-developed (4), and Sustainable (5), with 1 indicating minimal capacity and 5 reflecting sustainable system development.

4. Data sourced from the WHO SCORE database.

Table 1 Score Intervention and Element

Intervention		Element
Survey	Survey populations and health risks	S1. System of regular population based health surveys S2. Surveillance of public health threats S3. Regular population census
Count	Count births, deaths and causes of death	C1. Full birth and death registration C2. Certification and reporting of causes of death
Optimize	Optimize health service data	O1. Routine facility and reporting system with patient monitoring O2. Regular system to monitor service availability, quality and effectiveness O3.1. Health service resources: Health finance O3.2. Health service resources: Health workforce
Review	Review progress and performance	R1. Regular analytical progress and performance reviews, with equity R2. Institutional capacity for analysis and learning
Enable	Enable data use for policy and action	E1. Data and evidence drive policy and planning E2. Data access and sharing E3. Strong country-led governance of data

Results and Discussion

1. HIS development across China and ASEAN countries varies significantly. While China and Malaysia lead with strong performance, countries like Laos and Myanmar face challenges in data collection and system enablement. Regional averages highlight progress in Survey but reveal gaps in Count and Enable, emphasizing the need for tailored interventions and stronger regional cooperation to enhance HIS capacity (see figure 1).

2. Results of the detailed elements suggests that China leads across dimensions, achieving sustainable levels in key areas like health surveys, reporting systems, and governance, while Malaysia, Thailand, and Indonesia also show strong performance. Conversely, countries like Laos, Cambodia, and Myanmar exhibit gaps in data collection and reporting, and Singapore lags in governance and reporting (See table 2).The Availability of latest data has reached a basic level of accessibility across all countries, with China, Malaysia, Thailand, and Cambodia achieving sustainability (see table 3).

Figure 1 The Score of Five Intervention of HIS among China and ASEAN countries

Table 2 Results of detailed elements among China and ASEAN countries

Indicators	CN	SG	BN	MY	TH	ID	VN	PH	LA	KH	MM
Survey	4	3	4	4	3	4	4	4	3	4	4
S1	4	2	3	4	3	4	4	4	3	3	4
S2	5	5	5	5	4	4	3	3	4	4	4
S3	5	4	4	4	3	5	4	5	4	4	4
Count	4	4	5	4	3	2	2	4	1	2	2
C1	4	5	5	5	5	2	4	4	2	2	3
C2	4	4	5	3	2	2	1	4	1	2	2
Optimize	5	2	3	4	4	3	3	3	3	4	3
O1	5	1	3	4	3	2	2	3	3	3	3
O2	3	1	2	5	5	2	5	2	5	3	3
O3	4	3	2	4	5	3	3	5	4	4	4
O4	5	3	5	5	5	5	4	5	5	5	5
Review	5	2	3	5	4	4	4	4	3	4	3
R1	4	2	4	4	4	4	3	3	3	4	3
R2	5	1	2	5	3	5	3	3	2	3	2
Enable	4	1	2	4	4	3	3	4	4	3	3
E1	4	1	1	5	4	3	3	4	4	4	3
E2	4	1	3	5	4	4	4	4	4	3	4
E3	4	1	3	3	3	3	3	4	4	2	2

Table 3 Results of the health-related SDGs data availability

World Bank country income levels	Country	Number of Accessible Indicators	Total Relevant Indicators	Proportion of Accessible Indicators	Capability Maturity Rating	Capability Maturity Evaluation
Upper-middle income	CN	39	53	74%	4	Well-developed
High-income	SG	34	53	64%	4	Well-developed
Lower-middle	BN	42	53	79%	4	Well-developed
Upper-middle	MY	52	53	98%	5	Sustainable
	TH	44	53	83%	5	Sustainable
	ID	36	53	68%	4	Well-developed
Lower-middle income	VN	41	53	77%	4	Well-developed
	PH	42	53	79%	4	Well-developed
	LA	41	53	77%	4	Well-developed
	KH	46	53	87%	5	Sustainable
	MM	39	53	74%	4	Well-developed

Conclusion

China and ASEAN countries have established foundational HIS frameworks but still face challenges in achieving sustainability across all SCORE dimensions. Middle-income countries outperform high-income nations in some aspects, suggesting potential discrepancies in evaluation processes. However, significant gaps in data collection, optimization, and empowerment remain across the region. Strengthened commitments, targeted interventions, and collaborative efforts are essential to building sustainable and equitable HIS that support health security and policy effectiveness in the region.

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