

COST AVOIDANCE ASSOCIATED WITH HOSPITAL-COMPOUNDED PREPARATIONS IN A THAI TERTIARY HOSPITAL: A REAL-WORLD ECONOMIC ANALYSIS

EE103

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BACKGROUND

Hospital compounding provides essential formulations when suitable commercial products are unavailable.

Commercial products may not meet institutional needs in formulation, strength, package size, or accessibility.

Despite its operational importance, the **economic and healthcare-system value** of hospital compounding remains underexplored.

OBJECTIVE

Evaluate the real-world economic and healthcare-system value of hospital-compounded preparations using cost avoidance analysis and operational production data.

METHODS

1

STUDY DESIGN
Retrospective real-world economic evaluation from the hospital perspective
FY2025: 1 Oct 2024–30 Sep 2025

2

PRODUCT SCOPE
56 compounded formulations
Representing ~85–86% of annual production volume across five operational categories

3

VALUE & COSTING FRAMEWORK
Group A: Market comparators available → quantitative cost avoidance

Group B: No direct commercial equivalents → descriptive healthcare access value

TDABC for selected high-impact formulations;
institutional production costs for routine formulations

4

ECONOMIC ANALYSIS

COST AVOIDANCE FORMULA

Cost Avoidance

=

Market Price/Unit

Price of equivalent commercial product

-

Hospital Production Cost/Unit

Total cost to produce 1 unit in hospital

×

Annual Volume

Total quantity produced and used per year

RESULTS — GROUP A: ECONOMIC VALUE

ESTIMATED ANNUAL COST AVOIDANCE

7.78

MILLION THB / YEAR

12 Group A preparations had identifiable commercial comparators.

Tar Shampoo Contributes 73% of the 7.78M THB Annual Cost Avoidance

Product Formulation	Estimated Annual Cost Avoidance (Million THB)	Percentage
Tar Shampoo (2 sizes)	5.70M THB	73.0%
2% Chlorhexidine in 70% Alc.	0.97M THB	12.0%
80% Antiseptic Handrub	0.46M THB	6.0%
Aqua / Ultrasound Gel	0.26M THB	3.0%
Other Formulations	0.25M THB	3.0%
Zinc Oxide Paste	0.14M THB	2.0%

Source: Real-World Health Economic Analysis, Sunpasitthiprasong Hospital (FY2025)

ECONOMIC HIGHLIGHTS

- Tar shampoo was the largest contributor: 5.70M THB/year (~73%)
- 2% chlorhexidine in 70% alcohol: 0.97M THB/year (~12%)
- 80% antiseptic handrub: 0.46M THB/year (~6%)
- Aqua Gel: 0.26M THB/year (~3%)

SENSITIVITY ANALYSIS

Cost advantages for major high-impact formulations generally persisted across varying market-price assumptions.

ROBUSTNESS & NEUTRALITY

ROBUSTNESS
Major high-impact formulations remained economically favorable across varying market-price assumptions.

METHODOLOGICAL NEUTRALITY
Some formulations showed minimal or negative cost avoidance; 0.12% CMW showed slightly negative cost avoidance.

SENSITIVITY TESTING
Sensitivity analyses varied market-price assumptions for selected high-impact formulations.

GROUP B: ACCESS VALUE

INSTITUTIONAL PRODUCTION EXPENDITURE

5.03

MILLION THB / YEAR

Access-supporting production expenditure for specialized formulations without direct commercial equivalents — not direct savings.

GROUP B PRODUCTION CATEGORIES

Category	Percentage
External	60.1%
Internal	18.0%
Pediatric extemporaneous liquids	12.6%
Disinfectant & antiseptic	7.6%
Sterile	1.7%

SPECIALIZED FORMULATIONS WITHOUT DIRECT MARKET EQUIVALENTS

Examples

- Chloral hydrate syrup • Clonazepam suspension
- Rifampicin suspension • Baclofen suspension
- Itraconazole suspension

ACCESS VALUE

Supports continuity of care where suitable commercial alternatives are unavailable.

SENSITIVITY SNAPSHOT

Product	Market	Hospital
Tar shampoo	0.69–1.25	0.26–0.28
2% CHG	0.60–2.00	0.36
Oxymetazoline	5.30–8.00	4.90
Aqua Gel	0.07–0.19	0.12

THB/mL. Major products generally remained economically favorable under varying market-price assumptions.

ECONOMIC SUSTAINABILITY

7.78

MILLION THB / YEAR

Measurable Cost Avoidance

MEDICINE ACCESSIBILITY

5.03

MILLION THB / YEAR

Access-Supporting Production Expenditure

12.81

MILLION THB / YEAR

Total compounded pharmaceutical activity analyzed*

*Combined pharmaceutical activity analyzed — not total savings.

HEALTHCARE-SYSTEM RESILIENCE

Hospital compounding supports economic sustainability while maintaining access to essential formulations unavailable commercially.