Improving Performance Based Decisions in the Bidding Processes for Multi-Source Pharmaceuticals in Public Hospitals in Thailand

Short Report from an Applied Policy Workshop

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Introduction:

Pharmaceutical procurement in Thailand has a long history of de-concentration of management and decision to the Provincial Health Office (PHO) and all public hospitals such as delegating financial power to generate, retain and use revenue according to regulations, subject to regular audits by the Auditor General [4]. Thus, purchasing for hospital pharmaceuticals is strongly decentralized. Before the Public Procurement Act was deployed, the selection criterion in tenders or bidding, as called in Thailand, was the lowest price. Since the establishment of the Public Procurement Act BE2560 (AD2017), the bidder selection for multi-sourced supplies including pharmaceutical and medical supplies has been expanded beyond "price" to "price-performance" in order to align with the principles of the Act concerning worthiness, transparency, efficiency, effectiveness and accountability. While public hospitals are encouraged to use performance criteria to determine the suppliers for pharmaceutical products, there is still a lack of a standard definition of what these criteria encompass and how important each of them is in making the decision. This may lead to a high level of variation between the hospitals on the formulary composition and in the methods used to make the specific tender. To increase the overall quality and transparency based on Public Procurement Act BE2560 (AD2017), the government is now requiring a solid rational and transparent documentation of hospital purchasing decisions.

Multiple Criteria Decision Analysis (MCDA) is a method which has been suggested as a tool for the evidence-based assessment of multi-source pharmaceuticals in developing countries.[7] MCDA can help to consider multiple and sometimes conflicting criteria in the evaluation of the available alternatives. Each criterion is scored separately and contributes with a predetermined weight, according to its relative importance, to the composite score reflecting the overall performance of the alternative.[a] MCDA is being used widely to inform decision making in healthcare, including benefit-risk assessment of medicine, formulary listing, or reimbursement decisions.[8] Examples for using MCDA in decision making for multi-source medicines in developing countries are emerging in several countries such as China, Thailand or Egypt.[9,10] MCDA could be a solution for hospitals in Thailand to select those product which best meet the needs of the patients, providers, and the National Healthcare Policy bodies.

Thailand has a strong history of using multiple criteria decision analysis (MCDA) in considering value of pharmaceuticals as an important component in pharmaceutical policy planning, price

[a] A short explanation of MCDA in lay language (English) can be seen under https://www.youtube.com/watch?v=7OoKJHvsUbo

negotiation, development of clinical practice guidelines, and communication with health professionals [5]. It has been recognized that MCDA enhances the legitimacy of policy decisions by increasing the transparency, systematic nature, and inclusiveness of the process [5]. Examples for using the MCDA method on a National level for rational, transparent, and fair priority-setting in context of single source drugs have been described.[6]

On the 29th of June 2018, key stakeholders and experts in pharmaceutical tender policies in Thailand came together on invitation by the Pharmaceutical Association of Thailand under Royal Patronage (PAT). During the 1-day workshop, which was officially opened by the president of PAT, Associate Professor Sindhchai Keokitichai, all participants were involved in developing a MCDA tool to improve decision making in the hospital tender setting.

The 37 active workshop participants represented multiple perspectives in Thailand (24 pharmaceutical purchasing (12 of these from leading hospitals), 7 academic pharmacy education leaders, 4 from the Ministry of Health, 1 from PAT, and 1 from an industry association) in addition to 2 observers from the regulatory perspective.

The international health-policy advisors Professor Nikolaos Maniadakis (Greece) and Dr. Anke-Peggy Holtorf (Health Outcomes Strategies, Switzerland) moderated the workshop following an internationally validated MCDA model and process for local adaptation.[11] Both international experts, together with the local leader of the initiative, Dr. Anunchai Assawamakin, guided the workshop participants through the local adaptation of the MCDA format using 5 work-steps, starting from the basic decision criteria proposed by international health policy thought leaders[7] and an adapted set of these criteria which had been revised of the local leadership team of the initiative before the workshop.

Photo 1: The participants of Workshop on MCDA Adoption for Good Public Procurement in Thailand, which took place in Bangkok on the 29th of June 2018

The discussion among the participants confirmed that currently, there is no uniform evaluation method applied to tender decision making in hospitals. However, there was a general agreement, that the decision should not solely be based on price because major differences relating to quality and reliability or other factors with healthcare impact are observed in real life between the products offered by different suppliers and may have a major impact on the health of the patients. The aim of the workshop was to build a consensus on a MCDA process integrating these criteria, which would be applicable across diverse hospitals and institution, but which would also allow them adaptation to local priorities. The key advantages of using a

consistent approach involving the MCDA methodology would be on one hand the improved decision consistency and fairness, and on the other hand, the high transparency and documentation of decisions versus all stakeholders with interest in the decision (e.g., manufacturers, government agencies, quality control, hospital administration and providers).

Photo 2: Discussion of the decision criteria relevant for Thai public procurement in hospitals with the international health policy advisors

At the beginning, the participants selected the most important non-price criteria which should be considered for determining the value of multi-source pharmaceuticals (*Step 1: selection of non-price criteria*). This discussion resulted in 10 criteria of which five relate specifically to the product (Equivalence with the reference (original) product, Stability and drug formulation, Product Quality determined by the Certificate of Analysis (CoA) of the finished product and the Product Specifications of both the finished product and the API), three relate to the manufacturer (the Manufacturing Standard of both the finished product and the API as well as the reliability of drug supply), and two relate to additional value beyond the actual product (added value services on hospital level and macroeconomic benefit in terms of local investments by the manufacturer).

Two other criteria have been considered but were not adopted to the final essential list of decision criteria: The certificate of analysis for the API is a prerequisite to enter the tender and therefore, will not be relevant for further differentiation between the products; pharmacovigilance was also not considered relevant for the multisource pharmaceuticals used in the hospital setting. In addition, it was warned that this criterion might introduce an unfair bias towards the originator products which are usually the only ones pursuing a pharmacovigilance database on international level.

The MCDA model is a living instrument which can be revised when the priorities and needs in the healthcare system and policies change. Therefore, criteria can be included, excluded, or adapted at a later stage once a consensus on the importance and the transparent measures for qualification is reached among the users of the instrument. The final list of criteria selected for the resulting MCDA model shows some variations towards the criteria which were previously suggested by an international expert group[7] and which were selected in other countries adapting the tool to their settings[11].

For all selected criteria, the measurement scales were discussed in in some cases, the previously suggested rating were adapted by the participants as considered more appropriate in the Thai hospital setting (*Step 2: criteria scoring*). During this discussion, the rating for Certificate of Analysis for the finished product was determined as either ‘complying with the specifications (= 100%) or not complying (Exclusion). It may be appropriate in a subsequent version to consider this criterion as another prerequisite to enter the tender and therefore, not necessary to remain part of the tender evaluation criteria.

Photo 3: The choices were made interactively with an audience response system used by all participating stakeholders

Subsequently, the consensus on the relative importance of the price criterion was determined by voting to be 40% which is established as a general established ratio for chemical pharmaceutical products. (*Step 3: Weight of price criterion*). To enable a quantitative scoring function for the price criterion, the participants had to determine the cut-off point for the price (*Step 4: Scoring of price criterion*). This median cut-off point was voted to be and excess price of 100% based on the acceptance threshold defined by the current guideline of Comptroller General Department. Therefore, all products with prices which are 100% or more over the lowest price offered in the tender will receive a score of 0 in the evaluation.

Finally, the selected criteria were ranked and rated for their weight in the final decision (*Step 5: ranking and weighting of non-price criteria by 'SMART and swing' method*[8]). The results are summarized in Table 1 in the column 'Final Weights'.

Table 1: Results of the consensus workshop for the relative importance of the evaluation criteria and their weight in the final score for each option.

Criterion	**Measures**	**Rank** (Importance)	**Final Weights***
Price	Quantitative	1	40%
Equivalence with the reference (original) product	Qualitative	2	12.2%
Product Quality: Certificate of Analysis (CoA) Finished product	Yes / No (No = Exclusion)	3	8.7%
Manufacturer Quality: Manufacturing Standard Finished product	Qualitative	4	8.7%
Stability and drug formulation	Qualitative	5	7.3%
Product Quality: Product Specification: Finished Product	Qualitative	6	5.8%
Quality: Product Specification API	Qualitative	7	4.9%
Quality: Manufacturing Standard API	Qualitative	8	4.0%
Added value service on hospital level	Qualitative	9	3.1%
Reliability of drug supply	Qualitative	10	2.8%
Macroeconomic benefit	Qualitative	11	2.5%

The workshop resulted in a MCDA model which facilitates the comparative assessment of multi-source pharmaceuticals considering the price with a weight of 40% following the generally used ratio for chemical pharmaceutical products and, in addition, 10 other non-price criteria with a combined weight in the final decision of 60 percent to evaluate the performance of the product. Flexibility of the ratio between price and performance i.e. performance ratio higher than 60% could be considered depending on pharmaceuticals type (e.g narrow therapeutic index drugs, lifesaving drugs). Among the non-price criteria, those relating to product or

manufacturing quality were deemed most important and have a combined weight of 32.1% in the product selection. Product equivalence and product stability were further important criteria with an impact of 12.2% and 7.3% respectively on the final product score. The impact of all other criteria including added value service on the hospital level (3.1%), reliability of drug supply (2.8%) and macroeconomic benefit or local investment (2.5%) remains limited with a combined weight of 8.4%. Two of the internationally proposed criteria, real world outcomes and pharmacovigilance were not considered to be among the relevant criteria for the selection of tender winners in the hospital procurement context.

Finally, all participants agreed that the resulting model seemed appropriate for the selection process in Thai hospitals and that it should be tested in real-life pilot applications. Hence, after the adaptation through this workshop by a group of Thai pharmacists from a broad range of institutions, the MCDA model, two additional steps are important to ensure applicability in the hospital setting: 1.) piloting and validating in real decision processes and 2.) refinement based on the experiences in the piloting. Realizing such a pilot application will require involvement of all functions concerned in the specific hospital decision process and their agreement. After successful piloting and refinement of the model and evaluation tool based on the real-life experience, a roadmap for further dissemination and implementation should be developed.

Involving the important purchasing stakeholders in the pilots and the evaluation will allow for full transparency, further improvement and finally, endorsement of the process in the specific Thai hospital tender decision context. More stakeholders may be important in the subject of this discussion and they should be involved in the subsequent steps throughout the implementation of a revised process. The participants at the workshop agreed to the approach and considered the resulting MCDA tool to be suitable to improve the transparency and consistency of decision making for multi-source pharmaceuticals in Thai hospitals.

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