Standard Cost Lists for Health Economic Evaluation in Thailand

Arthorn Riewpaiboon BPharm, MSc, PhD*

** Social and Administrative Pharmacy Excellence Research (SAPER) Unit, Department of Pharmacy, Faculty of Pharmacy, Mahidol University, Bangkok, Thailand*

This analysis was undertaken to generate a set of standard costs for medical services and those incurred by patients receiving treatment, for use in health economic evaluations. Medical service unit cost data were derived from a survey of 3,091 hospital medical services in five hospitals, disaggregated by type of hospital (district or provincial/regional) and analyzed using the relative value unit method. Patient-borne ambulatory cost values were derived from data gathered through 905 patient interviews that took place in six health centers, three district hospitals, and three provincial/regional hospitals. The survey gathered data on costs a rising from the distance travelled to access the medical service, the time spent in the healthcare facility, as well as travel and meal costs. The analysis generated a set of standard cost data for Thailand that will make conducting economic evaluations more accurate, faster, and more convenient, as well as allowing better comparability between studies. This is the first standard cost menu that has been developed specifically for Thailand, and as such should be revised and refined in the future. Some areas that would benefit from revision are suggested.

Keywords: *Medical service, Unit cost, Standard cost list, Health economic evaluation, Thailand*

J Med Assoc Thai 2014; 97 (Suppl. 5): S127-S134
Full text. e-Journal: *http://www.jmatonline.com*

Economic evaluation is a tool that is widely used tool to aid decision-making, both from a practical, individual standpoint and as part of the development of national policies. Despite this, implementation of the approach is not always straightforward. One issue that can impede accurate economic evaluation is the process of obtaining accurate cost measurements, which may be derived using a variety of concepts, methods, and reference values[1,2]. This can lead to instances where one technology is assigned various different values, as a result of the researchers using different methods and/or references in the calculations. This difference in costing may not necessarily reflect a real difference in resource usage, but merely a different calculation approach on the part of the researcher. One recent study in Thailand found that the capital cost of a district hospital calculated using an economic approach was 13% higher than that calculated using an accounting approach. The same study also found that using a 6% discount rate comparing to 3% rate increased the calculated cost by 4.8%[3].

Correspondence to:
Riewpaiboon A, Social and Administrative Pharmacy Excellence Research (SAPER) Unit, Department of Pharmacy, Faculty of Pharmacy, Mahidol University, 447 Sri Ayutthaya Road, Ratchathewi, Bangkok 10400, Thailand.
Phone: 0-2644-8677-90 ext. 5745, Fax: 0-2644-8694
E-mail: arthorn.rie@mahidol.ac.th

The costing process involves three basic steps: identification, measurement, and valuation of resource use[4,5]. While the first two steps are relatively straightforward, the final step-valuation-involves multiplying the unit cost of the resource in question by the quantity used. For medical services, the unit cost can be determined by direct measurement, standard or reference lists for both price and cost, average market prices, or estimation[6]. While the specific objective and limitations of some studies may mean that average market prices, or estimation are used to determine unit cost, in general, the use of direct measurement or standard/reference cost lists is preferred. Using direct measurement at a study site to ascertain unit cost is appropriate when the results are to be used for organizational management, while standard unit cost is used when the results are needed for national-level management.

In Thailand, health economic evaluation (HEE) is a standard tool that is used to inform policy development. For instance, before a new drug is included on the national list of essential drugs it must first be subjected to an HEE; the same is true for a new treatment regimen, before it is accepted for coverage under the national health insurance benefit package. To establish standardized study methods in 2008, the Health Intervention and Technology Assessment Program (HITAP) of the Ministry of Public Health

developed a set of National Health Technology Assessment Guidelines, published in book form and in the Journal of the Medical Association of Thailand (volume 91, supplement 2)[7]. These guidelines included a chapter on measurement of costs written by this author[8,9]. Although the establishment of national standard guidelines on cost measurement has provided researchers with much more clarity, conducting comparisons between studies at a national level remains a challenge, as researchers continue to use unit costs that cannot be compared. To help address this challenge and provide clear guidance on unit costing processes, HITAP assigned this author to develop a list of standard unit costs of medical services for Thailand. The list is intended to increase the efficiency of study implementation, improve the reliability of data, and allow more accurate cross-study comparison.

Material and Method

Overall methods

The present study employed a standard or conventional costing method, which is comprised of five steps[3]: cost centre identification, direct cost determination, indirect cost allocation, full cost calculation, and unit cost calculation. To classify cost centers, it is necessary to know which service outputs and resources are used by those units: transient cost centers provide support to patient service units and absorbing cost centre provide medical services to patients. Direct cost determination is a method used to calculate those costs that are directly incurred by the cost centers-labor cost, material cost, and capital cost. Costs incurred by transient cost centers are allocated to absorbing cost centers. Many alternative allocation methods are available, including direct allocation, step-down allocation, double distribution, and simultaneous equation methods[10], the latter of which is the most complicated but also the most accurate. Full cost is calculated by adding together all direct and indirect costs. Finally, the full cost is allocated to output services (or cost objects or cost products).

There are several unit cost allocation methods. The average method is used for cost centers producing only one service or a set of homogeneous services assumed to be the same service. For multi-service cost centers, there are a number of alternative methods, including micro-costing[11,12], ratio of costs to charges (RCC)[12,13], and relative value unit (RVU) or weight procedure method[12,13].

The micro-costing method is the most accurate since it is based on the real resource consumption of each service. The method starts by measuring the direct cost (labor, material, and capital costs) of each service. After that, the sum of direct costs of all services is subtracted from the full cost, resulting in indirect cost (of the service outputs). Finally, the indirect cost is allocated to each service, and then added to the direct cost to obtain the unit cost.

For the RCC method, the unit price of each service is multiplied by the number of service outputs, which then generates a total charge for that service. After this, the full cost is divided by sum of the charges of all services to obtain the ratio of cost to charge. Finally, this ratio is used to multiply each unit price, resulting in unit cost.

The RVU method is based on the ratio of resources used for all services in terms of standard RVUs. Although this method is not as accurate as the micro-costing method, it offers greater time savings[14,15]. First, standard RVUs of all services are developed. Then, the total RVUs used by the hospital are calculated by multiplying the results of the standard RVU by the number of services for all medical services. After that, the cost per RVU is calculated by dividing the full cost by the total RVUs of the hospital. Finally, the cost per RVU is multiplied by the number of RVUs for each service to obtain a unit cost. Standard RVUs can be developed using a ranking method or an objective data method[16-18]. The ranking method is a subjective technique that compares resource usage by establishing the smallest amount, and then estimating subsequent amounts in multiples of this initial amount. The objective data method is based on real resource consumption, based either on the consumption of a major selected resource (for instance time or material use), or the costing data derived from other studies.

Specific methods

The standard cost list used here in was developed based on the following sub-research projects conducted by the author, and on theses of graduate students supervised by the author:

1. Development of standard relative value units of health services[19].

2. Unit cost analysis of hospital medical services[20].

3. Direct non-medical costs for outpatients[21]

Development of standard relative value units of health services[19]

The present study was conducted in 2009 to develop standard RVUs for Thailand. The objective

data method was used for the analysis, based on existing service cost or price lists. In Thailand, there are three main lists-the price list of medical services of hospitals under the Ministry of Public Health[22], which is developed based on costing concepts; the reimbursement list for medical services of public health facilities under the Civil Servant Medical Benefit Scheme (CSMBS)[23], a modified version of the Ministry of Public Health list using assigned service codes available in hospital databases and used by all public hospitals; and the reimbursement list of medical services for road traffic injuries under the victims compensation fund, based on charges. The authors used the reimbursement list to develop our RVUs, as it included all services with codes used in public hospital databases.

Unit cost analysis of hospital medical services[20]

To calculate unit costs of hospital medical services, the standard costing approach was used[3]. For unit cost calculation, the RVU method[12,13] was employed, using the aforementioned standard RVUs of Thailand[19]. Costs were presented based on 2009 values. The study covered regional (>500 beds), provincial (120-500 beds), and district (10-120 beds) hospitals. In larger provinces, regional hospitals provide the same services as provincial hospitals, in addition to offering more advanced treatment. Therefore, regional and provincial hospitals were classified into the same group for the purposes of this study. Only those hospitals that met specific efficiency criteria were included[25]. Study sites were composed of three regional/provincial hospitals and two district hospitals. Total hospital costs were calculated, including labor, material, and capital costs but excluding pharmacy costs. Capital costs included cost of using durable assets and opportunity cost of land used. Capital cost of durable assets was calculated using an economic-based approach[10] with a 3% discount rate[9]. Useful years were defined according to the guidelines of the Ministry of Finance[26]. Items used beyond their useful years were still included in the cost[6,27]. After determining total hospital costs, total RVUs were calculated by multiplying the RVU of each service by the total number of service outputs. Then, the cost per RVU was calculated by dividing the hospital's total cost by the total RVUs. Finally, the cost per RVU was multiplied by the number of standard RVUs of each service, which results in the unit cost.

Direct non-medical costs for out-patients[21]

The present study estimated the direct non-medical costs for outpatient services received at health centers, district hospitals, and regional/provincial hospitals by way of a descriptive study using a face-to-face interview technique. Study sites were selected from the central, northeastern, and northern regions of Thailand. In each region, one regional or provincial hospital, one district hospital, and two health centers were selected based on convenience sampling. In each study hospital, approximately 100 patients were selected for interview. For each health centre, approximately 50 patients were interviewed. All study sample patients were at least 18 years old. Patients who came for general physical examinations, appointments for injections, and wound dressing were excluded. The interviews were conducted between October and December 2009, and focused on gathering information on the distance traveled between the home and health facility, time spent, costs involved with transportation, meal costs, and income loss in the course of obtaining medical services. The Mahidol University institutional review board approved the study. Interviewers explained the process of the study to respondents and obtained their written informed consent before conducting the interview.

Results

The results from this study generated the first set of standard cost lists for Thailand. These have been published, along with the methodology used, in Thai, in hard copy and online (http://www.hitap.net/research), and in software form (http://www.hitap.net/costingmenu/). Five hundred copies of the book were distributed to academics and related organizations[28]. All costs are given in 2009 values, but these can be adjusted by applying the consumer price index for medical care[29]. For international readers, the exchange rate was 34.34 Thai baht (THB) per $1US in 2009[30].
The standard cost list is composed of,

- standard RVUs of medical services
- unit cost of medical services at regional/provincial hospitals
- unit cost of medical services of district hospitals
- direct non-medical cost of outpatients at all levels of health facilities

Lists of medical services, standard RVUs, and unit costs at regional/provincial hospitals and district hospitals are presented in Table 1. In the analysis, no data of variability (standard error) is included, as the hospitals in the survey did not provide the same set of services. To broaden the information base, data for

services rendered by all hospitals at the same level were incorporated into one tabulation. The services were composed of 3,091 items in 12 groups, as follows:

Group 1: Routine service at outpatient and inpatient departments (visit and hospitalization day).

Group 2: Blood transfusion services.

Group 3: Diagnostic and clinical pathology services.

Group 4: Diagnostic and therapeutic radiology services.

Group 5: Special investigations.

Group 6: Medical supplies and services.

Group 7: Medical procedures and anesthesia.

Group 8: Nursing care services.

Group 9: Dentistry services.

Group 10: Physical therapy and medical rehabilitation.

Group 11: Acupuncture and other alternative medicine.

Group 12: Health promotion and disease prevention and control.

Some services in the list were not provided at the time of study; in these cases, the unit costs were listed as not available (N/A). The unit cost of these services can be calculated by multiplying the number of RVUs per service (taken from the standard RVU value list) by cost per RVU. The cost per RVU for regional/provincial hospitals and district hospitals was found to be 134.95 THB and 128.67 THB, respectively (2009 values). In the case of services beyond the scope of the list, unit costs were estimated by multiplying the unit price by the cost to charge ratio developed by this program, giving ratios of 1.63 and 1.45 for regional/provincial hospitals and district hospitals, respectively.

To calculate the direct nonmedical cost data for outpatients, 905 patients were interviewed. The interview asked participants about the various factors that contribute to the direct medical costs, specifically-distance travelled from home to health facilities, time spent travelling and receiving services, costs of travel and meals, and real income loss of patients and accompanying persons (Table 2). All values were calculated according to one hospital visit. All data were disaggregated for health centers, district hospitals, regional/provincial hospitals, and the average across all facilities was calculated. To calculate real income loss, the statistical analysis also included persons who had incurred no income loss, due to being on a fixed monthly salary, being self-employed, or being unemployed. In addition, the opportunity cost could be calculated based on the time spent versus a reference wage rate.

Discussion

A number of countries have developed standard cost lists to help standardize their economic evaluations; the most well known are those of Australia[31], Canada[32,33], the Netherlands[34] and the United Kingdom[35]. The first cost list in health care to be produced was the "Manual of Resource Items and Their Associated Costs"[31]. First developed in Australia in 1993 by the Common wealth Department of Health and Ageing[33], the list gives a standard list of service costs that can be used in economic analyses, the results of which are then submitted to the Pharmaceutical Benefits Advisory Committee. In Canada, the first cost list was developed in Alberta province in 1997; in 1999, a specific cost list for Manitoba health services was developed[36]. This list was then incorporated into the national list of provincial costs for health care in 2000[33]. In the UK, the first costing guidelines, known as NHS Costing Manual, was first developed in 1998 by the Department of Health. It is revised every year, published in manual form, and provided to all hospitals[37], who then conduct cost analyses based on the values within. Participating hospitals calculate the unit costs of the medical services they provide, and the reference cost list is then developed, based on average costs obtained from data submitted by participating hospitals. In the Netherlands, the first "Dutch Manual for Costing: Methods and Reference Prices for Economic Evaluations in Healthcare" was first published in 2000, and a new and revised version was published in 2010, according to the guidelines on pharmacoeconomic evaluation issued by the Dutch Health Insurance Board. The guidelines have been approved by the Ministry of Health, Welfare, and Sport[34,38,39].

By comparing the Thailand list to other international lists in terms of costing methods, it is clear that the present study used similar costing steps to those conducted in other countries-resource identification, quantity measurement, and valuation of resources used. The main difference is that, while most other countries with costing lists have had regularly revised standard cost lists for more than a decade, in Thailand, this is the first version. A clear benefit of this list is that the results were determined from the calculations using data from actual health facilities meeting criteria of efficiency and quality. Nevertheless, as with all first versions, there are some limitations. The CSMBS reimbursement rate used for the standard RVU development was established several years ago,

Table 1. Sample of standard RVUs and unit costs of hospital medical services in Thai baht (THB), 2009 values

Service	Unit	Code	RVU	Unit cost (THB)	
				RH/PH	DH
Group 2 Blood transfusion services					
2.1 Diagnosis					
2.1.1 Antibody identification (tube method)	Test	22101	2.0	270	n/a
2.1.2 Antibody identification (gel test)	Test	22102	4.0	540	n/a
2.1.3 Antibody screening, indirect antiglobulin (tube method)	Test	22103	0.5	n/a	64
2.1.4 Antibody screening, indirect antiglobulin (gel test)	Test	22104	1.0	135	129
2.1.5 Blood group (ABO) (tube method)	Test	22105	1.0	135	129
2.1.6 ABO cell grouping	Test	22106	0.5	67	64
2.1.7 ABO serum grouping	Test	22107	0.5	67	64
2.1.8 Rh.(D) typing	Test	22108	0.4	54	51
2.1.9 Rh. typing (complete)	Test	22109	3.5	472	n/a
2.1.10 Direct antiglobulin test	Test	22110	0.5	n/a	n/a
2.1.11 Direct antiglobulin test (gel test)	Test	22111	1.0	135	n/a
2.1.12 Cross matching	Test	22114	0.8	108	103
2.1.13 Cross matching (gel test)	Test	22115	1.5	202	n/a

RH = regional hospital; PH = provincial hospital; DH = district hospital, THB = Thai baht, n/a = not available

Table 2. Data on direct nonmedical costs for outpatients per visit

Data	Mean (SE)			
	HC	DH	RH/PH	Average
Distance from home to health facilities (km)	3.85 (0.28)	10.86 (0.67)	29.52 (1.82)	14.35 (0.72)
Time spent from home to health facilities (min)	18 (0.72)	40 (3.51)	60 (2.68)	39 (1.59)
Time spent for receiving service, including traveling (from home to home) (min)	69 (3.10)	175 (7.00)	361 (7.91)	201 (5.43)
Traveling cost*	53.72 (3.53)	72.33 (4.12)	142.55 (11.60)	89.16 (4.39)
Meal cost*	13.36 (1.81)	26.23 (3.17)	52.51 (5.35)	30.76 (2.23)
Patient real income loss*	13.71 (3.67)	49.07 (5.84)	80.29 (13.74)	47.69 (5.20)
Accompanying person real income loss*	5.76 (1.96)	43.52 (5.45)	95.51 (35.41)	48.27 (12.02)

SE = standard error, HC = health center; RH = regional hospital; PH = provincial hospital; DH = district hospital, km = kilometer, min = minute
* Thai baht, 2009 values

which may mean that some of the methods may be slightly out of date. This rate was modified from the Ministry of Public Health price list-a list which was developed by different working groups for different service groups. Each group might therefore have used different methods in determining specific details. Another limitation is the small sample size of health facilities used for the calculation. Future revisions to the list should ideally be performed every few years, and the medical services and corresponding codes should be standardized among the various health facilities. The authors recommend that an institute be established to oversee this job as a continuing responsibility.

Conclusion

This is the first standard cost menu to be developed for Thailand. It covers a range of medical services, and covers district hospitals and provincial/regional hospitals. At present, the list does not include services at a super tertiary level or at a university hospital level. This standard cost menu should make

economic evaluations more convenient, faster, and more reliable for national policy decision-making. The next revision should be developed on the back of the recommendations suggested herein.

Acknowledgement

The author wish to give particular thanks to the funding support through the Health Intervention and Technology Assessment Program (HITAP) from the National Health Security Office, the Thailand Research Fund under the Senior Research Scholar on Health Technology Assessment (RTA5580010) and Thai Health Global Link Initiative Program (TGLIP), supported by Thai Health Promotion Foundation. The author wishes to thank graduate students in Pharmacy Administration at the Faculty of Pharmacy, Mahidol University for participating in the project and Professor Peter Coyte, Department of Health Policy, Management and Evaluation, Faculty of Medicine University of Toronto, Canada for giving suggestions on manuscript preparation.

Potential conflicts of interest

None.

References

1. Rizzo JD, Powe NR. Methodological hurdles in conducting pharmacoeconomic analyses. Pharmacoeconomics 1999; 15: 339-55.
2. Cairns J. Discounting in economic evaluation. In: Drummond M, McGuire A, editors. Economic evaluation in health care; merging theory with practice. Oxford: Oxford University Press; 2001: 236-55.
3. Riewpaiboon A, Malaroje S, Kongsawatt S. Effect of costing methods on unit cost of hospital medical services. Trop Med Int Health 2007; 12: 554-63.
4. Brouwer W, Rutten F, Koopmanschap M. Costing in economic evaluations. In: Drummond M, McGuire A, editors. Economic evaluation in health care-merging theory with practice. New York: Oxford University Press; 2001: 68-93.
5. Luce BR, Manning WG, Siegel JE, Lipscomb J. Estimating costs in cost-effectiveness analysis. In: Gold MR, Sigel JE, Russell LB, Weinstein MC, editors. Cost-effectiveness in health and medicine. Oxford: Oxford University Press; 1996: 176-213.
6. Mogyorosy Z, Smith P. The main methodologyical issues in costing health care services; a literature review. York: Centre for Health Economics, The University of York; 2005.
7. Chaikledkaew U, Teerawattananon Y, Kongpittayachai S, Sooksomboon N. Guidelines for health technology assessment in Thailand. Nonthaburi: The Graphico Systems; 2008.
8. Riewpaiboon A. Measurement of costs. J Med Assoc Thai 2008; 91 (Suppl 2): S28-37.
9. Riewpaiboon A. Measurement of costs. In: Chaikledkaew U, Teerawatananon Y, Kongpittayachai S, Sooksomboon N, editors. Guidelines for health technology assessment in Thailand. Nonthaburi: The Graphico Systems; 2008: 79-114. (in Thai)
10. Drummond MF, Sculpher MJ, Torrance GW, O'Brien BJ, Stoddart GL. Methods for the economic evaluation of health care programmes third edition. Oxford: Oxford University Press; 2005.
11. Lerner WM, Wellman WL. Pricing hospital units of service using microcosting techniques. Hosp Health Serv Adm 1985; 30: 7-28.
12. Suver JD, Cooper JC. Principles and methods of managerial cost-accounting systems. Am J Hosp Pharm 1988; 45: 146-52.
13. Cooper JC, Suver JD. Product line cost estimation: a standard cost approach. Healthc Financ Manage 1988; 42: 60, 62, 64.
14. Dowless RM. What's the procedure? Your guide to costing methods and terminology. Nurs Manage 2007; 38: 52-7.
15. Dowless RM. Procedure costing flexibility. Healthc Financ Manage 2007; 61: 103-4.
16. Cost Accounting Workshop. The preparation and development of cost accounting information [Internet]. n.d. [cited 2012 Aug 12]. Available from: http://www.health.gov.ua/zpr/101-200/0145/English/caprep.doc
17. Christie GHW. A guide to cost analysis: developing cost based fees. Syracuse: Health Policy Analysts; 2008.
18. Hankins RW, Baker JJ. Management accounting for health care organizations. Sudbury: Jones and Bartlett Publishers; 2004.
19. Koopitakkajorn T, Riewpaiboon A, Chaikledkaew U. Development of relative value units of health services in Thailand. Bangkok: Faculty of Pharmacy, Mahidol University; 2010.
20. Kamluang S, Riewpaiboon A, Chaikledkaew U. Unit cost analysis of medical services employing relative value unit method. In: Proceedings of the 4th Ubon Ratchathani University Research Conference; 9-10 August 2010. Ubon Ratchathani, Thailand: Ubon Ratchathani University; 2010: 234-

42.
21. Riewpaiboon A. Direct nonmedical cost of outpatients in Thailand. Bangkok: Faculty of Pharmacy, Mahidol University; 2009.
22. Department of Health Service Support. Price list of medical services. Nonthaburi: Ministry of Public Health; 2004. (in Thai)
23. The Comptroller General's Department. Reimbursement rate for medical services of public health facilities. Bangkok: Ministry of Finance; 2006. (in Thai)
24. Department of Insurance. Reimbursement list of medical services for road traffic injuries under the victims compensation fund. Bangkok: Ministry of Finance; 2004. (in Thai)
25. Pattamasiriwat D. Efficiency of hospital cost management: a case of hospitals under the Ministry of Public Health. In: National conference of economists on self-sufficiency economy. Bangkok: University of Agriculture; 2007. (in Thai)
26. Ministry of Finance. Revaluation of assets [Internet]. 2003 [cited 2012 Aug 12]. Available from: http://www.moe.go.th/webfnd/mo29.htm
27. Edejer TT-T, Baltussen R, Adam T, Hutubessy R, Acharya A, Evans DB, et al. Making choices in health: WHO guide to cost-effectiveness analysis. Geneva: World Health Organization; 2003.
28. Riewpaiboon A. Standard cost lists for health technology assessment. Nonthaburi: Health Intervention and Technology Assessment Program (HITAP), Ministry of Public Health; 2011. (in Thai)
29. Bureau of Trade and Economic Indices, Ministry of Commerce. Report for consumer price index of Thailand [Internet]. 2013 [cited 2013 Feb 19]. Available from: http://www.price.moc.go.th/price/cpi/index_new_all.asp
30. Bank of Thailand. Rates of exchange of commercial banks in Bangkok metropolis [Internet]. 2011 [cited 2011 Dec 4]. Available from: http://www2.bot.or.th/statistics/ReportPage.aspx?reportID=123&language=eng
31. Pharmaceutical Evaluation Section Commonwealth, Department of Health and Ageing Australia. Manual of resources items and their associated costs [Internet]. 2009 [cited 2012 Aug 18]. Available from: http://www.health.gov.au/internet/main/publishing.nsf/content/health-pbs-general-pubs-manual-content.htm/$FILE/manual.pdf
32. Jacobs P, Roos NP. Standard cost lists for healthcare in Canada. Issues in validity and inter-provincial consolidation. Pharmacoeconomics 1999; 15: 551-60.
33. Institute of Health Economics. A national list of provincial costs for health care: Canada 1997/8 [Internet]. 2004 [cited 2012 Aug 15]. Available from: http://www.cadth.ca/media/pdf/Costlist_e.pdf
34. Tan SS, Bouwmans CA, Rutten FF, Hakkaart-van Roijen L. Update of the Dutch Manual for Costing in Economic Evaluations. Int J Technol Assess Health Care 2012; 28: 152-8.
35. Department of Health. 2011-12 reference costs publication [Internet]. 2011 [cited 2012 Aug 15]. Available from: http://www.dh.gov.uk/en/Publications and statistics/Publications/Publications Policy and Guidance/DH_131140
36. Jacobs P, Shanahan M, Roos NP, Farnworth M. Cost list for Manitoba health services [Internet]. 1999 [cited 2012 Aug 15]. Available from: http://mchp-appserv.cpe.umanitoba.ca/reference/costlist.pdf
37. Department of Health. NHS costing manual 2009/10 [Internet]. 2010 [cited 2012 Aug 15]. Available from: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_113295.pdf
38. Oostenbrink JB, Koopmanschap MA, Rutten FF. Dutch manual for costing-research: methods and guideline-prices. In: Annual Meeting of International Society of Technology Assessment Health Care Int Soc Technol Assess Health Care Meet; 2000: 162.
39. Oostenbrink JB, Koopmanschap MA, Rutten FF. Standardisation of costs: the Dutch Manual for Costing in economic evaluations. Pharmaco-economics 2002; 20: 443-54.

รายการต้นทุนมาตรฐานเพื่อการประเมินความคุ้มค่าทางสาธารณสุขในประเทศไทย

อาทร ริ้วไพบูลย์

โครงการนี้มีวัตถุประสงค์เพื่อคำนวณต้นทุนต่อหน่วยมาตรฐานของบริการทางการแพทย์ในสถานบริการระดับต่างๆ และต้นทุนของผู้ป่วยและครอบครัวในการมารับการรักษาสำหรับใช้ในการประเมินความคุ้มค่าทางสาธารณสุข การวิเคราะห์ต้นทุนต่อหน่วยของบริการทางการแพทย์ได้ดำเนินการในโรงพยาบาล 5 แห่ง ด้วยวิธีค่าต้นทุนสัมพัทธ์ สำหรับต้นทุนในการมารับบริการในฐานะผู้ป่วยนอก ได้เก็บข้อมูลโดยการสัมภาษณ์ผู้ป่วยจำนวน 905 ราย จากสถานีอนามัย 6 แห่ง โรงพยาบาลอำเภอ 3 แห่งและโรงพยาบาลทั่วไปหรือโรงพยาบาลศูนย์ 3 แห่ง ผลการศึกษาประกอบด้วยรายการบริการทางการแพทย์จำนวน 3,091 รายการ โดยแยกต้นทุนเป็นของโรงพยาบาล 2 ระดับ คือ โรงพยาบาลอำเภอ และโรงพยาบาลทั่วไปหรือโรงพยาบาลศูนย์ ข้อมูลในการมารับบริการของผู้ป่วยนอก แยกเป็นระยะทางจากบ้านถึงสถานบริการ เวลาที่ใช้ในการมารับบริการ ค่าเดินทางและค่าอาหาร รายการต้นทุนมาตรฐานที่จัดทำในครั้งนี้จะช่วยทำให้การประเมินความคุ้มค่าทางสาธารณสุขสะดวกและรวดเร็วยิ่งขึ้น อย่างไรก็ตามรายการต้นทุนมาตรฐานนี้ยังมีข้อจำกัดอยู่บ้าง เนื่องจากเป็นการจัดทำครั้งแรกซึ่งจะได้แก้ไขในการปรับปรุงครั้งต่อไป