ต้นทุนในการผลิตบัณฑิตแพทย์ของคณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย



นายทศพร วิมลเก็จ

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิทยาศาสตรมหาบัณฑิต สาขาวิชา เศรษฐศาสตร์สาธารณสุข คณะเศรษฐศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ปีการศึกษา 2543 ISBN 974-130-995-3 ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

COST OF PRODUCING A MEDICAL STUDENT AT CHULALONGKORN UNIVERSITY



Mr. Thosporn Vimolket

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Health Economics

Program of Economics
Faculty of Economics
Chulalongkorn University
Academic Year 2000
ISBN 974-130-995-3

Thesis Title : COST OF PRODUCING A MEDICAL STUDENT AT

CHULALONGKORN UNIVERSITY

By : Mr. Thosporn Vimolket

Field of Study : Health Economics

Thesis Advisor : Assistant Professor Kaemthong Indaratna, Ph.D.

Co – Advisor : Professor Pirom Kamol–ratanakul, M.D.

Accepted by the Faculty of Economics, Chulalongkorn University in Partial Fulfillment of the Requirements for Master's Degree

S_Ch_____Dean, Faculty of Economics

(Associate Professor Suthiphand Chirathivat, Ph.D.)

Thesis Committee:

Waranya Patarasuk Chair Person

(Associate Professor Waranya Patarasuk)

(Assistant Professor Kaemthong Indaratna, Ph.D.)

(Professor Pirom Kamol-ratanakul, M.D.)

P. Kam / Thesis Co - Advisor

P. Jesadachatz Member

(Phitsanes Jessadachatr, Ph.D.)

ต้นฉบับ หน้าขาดหาย

4385756229:

MAJOR HEALTH ECONOMICS

KEY WORD:

UNIT COST / MEDICAL STUDENT / EDUCATION / CHULALONGKORN UNIVERSITY /

ECONOMIC COST

THOSPORN VIMOLKET: COST OF PRODUCING A MEDICAL STUDENT

AT CHULALONGKORN UNIVERSITY. THESIS ADVISOR: ASSIST. PROF. AEMTHONG

INDARATNA, Ph.D. THESIS CO-ADVISOR: PROF. PIROM KAMOL-RANAKUL, M.D.,

103 pp. ISBN 974-130-995-3

The cost of producing a medical student in a 6 years curriculum and the analysis of the cost components of the Faculty of Medicine, could be used as the key data for planning,

budgeting and preparing for the autonomous university in the future.

The cost centers were categorized to be executive, education supporting and education unit. The simultaneous equation method was applied to allocate all costs of other cost centers to the education unit. The unit cost per enrolled student was, 2,161,124 Baht and 8,217Baht/Student Credit Hour (SCH), while the unit cost per graduate was. 2,174,091 Baht and 8,267 Baht/SCH. The labor cost accounted for 69.46%, capital cost, 26.42% and material cost, 4.12% of the total medical student production cost. The three most costly Departments were Medicine (13.24%), Obstetrics and Gynecology (11.73%) and Paediatrics (9.87%). The cost-fee ratio (cost/fee) was 95: 5 which suggested that medical students obtain 95% subsidy from the government budget or the society. If the University becomes autonomous and less dependent on public budget, the fee may have to be adjusted higher to cover the cost. The percentage of drop out and repeat students was 0.00-0.88% with delay duration of about 6 months to one year only. The opportunity cost of six years study for a student attending the medical school was 544,956 Baht which raised the total cost per graduate to 2,719,047 Baht from student/ societal perspective.

Department	Economics	Student's signature	11. C. M.
Field of study		Advisor's signature	of melayh
Academic year	2000	Co-advisor' signature	P. Kambe

V

ACKNOWLEDGEMENT

I would like to thank my thesis advisor Asst. Prof. Dr. Kaemthong Indaratna,

Ph.D. my thesis co-advisor Prof. Pirom Kamol-ratanakul, M.D., Chair Person Assoc.

Prof. Waranya Patarasuk, and Member Dr. Phitsanes Jessadachatr, Ph.D.

I would also like to express my sincere thanks to the Duangkaew Foundation in

funding this study, Assoc. Prof. Ong-ari Viputsiri, head of the Department of Preventive

and Social Medicine, Dr. Adisorn Phatradune, Finance division, Logistic division,

Secretariat Office Academic Division, Faculty of Medicine, Chulalongkorn University,

the Hospital Accreditation Office, King Chulalongkorn Hospital Administration, my

assistant Miss Sutisa Petchyuan, Miss Mayuree Jiravisit, Mr. Boonchorb Melapa, Miss

Sureerat Ngamkiatepaisan, Miss Sudarat Patarathavorn.

Finally I would like to thank my family in encouraging me this work.

Thosporn Vimolket

May 2001

*

CONTENTS

	rage
ΑĒ	SSTRACT (ENGLISH)iv
ΑC	CKNOWLEDGEMENTSv
CC	ONTENTS vi
LIS	ST OF TABLESix
LIS	ST OF FIGURESxi
ΑE	BBREVIATIONSxii
CF	IAPTER
1.	INTRODUCTION
	1.1 Background and Rationale1
	1.2 Research Questions
	1.3 Research Objectives
	1.4 Scope of the study2
	1.5 Operating definition
	1.6 Possible Benefits5
2.	LITERATURE REVIEW6
	2.1 Economics of education
	2.2 Cost theory6
	2.3 The Cost of Education
	2.4 The analysis of cost of education
	2.5 Cost of producing health care graduates
	2.6 Tuition fees of health care study
3.	BACKGROUND INFORMATION
	Administrative organization structure
4.]	RESEARCH METHODOLOGY
	4.1 Study Design22
	4.2 Data Collection
	4.3 Population and Sample

4.4 Analysis of cost of education	26
4.5 Data Analysis	32
5. ANALYSIS AND RESULTS	37
5.1 The total cost, unit cost and Baht/SCH	37
5.2 The labor cost, material cost and capital cost	38
5.3 The cost of producing Medical Student year 1 to year 6	39
5.4 The cost of producing Medical Students year 2 to year 6 by Departments	40
5.5 Hospital Cost.	46
5.6 The analysis of economic loss from dropout and repeat student	48
5.7 Indirect Cost of Student.	51
5.8 Sensitivity analysis	52
6. CONCLUSION, DISCUSSION, POLICY IMPLICATION	
AND RECOMMENDATION	54
6.1 Conclusion.	54
6.2 Discussion.	55
6.3 Policy implication and Recommendation	57
REFERENCES	59
APPENDICES	63
Appendix I	64
Apportation coefficient of each cost center	64
Apportation coefficient matrix	76
Curriculum Structure of Doctor of Medicine Program	80
The credit and the Student Credit Hour (SCH)	81
Appendix II	82
Medical Curriculum (Year 1 – Year 6)	82
Appendix III	91
Table Shows department and number of weeks that	
medical Students attended in ward	91

Append	dix IV	. 93
	Space of the Faculty of Medicine	. 93
Append	dix V	. 94
	Table A.1 Rate of unemployment by region and age	. 96
	Table A.2 Shows average wage by region and sex	97
	Table A.3 Number of Student by sex and study year	
	of age 15 – 19	. 94
	Table A.4 Number of Student by sex and study year	
	of age 20 – 24	. 95
Append	dix VI	98
	Summary table: General Consumer Price Index 1994 – 2001	98
Appendix VII	lix VII	. 99
	Doctor cost allocation data shoat	. 99
	Form CC.	100
	Form LC-1.	101
	MC-1 Material Survey Material section.	.102
BIOGRAGHY		. 103

LIST OF TABLES

Tab	le I	Page
2.1	Number of graduates during 1992 – 1996 by source of production	12
3.1	Study program and number of student.	.20
4.1	List of data and sources required in this study	.23
5.1	The total cost, unit cost and Baht per Student Credit Hour	
	(SCH) of producing medical doctor. (not adjusted with dropout and	
	repeat student)	38
5.2	The total cost, unit cost and Baht per Student Credit Hour (SCH)	
	of producing medical doctor. (adjusted with dropout and repeat student)	38
5.3	The cost and percentage of the total cost labor cost, material cost and	
	capital cost of producing medical doctors (not adjusted)	38
5.4	The total cost, unit cost and Baht/SCH of producing Medical Student	
	year 1 to year 6.	.39
5.5	The cost of producing one medical doctor per year from year 2 to year 6	41
5.6	Total cost, material cost, capital cost and unit cost of medical student year 2	42
5.7	Total cost, material cost, capital cost and unit cost of medical student year 3	43
5.8	Total cost, material cost, capital cost and unit cost of medical student year 4	44
5.9	Total cost, material cost, capital cost and unit cost of medical student year 5	45
5.10	Total cost, material cost, capital cost and unit cost of Medical student year 6	.46
5.11	Hospital cost in material cost, labor cost, capital cost, percentage and	
	total cost of producing medical student by department	47
5.12	The number of number of students, number of students not pass,	
	drop out and time delayed	49
5.13	Study status, average years of study and rate of loss of medical student in	
	the year 2000.	. 50
5.14	The indirect cost or opportunity cost or income foregone of student	51

5.15	The total cost, unit cost and Baht per student credit hour(SCH) of	
	producing medical doctor and sensitivity analysis if labor cost changed	
	by 70% (not adjusted will delayed and dropout students)	52
5.16	The total cost, unit cost and Baht /person student credit hour (SCH) of	
	producing medical doctor and sensitivity analysis if labor cost of	
	charitably 70%(adjusted with delayed and dropout students)	52
6.1	The variable cost and fixed cost of producing one medical doctor	54

LIST OF FIGURES

Figure		Page
3.1	Administrative organization structure	16
3.2	Organization structure	18
4.1	Student tracks and data collection diagram	24
4.2	Conceptual Frame Work.	25

ABBREVIATIONS

CC Capital Cost

CPI Consumer Price Index

LC Labor Cost

MC Material Cost

SCH Student Credit Hour

TC Total Cost