

Cost of Primary Health Care in Universal Insurance at Health Center 16, Bangkok Metropolitan Administration

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The purpose of the present study was to illustrate the cost of services in health promotion and prevention, out patient (OPD) and dental care in Health Center (No.16) Bangkok Metropolitan Administration. The analysis of the cost components could be used as key data for future planning, budgeting and resources preparing for the short and long terms.

The cost centers were categorized to be executive, services and supporting unit. The simultaneous equation method was employed to allocate all costs from other associated cost centers to the service unit.

The unit cost per visit was 372.76 baht, while the unit cost per capitation was 532.83 baht. The unit cost of health promotion and prevention per capitation was 288.95 baht, whereas the unit cost of OPD care per capitation was 183.47 baht and the unit cost of dental care per capitation was 55.37 baht. The labor cost accounted for 83.67 per cent, capital cost 6.09 per cent and material cost 10.24 per cent of the total cost.

Unit costs of OPD and dental care were lower than the proposed budget while the unit cost of health promotion and prevention was higher. This could be due to some patients seeking OPD care from King Chulalongkorn Hospital instead, while the health promotion and prevention offering was more than that normally offered in other Health Centers. The improvement of labor efficiency and the decrease of labor cost would be the short and long run strategies respectively.

Keywords : Primary medical care, Universal insurance, Cost analysis

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Since the Economic and Social Development Plans have been implemented in Thailand for nearly 40 years, there have been a lot of changes in the population's socioeconomic and health status. The health care systems were guided through Western education and international aids, emphasizing on the therapeutic, while health promotion, disease prevention and the alternative medicines were overlooked and given the last priorities⁽¹⁾.

According to the Ninth Economic and Social Development Plan, year 2002-2006, access to health care services is the key strategy in health and population development and the quality of life improvement. Its objectives and targets are to expand health care insurance coverage to all the population, providing health promotion and disease prevention in community health care, including efficient and improving the emergency care delivery system⁽²⁾. The Ministry of Public Health was the key organizer of the universal insurance policy implementation in 2002^(3,4). It classi-

fied budget for each component in the universal insurance as follows: outpatient care 574 baht, inpatient care 303 baht, health promotion and disease prevention 175 baht, investment 93 baht, high cost care 32 baht and emergency care 25 baht⁽⁵⁾.

Health Center 16 Bangkok Metropolitan Administration is an urban health service provider that provides primary medical care, outpatient and dental health services, was established in 1966 and covered a population of 59,866 in the area of 5.666 square kilometers. There are 29 civil servants, 19 permanent employees and 1 transient employee in the Center. Personnel contributed by King Chulalongkorn Hospital: 1 full time physician, 6 part time physicians, 12 Community Health Personnel, 1 physical therapist and 1 health education worker.

The authors studied the cost of primary medical care in universal insurance at Health Center 16, working together with the Universal Insurance Section, King Chulalongkorn Hospital by setting new Community Health Personnel to work with nurses in the community, a physical therapist and health education worker to work in the Health Center. To illustrate the cost of services in health promotion and preven-

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Table 1. Allocation basis used in the study of primary medical care services cost

Cost Center	Criteria	Reason
Administration Work	Personnel of each cost center	Cost allocated to each cost center is related to the number of personnel
Pharmaceutical Work	Number of prescriptions of each cost center	Cost allocated to each cost center is related to the number of prescriptions
Social Welfare Work	Number of consultations of each cost center	Cost allocated to each cost center is related to the number of consultations given
Official Work	Personnel of each cost Center	Cost allocated to each cost center is related to the number of personnel
Financial Work	Personnel of each cost Center	Cost allocated to each cost center is related to the number of personnel

tion, out patient (OPD) and dental care through a Health Service Center. The analysis of the cost components could be used as key data for future planning, budgeting and resources preparing for the short and long runs.

Material and Method

Data collection

Two types of data were collected from Health Center 16.

Primary data: Came from observation and the questionnaires interviewed the personnel for the contribution of their work to each component of the primary medical care.

Secondary data: was collected from several units concerned: Division of Finance, Division of Nursing, Division of Pharmaceutical and Universal Insurance Section King Chulalongkorn Hospital from 1 June 2002 to 30 April 2003.

Population and Sample

The target population comprised people covered by universal insurance using the primary medical care in Health Center 16.

Analysis of cost of health care services

The total cost was the summation of the labor cost, material cost and capital cost.

Allocation criteria

The cost allocation criteria for the Administration, Pharmaceutical, Social Welfare, Official and Financial Work are shown in Table 1, using in the simultaneous equation method for cost allocation to all the health care services.

Sensitivity analysis

The inflation rate of Thailand in the last ten years ranged between 0.3-8.1 percent⁽⁶⁾, the authors used

the change in cost from 0-30percent in the models.

Results

The total cost, unit cost and number of visits

The total cost of the primary medical care was 11,148,753 baht, numbers of utilization 29,909 and unit cost 372.76 baht. The unit cost per insured capitation was 532.83 baht as in Table 2.

The cost of each cost center

The total cost, number of visits and unit cost of Health Promotion and Disease Control Work were 6,045,895 baht, 8,992 visits and 672.36 baht. When classified to be of the Antenatal Care (ANC) were 1,230,178.43 baht, 835 visits and 1,142.18 baht, of the Well Baby Clinic, Preschool Health, Nutrition Counseling, EPI were 1,166,934.74 baht, 1,331 visits and 876.74 baht, of the Post Partum Care, Pap Smear, Breast Cancer Screening were 1,096,194.56 baht, 503 visits and 2,179.31 baht, of the Home Visit were 1,088,786.05 baht, 5,413 visits and 201.14 baht, of the Home Health Care were 1,123,515.86 baht, 320 visits and 3,510.99 baht and of the Rehabilitation were 340,285.36 baht, 572 visits and 594.90 baht respectively. While the total cost, number of visits and unit cost of Health Promotion and Disease Control per insured capitation were 6,595,521.80 baht, 22,826 visits and 288.95 baht. The total cost, number of visits and unit cost of Therapeutic Work

Table 2. The unit cost of the primary medical care

Total cost	Number of visits or Number of the insured population	Unit cost (baht)
11,148,735	29,909	372.76
12,162,276*	22,826	532.83*

* Adjusted to be 12 months

were 3,838,859.90 baht, 16,220 visits and 236.67 baht, and per insured capitation were 4,187,847.00 baht, 22,826 visits and 183.47 baht. The total cost, number of visits and unit cost of Dental Work were 1,263,999.00 baht, 4,697 visits and 269.11 baht and per insured capitation were 1,378,908.00 baht, 22,826 visits and 60.41 baht. The total cost, number of visits and unit cost of Therapeutic Work were 3,838,859.90 baht, 16,220 visits and 236.67 baht, and per insured capitation were 4,187,847.00 baht, 22,826 visits and 183.47 baht as shows in Table 3.

The labor cost, material cost and capital cost

Labor cost was the largest portion, which was 10,176,176 baht (83.67 percent), the material cost was 1,245,417 (10.24 percent) and the capital cost was 740,682 baht (6.09 percent).

The cost contribution of each work were: Administration Work 5.58 per cent, Therapeutic Work 19.34 per cent, Health Promotion and Disease Control Work 42.10 per cent, Social Welfare Work 3.11 per cent, Pharmaceutical Work 11.32 per cent, Dental Work 8.44 per cent, Financial Work 2.49 per cent and Official Work 7.62 per cent.

Sensitivity analysis

Increment of the unit cost per insured capitation changed as in Fig. 1. The unit cost increased from 532.83 baht to be 553.99 baht, and to be 665.55 baht when labor cost of the Health Center 16 was increased by 5 and 30 percent respectively. Whereas the unit cost increased from 532.83 baht to be 557.33 baht, and to be 682.47 baht when both labor and material cost of

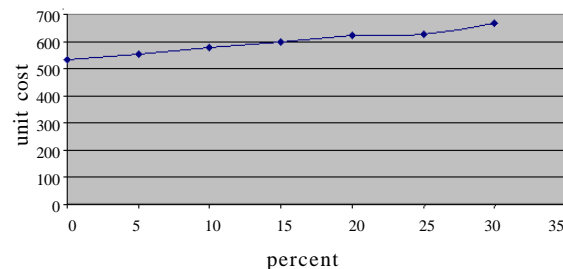


Fig. 1 Change in unit cost when labor cost increased

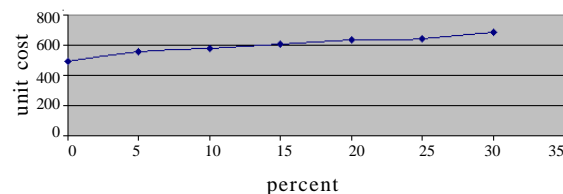


Fig. 2 Change in unit cost when both labor and material cost increased

the Health Center 16 was increased by 5 and 30 percent respectively, the unit cost per insured capitation changed as in Fig. 2.

Discussion

Cost analysis of the health care and health promotion and prevention of the Health Center 16, the unit cost per visit was 372.76 baht which included all the OPD services, dental care, health promotion and prevention. The unit cost per insured capitation was 532.83 baht, for the OPD was 183.47 baht and for dental care was 60.41 baht. The grand total for the health services (the OPD and dental care) was 243.88 baht. While

Table 3. Total cost, number of visits and unit cost of each primary care unit

Primary care unit	Total cost	Number of visits	Unit cost (baht)
1. Cost of Health Promotion and Disease Control	6,045, 895.00	8,992	672.36
- Antenatal Care	1,230, 178.43	835	1,142.18
- Well Baby Clinic, Preschool Health, Nutrition Counseling, EPI	1,166,934.74	1,331	876.74
- Post Partum Care, Pap Smear, Breast Cancer Screening	1,096, 194.56	503	2,179.31
- Home Visit	1,088, 786.05	5,413	201.14
- Home Health Care	1,123,515.86	320	3,510.99
- Rehabilitations	340,285.36	572	594.90
2. Cost of Health Promotion and Disease Control per insured capitation	6,595,521.80*	22,826	288.95*
3. Cost of Therapeutic Work	3,838,859.00	16,220	236.67
4. Cost of Therapeutic Work per insured capitation	4,187,847.00*	22,826	183.47*
5. Cost of Dental Work	1,263,999.00	4,697	269.11
6. Cost of Dental Work per insured capitation	1,378,908.00*	22,826	60.41*

* Adjusted to be 12 months

the proposed budget was 574 baht, this seemed to be a positive balance (there were patients given treatments from King Chulalongkorn Hospital as out patients, this could cause the cost to be lower than usual).

The unit cost per insured capitation for the health promotion and disease control was 288.95 baht, when compared to the proposed budget 175 baht seemed to be a negative balance. This could be because the health promotion and disease prevention program provided by the Health Center 16 was different from other Health Service Center as mentioned earlier.

The inflation rate in the couple years was rather low at 1-2 percent. The sensitivity analysis model that proposed the change of the unit cost per insured capitation to be 553.99 baht if the labor cost only change 5 percent, the changed of all the labor and material costs was 5 percent, the unit cost per capitation was 557.33 baht, that was 4.60 percent changed from the current cost. In the short run the change of labor and material cost were not a significant factor, even if the change was in both factors, the change in unit cost per insured capitation was still not as much as the change in labor and material cost.

The capital costs in Health Center 16 was nearly zero, which was because of the depreciation of the building, which was 36 years old on the day of the study. The durable articles cost about 6 percent, mostly were in the Official and Dental Works e.g. cars, computers and dental equipment.

Labor costs accounted for the majority of the total cost 83.67 percent. The most feasible measure to reduce the cost is labor cost by increasing efficiency in the short run and reducing personnel in the long run.

From the study, total cost was 12,162,276 baht compared to that of budget allotted 17,096,674 baht, which came from the number of population in charge.

The cost analysis of health services system of health care, both Health Promotion And Disease Control and Therapeutic Works which settled with King Chulalongkorn Hospital: the Health Promotion And Disease Control, new strategy: Community Health Personnel working together with a nurse in the Health Promotion And Disease Control Work, the home visits

were 5,413 visits in 11 months, or 22.5 visits per day that was 201.14 baht per visit, a very good figure.

The home health care which worked together with the home visit, 320 visits per 11 months, or 1.33 visits per day, cost 3,510.99 baht per visit, this was a costly measure compared to that of home visit. The cost could be less by increasing the number of patients who needed home health care. The unit cost per insured capitation 532.83 baht (including the cost of health promotion, therapy and dental services) was lower than the received budget 574 baht for out patients and 175 baht for health promotion and disease control. There were a number of patient visits at the out patient department in King Chulalongkorn Hospital for treatment and vaccination, however, there were cost of vaccines, family planning pills, health promotion and disease control medications, which were supported by the Bangkok Metropolitan Administration, the real cost should exceed 532.83 baht.

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ต้นทุนการรักษาประจําปีของระบบประกันสุขภาพถ้วนหน้าศูนย์บริการสาธารณสุข 16 กรุงเทพมหานคร

ทศพร วิมลเก็จ, ภิรมย์ กมลรัตนกุล, สนธยา ตอบประโคน

ศึกษาและวิเคราะห์ต้นทุนบริการส่งเสริมสุขภาพและป้องกันโรค การรักษาและทันตกรรม ในโครงการประกันสุขภาพถ้วนหน้าศูนย์บริการสาธารณสุข 16 กรุงเทพมหานคร เพื่อใช้เป็นแนวทางในการวางแผน เตรียมงบประมาณรวมทั้งจัดเตรียมทรัพยากรในรูปแบบต่าง ๆ ให้เหมาะสมสำหรับระยะสั้นและระยะยาว

หน่วยต้นทุนต่าง ๆ ในศูนย์บริการสาธารณสุข 16 จะถูกจัดเป็นหน่วยต้นทุนด้านบริการและด้านสนับสนุนบริการ การกระจายต้นทุนใช้การคำนวณแบบสมการพีชคณิตเส้นตรงในการกระจายต้นทุนจากหน่วยต้นทุนชั่วคราวไปยังหน่วยรับต้นทุนสุดท้าย

ต้นทุนต่อหน่วยของผู้มาใช้บริการ เท่ากับ 372.76 บาท ต้นทุนต่อหน่วยของผู้ประกันตน 532.83 บาท ต้นทุนต่อหน่วยของผู้ประกันตนเฉพาะงานส่งเสริมสุขภาพและควบคุมโรค 288.95 บาท ต้นทุนต่อหน่วยของผู้ประกันตนเฉพาะงานรักษาพยาบาล 183.47 บาท ต้นทุนด้านแรงงาน 83.67 % ค่าลงทุน 6.09 % และค่าวัสดุ 10.24 % ของต้นทุนทั้งหมด

ต้นทุนต่อหน่วยของงานรักษาพยาบาลต่ำกว่างบประมาณ ขณะที่ต้นทุนต่อหน่วยงานส่งเสริมและควบคุมโรคสูงกว่างบประมาณ เนื่องจากงานรักษาพยาบาลมีผู้ป่วยจำนวนหนึ่งมาใช้บริการที่โรงพยาบาลจุฬาฯ ด้วย และงานส่งเสริมสุขภาพและควบคุมโรค ทางศูนย์ฯ มีการจัดรูปแบบบริการที่มากกว่าศูนย์บริการสาธารณสุขอื่น การเพิ่มประสิทธิภาพด้านแรงงานและการลดต้นทุนด้านแรงงานจึงเป็นมาตรการในระยะสั้น และระยะยาวตามลำดับ
