in Malaysia. METHODS: A non-parametric method called Data Envelopment Analy- sis (DEA) with two assumptions: Variable Return to Scale (VRS) and Constant Return to Scale (CRS), was used to calculate and compare the efficiency scores for selected hospitals' clinical departments between the year 1998 and 2006. DEA input oriented analysis indicates how the inefficient units could adjust their inputs to reach the effi- ciency frontier. RESULTS: Based on CRS model the mean efficiency scores in Hospital A departments were 76%. One department was around 50% and six departments were between 50% and 90% and three departments were more than 90%. The mean efficiency scores in Hospital B was 92%. In this hospital, two departments were between 75% and 90% and two departments had efficiency score equal 100% during study period. In Hospital C all departments were more than 75% and one department had efficiency score equals 100%. The results based on VRS model showed similar trends. CONCLUSIONS: The mean of efficiency score according different assumptions of Hospital B was higher than two other hospitals. The results showed that few departments are efficient and rest are considered inefficient and need to find optimum mixture of inputs combination. It is suggested that Hospital A and Hospital C should consider to improve their management of the resource inputs in inefficient department in order to enhance their efficiencies.

HEALTH CARE USE & POLICY STUDIES – Health Technology Assessment Programs

PIHP3

PRIORITYIZATION OF HEALTH POLICY AND SYSTEM RESEARCH TOPICS IN THAILAND: MAKING IT SYSTEMATIC, TRANSPARENT AND PARTICIPATORY
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OBJECTIVES: A growing concern is that health policy and system researches (HPSR) should address the needs of potential users, and subsequently have substantial impacts on policy decisions and professional practices. The purpose of this study is to describe the experience on the annual HPSR topic prioritization conducted by Thailand's Health Systems Research Institute and its alliances. METHODS: Narrative descriptive and quantitative approaches were employed to illustrate the processes of and results from the HPSR topic prioritization in 2010. RESULTS: The prioritization process was carried out on the basis of systematics and transparency, with participation by key stakeholders including policymakers, academics, health professionals, civil society, and patients. There was a call for research proposals from stakeholders in November and December 2009. A total of 120 topics suggested by 66 organizations were then prioritized by 90 representatives of stakeholder organizations. Multiple criteria introduced in this step involved policy relevance; disease burden; economic impact; social and ethical aspects; variation in practices; possibility of changing prac- tices; and public concerns. It was found that topics related to diseases with high burden, relating to service delivery especially on health promotion and disease preven- tion, and those submitted by central government agencies were more likely to get high priority than others. In addition, results from self-administrative survey demonstrated that over 92% of stakeholders strongly supported and expressed their interest to participate in the next annual topic prioritization process. CONCLUSIONS: This case study demonstrated that it is feasible to develop clear criteria and transparent process for prioritization of HPSR topics. Lessons learned from this case study can be useful for improving mechanism for selecting HPSR topics in other settings.

PHP18

COMPLEXITY INCREASES UNCERTAINTY: THE IMPACT OF PBAC GUIDELINES (VERSION 4) ON PBAC DECISION-MAKING
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OBJECTIVES: In Australia, the Pharmaceutical Benefits Advisory Committee (PBAC) makes recommendations to the Minister for Health on the reimbursement of pharma- ceuticals. The sponsor's submission is accepted by the PBAC if the drug is determined to be clinically effective and also cost-effective. New PBAC Guidelines on how to prepare a submission (version 4) were introduced in 2008. These new Guidelines sought to reduce the uncertainty for the PBAC in accepting the many inferences made in major submissions. We assessed whether the New Guidelines have indeed reduced the PBAC's uncertainty in their decision-making. METHODS: Since June 2003 all PBAC recommendations have been made public on the Department of Health & Ageing website. Public Summary Documents (PSD) are available for PBAC consider- ations relating to the PBS listing of medicines since July 2005 meeting. We reviewed all the PSDs reported during the period of July 2003 to July 2009. For each PSD, we estimated the average number of times that the words "uncertain/uncertainties/uncer- tainty" appeared per PSD page. We compared the results for the period before and after the introduction of version 4 of the PBAC Guidelines. RESULTS: The average number of times that the words "uncertain/uncertainties/uncertainty" appeared per PSD page was significantly higher for the period after the introduction of version 4 of the PBAC Guidelines compared to the period before (0.51 vs. 0.66, P < 0.01). CONCLUSIONS: The introduction of version 4 of the PBAC Guidelines in 2008 has led to an increase in the complexity and, thus, uncertainty faced by PBAC during their delibera- tions around reimbursement of pharmaceuticals in Australia. There was a significant 30% increase in the number of times that the word "uncertain/uncertainties/uncer- tainty" was found per PSD page compared with the period prior to the introduction of the version 4 of the Guidelines (2003–2008).

HEALTH CARE USE & POLICY STUDIES – Prescribing Behavior & Treatment Guidelines

PHP39

THE EFFECTS OF DIRECT BILLING SYSTEM IN PATIENTS WITH CIVIL-SERVANT MEDICAL BENEFIT SCHEMES ON PRESCRIBING PATTERNS
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OBJECTIVES: In 2006, the reimbursement system for civil-servant medical benefit schemes beneficiaries in Thailand was changed to direct billing system. It was unknown how this new system affects drug expenditures and the number of drug supply given to beneficiaries. This study aims to assess the effects of direct billing system on prescribing patterns. METHODS: This study was undertaken with retro- spectrum cohort approach. We used the data recorded in databases of a university hospital in northern part of Thailand. We undertook the data on all patients with civil-servant medical benefit schemes who came to out-patients department between October 1, 2005 and March 31, 2007. Mean cost of medication, number of days' supplies and medication possession ratio (MPR) of five highest costs of oral medication were calculated in 1 year before and after the implementation of the new system change. RESULTS: A total of 43,897 visits made at the hospital, 15,632 (36%) were under civil-servant medical benefit schemes. Eighty-eight percent (13,785/15,632) received medications during visit. The total costs of medication increased from 2 million to 4 million baths in 1 year and all seven major classes of drugs were increased from 1.29 to 1.48 months per a prescription. Proportion of patients receiving medications more than 3 months, was slightly increased from 1.82% to 2.43%. Three out of five medications had higher MPR after system was changed (Relative risk ranged on 1.19~2.32). Two of these were statistical significant. CONCLUSIONS: The direct billing system affects prescribing patterns as indicated by trend of increased number of day's supplies and higher medication possession ratio. Further evidence remains needed. Policymakers need to consider all relevant and important conse- quences associated with the new system prior to making policy decision-making.

INDIVIDUAL'S HEALTH – Clinical Outcomes Studies

PIHI

CRITICAL APPRAISAL OF SYSTEMATIC REVIEWS ASSESSING SAFETY OUTCOMES OF SSRIS IN THE PERINATAL PERIOD
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OBJECTIVES: A systematic appraisal was conducted of published systematic reviews that assessed the harms associated with selective serotonin reuptake inhibitors (SSRIs) in the perinatal period, both for the mother and infant. METHODS: A sys- tematic method of literature searching and selection was employed for this review. Searches were conducted in EMBASE, Medline and the Cochrane Database of Sys- tematic Reviews. Studies were eligible if they evaluated pregnancy or infant-related safety outcomes for SSRI use in pregnant or lactating women. RESULTS: The litera- ture search identified seventeen systematic reviews and three subsequently published prospective cohort studies. None of the systematic reviews assessing serotonin reuptake inhibitors as a group found an association with congenital malformations. An association between paroxetine exposure and infant cardiovascular malformations has been reported in the literature; however, more recent evidence from a large systematic review shows no relationship between paroxetine exposure and congenital cardiac malformations. Neonatal symptoms (such as withdrawal symptoms, lower Appar score, and diminished response to pain stimulus) have been reported in 20-30% of infants with third trimester SSRI exposure. All of the reviews reported the symptoms as mild and self-limiting. Several SRs found a significant association between SSRI use in pregnancy and premature delivery, low birthweight, and admission to special care nurseries. There is conflicting evidence regarding the long-term neurodevelopmental risks of serotonin antidepressants. Although the levels of SSRIs in breast milk are relatively low, the evidence for the safety of antidepressant exposure via breastfeeding is limited. CONCLUSIONS: SSRI exposure during pregnancy is associated with most minor and temporary adverse outcomes for the newborn. The risk of these outcomes needs to be balanced with the risk of adverse outcomes resulting from SSRI withdrawal for the mother.

PIH2

IMPACT OF HPV VACCINATION ON CERVICAL CANCER IN ASIA: RESULTS OF A STATISTICAL MODEL
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OBJECTIVES: Estimate the potential clinical effect of HPV vaccination with a bivalent HPV-16/18 vaccine in Asian countries including the effect of cross-protection against non-vaccine oncogenic HPV types. METHODS: A static population model estimates