60 hours per year. The median number of FE hours for required courses was 16 and the mean number of students enrolled annually was 117. Learning objectives and covered topics obtained from syllabi and surveys varied among college/schools.

CONCLUSIONS: More US Colleges/Schools of Pharmacy required FE education compared to the 2007 survey, and the number of hours and students in these courses increased. Although the extent of FE education has increased, a large variation in the number of teaching hours and number of students among colleges and schools demonstrates a lack of uniformity or standardization for this area.

PHP72
THE STATUS OF PHARMACOECONOMIC EDUCATION IN EGYPTIAN SCHOOLS OF PHARMACY: AN EXPLORATORY ANALYSIS
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OBJECTIVES: Optimal allocation of resources in healthcare requires a solid research infrastructure, especially for a developing country like Egypt. Previous research focusing on pharmacoeconomic education status internationally did not report any information about the Egyptian case. The purpose of this study was to assess the existing state of undergraduate and postgraduate pharmacoeconomics education in the Egyptian schools of pharmacy. METHODS: A survey methodology was employed in which a previously published survey was adapted and modified into a 15-item survey to suit our research purpose. The survey was administered to the head of the department under which offers pharmacoeconomic related topics or to the dean of the school if not offered. To ensure a higher response rate, surveys were administered via e-mail, mail, and face to face when necessary. RESULTS: We attempted to reach all the schools of pharmacy in Egypt (n = 23). We received usable responses from 13 schools of pharmacy (56.5%). Only 4 schools were offering pharmacoeconomic education at the time of survey compared to 35 teaching hours of the 38.5 hours. Average estimated class size was 420 students (range: 280-600). Among the 4 schools offering pharmacoeconomics, only 1 faculty member was trained through a formal PhD program. Two schools offered pharmacoeconomics education at the graduate level. Methods of pharmacoeconomic analyses were the most commonly taught topics. Out of the 13 schools of pharmacy, 9 schools expressed their interest to teach a course fully dedicated to pharmacoeconomics in the near future (2-4 years).

CONCLUSIONS: Pharmacoeconomic education in Egypt is still in its infancy. Interest was expressed by faculty members in integrating pharmacoeconomics into pharmacy education. Lack of subject area experts might be a major barrier in such adoption. There exists a unique opportunity for well-trained individuals to fill this gap.

HEALTH CARE USE & POLICY STUDIES – Health Technology Assessment

PHP73
BUDGET IMPACT ANALYSIS: DO CANADIAN GUIDELINES MEET THE NEEDS OF PUBLIC DRUG PLAN MANAGERS?
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OBJECTIVES: The objective of this research was to validate with provincial drug plan managers if the guidelines for conducting pharmaceutical budget impact analyses (BIA) in Canada, published by the Patented Medicines Prices Review Board (PMPRB) in 2007, meet their needs. METHODS: A survey entitled Budget Impact Analysis Requirements by Canadian Provincial Drug Plans was developed and sent by email to all provincial drug plan managers, at the expiration of the contracts. The survey consisted in 14 questions that take approximately twenty minutes to complete. RESULTS: The participation rate of the provinces was of 55.6%. In 60% of the participating provinces, the person that completed the questionnaire was the drug plan manager, therefore a reliable source of information. Forty percent of the participating provinces prefer that the market size for the BIA to be estimated using a population data-based model versus a claims data-based model, 40% prefer both models, and 20% have no specific preference. The guidelines developed by PMPRB recommend the use of a population data-based model. 100% of the participating provinces agree that if a comparator will lose its patent over the time horizon, it should be taken in consideration in the BIA. The guidelines, however, do not provide any recommendations regarding the inclusion of generic products. Accurate drug cost reporting is an important component of the BIA. The dollar or percentage value for wholesaler mark-up, pharmacy mark-up, inventory allowance and dispensing fees provided by 80% participating provinces do not match those recommended by the BIA guidelines. CONCLUSIONS: Overall, the guidelines for conducting pharmaceutical BIA in Canada, published by PMPRB in 2007, meet the needs of provincial drug plan managers. However, they should be updated in order to reflect the changes that have occurred in the pharmaceutical industry, especially those around the Canadian price of generics.

PHP74
LOW EFFICACY OF INNOVATIVE DRUGS AS A KEY FACTOR OF NEGATIVE RECOMMENDATIONS ISSUED BY AGENCY FOR HEALTH TECHNOLOGY ASSESSMENT IN POLAND (AOTM) IN 2011
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OBJECTIVES: Low on financing all medical technologies from public funds for the Minister of Health. For all new health technologies entering market full pharmacoeconomic evaluations are required before reimbursement decisions are taken. The aim of the present analysis was to identify what was the impact of low efficacy on AOTM negative recommendations for innovative drug. METHODS: All recommendations issued by AOTM in 2011 were reviewed and analyzed. We distinguished those regarding only innovative drugs (other recommendations were excluded) and identified the reason for negative statement. RESULTS: In 2011 AOTM issued 111 recommendations for new drugs. 96 (87%) were of innovative type. In 34 cases (30%) there were no specific recommendation in the AOTM recommendations (with restrict related with the cost- effectiveness outcomes). Negative recommendation was given for reimbursement to 18 of 85 (21%) of innovative drug submissions. In one case budget impact and the corresponding high prices were emphasized as a main reason of negative recommendations. Also only in one case the reason was connected with drug safety issues, while in 16 cases with insufficient data. Low efficacy of appraised innovative drugs was a key factor of negative recommendations published by AOTM in 2011. Neither cost-effectiveness nor costs, safety and budget impact were significant arguments in negative recommendations of AOTM.

PHP75
A WEB APPLICATION TOOL FOR ENHANCED MEDICATION UTILIZATION EVALUATION OF ERYTHROPOIESIS STIMULATING AGENTS
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OBJECTIVES: The VA Center for Medication Safety has developed a data-extract driven, web-based, user-interface application for a medication utilization evaluation tracker (MUET). MUET identifies at-risk patients as well as records, stores, and tracks clinical interventions in a centralized interactive VA database accessible to all 152 VA Medical Centers (VMCs). The objective of this study is to describe the implementation of MUET tool definition and redesign process. Methods A prospective, patient level case-control study was developed and implemented to address the safety and monitoring needs of target patients on erythropoiesis stimulating agents (ESA). To enable interventions to be tracked in a centralized database. METHODS: Data are extracted from the VA PBM prescription and laboratory databases each month, and potentially at-risk patients on ESA therapy are loaded into the MUET tool. Four trigger groups indicating quality of care issues are identified: No Hgb, Hgb > 12 and ≤ 13 g/dL, Hgb > 13 g/dL, and Hgb < 9 g/dL with no recent ferritin assessment. Upon log-in to MUET, clinicians are prompted to address the safety needs of each patient by selecting from a list of interventions that are recorded and tracked over time. RESULTS: Approximately 2.5 years after ESA MUET initiation, chi-square tests showed decreases in patients without Hgb lab (11.4% to 3.0%, p < 0.0001); in patients with Hgb > 12 g/dL and ≤ 13 g/dL (12.7% -7.3%, p < 0.0001); and in patients with Hgb > 13 g/dL (5.7% - 2.6%, p < 0.0001). Low non-significant decrease was observed in patients with Hgb > 13 g/dL and without a ferritin assessment (3.1% - 2.8%, p = 0.3960). CONCLUSIONS: The ESA MUET is a real-time web application tool accessible by all medical centers within the VA health care network to identify and intervene on patients at potential risk. Data trends demonstrate significant improvements in 3 out of 4 ESA risk groups.

PHP76
EFFECT OF TECHNOLOGICAL INTERVENTION ON WORK EFFICIENCY AT INTENSIVE CARE UNIT
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OBJECTIVES: As technological advances are becoming common in hospitals, its impact on work efficiency also needs to be evaluated. The objective of this study was to evaluate the long term effect of a bedside bar-coded medication administration and dispensing system on work efficiency of the medication administration process. METHODS: A prospective cohort study was conducted to compare medication administration time before and after the intervention in an intensive care unit in a large tertiary hospital using a pre-validated time and motion observation instrument. bedside bar-coded medication administration system was implemented in July 2008 and the medication dispensing system was implemented on November 2009. Pre-intervention data were collected in April-May 2008 and post-intervention data were collected in June-July 2010. Mean duration of time dedicated to medication administration activity was compared. Multivariate analysis of covariance (MANCOVA) was conducted to assess the effect of the intervention by controlling factors such as patients’ age, gender, body weight and length of ICU stay, number of drugs administered, and number of doses administered to each patient. RESULTS: The pre-intervention and 109 post-intervention medication administration times were recorded. Mean (± SD) overall medication administration time was increased from 313.3 (±224.3) seconds during pre-intervention period to 613.7 (±348.7) seconds during the post-intervention period. Nurses spent significantly (p < 0.05) more time on direct patient care activity (pre: 54.6 ± 11.4 seconds, post: 91.1 ± 78.8 seconds, p = 0.001) and less time on indirect patient care activity (pre: 13.0 ± 25.8 seconds, post: 6.1 ± 13.8 seconds, p < 0.05) during post-intervention period. CONCLUSIONS: Health technology intervention improved time spent on direct patient care activity and reduced time spent on indirect patient care activity after implementation of bedside bar-code technology and a medication dispensing system.

PHP77
TECHNOLOGICAL INTERVENTION: NURSES’ PERCEPTION REGARDING PERFORMANCE OBSTACLES AND EASE OF WORK
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OBJECTIVES: To evaluate perception of nurses regarding performance obstacles and ease of work

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