have the potential to improve medication safety and reduce health care costs in the context of meaningful use.

PHS115 IMPACT OF MEDICATION THERAPY MANAGEMENT (MTM) SERVICES ON HEALTH CARE COSTS IN POLYPHARMACY PATIENTS: EVIDENCE FROM RETROSPECTIVE CLAIMS ANALYSIS OF COMMERCIALLY INSURED US POPULATION

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OBJECTIVES: MTM services aim to optimize care and reduce costs for patients taking multiple chronic drugs (poly-pharmacy). This study examined the impact of face-to-face MTM services on drug expenditures and total health care costs in METHODS: MarketScan Commercial Claims and Encounters database (January 1, 2007 and December 31, 2010, with face-to-face MTM (CPT codes 99605, 99606, 99607), and poly-pharmacy (4 or more chronic medications in the 6-months prior to index date). The date of the first MTM encounter was the index date. A (100:1) age, gender-matched poly-pharmacy control group was formed; the index date was that of the matched MTM patient. Nearest-neighbor propensity score matching within a caliper (1:1) was run to form two exchangeable study groups (n=401) controlling for demographic, drug-related, clinical status-related and health services utilization-related covariates. A difference-in-differences (DID) model with gamma distribution and log link accounting for three times points (period 0: 6 months prior to index date, 1: 6 months after index date, and 2: 12 months after index date) was run to quantify the cost impact of each medication error (NSAIDs, beta-blockers, ACE-inhibitors, diuretics, amiodarone, methotrexate, lithium). A five year time horizon was used. Costs and outcomes were discounted at 3.5%. RESULT: Seventy-two practices (48092 patients) were randomised to either arm. Mean (SD) error rate reduction per practice (simple feedback vs MTM) at 6 months was 12.90 (2.60) (p<0.001). In comparison, PINCER was dominant, generating 0.81 more QALYs and saving £3000 per patient. In probabilistic analysis, PINCER reduced 57% probability of being cost-effective at £10000 ceiling willingness-to-pay ($15,000). The probability of PINCER being cost-effective had not increased beyond 57% at £30000. The mean net benefit generated (n=21) £21 (SD £91). Practice size did not affect results. CONCLUSIONS: This is one of the first studies to estimate the economic impact of a safety-focused intervention in health care. In the base-case, PINCER is dominant. However, due to uncertainty around the clinical and economic consequences of some errors, PINCER could not be considered cost-effective under current decision rules. Correcting errors relating to certain drugs (NSAIDs and amiodarone) had more impact, such that PINCER may be cost-effective if the “right” errors are targeted. Future work will investigate including other errors.

PHS116 DRUG THERAPY MANAGEMENT REDUCES HOSPITAL UTILIZATION AND COSTS IN PATIENTS WITH DIABETES WHO ARE HIGH MEDICATION UTILIZERS

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OBJECTIVES: Patients whose diabetes is managed with polypharmacy are subject to increased risk of medication-related problems and non-adherence. The objective of this drug therapy management (DTM) program is to integrate pharmacy intervention with case management to improve health outcomes, reduce cost. METHODS: The DTM program is a collaboration between pharmacy benefits management (PBM) and health plan-based care management (Kinsey Medical Group, [KMHP] and AmeriHealth Mercy Health Plan [AMHP]) targeting patients with diabetes who are high utilizers (>15 medications). Pharmacists review member profiles to recommend evidence-based prescriber and/or non-pharmacological interventions (e.g., diabetes education) and medication reminders. Pharmacists work directly with prescribers to optimize drug therapy, while care management provides detailed member coaching to enhance medication adherence. The profiles of 954 DTM participants (690 KMHP, 264 AMHP)—with a mean age of 67 years and greater than 2 times baseline risk score—were reviewed for services between November 1, 2010 to July 1, 2011, followed by 3-month claims run-out period, while profiles of non-DTM control participants were also followed. RESULTS: Inpatient (IP) admissions and emergency room (ER) utilization rates were lower in the DTM population; however, only the DTM group in KMHP demonstrated a statistically significant reduction in IP admissions compared to the control group (76.4%, p=0.0002). Additionally, although pharmacy-related costs were significantly increased across-the-board, the changes were not statistically significant between DTM and control groups; however, total costs (medical-pharmacy) were significantly reduced in the DTM group compared to the control group (47% for KMHP, p=0.0039; 50.7% for AMHP, p=0.0497). The overall acceptance rates for diabetes-specific DTM interventions for KMHP and AMHP members were 33% and 26%, respectively. CONCLUSIONS: DTM participants demonstrated a significant total cost savings, and modest-to-significant reductions in ER visits and IP admission compared to non-participants.

PHS117 THE RELATIONSHIP BETWEEN NURSE STAFFING AND PATIENT SATISFACTION IN EMERGENCY DEPARTMENTS

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OBJECTIVES: Patient satisfaction is a key outcome measure being examined by researchers exploring the relationships between patient outcomes and hospital structural and process factors. Only a few non-generalizable studies, however, have explored the relationship of nurse staffing and patient satisfaction with nursing care in emergency departments of hospitals. METHODS: A multi-level multivariate model was developed using more than 180,000 patient surveys collected over a five-year period from 153 emergency departments (EDs) in 107 hospitals in a range of Canadian ED settings including urban and rural, community and academic, and small and large health care institutions with varying sizes and case mix. Using an established conceptual framework for investigating the relationship between nurse staffing and patient outcomes, nineteen nurse staffing variables were initially investigated. Ultimately, however, only five staffing variables were used in the multi-level regression analyzes. These five variables included registered nurse (RN) proportion, agency proportion, percent full-time nurse worked hours, RN worked hours per patient length of stay and registered practical nurse (RPN) worked hours per length of stay. Emergency department case mix index, patient age and gender, hospital peer group, size, wait times, cleanliness of the emergency department, physician courtesy, and year of measurement were controlled to account for their effects. RESULTS: The relationship of nurse staffing and patient satisfaction in the ED: The study revealed a subset of six patient satisfaction variables representing the overall variation in patient satisfaction with nursing care in EDs. CONCLUSIONS: A multivariate model using hours per length of stay were found to have a statistical association with patient satisfaction in the ED, the association was weak and not administratively actionable. Interpersonal and environmental factors such as physician and nurse courtesy, ED cleanliness and timeliness, however, were areas where hospital administrators could improve patient satisfaction in EDs.

PHS118 ATTITUDES TOWARDS THE ROLE OF COMMUNITY PHARMACISTS IN IRAQ

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OBJECTIVES: To assess public use of community pharmacies; evaluate attitudes towards the role of community pharmacist; and determine the required pharmacists’ characteristics and future services. METHODS: It was a cross-sectional study using stratified sample of pharmacy-attenders in Baghdad from January to March 2012. Data gathered by using a validated self-administered questionnaire. Mann-Whitney and Kruskal-Wallis tests were performed to find the statistical differences among groups. Further analysis by Chi-square test and logistic regression detected the predictors of public’s attitudes. RESULTS: More than two thirds of respondents (70.0%) visited their local community pharmacies on an average 6 times per month, while half of the respondents (55.4%) rated community pharmacist as the first person to contact in case of any drug-related problem. However, poor attitudes towards the pharmacist’s role were recognized among the majority of respondents (79.8%). Respondent characteristics were related to the significant predictors of public attitudes. In the multivariate logistic analysis, gender and age were the influential predictors for the model. CONCLUSIONS: The use of community pharmacy in Iraq was characterized by low levels of public attitudes to purchase medicines. The selection of pharmacy depended on its location. Public has
poorly appreciated the professional performance of pharmacists. Therefore, raising the awareness about the important role of pharmacist in providing public health is warranted.

**PHS119**

**PROFILE OF PATIENTS USING IMMUNOBIOLOGICAL IN A HEALTH PLAN OPERATING IN PORTO ALEGRE, BRAZIL: ECONOMIC AND PHARMACOTHERAPEUTICS INDICATORS**

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**OBJECTIVES:** To profile the use of an operator in immunobiological supplemental health Fortaleza - Brazil, to identify the most prescribed therapeutic groups, and to determine the cost. METHODS: Conducted cross-sectional study in two hospitals accredited service provider, from March to November/2012. Data were recorded by medical expertise in computerized management system (Sabius)® performed after the medical consultation. Later, these were entered in Microsoft Excel 2007 and analyzed by pharmacists auditors. The cost was calculated from the value contained in Brasindre Unit 765, using the Consumer Price Max. The doses used for rheumatoid arthritis Etanercept 50 mg, 40 mg Adalimumab, abatacept 750 mg, 300 mg infliximab, 560 mg tocilizumab, Rituximab 1g and Golumunab 50 mg based on a 70 kg adult. RESULTS: We analyzed 64 patients with a mean weight 67 kg, of which 70.31% (n = 45) were women aged 30-59 years whose most frequent indications were rheumatoid arthritis (n = 33, 51.56%) and ankylosing spondylitis (n = 19, 29.69%). The most immunobiologically common prescribed were infliximab (n = 36; 56.25%), Tocilizimab (n = 11, 17.19%), abatacept, and Rituximab (n = 8; 12, 50%) and Golumunab (n = 1, 1.56%). It was observed that 97% of patients were allergic to at least one biological. In diabetes (n = 21) initiated with anti-TNF, whereas 61.9% (n = 13) moved into one another with immunobiological mechanism of action and 38.1% (n = 8) continued with an anti-TNF, changing only the drug. The average cost of treatment/dose first line was R$ 10,075, second line was R$ 13,759.39. The total cost was R$ 3,521.16 (36.72%). CONCLUSIONS: Knowledge of costs and pharmacotherapeutic profile becomes important for planning strategies aimed at streamlining and optimization of these drugs on quality of care.

**PHS120**

**MEDICAL RE-ADMISSIONS AT THE ROYAL LONDON HOSPITAL – PATIENT SPECIFIC AND DISEASE SPECIFIC FACTORS AT ONE WEEK AND ONE MONTH**


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**OBJECTIVES:** The Royal London Hospital is a teaching hospital in East London, UK. We hypothesised that medical patients with multiple comorbidities and complex disease are likely to present with a new diagnosis when re-admitted within a month. Further, re-admission within a week is likely to be related to the initial diagnosis. METHODS: We conducted a retrospective audit of all non-elective adult acute medical admissions over a 6 week period during 2012. We collected information on patient demographics, ICD-10 diagnosis, length of hospital stay, along with readmissions within one week and one month. We reviewed the original and subsequent electronic discharge summaries. We highlight patient specific and disease specific factors. RESULTS: There were a total of 124 readmissions from the original audit (n=859). A large proportion (40%) of all readmissions were for the elderly (elderly population). There were 73 (60%) readmissions within 1 month, and 37 (30%) within a week. Fourteen patients (11%) were readmitted within a week, and again within a month. COPD (33%), PE (29%), and AD (24%) had the highest re-admission rates. Our audit points to a 14.4% readmission rate in our cohort. We aim to address the precipitating factors in our new physician led ambulatory care clinic. We highlight the importance of using and following through shared care plans. As part of the study the data collected was compared to our hypothesis readmissions within a month were related to the initial diagnosis, interestingly this was less so when re-admitted within a week. Our audit has helped highlight the need for better community management plans prior to discharge. This has led to closer links with the Community Rehabilitation and Support Team (CRest) in order to reduce readmission rates.

**PHS121**

**DO PATIENTS NEED TO BE ACCOMPANIED IN ICU WARDS?**

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**OBJECTIVES:** For treatment needs, accompaniment is limited for ICU patients. A 30-minute visit a day is allowed for their families. However, mental disturbance have been reported in ICUs. Actually, patients suffer from not only diseases but also loneliness in the units. The study was conducted to answer the question whether ICU patients need to be accompanied? METHODS: A questionnaire survey to repeatedly ask questions about the attitude to accompany ICU patients. It was conducted in General Hospital of Shenyang Military region in China. The 3 questions are: 1) Do you need an accompany when treated in ICU? (Yes/No); 2) If you needed, who will be the candidate? (A relative or friend/Anyone available); 3) How long do you need to stay with your family members each day in ICU? (Half an hour/One hour/Half a day/All day). After repeatability test, the questionnaire was filled by patients randomly involved in, including 69 ICU patients and 73 general patients, 117 males and 52 females, 53 young & middle aged (≤60) and 89 old ones (>60). Fifty-seven percent of the patients needed accommodors in ICU, 86.6% of the patients chose family members as the candidates, 74.6% of the patients needed all-day accompany by family members. The percentage of patients needing half-day and all-day accompany by family members were higher in ICU and old patients than those in general and younger ones (<0.05). CONCLUSIONS: Patients do need to be accompanied in ICU. At all-day accompany by family member is highly preferred.

**PHS122**

**FIT FALLS OF THE NATIONAL HEALTH SERVICE (NHS) “INTERNAL MARKET” HEALTH CARE MODEL; DOES REIMBURSEMENT OF SECONDARY CARE MATCH COSTS INCURRED?**

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**OBJECTIVES:** Many NHS hospitals have developed an Acute Medicine Unit to streamline all non-elective medical admissions. The cost of providing this secondary care service is funded by the local primary care team, who in turn receive funding from central government. However, teaching hospitals in the capital would also care for a considerable number of international and national patients. We sought to examine if health care costs were reimbursed for these patients. METHODS: We undertook a retrospective audit of all admissions over a 6 week period at a central London teaching hospital. We collected demographic data, ICD-10 diagnosis and length of stay. We identified all “out of area” patients and calculated costs incurred based on bed days, diagnosis and readmission within a month. The ICD-10 codes were converted to cost (HRG) codes through the finance office. RESULTS: A total of 864 admissions and 124 readmissions were analysed. In all 28% (n=242) of admissions were “out of area” This cohort accounted for 25% of bed occupancy, and cost the hospital £390,300. Further, 1% (n=8) of patients were of no fixed abode (homeless) and cost £7,200 in bed occupancy. The international patients account for 1% (n=6) and cost £4,500 in bed occupancy. The total cost was £36,006, resulting in an incremental cost/dose of R$ 3,521.16 (36.72%). CONCLUSIONS: Knowledge of costs and pharmacotherapeutic profile becomes important for planning strategies aimed at streamlining and optimization of these drugs on quality of care.

**PHS123**

**THE EFFECT OF COPAYMENTS FOR PRESCRIPTIONS ON ADHERENCE TO MEDICINES IN PUBLICLY INSURED POPULATIONS: A SYSTEMATIC REVIEW AND META-ANALYSIS**

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**OBJECTIVES:** To quantitatively estimate the effect of copayments for prescriptions on adherence to medicines in a publicly insured population. METHODS: Eight electronic databases and the grey literature were systematically searched by one reviewer for relevant articles, along with hand searches of references in review articles and the included studies. Studies were included if they were conducted in a publicly insured or semi-insured setting, involved the introduction of, or an increase in copayment and if the outcome was objectively measured adherence (or non-adherence) to medicines. Measures of adherence included the proportion of DNG (Discontinuation and Medication Possession Ratio). Study exclusion, data extraction and quality appraisal were carried out by two independent reviewers. A random effects model was used to generate the meta-analysis. RESULTS: A total of 15 studies met the inclusion criteria. The meta-analysis included 199,996 people overall; 74,236 people in the copayment group and 125,760 people in the non-copayment group. Average age was 71.75 years. In the copayment group, (verses the non-copayment group), the odds ratio for non-adherence was 1.11 (95% CI 1.09-1.14; P<0.001). CONCLUSION: The meta-analysis point to a deficit in income generated. This has significant implications for the financial viability of secondary/tertiary care hospitals in the NHS. CONCLUSIONS: Our analysis point to a considerable financial burden from “out of area” patients to the NHS. Reducing this financial burden does raise clinical and ethical challenges to the receiving hospital.

**PHS124**

**REIMBURSEMENT LANDSCAPE AND POLICY DEVELOPMENT FOR RARE DISEASES IN CHINA: A CASE STUDY OF HEMOPHILIA**


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**OBJECTIVES:** Hemophilia, a costly yet treatable rare disease, receives 100% reimbursement coverage in most developed world and some developing countries. In China, a Priced drug (drugs with high cost/doubling (hemophilia) should be prioritized to ease patients’ economic burdens. This study aims to understand the current reimbursement landscape for hemophilia in China and to explore potential funding mechanisms that could be adapted for other rare diseases. METHODS: This descriptive study was conducted with selected government stakeholders to understand the rationale of different policies in different cities.