total number of customers who patronized the pharmacies during the study period. The mean respondents' satisfaction score was 4.24 (SD 0.52) out of a maximum possible score of 5.0. Most respondents also supported the suggestion of providing such services on a wider scale. However, half the respondents indicated that they were unwilling to pay for the professional services. CONCLUSION: The customers interviewed were satisfied with the pharmaceutical care services provided but their responses to paying for the services were less positive. However, due to the limited time and small number of participants in this project, a definite conclusion cannot be drawn as to whether similar results would be obtained if there were greater awareness by the public.

Session 2

INFECTIONOUS DISEASES & HIV RESEARCH PHV

PHV1

UTILIZATION OF INTENSIVE CARE AND HOSPITAL DAYS AND OUTCOME IN PATIENTS WITH SEVERE SEPSIS: THE SELECT II REGISTRY

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INTRODUCTION: Sepsis is a pervasive problem worldwide, and typically affects persons with significant underlying diseases, immunosuppression, or major trauma. Despite recent advances in therapy and intensive care medicine, mortality rates have remained essentially unchanged over the past decade. Furthermore, sepsis is poorly defined, usually incorporating septicemia, SIRS and severe sepsis. OBJECTIVE: The purpose of this study was to determine the outcomes and utilization of hospital and ICU days in patients with severe sepsis. METHODS: This evaluation was conducted as part of a prospective, multi-center, cohort study (“Sepsis Longitudinal Epidemiological Clinical Outcomes Tracking” [SELECT] registry) in 398 patients with severe sepsis of presumed infectious origin recruited through 45 ICU units across the US. For each ICU admission, patient demographic, ICU length of stay (LOS), hospital LOS and hospital discharge status (dead or alive) was collected. In addition, data concerning source of infection, comorbidities and treatments were also collected. RESULTS: In patients with severe sepsis, the most common comorbidities were CVD (38%), respiratory failure (36%) and diabetes (26%), and the majority were admitted from home (73%). The most common sources of infection were pulmonary (44%) and abdominal (23%). Overall mortality in patients with severe sepsis was 42%. ICU survivors had significantly longer mean hospital LOS (29 vs. 18 days, P < 0.01) and ICU LOS (18 vs. 13 days, P < 0.01) compared to non-survivors. Both groups received similar treatment. CONCLUSION: Based on these observations, severe sepsis of presumed infectious origin is associated with a high mortality rate and significant utilization of hospital resources.

PHV2

THE BURDEN OF RESPIRATORY SYNCTIAL VIRUS (RSV) HOSPITALIZATIONS IN THE US

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OBJECTIVES: To quantify the burden to the US of RSV associated hospitalizations using a new (October, 1996) ICD-9 code for RSV bronchiolitis and two established RSV codes. METHODS: We conducted a retrospective analysis of two recent federal databases. The 1997 National Hospital Discharge Survey (NHDS) was used to identify the number of discharges among children under age 5 with a primary diagnosis of RSV bronchiolitis (ICD-9 466.11); RSV pneumonia (ICD 480.1) and RSV (ICD-9 079.6); patient demographics; length of stay (ALOS); and expected payment source. NHDS formulas were used to estimate standard errors, normal distributions were assumed for the calculation of 95% CIs. Mean charges were generated from the 1996 HCUP-3 NIS and inflated to 1997 dollars using the Medical Care component of the CPI (1.028). RESULTS: In 1997 an estimated 110,000 RSV-associated discharges occurred among children under age five. RSV-bronchiolitis accounted for 84% [95% CI, 71%–97%] of RSV discharges; while RSV pneumonia accounted for 15% [95% CI, 1%–19%]. ALOS for RSV bronchiolitis was 3.5 days [95% CI, 3.0–4.0]; 4.3 days [95% CI, 3.2–5.4] for RSV pneumonia; and 2.8 [95% CI, 0.3–5.2] for RSV. Mean hospital charges were $9572 for infants six months and younger and $9056 for those under age one. 81% [95% CI, 68%–94%] of children discharged with RSV were under age one. CONCLUSIONS: Previous studies may have underestimated the burden of RSV. Estimated total 1997 hospital charges for RSV in children under age 5 were over $750 million with 75% ($580 million) for RSV bronchiolitis. Medicaid insured 50% and private insurors covered 39% of these discharges. The actual burden may be larger since RSV infections may be undercoded and this analysis was restricted to primary diagnoses.

PHV3

MODELLING A COST-OF-ILLNESS STUDY TO EVALUATE THE BURDEN OF INFLUENZA IN ITALY

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Even though it is widely recognised that influenza is a serious disease that causes significant consequences in
terms of morbidity and mortality, implying considerable healthcare costs and loss of productivity, there is a lack of data about the economic impact of an influenza epidemic in Italy. **OBJECTIVES:** The aim of this study was to estimate the social cost of a normal influenza epidemic in Italy using a generic algorithm for influenza outbreak and treatment. **METHODS:** Referring to the demographic characteristics of the population, to the published literature and to the epidemiological data (influenza season 1998/99), a simulation of the impact of a real influenza epidemic was run. The health service use and unit costs were estimated from standard data sources. **RESULTS:** The average direct costs of influenza per person in Italy were $68,000 ($US 36) for the overall population, and $155,000 ($S 82.26) for a high-risk patient; the average indirect costs of influenza per working patient were $56,900 ($US 301.97). Hence, the total cost of a case of influenza in Italy was about $637,000 ($US 338). In general, around 90% of total costs consisted of indirect costs. Costs are sensitive to changes in the rate of hospitalization and to changes in the proportion of the active population. **CONCLUSIONS:** Cost-of-illness studies should be “observational” to reflect the real world. Nevertheless, if relevant data are not available, a suitable model which uses reliable data can give consistent estimates of the cost of influenza in Italy. This kind of model may help decision-makers heighten awareness of the burden of influenza and design prevention and treatment strategies.

**PHV4**

**HEALTH CARE UTILIZATION AND COSTS ASSOCIATED WITH FOUR CATEGORIES OF SKIN ULCERS IN NEW MEXICO MEDICAID PATIENTS**

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US estimates show that 1.7 million annually develop pressure ulcers incurring costs of $8.5 billion. Leg ulcers affect 2.5 million persons in the US and their prevalence will likely rise as the population ages. **OBJECTIVES:** We determined the average costs and frequencies of prescription, physician and inpatient hospital claims for four diagnostic categories of skin ulcers from 1994 through 1998, including ulcers of lower limbs (ICD-9 code 707.1), pressure ulcers (ICD-9 code 707.0), venous leg ulcers (ICD-9 codes 454.0/454.2) and other chronic ulcers (ICD-9 codes 707.8/707.9). **METHODS:** A retrospective review of the New Mexico Medicaid (NMM) Drug Utilization Review (DUR) database was conducted. Data on frequency of hospital admissions, physician visits, and medications, as well as related costs, were analyzed. Prescription claims were not specific to ulcers, and included the top ten concomitant drugs. **RESULTS:** Mean annual hospital costs per patient ranged from $8671.48 (SD = $444.10) for other chronic ulcers to $15,733.16 (SD = $482.14) for venous leg ulcers. Mean annual hospital admissions per patient ranged from 1.25 (SD = 0.02) for other chronic ulcer to 1.50 (SD = 0.06) for venous leg ulcers. Mean annual physician costs per patient ranged from $111.09 (SD = $14.16) for other chronic ulcers to $196.08 (SD = $20.64) for ulcers of the lower limbs. Mean annual physician visits per patient ranged from 2.05 (SD = 0.16) for other chronic ulcers to 3.63 (SD = 0.32) for ulcers of the lower limb. Mean annual prescription cost per patient was $4179.18 (2461 patients). **CONCLUSIONS:** Costs from the perspective of the NMM program are substantial. Assessment of the cost-effectiveness of various treatments is warranted.

**PHV5**

**EFFECTIVENESS AND COSTS OF ANTIBIOTICS IN THE AMBULATORY TREATMENT OF RESPIRATORY TRACT INFECTIONS**

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Antibiotic treatment of respiratory tract infection (RTI) has been evaluated in many clinical trials, but little is known about its effectiveness (efficacy in real life conditions) and costs. **OBJECTIVE:** To measure the effectiveness, side effects and costs associated with the use of various antibiotics in the ambulatory treatment of RTI in adults. **METHODS:** Patients aged 18+ were recruited by community pharmacists. They were considered for inclusion if they reported being treated for an RTI and received a new prescription for one of the following antibiotics: amoxicillin, amoxicillin/clavulanate, azithromycin, cefaclor, cefuroxime, ciprofloxacin, clarithromycin or erythromycin. Presence of symptoms, side effects and resource utilization were reported in a self-administered questionnaire covering the first 14 days after treatment was initiated. A follow-up call at 28 days completed the data collection. Resource utilization considered included initial antibiotic, physician and pharmacist services, other medications (prescribed and OTC), and alternate antibiotic when required. **RESULTS:** Of 989 patients recruited, 777 returned their questionnaire (79%). At day 7, 33% of patients reported having symptoms. This proportion did not vary according to the antibiotic even when controlling for the type of RTI (URTI vs. LRTI) ($^{+5} P > 0.05$). Diarrhea was reported by 17%, nausea by 11% and abdominal pain by 10% of patients. Erythromycin had the largest proportion of patients reporting a GI side effect (53%). Average cost per episode varied between $34 and $89 (Canadian). Lower costs were seen for patients started with amoxicillin or erythromycin. **CONCLUSION:** Effectiveness was not dependent on the antibiotic selected at the start of treatment. Occurrence of side effects was relatively high.