all the four nationwide datasets together at the end of the study period, the most common drug groups used in children were antibacterials for systemic use (ATC group J01), ophthalmologicals (S01) and drugs for obstructive airway diseases (R03). The most common individual drugs were phenoxymethylpenicillin, amoxicillin and salbutamol. The drug consumption increased remarkably at the age of one year, and decreases then by school-age. Drugs were more commonly used in boys than in girls, but this difference vanished along age. The use of psychoanaleptics, methylphenidate in particular, increased in all countries during the study period. Also drugs used for constipation became more common. Decreases were noticed among antiobstructive, antiinflammatory and antirheumatic drugs. No remarkable between-country differences were observed within this cohort of about 4.4 million children. We saw, however, some differences in practices to prescribe drugs used for allergic symptoms. **CONCLUSIONS:** The national registers in the Nordic countries have exquisite potential as data sources for high quality and cost-effective pharmacoepidemiological studies. We indicated that Nordic citizens form an outstanding large and homogenous population for outpatient studies also in children. Future plans aim to survey use of contraindicated drugs in children.

PIH77
ANTI-DEMENTIA MEDICINE DISPENSING PATTERNS: A COMMUNITY PHARMACY DATABASE ANALYSIS
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OBJECTIVES: Studies reporting on the prescribing patterns of anti-dementia medicine in South Africa are scarce and most studies have been conducted on medical aid claims databases. The primary aim of this study was to determine the dispensing patterns and cost of anti-dementia medicine from a community pharmacy perspective. **METHODS:** A retrospective pharmacoepidemiological study was conducted on community pharmacy dispensing records in South Africa for 2013. All products in ATC subgroup N06D were extracted and analysed. **RESULTS:** A total of 12 307 products were dispensed to 2 244 patients. The average age of patients was 72.83 (SD=13.30) years. Slightly more males (53.07%) were prescribed anti-dementia products, they were prescribed 55.68% of anti-dementia products, and they were slightly older than female patients (74.40 versus 71.05 years). Four different active ingredients were prescribed, with donepezil the most often dispensed (61.58%), followed by memantine (27.81%). Only 1 278 prescriptions for galantamine were dispensed, and 27 prescriptions for rivastigmine. Rivastigmine was on average the most expensive per prescription (R856.68), followed by galantamine (R713.22), memantine (R532.79) and donepezil (R330.30). Donepezil was the only active ingredient with a generic equivalent (the average cost of the branded generic product was R303.58, compared to R485.72 for the originator product). Only 76.38% of products were partly or fully claimed from various medical aid schemes, the rest were paid for privately. Prescribing of combination therapy was not common. Only 5.57% of patients received more than one anti-dementia active ingredient during the year, and mostly not simultaneously. Most prescriptions (84.85%) were repeat prescriptions. ICD-10 codes were not specific. **CONCLUSIONS:** The cost of the branded generic of donepezil was 62.50% of the cost of the originator product. This finding was in agreement with other South African studies on generic prescribing. Further studies should focus on the impact of anti-dementia medicine on the quality of life of patients.

PIH78
INAPPROPRIATE DRUG PRESCRIPTION: STILL ON-GOING AMONG MALAYSIAN OLDER ADULTS
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OBJECTIVES: Despite advancements in the healthcare system and availability of several guidelines for appropriate prescribing, inappropriate drug prescription remains a noteworthy problem among older adults. Therefore, this study designed to identify inappropriate drug prescriptions and their predictors in older adults. **METHODS:** Prospective cohort study included 142 outpatients aged 60 years or over, of both sexes. Identified inappropriate drug prescription using the Modified Updated AGS Beers Criteria 2012 and also identified associated predictors. **RESULTS:** The patients had an average age (±SD) of 69.8±7.4 years and on an average (±SD) were prescribed 4.7±1.6 medications. Twenty three patients received at least one inappropriate drug (16.2%). 29 potentially inappropriate drugs were identified in 142 patients. Therefore, the total inappropriate drug use was found to be 20.42% (29/142). The most common inappropriate classes/drugs according to the first list of AGS Beers criteria 2012 were aspirin, prazosin, diclofenac, methyldopa and nifedipine. According to the second list were prazosin in syncope, followed by aspirin in bleeding and chlorphenaramine in chronic constipation. Increased inappropriate prescription was likely to be associated with patients with a advanced age of >74 years (OR-2.5; p<0.05) and number of diagnosis (OR-2.38, p<0.05). **CONCLUSIONS:** The assessment of inappropriate drug prescription has shown a lower prevalence (16.2%) as compared with other countries (up to 87%). Although lower prevalence, drug monitoring and education to physicians, other healthcare professionals and patients required to reduce inappropriate drug prescription to avoid any adverse effects among older patients. Despite advancements in healthcare system and availability of several guidelines for appropriate prescribing, inappropriate drug prescription remains noteworthy problem among older adults. Therefore, this study designed to identify inappropriate drug prescriptions and their predictors in older adults.

PIH79
CHARACTERISTICS OF GERIATRIC PATIENTS DIAGNOSED WITH MULTIPLE SCLEROSIS TAKING DISEASE MODIFYING AGENTS IN THE UNITED STATES
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OBJECTIVES: Understanding the heterogeneous characteristics of Multiple sclerosis (MS) patients is not properly studied in the past. The objective of this study is to assess the characteristics of geriatric patients diagnosed with MS and taking disease modifying therapies (DMTs) in the US. **METHODS:** A large US administrative retrospective claims database was used to identify patients diagnosed with MS and were prescribed DMTs between January 2010 to December 2012 were included in the study. All patients were ≥ 65 years of age and continuously enrolled in the same health plan for at least a year. Descriptive statistics and chi-square tests were performed on the data and statistical significance level was set a priori at 0.05. **RESULTS:** There were a total of 88,921 patients that met the study inclusion criteria. Of these, 67,335 (75.7%) were females, mean age was 68.2±3.4years, and majority of the patients were between 65 and 75 years of age (95.4%). Thirty five percentage of the patients were from Midwest, 31.6% were from East, 22% from south and 11.4% from West of the USA. Majority (66.9%) of the patients was taking subcutaneous injections, 31.2% were taking IV/IM and 1.9% was taking oral DMTs (p<0.001). 48.8% of the patients was under a group coverage, 58.8% of the patients were taking a DMT that was under their health plan formulary with a significant variation between the groups (p<0.001). The mean number of days of DMT supply was 33.3±16.1 with a significant difference between the three groups (p<0.001). Females enrolled continuously 5.5 ± 3.4 years with mean total number claims of 637.1±504.7 during the study period. **CONCLUSIONS:** Majority of the patients taking DMTs were females and was between 65 and 75 years of age. Most of the patients were taking subcutaneous injections compared to other forms of DMTs.

PIH80
ROLE OF PUPPET PLAYS IN IMPROVING CHILDREN'S KNOWLEDGE ABOUT HAND WASHING AND USING NORMAL SALINE TO RINSE NOSE AND THROAT
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OBJECTIVES: According to the IRAN NCRUM (National Committee Rational Use of Medicine) reports, assuming each prescription as an individual patient, 45% of patients received antibiotics. Decreasing of infections in the school community by improving of hygiene lead to decrement of consumption of antibiotics in children. The objective of this study was to assess the impact of the effectiveness of the puppet plays in improving children's knowledge about hand washing and using normal saline to Rinse nose and throat to decrease the spread of infection and unnecessary antibiotic use. **METHODS:** Evaluation was undertaken with 4 grade students (10 years) in primary schools in Fasa. 200 Students watched puppet plays in 5 groups which each groups contain 40 students. During the experiment, 2 puppet shows were used in one day. Then Students were required to complete identical knowledge questionnaires at two time points (before, and immediately after puppet show), to assess knowledge change. The questionnaires had 4 type questions include: group 1 about story, group 2 about hand washing, group 3 about how to use normal saline and group 4 about rational use of medicine. **RESULTS:** Our results demonstrated a significant improvement in student's knowledge in all groups after puppet plays (P<0.0001). **CONCLUSIONS:** Although the puppet plays has significant improve in knowledge of the students, modifications are needed in puppet plays for more achievement.

PIH81
THE DRIVERS OF FACILITY-BASED IMMUNIZATION PERFORMANCE AND COSTS. AN APPLICATION TO MOLDOVA
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OBJECTIVES: This paper identifies factors that affect the cost and performance of the routine immunization program in Moldova through an analysis of facility-based data collected as part of a multi-country costing and financing study of routine immunization (EPIC). **METHODS:** A nationally representative sample of health care facilities (50) was selected through multi-stage, stratified random sampling. Data on inputs, unit prices and facility outputs were collected during October 3rd 2012–January 14th 2013 using a pre-tested structured questionnaire. Ordinary least square (OLS) regression analysis was performed to determine factors affecting facility outputs (number of doses administered and fully immunized children) and explaining variation in total facility costs. **RESULTS:** The study found that the number of working hours, vaccine wastage rates, and whether or not a doctor worked at a facility (among other factors) were positively and significantly associated with output levels. In addition, the level of output, price of inputs and share of the population with university education were significantly associated with higher facility costs. A 1% increase in fully immunized child would increase total cost by 0.7%. **CONCLUSIONS:** Few costing studies of primary health care services in developing countries evaluate the drivers of performance and cost. This exercise attempted to fill this knowledge gap and helped to identify organizational and managerial factors at a primary care district and national level that could be addressed by improved program management aimed at improved performance.

PIH82
PSYCHIATRIC HEALTHCARE UTILIZATION AND RELATED COSTS IN NEWLY DIAGNOSED INDIVIDUALS WITH AUTISM SPECTRUM DISORDER (ASD) IN QUEBEC (CANADA)
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OBJECTIVES: Characterize the temporal course of psychiatric healthcare utilization and related costs in a cohort of newly diagnosed ASD individuals. **METHODS:** A cohort was built using RAMQ databases. Newly diagnosed subjects with ASD were selected (≥ 2 diagnoses ICD-9 codes: 299.X, excluding 299.2) between January 1998 and December 2010. Cohort entry was the date of first diagnosis confirmed by absence of ASD diagnosis in previous 5 years. Participants aged ≥ 26 years, those without full RAMQ drug plan coverage for 5 years after cohort entry, or not covered in the year preceding cohort entry were excluded. Demographic and clinical characteris-