

the easiest gynecological cancer to prevent, the study findings reveal a significant healthcare burden of cervical cancer in the national Medicaid population. A more rigorous routine screening of cervical cancer can be incorporated in clinical care of women enrolled in Medicaid to facilitate earlier diagnosis at pre-cancerous stage.

## PHS157

## NONCOMMUNICABLE DISEASE PREVENTION AND CONTROL IN MONGOLIA: A POLICY ANALYSIS

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**OBJECTIVES:** Noncommunicable diseases (NCDs) are the major global causes of morbidity and mortality. In Mongolia, a number of health policy documents have been developed targeting the prevention and control of noncommunicable diseases. This paper aimed to evaluate the extent to which NCD-related policies introduced in Mongolia align with the World Health Organisation 2008-2013 Action Plan for the Global Strategy for the Prevention and Control of NCDs (Action Plan). **METHODS:** We conducted a qualitative review of policy documents introduced by the Government of Mongolia from 2000 to 2013. A literature review, internet-based search, and expert consultation identified the policy documents. Information was extracted from the documents using a matrix, mapping each document against the six objectives of the Action Plan and five dimensions: data source, aim and objectives of document, coverage of conditions, coverage of risk factors and implementation plan. 40 NCD-related policies were identified. **RESULTS:** Prevention and control of the common NCDs and their major risk factors as described by WHO were widely addressed as were the objectives of the Action Plan. It appears that each objective of the WHO 2008-2013 NCD Action Plan was well addressed. Many documents included explicit implementation or monitoring frameworks. Areas less well or/and not addressed were chronic respiratory disease, physical activity guidelines and dietary standards. **CONCLUSIONS:** The Mongolian Government response to the emerging burden of NCDs is a population-based public health approach which includes a national multisectoral framework and integration of NCD prevention and control policies into national health policies. Our findings suggested gaps in addressing chronic respiratory disease, physical activity guidelines, specific food policy actions restricting sales advertising of food products, and a lack of funding specifically supporting NCD research. Future research should explore the effectiveness of national NCD policies and the extent to which the policies are implemented in practice.

## PHS158

## FACTORS PREDICTING RECEIPT OF PROSTATE SPECIFIC ANTIGEN (PSA) TESTING: EVIDENCE FROM THE NATIONAL AMBULATORY MEDICAL CARE SURVEY (NAMCS) DATA

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**OBJECTIVES:** Prostate cancer (PCa) claimed the lives of approximately 29,480 men in 2014 and American Cancer Society estimates the incidence of prostate cancer in 2015 to be 220,800. Screening using the prostate specific antigen (PSA) test remains critical to the early detection and management of PCa. Our objective was to study the factors affecting PSA testing in the US for the year 2010. **METHODS:** We used the most recent National Ambulatory Medical Care Survey (NAMCS) data available which was for the year 2010. The NAMCS data is a nationally representative annual survey of the provision and utilization of outpatient medical care services in the US. Main outcome measure was undergoing the PSA test. A logistic regression model was fit to determine if any variables were associated with having the PSA test done. **RESULTS:** Our weighted study sample consisted of primarily White men (N=568,146,002) between the ages of 50-64 years (N=231,848,274) residing in urban areas (N=544,556,049) covered by private health insurance (N=328,904,965) who were not being seen by a primary care provider (N=381,639,557). Majority of the men had undergone a PSA test (N=646,376,032). Multivariate analysis reveals that 65-79 years of age (OR: 3.4), living in urban areas (OR: 1.58), being consulted for chronic problems (OR: 2.25) and preventive services (OR: 4.40), being seen by surgical specialty physicians (OR: 1.52), and had private insurance (OR: 1.40) increased the likelihood of the visit resulting in a PSA test. **CONCLUSIONS:** Contrary to expected standard of practice of primary care physician (PCP) visits influencing PSA testing, our study showed that visiting with a surgeon increased the likelihood of PSA testing. Providing patients with the opportunity to be tested as early as possible during their visit with a PCP might aid in efficiently diagnosing PCa.

## PHS159

## THE BURDEN OF GOUT IN A CANADIAN PRIMARY CARE POPULATION

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**OBJECTIVES:** Gout, a common arthritis, causes significant burden on patient's quality of life and the health-care system. The objectives of this study were to understand a gout population in terms of demographics, clinical characteristics, healthcare utilization and costs versus a gout-free population. **METHODS:** This retrospective study is one portion of an overall gout study, which used data extracted from IMS Evidence 360 EMR Canada, a primary care electronic medical records database in Ontario. Gout patients were selected if they had  $\geq 1$  gout diagnosis and/or  $\geq 1$  gout medication claim (index date) from 1 July 2008 to 30 June 2012. Gout patients were matched 1:5 to gout-free patients based on demographics and comorbidities using an adapted version of the Charlson Comorbidity Index (CCI). All patients were followed for two years post-index date. Costs were limited to primary care physician visits. **RESULTS:** There were 676 gout patients; 77% were male with mean age of 58 years, which matched closely to gout-free patients. Mean CCI score at baseline was 1.08 in both groups. Over the two-year follow-up, gout patients were significantly

more likely to have cardiovascular disease (61% vs. 40%), dyslipidemia (43% vs. 29%), obesity (26% vs. 14%), and diabetes (22% vs. 17%, all  $p < 0.01$ ) vs the gout-free cohort. Gout patients' lab results (BMI, BP, eGFR, lipids) deviated from normal more than gout-free controls. Gout patients incurred a significantly higher number of annual physician visits (5 vs. 2.5), lab tests (24 vs. 4.5), and had a greater percentage with specialist referrals (58% vs. 46%, all  $p < 0.0001$ ) leading to higher healthcare costs. **CONCLUSIONS:** Gout is associated with high disease burden in a Canadian primary care setting, which is consistent with previous publications. Gout patients were more likely to have significant comorbidities, farther-from-normal lab results, and higher healthcare utilization and costs compared to gout-free patients.

## PHS160

## EVALUATING THE PREVALENCE OF MENINGITIS IN HAZARA DIVISION, KPK PAKISTAN

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**OBJECTIVES:** The main objective of this study is to evaluate the prevalence of Meningitis in Hazara Division, KPK Pakistan. **METHODS:** A retrospective approach was used to collect the data from Ayub Medical Complex Abbottabad Pakistan. Data collection was carried out from 2nd Feb to 1st May 2014, from Paediatric ward. **RESULTS:** A total of 360 patients were enrolled during the study in Ayub medical complex, Abbottabad, of which the meningitis patient were 40, occupying 11.11% of total admission in the Paeds wards. Male patient occupies the higher percentage of 61.38% and female on the lesser side occupying only 38.51%. The overall mortality rate during the study period was 12.22% from all disease and from meningitis the mortality rate was 3.88% from all the period. The mortality rate in meningitis patient was 35% during the study period. **CONCLUSIONS:** Meningitis either bacterial or viral is still a common serious infection. Both the causative (Bacterial or Viral) are common in the Hazara division of KPK. In our finding we have concluded that Meningitis prevalence is still more common and higher in Pakistan compare to other countries. Meningitis still prevail on higher side, so there is need of extensive awareness and vaccination program to cut down the prevalence rate. Meningitis Vaccination should be included in our expanded Immunization program (EPI).

## PHS161

## RECENT TRENDS IN BACTERIAL INFECTION-RELATED HOSPITALIZATIONS IN THE US

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**OBJECTIVES:** In the US, antibiotic-resistant (ABR) pathogens infect > 2 million people and cause nearly 23,000 deaths annually. In 2013, the Centers for Disease Control and Prevention identified *Clostridium difficile* (*C. diff*), carbapenem-resistant Enterobacteriaceae (CRE), and drug-resistant *Neisseria gonorrhoeae* (*N. gonorrhoeae*) as the nation's most urgent ABR threats. To understand the trajectory of ABR infections, we examined annual *C. diff*-, CRE-, and *N. gonorrhoeae*-related hospitalization and death rates in the US. **METHODS:** Data from the 2001-2012 Healthcare Cost and Utilization Project's National Inpatient Sample (NIS), nationally representative surveys of US hospitalizations, were analyzed. Overall and age- and gender-stratified annual rates of *C. diff*-, CRE-, and *N. gonorrhoeae*-related hospitalizations (per 10,000 people) and deaths per 10,000 hospitalizations were calculated. **RESULTS:** *C. diff*-related hospitalizations increased gradually from 5.2 in 2001 to 11.9 in 2012. CRE-related hospitalizations more than doubled between 2010 (5.6) and 2012 (11.9). *N. gonorrhoeae*-related hospitalizations remained fairly constant (0.2 in 2001 to 0.1 in 2012). *C. diff*-related hospitalizations among persons aged 85+ increased substantially, from 55.7 in 2001 to a high of 113.3 in 2008. CRE-related hospitalizations were also highest for the 85+ age group. Females had substantially higher rates than males for all three pathogens over time. Death rates steadily increased for each pathogen during the study period. **CONCLUSIONS:** *C. diff*- and CRE-related hospitalization rates have increased substantially over the past decade, while *N. gonorrhoeae*-related hospitalization rates remained constant. Both *C. diff* and CRE are commonly spread in healthcare settings; therefore, rising hospitalization rates with these infections is unsurprising. The recent surge in CRE-related hospitalizations is consistent with other studies that suggest increased use of carbapenems is partly responsible for increasing rates. These findings indicate need for immediate attention to developing interventions to curb the growth of *C. diff* and CRE infections to reduce the burden on the patient population and healthcare system.

## PHS162

## PREVALENCE OF MENTAL HEALTH DISORDERS AND ACCESS TO CARE AMONG CHILDREN ENROLLED IN THE MISSISSIPPI MEDICAID

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**OBJECTIVES:** The aim of the present study is to evaluate the prevalence of several mental health diagnoses and utilization of anti-psychotic medications among the children (<18 years) enrolled in the Mississippi Medicaid. **METHODS:** A retrospective analysis was conducted using Mississippi Medicaid administrative claims data for the period July 2013 to June 2014. Beneficiaries were included if enrolled in Medicaid (fee-for-service or coordinated care), were less than 18 years of age at end of observation year and enrolled 3+ months during the observation year. Since most mental health diagnoses are of a chronic nature, diagnosis were assessed using claims for the period January 2012 to June 2014 in order to be as complete as possible. Treatments and costs estimates were based on the one year observation period. Access to care was measured as the proportion of care received from MDs in-county, in adjacent counties, and in other counties. All measures were computed for each county. **RESULTS:** 387,838 children were identified in the observation period. Overall, the prevalence of ADHD (11.0%) was highest followed by developmental disorders (5.7%) and conduct disorder (4.4%). Children ages 11 to 18 had higher

prevalence of mental health disorders than did other ages. CNS stimulants, anti-depressants, narcotic analgesics and antipsychotics are the most frequently used mental health drug categories. The total annual cost was highest for ADHD patients (\$191 million), followed by patients with oppositional defiance disorder (\$115 million). Access to mental health care varied by county with the Mississippi delta region having poorer access to care as measured by the proportion of in-county MD visits. **CONCLUSIONS:** Mental health disorders among children are a significant burden to the Mississippi Medicaid. The prevalence of mental health disorders varies significantly among counties of the state. Children from some counties of Mississippi have poor access to mental health care services.

## PHS163

## IS THE UPTAKE OF VOLUNTARY MEDICAL MALE CIRCUMCISION INFLUENCED BY LEVEL OF EDUCATION, MARITAL STATUS AND MAIN SOURCE OF INCOME? CASE STUDY OF WESTERN KENYA

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**OBJECTIVES:** Male circumcision has been shown to be associated with lower transmission of sexually transmitted infections including HIV. In Kenya factors that influence Voluntary Medical Male Circumcision include ethnicity, residence, level of education and age. The objective of the study was to establish whether level of education, marital status and main source of income influence uptake of voluntary medical male circumcision. **METHODS:** A household baseline survey was carried out in two provinces in western Kenya e.g Nyanza and Western in which 1303 male heads of households were interviewed to determine whether they had been circumcised. Data analysis was done using SPSS version 16.0 in which cross-tabulations were generated, charts created and interpretation made for the three variables described below. **RESULTS:** The study indicated that the proportion of men circumcised tended to increase as the level of education increased. Those who had tertiary level of education and above were more likely to get circumcised compared to those with no or primary education. Analysis indicated that those with no education were 61% (36/59); primary education 65% (704/1085); secondary education 73% (94/129) and tertiary education and above 79% (19/24). Marital status and main source of income did not seem to have effect on uptake. **CONCLUSIONS:** The study indicated that the proportion of men circumcised tended to increase as the level of education increased. Those who had tertiary level of education and above were more likely to get circumcised compared to those with no or primary education. Analysis indicated that those with no education were 61% (36/59); primary education 65% (704/1085); secondary education 73% (94/129) and tertiary education and above 79% (19/24). Marital status and main source of income did not seem to have effect on uptake.

## PHS165

## IMPACT OF COMMUNITY BASED THERAPY ON CHILDREN WITH MENTAL HEALTH DISORDERS: A HEALTH TECHNOLOGY ASSESSMENT

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**OBJECTIVES:** The increasing prevalence of mental health disorders in children is a growing concern in India. Community based therapy, such as school based therapy (SBT) and psychotherapy (PT) is used in the treatment. This paper aims to investigate the disease burden of mental health disorders, and assess the clinical and economic impact (by cost-effectiveness analysis) of SBT and PT on the symptoms of depression in Indian children aged below 15 years. **METHODS:** Health technology assessment by systematic review of published literature. An electronic literature search was performed in Cochrane Review, Elsevier, PubMed and Medline databases for randomized controlled trials and cohort studies pertaining to community based therapies, particularly SBT and PT, in Indian children aged below 15 years suffering from depression. RevMan 5.0 was used for data analysis and quantitative data synthesis. Cochrane Review Manager's Risk of Bias Table was used to assess the risk of bias. **RESULTS:** Out of 32 studies which were screened, 6 studies involving a total of 1,375 participants (377 received SBT, 325 received PT, 673 received neither) were included. In comparison with no therapy, SBT significantly reduced symptoms of depression: standard mean difference (SMD) -0.20 (95% confidence interval (CI) -0.35 to -0.04); PT significantly reduced symptoms of depression: SMD -0.64 (95% CI -1.44 to 0.16). Economic burden: a total of 95,295.50 DALY/year was lost due to the condition in specific the patient population. Assuming the cost of PT as INR 300 (US\$ 4.75) per session, INR 962,000 (US\$ 15220.341) was required per year to avert 1 DALY. By reducing the cost of each session by INR 50 (US\$ 0.80), the PT can be made more cost-effective. **CONCLUSIONS:** SBT and PT are clinically and economically effective in reducing the symptoms of depression in Indian children aged below 15 years suffering from depression.

## PHS166

## INCREASING HOUSEHOLDS' ACCESS TO HEALTHCARE; LINKING CLINICIANS TO COMMUNITY HEALTH WORKERS THROUGH COUNTER REFERRAL COMMENTS

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**OBJECTIVES:** There is evidence that there is resistance from healthcare professionals to integrate community health workers into clinical care protocols. The reasons for this resistance vary. Some physicians/nurses do not believe that persons without professional training in healthcare can be trusted with responsibilities of taking care of patients. They view CHWs as not well trained to be trusted with patients care. The purpose of the study was to use counter referral slips to link clinicians to CHWs. **METHODS:** Quasi-experimental study was carried out in two sub-locations in rural Kenya where one hundred CHWs were trained on community-based-referral and counter-referral model and issued with referral tools. Each was assigned 25 households, instructed to regularly visit them in order to identify sick persons counsel and refer them to link hospitals. One hundred villages comprising 2209 households with a population of 11,000 people were covered where the referral model

was implemented. Tally sheets were used to categorize clinicians counter referral comments. **RESULTS:** The study engaged 4 clinicians who made 132 counter-referral comments on referral slips delivered to them from CHWs. The comments were categorized into seven themes as indicated below. The theme "service provided and patient counter-referred to CHW" accounted for 40% (53/132); "continue with treatment" 16% (21/132); "medicine/treatment given" 15% (20/132); "patient advised to attend ANC, PNC and MCH/FP clinic" 12% (16/132); "patient recommended for further referral" 7% (9/132); "patient seen" 7% (9/132) and the theme "patient advised to come again" accounted for 3% (4/132). **CONCLUSIONS:** Clinicians should take an active role in supporting and mentoring community health workers and ensuring that all members of households have access to healthcare. They need to recognize, appreciate and support their efforts. The referral and counter-referral comments made by both clinicians and CHWs acted as a perfect link between the two levels of healthcare.

## PHS167

## ARE EVIDENCE-BASED PRACTICES ASSOCIATED WITH EFFECTIVE PREVENTION OF HOSPITAL-ACQUIRED PRESSURE ULCERS IN U.S. HOSPITALS?

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**OBJECTIVES:** In 2008, Medicare established nonpayment policy for HAPU incidences, prompting hospitals to adopt quality improvement (QI) interventions that could support implementation of evidence-based practices (EBPs) for HAPU prevention. The objective of this study is to evaluate the longitudinal impact of CMS policy and EBP implementation on HAPU incidence. **METHODS:** We characterized longitudinal adoption of 25 QI interventions to implement EBPs. Counts of quarterly HAPU incidence were collected at the hospital-level from 55 University HealthSystem Consortium (UHC) hospitals between 2007-2012. We also monitored time points when QI interventions resulted in direct improvements to implementation of EBPs. Two-level mixed effects Poisson regression with empirical Bayes estimates models were developed to test the longitudinal association between CMS policy, EBPs and HAPU incidence by hospital-quarter. First, a model tested the effects of 25 categorical QI interventions bundled with EBPs as indicated by hospitals. Second, a model tested the effect of hospital-wide implementation of EBPs on HAPU incidence, controlling for EBP-time interaction. Each model included fixed effects for QI interventions, CMS policy, age, and case-mix index. The models assumed level-2 random effects for intercepts, CMS policy and EBP implementation. Both models included an offset to control for variability in number of inpatient hospitalizations. **RESULTS:** First, controlling for 25 categorical QI interventions, the EBPs for HAPU prevention had a significant effect on HAPU incidence (-0.1808 HAPU cases per quarter; p=0.0325). CMS policy had the largest significant effect on HAPU incidence (-1.13 cases per quarter; p<0.001). Second, direct effect of EBPs on HAPU incidence, not controlling for QI interventions, was greater (-0.27 cases per quarter; p=0.002). The effect of time on HAPU incidence was significant in both models, approximately -0.03 cases per quarter. **CONCLUSIONS:** HAPU prevention is closely associated with increased adoption of QI interventions and improved implementation of EBPs for HAPU prevention.

## PHS168

## ANTIPSYCHOTIC MEDICATION USE MEASURES FOR CHILDREN AND ADOLESCENTS: METABOLIC SCREENING FOR CHILDREN ON ANTIPSYCHOTICS

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**OBJECTIVES:** While antipsychotics offer the potential for effective treatment of psychiatric disorders in children, they can also increase the risk for developing metabolic and physical complications. In 2013, the National Collaborative for Innovation in Quality Measurement (NCINQ) proposed a measure of metabolic monitoring for children taking antipsychotics be considered for use in Medicaid and CHIP programs. The current study evaluated how the Mississippi Medicaid program performs on the proposed quality measure. **METHODS:** A retrospective analysis was conducted using Mississippi Medicaid medical claims, pharmacy claims and beneficiary eligibility data for the time period July 2013 to June 2014. Both fee-for-service (FFS) and managed care claims were used for the analysis. The measure specifications provided by NCINQ in their April 2013 call for public feedback on proposed new measures were used. The denominator for the measure was beneficiaries ages 0 and 21, as of June 30 2014, who were continuously enrolled for 3+ months and taking any antipsychotic medication. Numerators were beneficiaries having 1+ cholesterol tests, 1+ blood glucose tests, and having both types of tests during the measurement year. **RESULTS:** Around 30% of the children on antipsychotic medications had blood glucose test, 14% had cholesterol test, and 13% had both the tests during the observation year. The percentage of children who had both metabolic monitoring tests was slightly higher in fee-for-service beneficiaries compared to managed care beneficiaries (13.4% in fee-for-service vs 11.4% and 12.9% in managed care plans). The percentage is also higher in children of ages 12 to 20 compared to ages less than 11 years. **CONCLUSIONS:** Based on the performance rates provided by NCINQ for 11 state programs in 2008, the Mississippi Medicaid program currently performs at about the 25th percentile. Provider education has been undertaken to improve performance on this important measure being developed for Medicaid programs.

## PHS169

## QUALITY AND IMPLEMENTATION BARRIERS OF PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV PROGRAM IN ETHIOPIA: A CROSS SECTIONAL STUDY

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**OBJECTIVES:** The study aimed to assess the quality and implementation barriers of prevention mother-to-child transmission of HIV (PMTCT) program in public