(Mini-Mental State Examination [MMSE]) is equivocal in literature. To examine the association between depressive symptoms and cognitive function, we used longitudinal data on MMSE and depression and causal inference to illustrate the relationship between two health outcomes. METHODS: Data were obtained from the Hispanic Established Populations for Epidemiologic Studies of the Elderly. Participants included 3050 noninstitutionalized Mexican Americans aged 65 and older followed from 1993-2001. Cognitive function and depressive symptoms were assessed using the MMSE and CESD at baseline and at 2.5, and 7 years of follow-up. Independent variables were sociodemographics, CESD, medical history, and educational attainment. Results: There was evidence to evaluate the extent to which cognitive function depend not only on depressive symptoms measured at a single point in time but also on an individual’s entire depressive symptoms history. RESULTS: our results indicate that if intervention to reduce 1 point of depressive symptoms were made at two years prior to assessing cognitive function, they would result in average improvement in cognitive function of 0.11, points of depressive symptoms were made at two years prior to assessing cognitive function.

CONCLUSIONS: The results suggest that health intervention of depressive symptoms would be useful in prevention of cognitive impairments.

PRM17

METHODS FOR EVALUATING THE EFFECT MODIFICATION IN THE OBSERVATIONAL STUDIES: A RETROSPECTIVE ANALYSIS ON THE IMPACT OF SIMVASTATINA AND EZETIMIBE AND STATINS ON ACUTE MYOCARDIAL INFARCTION

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OBJECTIVES: Fundamental potential weaknesses of observational studies are bias and effect modification. In this situation, computing an overall estimate of association and causal inference to illustrate the relationship between two health outcomes. METHODS: We conducted a Monte Carlo simulation study to evaluate these three propensity scores for estimating ATE and ATT in terms of bias, mean squared error (MSE), and average effect on treatment assignment (ATT). RESULTS: The simulation results show that PS51 has the poorest performance compared to UPS and PS52 in terms of bias, MSE and CP. CONCLUSIONS: Based on these simulation results, we recommend using UPS and PS2 for estimating ATT and ATT for patient reported outcomes in practice.

PRM20

BARriers IN CONDUCTING RESEARCH IN THE FIELD OF RADIOLOGY

Perceptions of Health Care Professionals from a Developing Nation

The Aga Khan University Hospital, Karachi, Pakistan

OBJECTIVE: To identify proportion of radiology Health care professionals’ opinions regarding level of difficulty in conducting research in radiology and to ascertain barriers associated in conducting research activities in field of radiology. METHODS: Cross-sectional analytical study was conducted during International Conference organized by Radiological Society of Pakistan in November 2009 at Sheraton Hotel, Karachi. Data were collected using a structured, self-administered questionnaire from participants willing to participate in research registered for Annual Radiological Research Conference, via probability convenience technique. Data were analyzed using SPSS version 19.0. Means±SD were calculated for quantitative and proportions calculated for qualitative variables. Chi square and risk ratio with 95% CI were used for categorical variables. A-p-value of < 0.001 was considered significant. RESULTS: Response rate was 76% (n=78,103), 65.4% agreed that conducting research in the field of radiology is difficult. Most of the participants (60.9%) face difficulties in conducting research in radiology is difficult. Most of the participants (60.9%) face difficulties in conducting research in radiology. 38.2% believed that research in radiology is difficult as compared to those who had published a paper (30.8%) (P=0.026). However, age, sex, attending conferences and presenting papers did not significantly influence response of participants. The top three barriers in conducting research in field of radiology were time required to provide clinical services (92.3%), lack of dedicated time for research (91.0%) and diminished income in research activities (88.5%). Although similar responses were observed among residents and consultants regarding barriers in conducting research, more residents than consultants believed that lack of support from dean (P=0.037) and diminished income in research activities (P=0.003) were significant barriers. CONCLUSIONS: Most of the participants’ opinion was that conducting research in field of radiology is difficult. Time required providing clinical services, lack of dedicated time for research, diminished income in research activities were identified as most important barriers in conducting research. Similar responses were observed among residents and consultants regarding barriers in conducting research.

PRM21

VIEWS OF HEALTH CARE PROVIDERS ON MEDICAL ERRORS IN KARACHI, PAKISTAN

The Aga Khan University Hospital, Karachi, Pakistan

OBJECTIVES: Incidence of medical errors in an area of concern for health care providers, and policy makers. The large number of preventable errors, risk of litigations, patients’ insecurity and lack of confidence in health care provision is a concern globally in an underdeveloped country like Pakistan, patients safety is at stake. In a recent survey, it was revealed that the cost of treating a medical error is much higher than the cost of treating the same illness. The literature review identified eight studies. The Aga Khan University Hospital, Karachi, Pakistan

METHODS: Data were collected over period of three months, via self-administered survey questionnaire. 385 participants, including doctors, nurses and paramedics from different private and government hospitals of Karachi were selected by non-probability convenience sampling technique. Questionnaire elicited information about number of errors witnessed and reported, by health care providers and factors that influence error-reporting, after an informed consent. RESULTS: According to the preliminary review of data, approximately 90 percent of health care professional believe that medical errors are common. More than 50 percent have witnessed medical errors. 80 percent of the population surveyed has experienced a medical error. Approximately half of the participants believe that medical errors are not often reported in our country. CONCLUSIONS: Though a substantial number of the health care professionals in Karachi have ever witnessed or experienced a medical error, majority is of the opinion that not many are reported or disclosed. Improving health care system for patient safety need of the hour. Both management and health care professionals need to improve error-reporting systems in Pakistan so as to check the cost burden on health care.

PRM48

MULTICRITERIA DECISION ANALYSIS IN ONCOLOGY: AN OVERVIEW

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OBJECTIVES: Diagnosis, treatment, and management decisions in oncology can be particularly complex due to a combination of diagnostic and therapeutic uncertainties, patients’ preferences and values, as well as costs. These decisions involve trade-offs between possible benefits and harms. There is growing interest in the development of a generation of alternative decision-making frameworks within oncology, including multi-criteria decision analysis (MCDA). Even though the literature includes several reviews on MCDA methods, applications of MCDA in oncology are lacking. This study sought to discuss the rationale for using MCDA in oncology. In this context, the following research question emerged: How can MCDA be used to develop a clinical decision support tool in oncology? METHODS: This study reviewed several applications of MCDA in the field of oncology. In particular, the study reviewed key contributions addressing screening and treatment decision-making in this area. It proposed research opportunities in the context of oncology, and presented a hypothetical scenario to show how MCDA could be applied in oncology. RESULTS: The literature review identified eight studies. Five studies examined decision making for cancer screening. Four studies demonstrated applicability and acceptability of the Analytic Hierarchy Process (AHP) as a means to involve patients in oncology decisions and translate evidence into clinical practice. The study showed that a wide range of MCDA methods exist; each has its strengths and weaknesses. Choosing the appropriate method varies depending on the source and nature of information used to inform decision-making. CONCLUSIONS: Given recent advances in knowledge toward evidence-based, multidisciplinary teams, and shared decision-making, the field of oncology will continuously seek ways to include patients in oncology decisions and translate evidence into clinical practice.

RESEARCH ON METHODS – Cost Methods

PRM22

EVALUATING THE RELATIONSHIP BETWEEN BODY MASS index (BMI) OF DIABETIC PATIENTS AND HEALTH CARE COSTS

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OBJECTIVES: Although a number of studies have been conducted to estimate the economic implications of comorbid obesity in diabetic patients, mixed conclu-
sions have been reached. This study sought to assess the relationship between Body Mass Index (BMI) and all-cause direct medical costs reported to the Medical Expenditure Panel Survey (MEPS). METHODS: Eligible patients were ≥18 years, with a diabetes diagnosis (ICD-250) and on at least one oral antidiabetic medication. Primary outcomes were: 1) diabetes-related direct medical costs, 2) all-cause direct medical costs, and 3) direct costs. Costs were inflated to 2010 US dollars using the medical consumer price index. The main independent variable was BMI, categorized as normal weight BMI: 18.0-24.9; overweight BMI: 25.0-29.9; obese BMI: 30.0-40.0 and morbidly obese BMI: ≥40.0 kg/m². We used descriptive analyses of demographic and clinical variables. Generalized linear models with gamma distribution and link function were conducted. RESULTS: A final unweighted sample size of 7,003 patients was obtained (14.6 million weighted), with a mean age (±SE) = 59.6 (±0.1) years, mean BMI (±SE) = 32.2 (±0.1), and 50.4% were male. After controlling for diabetes-related direct medical costs of normal-weight patients ($1,622) were lower than their overweight ($1,955; p<0.001) obesity, ($2,259; p<0.001) and morbidly obese ($2,636; p<0.001), all-cause medical costs were increased. Moreover, lower costs were observed for patients with less ($795; p<0.001) compared to normal-weight ($1,622) patients. All-cause direct costs for obese ($1,415) and morbidly obese ($1,043) patients were not statistically different than costs for normal weight peers. Indirect costs (estimated as lost earnings) in patients with diabetes were applied to each dataset and %bias assessed using estimated-lifetime of average person are calculated. The net balance is discounted to obtain fiscal balance. Expected revenues from taxes and social contributions are obtained (14.6 million weighted), with a mean age (±SE) = 32.2 (±0.1), and 50.4% were male. After controlling for diabetes-related direct medical costs of normal-weight patients ($1,622) were lower than their overweight ($1,955; p<0.001) obesity, ($2,259; p<0.001) and morbidly obese ($2,636; p<0.001), all-cause medical costs were increased. Moreover, lower costs were observed for patients with less ($795; p<0.001) compared to normal-weight ($1,622) patients. All-cause direct costs for obese ($1,415) and morbidly obese ($1,043) patients were not statistically different than costs for normal weight peers. Indirect costs (estimated as lost earnings) in patients with diabetes were applied to each dataset and %bias assessed using estimated-

**PROM23**

**THE LONG-TERM ECONOMIC VALUE OF A NEW-BORN CHILD COMPARISON OF THE HUMAN CAPITAL AND THE LIFETIME INVESTMENT APPROACHES**

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OBJECTIVES: The aim of the study is to assess the long-term economic value of one additional child born in Hungary, Italy, Spain, Sweden and the UK. METHODS: Two different methods were applied. The Human Capital Approach looks at the perspective of society, the perspective of the society is used to estimate the potential loss in production for every unborn child. It is calculated by summing up the discounted value of all expected future gross earnings of the individual, including an imputed value for household production. The Lifetime Investment Approach, the perspective of the long-term value of the child. It is based on the cost of a high-quality education. RESULTS: The results showed that the potential loss in production is not significantly different across the five countries.

**PROM24**

**HOW TO DEAL WITH MISSING LONGITUDINAL DATA IN COST OF ILLNESS STUDIES: SUGGESTIONS FROM THE GERAS STUDY**

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OBJECTIVES: To use baseline results from a prospective observational study in Alzheimer’s disease (AD) to evaluate methods for dealing with missing longitu-

**PROM25**

**A REVIEW OF NICE TECHNOLOGY APPRAISALS USING SINGLE-ARM TRIALS**

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OBJECTIVES: Head-to-head randomized controlled trials (RCTs) remain the gold standard for establishing relative treatment efficacy and for use in cost-effectiveness (CE) models. However, for some interventions, head-to-head RCTs may not be available. We identified health technology appraisals (HTAs) published by the National Institute for Health and Care Excellence (NICE) that included evi-

**PROM27**

**QUANTIFYING THE EFFICIENCY OF HEALTH CARE INTERVENTIONS: A REVIEW OF TIME AND MOTION STUDIES PRESENTED AT ISPOR CONFERENCES BETWEEN 2008 AND 2013**

Korolik B1, De Cock K2


OBJECTIVES: Efficiency may be crucial to a health technology’s value proposition. Measuring time endpoints prospectively is subject to variability and bias that makes Time and Motion (T&M) methodology complex. The aim was to investi-

**RESULTS:** A final unweighted sample size of 7,003 patients was obtained (14.6 million weighted), with a mean age (±SE) = 32.2 (±0.1), and 50.4% were male. After controlling for diabetes-related direct medical costs of normal-weight patients ($1,622) were lower than their overweight ($1,955; p<0.001) obesity, ($2,259; p<0.001) and morbidly obese ($2,636; p<0.001), all-cause medical costs were increased. Moreover, lower costs were observed for patients with less ($795; p<0.001) compared to normal-weight ($1,622) patients. All-cause direct costs for obese ($1,415) and morbidly obese ($1,043) patients were not statistically different than costs for normal weight peers. Indirect costs (estimated as lost earnings) in patients with diabetes were applied to each dataset and %bias assessed using estimated-

**CONCLUSIONS:** This T&M study review reveals a clear choice for descriptive non-hypotheses testing designs, some employ inferential statistics. In multi-centre studies, multilevel models to account for “centre clustering” are scarce.

**T&Ms**