rect cost of asthma. METHODS: Data were drawn from the 2001 Medstat-Marketscan claims database. Medstat is a claims-based database with over five-million members, representing an employed population plus dependents. Individuals with asthma were defined as having at least two outpatient or one inpatient event with a primary diagnosis of asthma (ICD-9 code 493). Direct costs include expenditures for outpatient and inpatient services and prescription drugs. Indirect costs include time lost from work, short term disability and workers compensation. RESULTS: The sample included 31,067 individuals with asthma and 385,883 individuals without. Persons with asthma were significantly more likely to have paid absence from work (16.5% vs. 5.2%), and when absences occur, they were 10.9% longer. Similarly, persons with asthma are more likely to receive disability payments (8.6% vs. 2.0%), although the mean payments are not statistically different. Persons with asthma are also more likely to receive workers compensation payments (5.1% vs. 1.3%) which are significantly more expensive ($7851 vs. $7073). Overall mean expenditures for inpatient and outpatient care were $311, the majority attributable to outpatient care ($207). Inpatient stays were relatively infrequent, although expensive when they occurred with a mean cost of $4736. CONCLUSION: Asthma is a high cost chronic illness in employer populations. Strategies to identify and manage high cost individuals may lead to cost savings. However, asthma is an illness where total indirect costs ($181) are an unusually higher percentage of the total cost of illness, so much of the economic burden of the illness is borne directly by employers. This suggests that employer based asthma programs may be appropriate.

A DYAD APPROACH TO QUALITY OF LIFE MEASUREMENT IN CHILDREN WITH ASTHMA

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OBJECTIVES: The assessment of health-related quality of life (HRQOL) is an essential component of evaluations of health status, physical functioning, response to treatment and disease progression. The measurement of HRQOL in children with asthma often relies on parents as proxy respondents. Yet, several studies have shown poor to moderate correlations between parent and child responses, questioning the validity of the parent proxy response. This pilot study tests a dyad approach, where parent and child are interviewed together. It was hypothesized that the dyad interview, by bringing parent and child perspectives together, would create a more detailed and accurate picture of HRQOL in children with asthma. METHODS: Children clinically diagnosed with asthma aged 8 to 15 and their primary caregivers were recruited from the Hospital for Sick Children Asthma Clinic. Sixteen parent and child dyads consented and were administered the Health Utilities Index Mark II & III (HUI II/III), the Pediatric Asthma Quality of Life Questionnaire (PAQLQ), and the Pediatric Quality of Life Inventory (PedsQL). A qualitative approach was used wherein parents and children were encouraged to discuss each question together. Interviews were audiotaped and transcripts were analyzed thematically. RESULTS: Consistent with Grounded Theory methodology, observations were indexed according to a priori and a posteriori categories and subcategories. Theoretical saturation was achieved. The data showed that parents were a valuable resource in overcoming problems associated with inaccurate recall, respondent bias, frustration, psychic discomfort, anxiety and comprehension. CONCLUSIONS: A dyad approach provided children with access to their parent as an important information resource, as an enabler and as an extension of the child’s cognitive skills. Pilot data suggested that the dyad is more likely to capture multi-factorial aspects of pediatric HRQOL than independent assessments of parent or child.

CHOOSING AMONG DIFFERENT TYPES OF MATCHING TECHNIQUES

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OBJECTIVE: The diversity of procedure in pharmaceutical research requires a guideline to choose appropriate matching method. Coherent guidelines for practice are absent. In this paper we evaluate the several matching techniques and provide a guideline to choose the best. METHODS: We proposed the following ways to check for the balance: 1) Two sample t-statistic between the mean of the treatment group for each explanatory variables with the mean of these variables in the control group; 2) The mean difference as a percentage of the average standard deviations; 3) Percent reduction bias in means of explanatory variables after matching and initially; 4) Compare treatment and control density estimates for the explanatory variables; and 5) Compare the density estimates of the propensity scores of control units with that of the treated units. RESULTS: Medstat Market Scan data used to provide empirical examples. We examined 2 to 1 matching, nearest neighborhood matching (NNM) with replacement, NNM without replacement, MM matching (MM), MM with calibers, stratification method, kernel matching and radius matching. Comparing techniques according to the above criteria yield that 2 to 1 and NNM without replacement provides the worst balance. The difference between the control and treatment variables was significant. To choose among the rest, we estimated the average treatment effect according to each matching procedures and calculated the deviation from the mean of estimated average treatment effect. MM with calibers where calibers is selected as a quarter of standard deviation of estimated propensity score provides least deviation, there this procedure was superior to the others. CONCLUSION: Sensitivity analysis of the matching techniques is especially important since none of the proposed methods in literature is a priori superior to the others. The joint consideration offers a way to assess the robustness of the estimates.

COMPARISON OF ALTERNATIVE STRATEGIES FOR THE DIAGNOSIS OF ACUTE CARDIAC ISCHEMIA IN EMERGENCY DEPARTMENTS: STANDARD OF CARE VERSUS BMIPP

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OBJECTIVE: This study compared diagnostic accuracy, time spent in the emergency department/chest pain observation unit ("ED/CPU"), medical costs, and litigation risk of diagnostic strategies for acute cardiac ischemia (ACI) in ED/CPU. The present study compared the efficacy of standard care versus BMIPP. METHODS: A decision tree model was constructed for alternative diagnostic strategies based on comprehensive literature review and expert panel input. Pre-admission standard of care is a complex scheme involving enzyme tests, ECG, X-ray, and SPECT with other common cardiac imaging agents. Model para-
OUTCOMES

ACUTE CORONARY SYNDROMES: ONE YEAR COSTS AND OUTCOMES

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OBJECTIVE: Consensus treatment guidelines recommend most patients with acute coronary syndrome (ACS) receive antiplatelet therapy, statins, and beta-blockers for prevention of secondary events. The goal of this review was to examine prescribing patterns of these agents from published naturalistic studies and compare to guideline recommendations. METHODS: An OVID Medline search was conducted from 1995 to 2004 to identify published naturalistic studies of ACS treatment that contained detailed drug utilization data. Drug utilization patterns were examined for two aspects: associated therapeutic strategy (medical therapy or percutaneous coronary intervention [PCI]) and initiation of drug therapy (acute or as chronic therapy after hospital discharge). RESULTS: Four sources that contained sufficient details on drug utilization were identified. Data were from US and worldwide studies. Beta-blockers had the highest overall utilization (50–87% acute; 41–77% chronic). Statins were administered to 43–57% of patients acutely and 44–68% chronically. Insufficient data were available to examine associated therapeutic strategy for beta-blockers and statins. Clopidogrel use, with or without aspirin, ranged from 16–30% acutely. In the subgroup of patients who received PCI, clopidogrel use in the hospitalization period ranged from 51–83%. The percentage of ACS patients who received clopidogrel chronically was 38–66%, however in the subgroup of patients who underwent PCI, up to 83% received clopidogrel after hospital discharge. Insufficient data were available to examine duration of therapy. CONCLUSIONS: Recent treatment guidelines recommend use of beta-blockers, statins, and antiplatelet therapy in ACS patients. Some of the data reviewed here predate the most recent guidelines but they suggest a gap between the usual care setting and treatment guidelines. The largest discrepancy appears to be with chronic statin use and clopidogrel use in ACS patients who do not undergo PCI. Few data regarding duration of therapy are available. Continued guideline education and reinforcement along with quality improvement measures are needed.

ACUTE CORONARY SYNDROMES: ONE YEAR COSTS AND OUTCOMES

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OBJECTIVES: Acute coronary syndromes (ACS) are a major cause of morbidity and mortality in Western Europe, imposing significant costs on health care providers. This study aims to estimate costs (including medications prescribed, intervention rates and hospital utilization) and health outcomes of ACS during the first year following diagnosis. Perspective of the health care provider is used throughout. Countries examined were the United Kingdom (UK), France, Germany, Italy and Spain.

METHODS: Treatment pathways for ACS patients, including investigations, revascularisation and medical management, were developed. Resource use was multiplied by the unit cost of the resource for all interventions and, since these factors vary between countries, country-specific inputs (where possible) from 2002 data were used. RESULTS: Estimated number of deaths in the first year following ACS diagnosis ranged from around 22,500 in Spain to over 90,000 in Germany. Although the number of patients undergoing percutaneous coronary intervention (PCI) is lower in the UK (9%) than the rest of Western Europe (Germany was highest at 62%), differences are narrowing, as the UK's PCI rate is increasing more rapidly than that of other countries. Largest contributors to total costs are hospital stay (particularly intensive and coronary care units) and revascularisation procedures. Pharmaceuticals were estimated at 14–25% of ACS total cost. Models were most sensitive to changes in ACS incidence, death rate before hospitalization, and hospital unit costs. Total cost of ACS in the UK is estimated around 1.8 billion, compared with 1.3 billion in France, 2.3 billion in Germany, 2.9 billion in Italy and 1.06 billion in Spain. CONCLUSION: Morbidity and mortality, and cost of ACS are substantial. ACS contributes a large proportion towards total health care expenditure of Western European economies. Differences in expenditure between countries can be accounted for by disparities in population, incidence and resource use.

Utilization of Recommended Drug Therapy in Acute Coronary Syndrome

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OBJECTIVE: Consensus treatment guidelines recommend most patients with acute coronary syndrome (ACS) receive antiplatelet therapy, statins, and beta-blockers for prevention of secondary events. The goal of this study was to examine prescribing patterns of these agents from published naturalistic studies and compare to guideline recommendations. METHODS: An OVID Medline search was conducted from 1995 to 2004 to identify published naturalistic studies of ACS treatment that contained detailed drug utilization data. Drug utilization patterns were examined for two aspects: associated therapeutic strategy (medical therapy or percutaneous coronary intervention [PCI]) and initiation of drug therapy (acute or as chronic therapy after hospital discharge). RESULTS: Four sources that contained sufficient details on drug utilization were identified. Data were from US and worldwide studies. Beta-blockers had the highest overall utilization (50–87% acute; 41–77% chronic). Statins were administered to 43–57% of patients acutely and 44–68% chronically. Insufficient data were available to examine associated therapeutic strategy for beta-blockers and statins. Clopidogrel use, with or without aspirin, ranged from 16–30% acutely. In the subgroup of patients who received PCI, clopidogrel use in the hospitalization period ranged from 51–83%. The percentage of ACS patients who received clopidogrel chronically was 38–66%, however in the subgroup of patients who underwent PCI, up to 83% received clopidogrel after hospital discharge. Insufficient data were available to examine duration of therapy. CONCLUSIONS: Recent treatment guidelines recommend use of beta-blockers, statins, and antiplatelet therapy in ACS patients. Some of the data reviewed here predate the most recent guidelines but they suggest a gap between the usual care setting and treatment guidelines. The largest discrepancy appears to be with chronic statin use and clopidogrel use in ACS patients who do not undergo PCI. Few data regarding duration of therapy are available. Continued guideline education and reinforcement along with quality improvement measures are needed.

Long-Term Thienopyridine Therapy in ACS Patients Residing in the United Kingdom

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OBJECTIVES: Long-term antiplatelet therapy is typically considered standard of care for secondary prevention of cardiac events in acute coronary syndrome (ACS) patients. The European Society of Cardiology consensus treatment guidelines in 2002 support the use of clopidogrel in many of these patients. The goal of this descriptive study was to examine clopidogrel patterns of use in ACS patients in the UK. METHODS: The data source was the IMS Health, Disease Analyzer Medipius—UK database. This database contains nearly two-million de-identified patient records and 58 million prescriptions continuously collected from approximately 560 participating general practices. The study time period was January 01, 1999 to November 30, 2003. The index ACS event was identified using ICD-10 codes for unstable angina and acute myocardial infarction. Patients were included if they had at least six-months of data both before and after the index ACS event, and at least one prescription for clopidogrel after the event. RESULTS: A total of 9591 patients were included in the ACS cohort and 1110 had at