OBJECTIVES: West Virginia University, Morgantown, WV, USA

of co-morbidities, urban and teaching hospitals were
and ER visits. Non-whites, patients with higher number
children showed highest hospitalization charges, LOS
and payer as compared to children. Medicaid-eligible adults
higher total charges, LOS and ER visits for all types of
62% of asthmatic children. Adults had significantly
70% of adult asthmatics had ER visits as compared to
$4,532 as compared to $7,713 for adult asthma. Almost
mean total charges for childhood asthma was
2.43 days and 3.98 days, respectively. Mean total charges for
asthma was $4,532 as compared to $7,713 for adult asthma. Almost
70% of adult asthmatics had ER visits as compared to
62% of asthmatic children. Adults had significantly
higher total charges, LOS and ER visits for all types of
payers as compared to children. Medicaid-eligible adults
and children showed highest hospitalization charges, LOS
and ER visits. Non-whites, patients with higher number of
co-morbidities, urban and teaching hospitals were
associated with higher charges, LOS and ER visits, for
both adult and childhood asthma.

CONCLUSIONS: Adult asthmatics, especially Medicaid
beneficiaries, have higher inpatient charges, LOS and ER
visits as compared to asthmatic children. Future studies
should be aimed at reducing asthma-related ER visits and
investigating variations in resource utilization based
on insurance coverage and patient and hospital-related
characteristics.

PAT I 0

RESOURCE UTILIZATION FOR INPATIENT
ASTHMA CARE IN CHILDREN AND ADULTS: AN
ANALYSIS OF HCUP DATA
Hassan MK, Amonkar MM
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OBJECTIVES: To estimate differences in length of stay
(LOS), emergency room (ER) visits and charges for
inpatient asthma care between children and adults based
on insurance coverage, patient and hospital-based
characteristics.

METHODS: The 1997 Nationwide Inpatient Sample of
the Healthcare Cost and Utilization Project data were
used to extract 183,400 childhood (age <17 years) and
251,760 adult asthma cases (primary diagnosis using
ICD-9 codes 493.00–493.91). Two-way ANOVA was
conducted to determine differences in LOS and total
charges between adult and childhood asthma based on
type of insurance coverage (Medicaid, private insurance/HMO and self-pay) while chi-square analysis was
conducted to detect differences based on number of ER
visits. Regression models were developed separately for
childhood and adult asthma to examine if LOS and total
charges (multiple regression) and ER visits (logistic
regression) are affected by patient-related (race, gender,
number of co-morbidities and insurance status) and
hospital-related (bed-size, location, teaching and
ownership status) factors.

RESULTS: Overall, average length of stay for childhood
and adult asthma was 2.43 days and 3.98 days, respectively. Mean total charges for childhood asthma was
$4,532 as compared to $7,713 for adult asthma. Almost
70% of adult asthmatics had ER visits as compared to
62% of asthmatic children. Adults had significantly
higher total charges, LOS and ER visits for all types of
payers as compared to children. Medicaid-eligible adults
and children showed highest hospitalization charges, LOS
and ER visits. Non-whites, patients with higher number of
cocmorbidity, urban and teaching hospitals were

PAT I 1

COST-UTILITY ANALYSIS OF MIDDLE SEVERE
ASTHMA WITH SODIUM CROMOGLYCATE AND
SODIUM NEDOCROMIL
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OBJECTIVES: Comparative estimation cost and
influence on quality of life in children with middle severe
asthma sodium cromoglycate and sodium nedocromil.

METHODS: Cost-utility analysis was conducted in
years in 100 children with asthma. We determined one
year expenses for quality adjusted life years (QALY). For
estimation quality of life we used “Childhood questionnaire” by A. West, D. French adapted for Russian by
V. Petrov and I. Smolenov and index Rosser-Kind. Estimation of expenditures included direct and indirect
expenses.

RESULTS: The investigation revealed the differences in
therapeutic effectiveness and quality of life depending on
treatment method. Using therapy by nedocromil sodium
during one year, the total sum of positive effect on quality
of children’s life was 149,8%; health index 0,985 and
expenses on drug—3672,3 ± 40,4 roubles. Using
sodium cromoglycate these indices were 70,9%; 0,965
and 1862,4 ± 24,2 roubles accordingly. Annual cost of
middle severe asthma for one child was 5051,4 ± 68,6
roubles using sodium nedocromil (72,7% expenditures
formed expenses on the drug); using sodium
cromoglycate—5044,7 ± 110,4 roubles (36,92%) accordingly. In
the second case expenses on QALY were much more—
5207,65 in consequence of expenses on hospital care and
additional therapy.

CONCLUSIONS: Therapy by sodium cromoglycate of
middle severe asthma didn’t provide complete disease
control. In this case necessity in additional therapy for
improvement quality of life is increased.

PAT I 2

ESTIMATES OF THE COST OF ASTHMA IN A
EMPLOYER POPULATION
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$2205 for salmeterol, $1911 for montelukast) in year 2.
There were no significant differences in the adjusted
asthma-related health care costs and utilization. Although
the montelukast group showed higher compliance in the
bivariate analysis, this was not significant in the multi-

PAR10

PAR11

PAR12
OBJECTIVE: To examine determinates of asthma cost in a large employer population.

METHODS: Data was drawn from the MedStat database. Medstat is a claims-based database with over 5 million members. Individuals were identified as asthmatics based on either a hospitalization, emergency room (ER) or outpatient visit with a primary diagnosis of asthma. Final sample size was 107,432.

RESULTS: Overall mean expenditures for inpatient, outpatient and emergency room care were $417, the majority attributable to outpatient care ($270). Both ER visits (2.6% of the sample) and inpatient stays (2.5%) were relatively infrequent. But, among ER users, mean ER expenditures ($438) were greater than total mean expenditures for the typical asthmatic. Similarly, mean hospital expenditures for those using inpatient services were large ($5,316). ER visits were most likely for those aged 18–34 and became more infrequent with age. Conversely, hospital stays were least frequent for those 18–34 and otherwise showed no age trend. Although the frequency of inpatient events didn't increase with age, the cost was positively correlated with age, with the lowest mean inpatient expenditures for the 18–34 age group ($98) and the highest for those age 65 and over ($355). Outpatient costs showed a similar trend, with the highest costs for those over 65 ($355) and the lowest for the 0–18 age group ($237). Overall costs in the over 65 age group ($589) were significantly greater than the lowest cost group ($237). ER visits were most likely for those aged 18–34 and became more infrequent with age. Conversely, hospital stays were least frequent for those 18–34 and otherwise showed no age trend. Although the frequency of inpatient events didn’t increase with age, the cost was positively correlated with age, with the lowest mean inpatient expenditures for the 18–34 age group ($98) and the highest for those age 65 and over ($355). Outpatient costs showed a similar trend, with the highest costs for those over 65 ($355) and the lowest for the 0–18 age group ($237). Overall costs in the over 65 age group ($589) were significantly greater than the lowest cost group, ages 18–34 ($375). Mean total costs for women ($446) were higher than for men ($379), largely due to higher outpatient costs. Women more frequently used inpatient services (2.7% versus 2.4%), but were less likely to use the ER (2.5% versus 2.9%).

CONCLUSIONS: Asthma is a high cost chronic illness in employer populations. Strategies to identify and manage high cost individuals may lead to cost savings.

THE COST OF ASTHMA IN CATALONIA: A DESCRIPTIVE AND MODELLING APPROACH

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OBJECTIVES: To develop a model of the cost of treatment of asthma for planning and evaluation purposes.

METHODS: The model is based on the five states classification of the GIA (Global Initiative on Asthma) A preliminary model was designed and validated by a group of expert clinicians, which defined also the current treatment patterns. On the basis of that information a template was designed for the collection of the following data: visits, in-patient stays, lab tests, drug treatments and clinical state. Retrospective data were collected for 3 and 5 years from 36 clinical records of 6 outpatient units of 6 Catalan hospitals. The cost at each state as well as the probabilities of transition between states was derived from the former data.

RESULTS: The average annual cost at 1997 prices is US$250. The distribution by resource category is: visits 33.5%, in-patient care 9.3%, lab tests 13.6% and drugs 43.6%. The cost in the first year is twice as much as the average of the following years. There are no significant differences in cost between pediatric and adult patients. The three years treatment cost does not seem to have increased over time between the patients starting treatment in 1996 and those starting in 1998. The initial simulation model gave an annual treatment cost of US$215, 250 and 285, respectively, for patients being in states one, two or three at the first visit.

CONCLUSIONS: The model reflects physicians understanding of the disease process and can be easily populated with data from clinical records. Given the limited size of the sample, transition probabilities were assumed to depend only from the previous state, but not from the state at the first visit or from other patient characteristics. These simplifying assumptions could and should be relaxed if data from a larger sample were available.

USE OF AN INTERACTIVE VOICE RESPONSE SYSTEM (IVRS) FOR LONG-TERM RESOURCE USE DATA COLLECTION

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OBJECTIVES: Compliance is a concern when trying to capture resource use (RU) data over a long period. An IVRS was developed to capture RU data for chronic obstructive pulmonary disease and to assess the viability of using a patient-oriented IVRS system for periodic and long-term RU data collection. This presentation will focus on results of the second objective.

METHODS: This study was done over 58 weeks in parallel with a clinical trial. At the initial study visit, subjects were instructed in the use of the IVRS, provided written instructions and a Health Care Resource Use Tracking Aid© for each of 14 reporting periods. Subjects were instructed to record RU daily on the tracking aid and to report via the IVRS toll-free number each 30 days during the course of the study. IVRS data were accessed weekly for data monitoring. Reminders were generated to patients who did not complete a scheduled report. Two RU reporting periods extended beyond the last clinical trial visit. Subjects resided in 23 states.

RESULTS: Males comprised 58% of study subjects; 55% were greater than 65 years old; and 53% resided in Southern states. All 381 IVRS users reported resource use data at least once. The average number of IVRS reports per subject was 10.5 (sd = 4.5). Of those subjects who finished the trial, 89% completed at least 12, and 46% completed all 14 data reports.

CONCLUSIONS: This study demonstrated that multiple data reporting via an IVRS can be used successfully for collecting long-term health care resource use data even when a substantial portion of the subjects are elderly. The