obtained from the derivation versus the validation samples. The
construct validity of the DRCI was assessed by comparing it to
only demographics, a comorbidity-index, and the revised
Chronic Disease Score (CDS). Wilcoxon matched-pairs signed-
rank test was used to determine differences between the median
squared residual scores between the various risk-adjustment
models. RESULTS: The correlation between actual and predicted
costs between the derivation and validation samples was not sta-
tistically different for the three predicted outcomes. Age and sex
accounted for 0.8% and 0.1% of the variance in total and ambula-
tory cost. The comorbidity index and the CDS individually
explained approximately 6%–10% of the variance in total and
ambulatory cost, respectively. The DRCI explained 6%–8% of
the variance in total and ambulatory costs, and did significantly
(p < 0.05) better than only demographics. The added variance
explained by the incorporation of the comorbidity index or CDS
accounted for 5%–8% of the variance in total and ambulatory
costs, respectively. CONCLUSIONS: The predictive validity of
the DRCI is equivalent to that of the CDS. When the DRCI was
used along with the CDS, up to eight percent of variability in
costs and utilization were explained. This may suggest that the
DRCI and the CDS may be explaining different dimensions of a
subject’s severity of diabetes.

DEVELOPMENT OF A DIABETES RESOURCE
CONSUMPTION INDEX (DRCI) USING VETERANS HEALTH
ADMINISTRATION DATA
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OBJECTIVES: The fifth leading cause of death by disease in the
U.S., type-2 diabetes places patients at higher risk for heart
disease, blindness, kidney failure, extremity amputations, and
other chronic conditions. The 2002 costs associated with dia-
betes were estimated at US$132 billion. Predictive models incor-
porating clinical measures of diabetes severity from clinical
databases and their association to health care resource use and
costs are needed for health plan resource planning and man-
agement. The purpose of this study was to determine the
relationship between health care resource use and costs with dia-
betes-related clinical measures, and to develop a diabetes
resource consumption index (DRCI). The DRCI consists of
empirically derived weights to predict health care use among
persons with diabetes. METHODS: The data was collected from
four outpatient clinics within the Southern Arizona Veterans
Affairs Health Care System. The DRCI models used diabetes
severity measures to predict three health care resource outcomes:
risk of hospitalization; total health care costs; and ambulatory
costs. Severity of diabetes was defined as the function of annual
HbA1C, creatinine clearance-rate, and cholesterol values.
Comorbidity was defined as the number of concurrent secondary
diseases. The log-likelihood ratio test and the Wald test-statistic
were used to assess the performance of the models. RESULTS:
A total of 367 diabetic subjects had complete information on
diabetes-specific variables and represented the sample for this
study. DRCI weights based on the magnitude of one year health
care resource use and socio-demographic characteristics, ranged
from −471.5 to 3081.2 for total health care costs, from −304.3
to 1582.1 for outpatient costs, and −0.19 to 0.93 for risk of
hospitalization. The DRCI models predicted 7% and 9% of
the variance in total and ambulatory costs, respectively.
CONCLUSIONS: This study suggests an association between
clinical measures of diabetes severity and health care resource

and costs. Future studies are needed to validate this index in
other settings.

GASTROINTESTINAL ADVERSE EVENTS FROM NON
STEROIDAL ANTI-INFLAMMATORY DRUGS: RELATIONSHIPS
BETWEEN RISK ASSESSMENT, VETERANS AFFAIRS
PRESCRIBING GUIDELINES, AND HOSPITALIZATION COSTS
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OBJECTIVES: We determined rates of gastrointestinal (GI)
complications among patients receiving nonsteroidal anti-
inflammatory drugs (NSAIDs), according to risk of GI events
and adherence to Veterans Affairs (VA) NSAID prescribing
guidelines; and calculated the associated costs of hospitalizations
from GI events by risk and adherence to guidelines. METHODS:
In November 2001, we identified 7625 patients treated with
NSAIDs in the New Mexico VA Health Care System. Using VA
prescribing guidelines we assessed each patient’s risk for GI
events (low, moderate, high) and whether their treatment
adhered to VA prescribing guidelines. We then reviewed patient
records for GI hospitalizations and diagnoses within the follow-
ing 2 years. Our data included demographic information, hos-
pitalizations, prescription medications, and diagnoses. Costs
were based upon 2002 Medicare reimbursement values. We com-
pared outcomes and costs by risk level and adherence to guide-
lines, using chi square analyses for categorical data and t-tests
for costs. RESULTS: Patients at moderate and high risk (n =
2288) had more (p < 0.001) GI hospitalizations (1.86%), com-
pared to patients at low risk (n = 5337, 0.83%) with an odds
ratio of 2.24, 95% confidence interval 1.47–3.41. Adherence to
guidelines was not associated with fewer hospitalizations (odds
ratio 1.41, confidence interval 0.67–2.96). Among patients at
moderate-risk who were hospitalized, non-adherence to criteria
(n = 26) was associated with higher (p = 0.027) mean costs
($5709 ± 2991) compared to those adherent to criteria (n = 9,
$4037 ± 1248). Additional hospitalization costs due to non-
adherence totaled $112,099. CONCLUSION: The VA guidelines
used to assess risk of GI complications from NSAIDs was
related to rates of GI hospitalizations over a 2-year follow-
up period. Rates of hospitalizations were not affected by
adherence to guidelines. However, mean hospitalization costs
were significantly lower among patients at moderate risk who
were prescribed according to guidelines. Limitations are that
the study is observational and that costs are limited to GI
hospitalizations.

A SYSTEMATIC REVIEW OF THE EFFECTIVENESS OF TOTAL
AND PARTIAL LAPAROSCOPIC FUNDOPLICATION FOR
THE TREATMENT OF GORD
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With a prevalence in Western countries of around 15%, GORD
is associated with considerable long-term morbidity and treat-
ment costs. Since the introduction of laparoscopic surgery in the
1990s fundoplication has become a viable alternative to long-
term drug therapy in difficult to treat patients. Partial fundopli-