Title
Managed care profit status, model type, and diabetes care.

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modified version of the SF-20 to assess functional status. Using multiple regression, we analyzed treatment and the functional status after adjustment for the estimated propensity of being admitted to a cardiology service, AHRQ guideline risk group, and predicted probability of ACI (with correction for clustering by admitting physician).

RESULTS: On average, physical functioning was higher in cardiology pts (adjusted difference of 5.5 on a scale 0–100, 95% CI 0–11.1, p = 0.01). There were no differences in role function, general health perception, social function, or mental health measures. In-hospital complications and deaths (combined) were uncommon in both groups (5% vs. 2% in cardiology vs. generalist pts, p = 0.13). Cardiologic pts were more likely than generalist pts to receive aspirin (OR 4.1, 95% CI 2.0–8.4), beta-blockers (OR 1.8, 91% CI 1.1–2.9), and cardiac catheterization (OR 2.7, 95% CI 1.0–7.5).

CONCLUSION: Our results suggest that physical function in pts who are admitted to a cardiology service is superior to that of pts admitted to a generalist service for evaluation of possible ACI. The feasible explanation is that cardiology pts are likely to receive recommended therapies for ACI. Analysis of a larger sample of patients is needed to confirm these findings and to determine whether cardiology admission is associated with improved (or worsened) mortality and cardiac complications.

THE COST OF COMPLICATIONS: PNEUMONIA AFTER ACUTE STROKE. [L. Katranz, R.D. Cabut] University of Tennessee Health Science Center, Memphis, TN. [University of Tennessee Health Science Center, Memphis, TN.]

BACKGROUND: There is evidence that clinical pathways that include a swallowing evaluation can reduce the incidence of pneumonia that complicates acute stroke, although, in usual care, fewer than half of stroke patients are evaluated. We previously reported that pneumonia after stroke confers a 3-fold increased risk for 30-day mortality; in this study, we examined the incremental cost of pneumonia complicating acute stroke.

METHODS: This was a retrospective cohort study involving 11,286 Medicare patients admitted for ischemic or hemorrhagic stroke to one of 10 hospitals in Greater Cleveland between 1991 and 1997. The sample excluded 3,007 patients who died or had DNR orders with 14 or fewer days of admission. For costs, we used patient-level charges adjusted for hospital specific cost-to-charge ratios, which then were log-transformed. Pneumonia was identified from secondary ICD-9-CM codes. We used detailed chart-abstracted patient data to generate covariates representing patient severity (c-statistic = 0.73), predicted cost (c2 = 0.37), and propensity for pneumonia (c-statistic = 0.81). Linear regression was used to estimate the incremental cost of pneumonia after adjusting for age, sex, race, and the above covariates.

RESULTS: Pneumonia occurred in 5.6% (651/11286) of patients in the cohort. There was a higher incidence in patients with hemorrhagic stroke (13.3% vs 4.9%, p < 0.001), those admitted from nursing homes (10.8% vs 5.1%, p < 0.001), and those with greater severity on admission (predicted mortality 13.2% vs 6.0%, p < 0.001). The unadjusted average cost for patients with pneumonia was $15,026, compared to $5,094 for patients without pneumonia, resulting in an incremental in-hospital cost of $9,912. After adjustment, the cost for the average patient with pneumonia was $9,259 as compared to $4,642 for those without pneumonia, representing an incremental cost of $3,618.

CONCLUSION: Extrapolated to the estimated 551,000 U.S. patients annually suffering acute stroke, the cost of pneumonia complicating stroke admissions is approximately $112 million each year. Together with the 1.1-fold increased mortality risk of pneumonia, and evidence that interventions can reduce risk, these findings provide strong impetus to quality improvement efforts in stroke evaluation and management.

BUILDING A BETTER QUALITY MEASURE: ARE SOME PATIENTS WITH “POOR QUALITY” ACTUALLY GETTING GOOD CARE? [E. Lemi, D. M. Smith, M. M. Hogan, T. P. Hoffer, S. L. Krein, M. Berenson, R. A. Hayard; Ann Arbor VMAC Center for Practice Management and Outcomes Research and University of Michigan Department of Medicine, Ann Arbor, MI; [Ann Arbor VMAC Center for Practice Management and Outcomes Research, Ann Arbor, MI].]

BACKGROUND: National performance measures monitor the proportion of diabetic patients with low density lipoprotein cholesterol (LDL) levels ≥10 mg/dL, but such simple rates of standard intermediate outcomes measure poor control, not poor care. Electronic medical records may enhance our ability to improve quality assessment by allowing the creation of more “tightly linked” quality measures that define good quality either by a good intermediate outcome (LDL ≤100 mg/dL) or by evidence of appropriate responses to poor control (e.g., starting or optimizing medications for high LDL or doing so in the face of contraindications). We examined hyperlipidemia therapy for patients with diabetes to determine the relative accuracy of quality assessment using simple intermediate outcome versus tightly linked quality measures.

METHODS: We used a national VA diabetes registry to randomly sample 1154 diabetic patients from two large VA healthcare systems who had an LDL test done between October 1, 1998–March 31, 1999. We reviewed the medical records of all patients with high LDL levels to more fully examine medication treatment for hyperlipidemia, contraindications to treatment and explanations for poor quality.

RESULTS: While 27% (310/1154) of patients had an LDL ≥10 mg/dL using the simple intermediate outcome measure, only 11% (148/1154) were classified as having substantial quality using the tightly linked measure. Among the 139 escalated to adequate quality, 117 had LDL measurements started or increased within 6 months of an LDL ≥130 mg/dL, 8 were already on high dose medication, 12 had a repeat LDL ≤130 mg/dL and 22 had contraindications to treatment. We were able to construct a tightly linked measure from automated data alone that had a high agreement with the tightly linked measure constructed with the medical record data (kappa = 0.84).

CONCLUSION: Simple intermediate outcome measures can be an inaccurate reflection of true quality of care and many patients classified as having substantial quality by “poor control” may actually be receiving good quality of care.

DISCIPLINARY ACTION AGAINST PHYSICIANS: CHARACTERISTICS AND PRECURSORS. [A. A. Kasir, J. J. Naren, A. A. Sorensen; University of Oklahoma Health Sciences Center, Oklahoma City, OK; University of North Carolina at Charlotte, Charlotte, NC; University of North Dakota School of Medicine & Health Sciences, Fargo, ND] (Tracking ID #78106)

BACKGROUND: State medical boards routinely discipline physicians (MDs) for violations of laws governing the practice of medicine, but there is a dearth of information linking offender characteristics to severity of disciplinary action. We sought to determine physician characteristics and disciplinary predictors and to report the type, frequency, and severity of disciplinary actions against MDs.

METHODS: We undertook a descriptive and predictive analysis of publicly-available data maintained by the Oklahoma State Board for Medical Licensure and Supervision (OSBMS) on disciplined MDs. RESULTS: Longitudinally maintained data since 1922 showed that of 14,314 currently or previously licensed MDs, 396 (2.8%) MDs had been disciplined. Forty-eight MDs currently practicing medicine, 85.7% were practicing in Oklahoma. While physician race was not a significant factor (OR = 1.23, 95% CI 0.94–1.62), males (OR = 2.62, 95% CI 1.79–3.84) and non-board-certified MDs (OR = 2.85, 95% CI 2.85–3.80) were more often disciplined. Logistic regression analysis showed that age > 40 years, male gender, and lack of board certification were the only important predictors of being disciplined. During 2001, complaints against MDs involved quality of care issues (24.8%), incompetence (18.3%), malpractice (16.7%), non-controlled substance fraud (12.7%), billing issues (9.4%), inadequate records (8.4%), fraud (6.7%), prescribing violations (5.9%), sexual misconduct (4.6%), substance abuse (1.8%), criminal activity (1.0%), fraud application (0.3%), and others (11.8%). For that same year, two-thirds of complainants came from a public source.

CONCLUSION: Since 1922, almost 3% of its licensed MDs have been disciplined by the OSBMS. The characteristics of offender MDs are similar to those previously reported.

MANAGED CARE PROFILE, STATUS, MODEL TYPE, AND DIABETES CARE. [C. Kim, D.F. Williams, C.M. Mangione, M.M. Safford, J.V. Seely, D.G. Marmorek, J.D.Curb, T.J. Thompson, W.H. Herman; [University of Michigan, Ann Arbor, MI; [Centers for Disease Control and Prevention, Atlanta, GA; [University of California, Los Angeles, Los Angeles, CA; [University of Michigan and Dentistry of the University of New Hampshire, and [Penn State University School of Medicine, Philadelphia, PA]

BACKGROUND: The influence of investor-ownership and managed care model on the quality of health care is controversial. Among for-profit plans, group/network models provided significantly more (71%) of the measures of quality care than IPA/network models (p < 0.01) except for annual advice. Among non-profit plans, little difference existed between provider group model types.

CONCLUSION: Profit status was not associated with greater performance of diabetes process of care measures. Among for-profit plans, group/network models provide better diabetes care than IPA/network models.

Percentage of participants receiving diabetes processes of care and (95% CIs)

<table>
<thead>
<tr>
<th>Process of Care</th>
<th>Non-profit</th>
<th>For-profit</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetic eye exam</td>
<td>79 (74–83)</td>
<td>76 (72–80)</td>
<td>3 (1–5)</td>
</tr>
<tr>
<td>Urine protein checked</td>
<td>86 (78–91)</td>
<td>77 (67–84)</td>
<td>9 (2–15)</td>
</tr>
<tr>
<td>Foot exam performed</td>
<td>85 (77–90)</td>
<td>83 (75–89)</td>
<td>2 (0–4)</td>
</tr>
<tr>
<td>Lipid checked</td>
<td>63 (57–70)</td>
<td>67 (61–73)</td>
<td>4 (1–7)</td>
</tr>
<tr>
<td>HbA1c checked</td>
<td>87 (83–90)</td>
<td>86 (81–89)</td>
<td>1 (0–2)</td>
</tr>
<tr>
<td>Aspirin advised</td>
<td>62 (55–69)</td>
<td>47 (40–54)</td>
<td>15 (11–19)</td>
</tr>
<tr>
<td>Flu vaccination</td>
<td>66 (60–72)</td>
<td>64 (59–69)</td>
<td>2 (0–4)</td>
</tr>
</tbody>
</table>

LINKING DIABETES PROCESSES TO OUTCOMES: THREE PARADOXES. [S. Kim, M.F. Witosniewski, J. Bull, L.A. Fogelsted, D.O. Sollie, [Cook County Hospital, Chicago, IL; [University of Illinois at Chicago, Chicago, IL] (Tracking ID #78136)

BACKGROUND: As quality assessment and health services research move from administrative to clinical databases, new vistas are opened for evaluating and linking care processes and outcomes. Clinical care for patients with diabetes mellitus affords such an opportunity as electronic data from pharmacy and laboratory become more widely accessible and linkable. In the course of a cross-sectional look at diabetes care in a large public hospital outpatient system we uncovered and sought to better understand 3 paradoxes: in relationships between outcomes and care processes.

METHODS: We downloaded all insulin and oral hypoglycemic agent prescriptions for 2001 from an NDC-outpatient pharmacy database for a public hospital clinic system. Upon number? identifier, unique patients were identified, and linked to all HgA1C and glucose tests recorded in a laboratory database. Self-monitoring strip prescriptions dispensed (recorded in pharmacy database) were also downloaded and linked using Microsoft Access and SPSS.