excluded. Cox proportional hazard models were built to predict the time dependent likelihood of no recurrence, as a function of drug persistence, for patients who start on clopidogrel, warfarin or aspirin, adjusting for blood pressure lowering and lipid lowering drugs taken after the first stroke, hypertension, heart disease, diabetes, race, gender, and residence (urban or not).

RESULTS: In total, there were 925 patients, 36% older than 60, 58% African Americans, and 35% males. Patients who persist on the first drug taken post-stroke (HR = 1.29, p = 0.03, CI 1.02–1.63), start on clopidogrel (HR = 1.42, p = 0.006 CI 1.10–1.82) or take up to two (HR = 1.43, p = 0.001, CI 1.15–1.78) blood pressure lowering drugs post-stroke are significantly more likely to have no recurrence. Patients with a diagnosis of heart disease (HR = 0.81, p = 0.05, CI 0.66–0.99), hypertension (HR = 0.64, p = 0.00, CI 0.51–0.79) or diabetes (HR = 0.75, p = 0.006, CI 0.61–0.92) post-stroke are less likely to have no recurrence, i.e. to stay in remission after the first stroke. CONCLUSIONS: Among Medicaid patients, persistence on the first drug taken after a stroke reduces the likelihood of recurrence. Clopidogrel and the combination of up to two blood pressure lowering drugs are associated with a higher likelihood of no recurrence. However, heart disease, hypertension and diabetes decrease the likelihood of avoiding a second stroke. These results may inform care management plans for Medicaid patients.

building a link between disability after an ischemic stroke and need for follow-up care
Hankey GI,1 Moneuse P,2 Carita P,2 Spieesser J,2 Gabriel S1
1Royal Perth Hospital, Perth, Australia; 2Sanofi-Aventis, Bagneux, France

OBJECTIVES: We aimed to determine whether, and by how much, stroke severity, as measured by the Modified Rankin Scale (MRS) of disability, influences the duration of subsequent disability, and therefore the need for rehabilitation and nursing care.

METHODS: A total of 7599 patients were enrolled in a randomised clinical trial (MATCH) of clopidogrel vs. aspirin + clopidogrel after a transient ischaemic attack or ischaemic stroke within 90 days (median 15 days). The two study arms were pooled. The Modified Rankin Scale (MRS) was assessed at: baseline (randomisation), months one, three, six, 12, 18 and following a recurrent stroke. RESULTS: At baseline, 20.7% of 7599 patients were disabled (11.6% at MRS 3, 8.6% at MRS 4 and 0.5% at MRS 5). Median time to change from disabled state (MRS 3, 4, or 5) to non-disabled state (MRS 0, 1, or 2) was three-months for patients with moderate disability (MRS 3) and 18 months for patients with severe disability (MRS 4). For patients with very severe disability (MRS 5), 80.7% remained disabled at 18-months. Among the 804 patients who experienced a recurrent ischaemic stroke during the study, 53.4% of patients were disabled after the recurrent stroke (20.3% at MRS 3, 20.8% at MRS 4, and 12.3% for MRS 5). Median time to change from disabled state to non-disabled state was six-months for MRS 3 and more than 18-months for MRS 4. For MRS 5, 94.5% of patients still remained disabled. CONCLUSIONS: More severe strokes and recurrent strokes cause longer-term disability. After a recurrent stroke, the median time to change from a disabled to non-disabled state is six-months for patients with moderate disability (MRS 3) and more than 18-months for patients with severe disability (MRS 4). Almost all patients with very severe disability (MRS 5) remain disabled and require permanent nursing care.

stents

Economic evaluation of sirolimus-eluting stents in Japan
Kobayashi M, Ikeda S
Keio University School of Medicine, Tokyo, Japan

OBJECTIVES: Percutaneous coronary intervention (PCI) using a sirolimus-eluting stent (SES), coated with the immunosuppressive agent sirolimus, dramatically reduces the risk of restenosis compared to bare metal stent (BMS) implantation. However, before SES can be widely adopted in clinical practice, it is essential to conduct an economic evaluation of this effective but expensive device. Our study was undertaken to estimate the three-year cumulative medical costs of stenting using SES compared to BMS in the Japanese health care system.

METHODS: The data on clinical sequelae of stenting using BMS were derived from our previous study, based on data collected from three Japanese hospitals. We estimated that the probability of target lesion revascularization would be 0.15 times in SES implantation compared to BMS implantation based on the recent meta-analysis results (Baharille et al, 2004). The medical costs for procedures were obtained from published articles and were adjusted to the January, 2005 level. Annual discount rate was set to 0.03.

PSR7 DISABILITY MEASURES IN STROKE: SCORE CONVERSION BETWEEN THE BARTHEL INDEX AND THE MOTOR COMPONENT OF FUNCTIONAL INDEPENDENCE MEASURE FOR PRACTITIONER
Kwon S, Duncan PW
University of Florida/NFSG Veterans Health Administration, Gainesville, FL, USA

OBJECTIVES: Disability presents a major economic and humanistic burden among stroke survivors. To quantify disability in patients, activities of daily living (ADLs) measures have been developed, leaving a significant discontinuation of patient care between facilities that use different measures. The purpose of this study is to develop a conversion system for two most widely used ADL measures, the Motor component in Functional Independence Measure (M-FIM) and the Barthel Index (BI).

METHODS: We use Kansas City Stroke Study data. We standardized the scales of both instruments to 0–1 and rotated them 45 degrees in order to get a consistent conversion scheme regardless of the direction of the conversion (from BI to M-FIM or from M-FIM to BI). We applied the censored heteroscedastic regression spline model using Monte Carlos Expectation and Conditional Maximization (MCECM) algorithm, since the data is censored in both boundaries (for M-FIM: 13–91, and BI: 0–100) with ceiling and floor effects.

RESULTS: Among 1676 records, 2.4% and 5.8% of M-FIM records, and 3.5% and 24% of BI presented the lowest and highest scores respectively. Based on our model, zero, 60, and 100 of BI scores are equivalent to 13 to 15, 59 to 62, and 88 to 91 of M-FIM. (Complete conversion table will be provided in the presentation.) The two measures were highly correlated (r = 0.9479, p < 0.0001), but the linearity assumption was improper, particularly, for the higher score range of the M-FIM and BI.

CONCLUSIONS: For the continuum of patient care, the conversion among scales is an important issue. We developed a conversion scheme between two widely used ADL measures, BI and M-FIM, based on their total scores. Further research is planned to obtain a more robust and precise conversion model addressing item level information.

PST1 ECONOMIC EVALUATION OF SIROLIMUS-ELUTING STENTS IN JAPAN
Kobayashi M, Ikeda S
Keio University School of Medicine, Tokyo, Japan

OBJECTIVES: Percutaneous coronary intervention (PCI) using a sirolimus-eluting stent (SES), coated with the immunosuppressive agent sirolimus, dramatically reduces the risk of restenosis compared to bare metal stent (BMS) implantation. However, before SES can be widely adopted in clinical practice, it is essential to conduct an economic evaluation of this effective but expensive device. Our study was undertaken to estimate the three-year cumulative medical costs of stenting using SES compared to BMS in the Japanese health care system.

METHODS: The data on clinical sequelae of stenting using BMS were derived from our previous study, based on data collected from three Japanese hospitals. We estimated that the probability of target lesion revascularization would be 0.15 times in SES implantation compared to BMS implantation based on the recent meta-analysis results (Baharille et al, 2004). The medical costs for procedures were obtained from published articles and were adjusted to the January, 2005 level. Annual discount rate was set to 0.03. Sensitivity analyses with different presumptions, including the cost of intervention, the probability of target-lesion revascular-
IZATION, and discount rate, were undertaken. RESULTS: In the first admission to perform PCI, the medical cost of the SES patient was approximately 0.16 m Japanese Yen higher than that of the BMS patient. However, the expected three-year cumulative medical cost per patient to be approximately 0.35 m Yen lower in the SES patient (2.07 m Yen) than in the BMS patient (2.43 m Yen) because the revascularization rate was lower in the SES patient. Extensive sensitivity analysis confirmed that the economic advantage of SES over BMS was quite robust. CONCLUSIONS: We concluded that the use of SES is likely to be a cost-saving option as compared with BMS implantation within the context of the Japanese health care system. Prospective economic studies with long follow-up are needed to confirm our simulation results.

PST2
INPATIENT RESOURCE UTILIZATION AND COSTS OF PROCEDURES IMPLANTING DRUG-ELUTING STENTS IN COMPLEX CASES: THE ARRIVE REGISTRY
Olchanski N1, Clark MA1, Cohen D2
1Boston Scientific Corporation, Natick, MA, USA; 2Beth Israel Deaconess Medical Center, Boston, MA, USA
OBJECTIVES: There are no published “real world” data for costs of drug-eluting stenting procedures with the TAXUS Paclitaxel-Eluting Stent System. Whether Medicare payments sufficiently cover costs of cases with comorbidities has not been investigated. METHODS: We analyzed resource utilization data from ARRIVE, a prospective, multicenter, community-hospital-based single arm US registry capturing 2590 consecutive patients treated with the TAXUS stents at 50 sites. Procedural costs were calculated for subgroups with comorbidities of diabetes, renal disease, multivessel disease, congestive heart failure, left main disease, acute myocardial infarction (MI), and combinations of above conditions. Medical devices were priced using 2004 national average prices, and procedural medications using 2004 average wholesale prices. Hospitalization costs were calculated using the 2003 MedPAR files, adjusted to 2004 costs. RESULTS: As shown in the table below, patients with one or more comorbid conditions on average had higher resource utilization and costs, ranging from $16,077 for left main disease to $27,116 for renal disease (largely driven by the length of stay). CONCLUSIONS: Stenting cases with severe comorbidities incur higher costs than overall average. Average Medicare payments in 2003 were $17,441 for patients with MI (DRG 526) and $13,999 without MI (DRG 527). Clearly MI is not the only comorbid condition that drives high inpatient costs. The current DRG structure is not giving fair payments for patients with certain high-cost comorbidities.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Congestive Heart Failure (n = 239)</th>
<th>Left Main Disease (n = 109)</th>
<th>Acute MI (n = 181)</th>
<th>&gt;=1 comorbidities (n = 1223)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proc.</td>
<td>Duration (min) Stents implanted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>60.4</td>
<td>64.4</td>
<td>57.1</td>
<td>57.0</td>
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<tr>
<td>Gp IIb/IIIa Inhibitor</td>
<td>1.7</td>
<td>1.7</td>
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<tr>
<td></td>
<td>35.9%</td>
<td>41.6%</td>
<td>46.6%</td>
<td>34.7%</td>
</tr>
<tr>
<td>Length of stay (days)</td>
<td>3.7</td>
<td>2.6</td>
<td>3.6</td>
<td>2.9</td>
</tr>
<tr>
<td>Total Cost</td>
<td>$18,520</td>
<td>$16,077</td>
<td>$18,162</td>
<td>$16,408</td>
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</tbody>
</table>

PST3
COST-UTILITY OF STENTING FOR SYMPTOMATIC INTRACRANIAL ATHEROSCLEROTIC DISEASE
Hornberger J1, Robertus K1, Deuber N2, Reyes CM3, Hernandez J1, Bose A4
1The SPHERE Institute / Acumen, LLC, Burlingame, CA, USA; 2Boston Scientific Neurovascular, Fremont, CA, USA; 3Boston Scientific Corporation, San Jose, CA, USA; 4New York University (NYU) School of Medicine and SMART Therapeutics, New York, NY, USA
OBJECTIVES: Symptomatic intracranial atherosclerosis (IA) has an annual stroke risk of 5%–20%. The study objectives were: 1) to assess economics of existing and emerging IA stenting (IAs) technologies; and 2) estimate the effect of IAS versus anti-platelet therapy (APL) on stroke risk, overall survival (OS), quality-adjusted life years (QALYs), costs, and cost-utility (CU). METHODS: A Markov model was developed to compare IAS with APL from a US perspective in patients with symptomatic IA. The model included the following parameters: 1) procedural complications; 2) restenosis rates; 3) stroke rates of patent or stenosed vessels; 4) mortality after stroke; 5) utilities; and 6) costs of procedure, strokes, and unrelated future resource use. Procedural outcomes of the current model are based on literature findings. Costs in $US 2004 and benefits were discounted at fixed annual rate of 3%. Sensitivity analysis was performed on the above parameters. RESULTS: With IAS, 74% of patients had patent vessel at six-months; 18% of patients experienced restenosis by 12 months, 11.3% of patients had a procedural complication (3.3% stroke, 6.3% non-stroke, 1.7% death). Stroke risk is predicted to decline from 7.3%/yr from the stenosed, target vessel to 0.3%/yr with patent vessel; and 5%/yr stroke risk in non-target vessels. Over five years, stroke risk is predicted to decline from 44% with APL to 31% for IAS. OS thus is expected to increase by 0.33 years, and 0.24 QALYs. The average cost per IAS procedure is $9,731, with a predicted $8,366 reduction in stroke-related costs and cost-utility of IAS vs APL of $19,963 over a 10-year time horizon. CONCLUSIONS: The cost-effectiveness model shows that IA stenting is predicted to substantially reduce stroke rate, increase overall survival and QALY relative to antiplatelet therapy. The projected CU ratio is considered within acceptable adoption ranges in the US.

QL3/PST4
DRUG-ELUTING VERSUS BARE-METAL CORONARY STENTS: 6-MONTH CLINICAL AND ECONOMIC OUTCOMES OF A CONTROLLED STUDY FOR THE REDUCTION OF CORONARY RESTENOSIS
Brüggenjürgen BH, McBride D, Willich SN
Charité University Medical Center, Berlin, Germany
OBJECTIVE: To evaluate the long-term outcomes of drug-eluting stents in comparison to bare-metal stents in conventional