PURK21
POST-KIDNEY TRANSPLANT MORBIDITY RELATED RE-HOSPITALIZATIONS IN THE BRAZILIAN PUBLIC HEALTH SYSTEM: CAUSES, RESOURCES USE AND COSTS BASED ON AN ADMINISTRATIVE REGISTRY REVIEW FROM 2004 TO 2009
David-Neto E, Carvalho DPM, Asano E, Nisu M, Carvalho P, Dan S, Donato BM, Rahal E, The KIT73 STUDY GROUP P
1Hospital das Clínicas da Faculdade de Medicina da USP, HCFMUSP, São Paulo, São Paulo, Brazil, 2Hospital Geral do Distrito Federal, Distrito Federal, Brasília, Brazil, 3Hospital General de.figure, 4Bristol-Myers Squibb S/A, São Paulo, São Paulo, Brazil, 5New BD Assessoria Empresarial LTDA, São Paulo, São Paulo, Brazil, 6Bristol-Myers Squibb Co, Wallingford, CT, USA

MORBIDITY RELATED RE-HOSPITALIZATIONS IN BRAZIL
A total of 1030 patients were eligible for the analysis. Mean age was 38.7 ± 14.5 years, 57.6% were male recipients and 49.6% of transplant procedures were from living donors. During the study period, 2,168 hospitalizations occurred in 663 patients (62%), with a total cost of US$ 1,568,556. Most frequent causes of re-hospitalization were post-transplant surgical and clinical complications (40.1%) and graft rejection episodes (32.4%), accounting for 72.1% and 76.9% (US$ 1,207,406) of total expenses. Hospitalization costs per day (ICU/Ward days, operation room, equipments, etc) represent the most significant part of re-hospitalization costs (40.9%), followed by diagnostic/laboratory exams (24.2%), medicines (13.6%) and health professional fees (11.0%). Re-hospitalizations were concentrated in the first 39.6% and second (24.0%) years following transplant, stabilizing in the fourth and fifth years around 9% (200 hospitalizations/year). Patients receiving grafts from deceased donors accounted for 64.8% of total costs, and average costs per re-hospitalization were statistically different between patients receiving grafts from deceased and living donors (US$ 632 ± 973) (p < 0.01).

CONCLUSIONS: The majority of patients who underwent kidney transplant in 2004 were re-hospitalized at least once until July 2009. Costs associated with these re-hospitalizations were concentrated in the first year post-transplant and in cadaveric renal transplant recipients.

PURK22
REJECTION EPISODES REQUIRING HOSPITALIZATION AFTER KIDNEY TRANSPLANTATION IN BRAZIL: A RETROSPECTIVE DATABASE STUDY OF THE BRAZILIAN PUBLIC HEALTH SYSTEM
Duro-Garcia V, Abbud-Filho M, Emersonal RM, Asano E, Nisu M, Carvalho P, Dan S, Donato BM, Rahal E, The KIT73 STUDY GROUP P
1Universidade Federal de Câncer de Porto Alegre, UFCSPA, Porto Alegre, Rio Grande do sul, Brazil, 2FAMERP/FUNIMED Medical University, São José do Rio Preto, São Paulo, Brazil, 3Hospital Geral de Fortaleza, Fortaleza, Ceara, Brazil, 4Bristol-Myers Squibb S/A, São Paulo, São Paulo, Brazil, 5New BD Assessoria Empresarial LTDA, São Paulo, São Paulo, Brazil, 6Bristol-Myers Squibb Co, Wallingford, CT, USA

REJECTION EPISODES REQUIRING HOSPITALIZATION
From 1044 kidney transplant patients recorded in the database, 797 (77.1%) were eligible for the analysis. Proportion of patients that have not experienced any RE at 1 year post-transplant: Type of donor does not seem to influence occurrence, costs or duration of hospitalization.

PURK23
ADHERENCE TO A GUIDELINE FOR ERYTHROPOIESIS STIMULATING AGENTS IN CHRONIC KIDNEY DISEASE
Yab C, Clipp MD, Churchill WW, O'Day J, Reddy P
1Partners Healthcare, Needham, MA, USA, 2Massachusetts General Hospital, Boston, MA, USA, 3Bridge & Women's Hospital, Boston, MA, USA, 4Faulkner Hospital, Jamaica Plain, MA, USA

ADHERENCE TO A GUIDELINE FOR ERYTHROPOIESIS STIMULATING AGENTS
Approximately half of the patients achieved target hemoglobin levels, highlighting the difficulty in maintaining target hemoglobin. These data suggest that adherence to this guideline can be improved in hemoglobin and iron monitoring and with iron supplementation.

PURK24
THE IMPACT OF ADDING A RACIAL CASE MIX ADJUSTER TO MEDICARE DIALYSIS REIMBURSEMENT: CORRECTING A POTENTIAL BIAS
Murlid R, ²Mayne T, Krishnan M, Nissen A
¹DaVita Clinical Research, Minneapolis, MN, USA, 2DaVita Inc, El Segundo, CA, USA

THE IMPACT OF ADDING A RACIAL CASE MIX ADJUSTER TO MEDICARE DIALYSIS REIMBURSEMENT
In 2011, a new prospective payment system will be instituted for Medicare payments for dialysis. CMS analyses revealed that dialysis payments differ significantly by race, yet CMS has not proposed including a racial case mix adjuster (CMA). Initial analyses showed that the proposed payment system without a racial CMA produced significant underpayment in dialysis units serving large numbers of black patients. OBJECTIVES: Model the impact of adding a racial case mix adjuster on dialysis reimbursement to clinics serving black patients, including a geospatial mapping to understand regional impact. METHODS: We used the racial case mix weights reported by CMS (though not included as a CMA), as well as the projected payments under the current and proposed payment systems. We used updated census data on race on the country level for a national analysis, and actual race for analysis of only DaVita clinics. We calculated clinic-level change in reimbursement using race CMA weights, then lowered the base payment rate to offset the incremental costs associated with the race CMA. We then use geograming to plot percentage change due to race CMA, and overall change in proposed payment, and differential between current payment and proposed payment with and without the racial CMA.

RESULTS: Among the 4276 dialysis clinics analyzed, the addition of the race CMA increased payment in 1140 clinics and decreased payment by 22% in 172 clinics. Without the race CMA, payments were underpaid in 1206 clinics; it increased payment by 22% to offset the associated incremental costs.

CONCLUSIONS: Given recent safety as well as cost concerns, an evidence-based guideline for erythropoiesis stimulating agents (ESA) in chronic kidney disease (CKD) was developed across a seven-hospital system. The purpose of this analysis was to evaluate adherence to the guideline. Specific objectives were to assess whether 1) patients with hemoglobin levels (10-12 g/dL) were achieved, 2) ferritin or transferrin saturation (TSAT) was measured; and 3) iron therapy was administered, when appropriate. METHODS: The Research Patient Data Registry, a repository comprised of over four million patients and 900 million inpatient and outpatient encounters, diagnoses, medications, laboratory tests and results, and other medical care served as the data source. Data were available for three hospitals, two academic medical centers and a community teaching hospital. Patients were eligible for inclusion if they had a diagnosis of CKD based on ICD-9 diagnosis code and received at least two doses of ESA within three months. The analysis timeframe was November 2007 to April 2008. RESULTS: During the 6-month period, 344 eligible patients were identified. Of these, 54% achieved target hemoglobin levels within three months of therapy initiation. Approximately 4% did not have hemoglobin measured within three months. In the remaining patients, the hemoglobin level was less than 10 g/dL or more than 12 g/dL in 17% and 26% of patients, respectively. In 15% of patients neither ferritin nor TSAT were assessed. Among those with a ferritin < 100 ng/mL, 9% did not receive iron supplementation. TSAT was recorded only in one patient. CONCLUSIONS: Approximately half of the patients achieved target hemoglobin levels, highlighting the difficulty in maintaining target hemoglobin. These data suggest that adherence to this guideline can be improved in hemoglobin and iron monitoring and with iron supplementation.

PURK25
CASE MIX ADJUSTMENT: THE CONSEQUENCES OF DIVERGENCE IN ACCESS TO DATA
Mayne T, Burgess M, Waldon J
DaVita Clinical Research, Minneapolis, MN, USA

CASE MIX ADJUSTMENT
The proposed Medicare prospective payment system for dialysis includes 18 case mix adjusters, 17 of which only increase payment. CMS calculated these adjusters using several data sources, including Medicare paid claims, and reduced the base payment 22% to offset the associated incremental costs. OBJECTIVE: Determine the ability of a large dialysis organization to determine CMAs using all available data sources, and calculate the financial impact of differences in CMAs ascertainment and data used, versus those reported by CMS. METHODS: Four dialysis units were randomly selected in each of 20 geographic regions. CMAs were ascertained via chart reviews, electronic medical records, hospital discharge summaries, paper charts, health care professional
notes, and discussions with on-site health care professionals. RESULTS: The final sample included 100 clinics, with an average of 73.4 patients per unit. CMS provided estimated CMAs for 89 of these units. In 75 of 89 clinics, the case mix adjuster detected in the study was lower than that ascertained by CMS (mean difference = −0.2% ± 0.04). In 14 units, the CMA was higher than reported by CMS (mean difference = 0.04). The average CMA for the 89 units was 1.21 versus 1.28 reported by CMS for these same units, with uneven geographic distribution on the difference. The inability to replicate CMS CMAs would result in a 7% decrease in payment, with a differential from CMS payments of > $350 million over a 4 year period. CONCLUSIONS: Without access to Medicare claims data, we were unable to replicate CMS CMAs, representing the potential for significant underpayment for dialysis units under the proposed prospective payment system.

THE NON-LINEAR RELATIONSHIP BETWEEN DOSING FREQUENCY AND BREAK-EVEN COSTS IN CAPITATED ESRD REIMBURSEMENT

Mayne T, Krishnan M, Mutell R

DaVita Clinical Research, Minneapolis, MN, USA

BACKGROUND In 2011, a new prospective payment system will be instituted for Medicare payments for dialysis. Payments will be calculated per session. It is unclear how long-acting medications will fare under this new system, i.e., if patients are administered a monthly medication and then miss subsequent sessions, how will this impact revenue? OBJECTIVES: Model reimbursement for one long-acting drug under the proposed bundled payment system from the provider perspective. METHODS: We assumed that there would be one set of mix adjusters (CMAs) and outlier payment for all currently separately billable, that monthly drugs are truly administered only once per month; and that all payments are made in full, i.e., all 20% co-pays are made in full. We included 3 levels of drug utilization (for one drug) and 3 levels of other resource utilization, each ranging from 33% below to 33% above the current mean reported by CMS. We included 4 levels of rebates ranging from 0% to 50%. We examined 16 different CMAs, ranging from 0.6 to 3.6 in increments of 0.2. We varied the number of dialysis sessions in a month from 1 to 13. This 3 x 3 x 4 x 16 x 13 matrix produced 7488 solutions. RESULTS: The model showed providers will incur losses when a patient receives a full drug dose in 1 session and misses all subsequent sessions, unless manufacturers provide significant rebates/prices reductions. Losses occur even at 50% discounts when CMAs fall below 0.80. Greatest losses do not always occur when there is only 1 session in a month, but can occur at 2 to 7 sessions (J-shaped curve). CONCLUSIONS: Losses on long-acting medications will occur, but can be mitigated and in some cases eliminated through manufacturer pricing discounts. However, the relationship between component costs, CMA and session number are non-linear.

ERYTHROPOIESIS-STIMULATING AGENT DOSING AND HEMOGLOBIN TRENDS OVER TIME IN CHRONIC KIDNEY DISEASE PATIENTS NOT ON DIALYSIS

Lafuente MH1, Bailey RA1, Laliberté F, Serbetta M, Vekman F, McKenzie RS1, Dua K, Lefebvre P

1Groupe d’analyse, Lité, Montreal, QC, Canada; 2Centacor Ortho Biotech Services, LLC, Horsham, PA, USA; Analysis Group Inc, Washington, DC, USA

OBJECTIVES: This study evaluated dosing trends and hemoglobin levels over time in patients with chronic kidney disease (CKD) not on dialysis receiving epoetin alfa (EPO) or darbepoetin alfa (DARB), 2 erythropoiesis-stimulating agents (ESAs). METHODS: An analysis of medical claims between July 2000 and March 2009 from the Ingenix IMPACT database was conducted. Patients ≥18 years, newly initiated on ESAs, with ≥1 claim for CKD were included. Patients diagnosed with cancer, receiving chemotherapy or dialysis, or receiving both agents were excluded. Average weekly ESA dose, weighted by the treatment duration, was calculated and reported by sessions. RESULTS: A total of 4,182 ESA-treated patients were identified (EPO 2,684; DARB 1,498). Mean age was 64.2 and 63.2 in EPO and DARB groups, respectively, whereas proportion of women was 51% and 55%. The mean weekly dose was relatively stable for both ESAs over time (EPO: mean: 10,652 mcg; median: 10,623 mcg; 25th–75th percentiles: 9,872–11,609 mcg; DARB: mean: 41 mcg; median: 42 mcg; 25th–75th percentiles: 38–43 mcg); however, a slight decreasing trend was observed in more recent years (2006–2008). Analysis of laboratory results revealed a declining trend in mean baseline hemoglobin over time (10.5 g/dL in 2003S1 vs. 10.1 g/dL in 2008S2) consistent with recent treatment guidelines. A decreasing trend was also observed in mean achieved hemoglobin during the treatment episode (11.9 g/dL in 2003S1 vs. 10.9 g/dL in 2008S2). Furthermore, the proportion of patients with achieved hemoglobin ≥12 g/dL decreased from 41% before April 2006 to 23% in April 2007, after the KDOQI guidelines changed. CONCLUSIONS: This analysis of data from CKD patients not on dialysis reported relatively stable ESA dosing trends and decreasing trend in hemoglobin levels during the study period.