excellent response to the PD-L1 checkpoint inhibitor Pembrolizumab. DISCUSSION/SIGNIFICANCE OF IMPACT: This work highlights the potential utility of CTCs in the management of bladder cancer. It may be the case that this assay in conjunction with current methods of patient selection for immunotherapy may allow for better response prediction than either method alone.

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Large patient volume is associated with adverse patient outcomes among those requiring maintenance renal replacement therapy

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OBJECTIVES/SPECIFIC AIMS: We set out to describe important associations and outcomes among those requiring maintenance renal replacement therapy with the patient volume per provider. METHODS/STUDY POPULATION: Through the combination of several large administrative datasets, including the United States Renal Data System (n = 237,485), the American Medical Association Master file (n = 6249), and Medicare data limited to 2012, we compared characteristics of patients, by quintile of patient/provider volume. χ^2 and logistic regression, adjusted for various patient and provider factors for categorical and continuous variables, was used for baseline comparisons, respectively. Cox regression, adjusted for patient, provider, and socio-economic variables, was used to calculate risks for important clinical outcomes such as kidney transplant listing, transplant receipt, and all-cause mortality. RESULTS/ANTICIPATED RESULTS: There is a threshold patient volume at which important clinical outcomes, including kidney transplantation and all-cause mortality, may be influenced. Higher patient volume is associated with adverse patient outcome. Those receiving care from providers with the highest patient volumes are less likely to receive kidney transplantation, live in a more rural area, and be non-White. DISCUSSION/SIGNIFICANCE OF IMPACT: There is a need to identify novel and potentially modifiable factors associated with patient outcome among those with end-stage kidney disease on maintenance renal replacement therapy. Provider level variables, such as patient volume, is one such variable. As nephrologists are often tasked with the care of variable numbers of patients on dialysis, a better understanding of this association is an unmet need.

2481

A collaborative neurology-emergency medicine rapid outpatient clinic for the management of TIA and minor stroke in the emergency department

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OBJECTIVES/SPECIFIC AIMS: Current practice frequently dictates hospitalization for TIA and minor stroke (TIAMS) in order to obtain comprehensive evaluation of stroke risk factors and mechanism. Inpatient hospitalization is often done to expedite workup and to coordinate care although may be associated with nosocomial risks and increased healthcare cost. However, a subset of these patients who do not have debilitating deficits may not require inpatient hospitalization. We conducted a pilot study to assess the feasibility of conducting rapid outpatient stroke evaluations in low risk patients with TIAMS without disabling deficits. METHODS/STUDY POPULATION: The rapid access clinic was initiated at a single-site urban tertiary care facility for outpatient evaluation of TIAMS within 24 hours of emergency department (ED) evaluation. Patients were selected using a decision tool identifying presumed low-risk TIAMS seen in the ED. Criteria included medical (e.g., no disabling deficit, no thrombolytic agent given, negative CT for hemorrhagic stroke) as well as social criteria (e.g., patient ability to follow-up as an outpatient). We evaluated rates of noncompliance with post-ED follow-up, need for hospitalization from clinic, and 90 day stroke and health outcome data. RESULTS/ANTICIPATED RESULTS: Between December 2016 and December 2017 a total of 93 TIAMS patients seen in the ED were recommended for the rapid access clinic utilizing the decision tool. Of these patients, 94.5% (86) were evaluated within 24 hours of ED discharge. Only 2 patients (2.4%) who received outpatient evaluation required hospitalization; 61 (71.8%) patients had TIAMS on final evaluation in clinic. DISCUSSION/SIGNIFICANCE OF IMPACT: Our pilot data suggests that for a subset of patients, rapid outpatient evaluation may be a feasible and safe strategy for TIAMS management. Future work exploring such strategies may help improve TIAMS outcomes and reduce ED crowding and unnecessary hospital admissions.

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A prospective study of cancer clinical trial availability and enrollment among adolescents/young adults treated at a Children's Hospital or Affiliated Adult Cancer Specialty Hospital

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OBJECTIVES/SPECIFIC AIMS: Low cancer clinical trial (CCTs) enrollment may contribute to the poor survival improvement for adolescents and young adults (AYAs, aged 15–39 years) with cancer. Treatment site is thought to exacerbate this problem. This study evaluated whether differences in CCT availability explain lower CCT enrollment depending on treatment site for AYAs. METHODS/STUDY POPULATION: This prospective, observational cohort study was conducted at an academic children's hospital and an adult cancer hospital, 2 affiliated sites within a NCI-designated Comprehensive Cancer Center over 13 months. In consecutive AYA patients newly diagnosed with cancer at both site, it was determined whether an appropriate CCT existed nationally, was available locally, and if enrollment occurred. The proportions of AYAs in these categories were compared by site using the χ^2 test. RESULTS/ANTICIPATED RESULTS: Among 152 consecutive AYA patients, 68 and 84 were treated at the children's hospital and adult cancer hospital, respectively. AYAs treated at the children's hospital had similar CCT existence nationally compared with AYAs treated at the adult hospital [36/68 (52.9%) vs. 45/84 (53.6%), $p = 0.938$]. However, a significantly higher percentage of children's hospital treated AYAs than adult hospital treated AYAs had an available CCT [30/68 (44.1%) vs. 14/84 (16.7%), $p < 0.001$]. Enrollment percentages were similarly low in both groups [8/68 (11.8%) vs. 6/84 (7.1%), $p = 0.327$]. DISCUSSION/SIGNIFICANCE OF IMPACT: Significantly fewer AYAs treated at the adult hospital had a CCT available, but national existence was similar at both sites. This suggests that institutional barriers to opening CCT have more importance at adult centers.

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Addressing challenges from missing data in a global quality improvement study

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OBJECTIVES/SPECIFIC AIMS: Missing data is a common problem in research studies that may lead to inconclusive or inaccurate results. It may even lead to harm secondary to wrong research conclusions. The purpose of this ancillary study is to measure the differences in missing data following implementation of a variety of mechanisms to improve data quality and documentation in a global quality improvement study. Many of the sites involved in the study were in low-income or middle-income countries with minimal research infrastructure. Missing data is defined as "values that are not available that would be meaningful for analysis if they were observed" (The prevention and treatment of missing data, *New Engl J Med* 367; 14, nejm.org, October 4, 2012). METHODS/STUDY POPULATION: All study sites used REDCap software to enter various data points including hospital and ICU admission and discharge dates as well as whether items on a Checklist relevant to processes of care in the ICU were

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