

Abstract

Objective—To identify characteristics of children with primary neurologic diagnoses in PICU admissions that increase risk of unplanned health resource utilization during the year after discharge. Additionally, to characterize the frequency and risk factors for post-ICU epilepsy within this cohort.

Design—Retrospective cohort study of a single-center population matched in the Colorado All Payer Claims Database, 2013-2017.

Patients—101 children (>18 years at admission), who survived to discharge, were mechanically ventilated for >72 hours, with primary neurologic diagnoses.

Measurements and Main Results—The primary outcomes were unplanned hospital readmissions and emergency department (ED) visits within 12 months of discharge from index hospitalization. The primary outcome to identify post-ICU epilepsy was insurance claim record of antiepileptic drug use in months 6-12 after index hospitalization discharge. We hypothesized that seizures during index hospitalization would be positively associated with these outcomes. Unplanned rehospitalization and ED visits were common in this cohort, 25% and 47% respectively, and occurred soon after discharge, (respectively, median months: 2.5, 1.6). Having a pre-existing complex chronic condition and having a primary diagnosis of seizures were significantly associated with unplanned health care use. Post-ICU epilepsy was found in 29% of this cohort, and was significantly associated with having any seizures while admitted, regardless of primary diagnosis.

Conclusions—Many survivors of pediatric neurocritical illness experience unplanned hospital use in the first year after discharge. Post-ICU epilepsy is common amongst this cohort, and was not associated with any specific primary diagnoses, but was associated with any seizures while hospitalized. Prompt, specialized follow-up care for this population could be helpful in preventing unplanned medical care and educating families.