Inpatient Sample (NIS) from the Healthcare Utilization Project (HCUP) developed by AHRQ. **Methods:** We queried the NIS database for cases coded for VAP using the ICD-9 code of 997.31. Data were analyzed according to year from 2008-2011, representing the years data was available from AHRQ. Incidence rates are reported per 100,000 persons based upon US census data. **Results:** From 2008 to 2011, 73,215 cases were coded as VAP in the US. The incidence rate ranged from 1.6 to 7.3 per 100,000 persons across study years. The majority Caucasians and Hispanics were noted to have a 2-fold lower rate of VAP development compared to African Americans across study years. The incidence rate for men (8.9-9.6%) was significantly higher than women from 2009 to 2011. A higher rate of documentation of VAP was noted in the south region of the United States (37.6%) compared to the northeast (16.6%), mid-west (23.3%) and west (22.7%) regions. The overall rate of death across cohorts was 19.2% and improved from 2008 (20.8%) to 2011 (18.0%). Patients aged >80 years accounted for the smallest group of patients (11.3%) but had the highest rate of death (30.6%, RR 3.71, 95% CI 3.10-4.44, p<0.001) compared to patients <40 years of age. Rates of death for patients coded with VAP did not differ significantly according to gender, race, hospital type, or geographic location. **Conclusions:** The incidence of VAP has remained stable across study periods with a trend towards improved rates of death. African Americans may have a higher incidence rate of VAP compared to their Caucasian and Hispanic counterparts. Further research of the effect of racial disparities on VAP is warranted.

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CHANGING TRENDS IN THE USE OF VASOPRESSORS IN INTENSIVE CARE UNIT: A 7-YEAR STUDY

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Learning Objectives: The use of vasopressors was common in intensive care unit (ICU). Due to the lack of conclusive evidence in superiority in efficacy among various types of vasopressors, the choice of vasopressor use mainly depends on the physician preference. This study aims to describe the prevalence of vasopressor use and the trend in the use of each vasopressor medication in ICU over the past 7 years. **Methods:** This is a descriptive study conducted at a tertiary referral hospital. All ICU admissions, including both medical and surgical ICU, at our institution between January 2007 and December 2013 were included in this study. The use of vasopressors within given ICU day (12.00 am – 11.59 pm) during ICU stay was reviewed. Vasopressors were defined as the continuous intravenous administration of norepinephrine, epinephrine, dopamine, phenylephrine, or vasopressin regardless of duration and dosage. **Results:** A total of 52410 unique patients had 72005 ICU admissions in the course of study, (272271 patient*ICU day). Vasopressors were used in 17767 (24.7%) ICU admissions and on 53898 (19.8%) patient*ICU day, resulting in a total of 76564 vasopressor day. Vasopressin was used on 21955 (41%), epinephrine on 20958 (39%), norepinephrine on 17919 (33%), dopamine on 8636 (16%) and phenylephrine on 7096 (13%) patient*ICU day. Over 2007-2013, there was an upward trend in the use of norepinephrine (the proportion of ICU day on norepinephrine over total ICU day with vasopressor 0.24 in year 2007 to 0.45 in year 2013), and a downward trend in phenylephrine (the proportion of ICU day on phenylephrine over total ICU day with vasopressor 0.20 in year 2007 to 0.10 in year 2013). There was no specific trend in the usage of vasopressin, epinephrine, and dopamine. **Conclusions:** The vasopressors were used in about one fourth of ICU admission and about one fifth of ICU days. Vasopressin is the most commonly used vasopressor. The use of norepinephrine is in upward trajectory.

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SIMULTANEOUS PREDICTION OF MORBIDITY (M), MORTALITY (D), AND INTACT SURVIVAL (S)

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Learning Objectives: D rates adjusted for physiological status have been the standard for ICU quality assessments for decades. But D is decreasing and therapies are increasingly focused on reducing M. We hypothesized that M risk, like D risk, is associated with physiological dysfunction and M, D, and S can be predicted simultaneously. **Methods:** Pts. < 18 yrs. in medical/surgical and cardiovascular PICUs in the CPCCRN were randomly selected. Descriptive information, physiological status (4-hr. PRISM III score) and the Functional Status Scale (FSS) were collected. M was a ≥ 3 worsening in the FSS. Trichotomous logistic regression was used to model 3 outcomes at hospital discharge: M, D, and S. The modeling used development (75%) and validation sets (25%). **Results:** There were 10,078 pts. from 7 sites (1252 to 1617 pts./site). Pt. characteristics varied among sites (p<.001 for all comparisons). The crude D rate was 2.7% (site range 1.3% - 5.0%) and the crude M rate was 4.6% (range 3.3% to 7.7%). Increasing PRISM III scores were associated with increasing M as well as D risks (p<.001). Modeling PRISM III vs. the 3 outcomes indicated that M risks increased and then decreased as high-risk M's died. Trichotomous logistic regression using variables selected from univariate M and D odds ratios identified PRISM III and 7 pt. modifiers as independent variables. In the validation set, there were 108 M observed vs. 110.5 M predicted, and 61 D observed vs. 66.8 D predicted. Trichotomous goodness-of-fit tests were excellent (p>.20 for both development and validation sets). Discrimination as assessed by the 3-dimensional ROC was also excellent (volume under the surface of = .49 development and .50 validation sets, chance performance = .17). **Conclusions:** New M's were associated with many of the same factors as D including physiological status. Trichotomous modeling uncovered the phasic association of M risk with physiological status as well as produced an excellent simultaneous prediction model for M, D, and S. This unique severity of illness advance is a new paradigm for critical care outcomes and quality assessment.

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EPIDEMIOLOGICAL ESTIMATES OF HOSPITAL BASED EMERGENCY DEPARTMENT VISITS ATTRIBUTED TO LIGHTNING.

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Learning Objectives: Lightning injuries have been associated with high mortality and morbidity. Current national estimates and demographics associated with lightning injuries are unclear. We conducted this study to describe nationally representative epidemiological estimates of hospital-based ED visits attributed to lightning injuries in United States. **Methods:** We performed a retrospective analysis of the Nationwide Emergency Department Sample for the years 2008-2010 to include all ED visits with an external cause of injury code for lightning. Outcomes included disposition from ED, ED charges, and hospitalization outcomes(hospital charges-HC, Length of stay-LOS). Descriptive statistics were used. **Results:** During the study period, a total of 4,786 ED visits were attributed to lightning. Characteristics included: mean age(34.6yrs), males(62%), weekends(27%), months(June:23.8%, July 28.8%, August 16.7%). Outcomes following ED visit: mortality(18 patients), discharge routinely(84.5%), admitted as in-patients to same hospital(9.2%, N= 443). Following admission as inpatients, outcomes included: discharged routinely(76.7%), transferred to another short term facility(5%), long term facility(8.7%) or discharged to home health care(4.9%). In-hospital mortality included 18 patients following admission. Primary payers included private insurance(44.9%), Medicare(6%), Medicaid (10%), uninsured (17%). About 58% resided in low income. About 57% of all ED visits occurred in the Southern regions. The mean ED charge was $2,441 and total ED charges across the entire United States was $11.3 Million. Amongst those who were admitted as inpatients, the mean HC was $49,430 and the total HC across the entire United States was $21.88 Million. The mean LOS was 4.8 days and the total hospitalization days across the entire US was 2,127 days. **Conclusions:** In this national ED estimate,lightning injuries were associated with lower mortality rates compared to prior studies, which could be due to appropriate triage, advances in care or preventive program effectiveness. Certain risk factors and hospital resource utilization is described.

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EFFECT OF METHODOLOGY: DETERMINING DISPARITIES IN MORTALITY OF TRAUMA PATIENTS BASED ON PAYER SOURCE

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