Theme: Quality Improvement Initiatives

Decreasing seizure treatment time through quality improvement (*Pediatr Neurol. 2018 Jun 2. [Epub ahead of print]*)

Rapid administration of antiepileptic drug could abort the seizure early and thus decrease its associated morbidity and mortality. Quality improvement (QI) methodology was adopted to improve the treatment times for hospitalized children with status epilepticus. It included revising the nursing process, emphasizing on intranasal midazolam, relocating medicines, developing documentation tools, online education model for nurse and residents, and completing standardization to intranasal midazolam. Among 66 patients treated seventeen months after starting the project, median (IQR) time to abort seizure decreased from 14 (8, 30) minutes to 7.5 (5, 10) minute ($P=0.01$). Proportion of patients transferred to intensive care unit decreased from 39% to 9% ($P<0.005$). Authors concluded that children with status epilepticus can be treated more rapidly and effectively following implementation of QI methodology.

A quality improvement bundle to improve informed choice for children with ITP (*J PediatrHematol Oncol. 2018 Jul 19. [Epub ahead of print]*)

Current treatment guidelines are supporting more conservative management of children with immune thrombocytopenia over administration of intravenous immunoglobulin (IVIG). Quality improvement (QI) was adopted to lead practice change through patient information sheet; an evidence-informed, consensus-based protocol; and promotion of shared decision-making. A total of 27 patients were included, of whom 56% had none or mild bleeding with a mean initial platelet count of $4x10^9$/L. Observation increased from 6% to 30%, IVIG use decreased from 88% to 55%; hospital stay decreased from 47 hours to 36 hours. Authors concluded that with QI initiative, there was improvement in family-centered care and decreased use of hospital resources.

A quality improvement initiative to reduce necrotizing enterocolitis across hospital systems. (*J Perinatol. 2018;38:742-50*)

Necrotizing enterocolitis (NEC) among preterm very low birth weight (VLBW) infants is associated with increased morbidity and mortality. Authors of this study utilized quality improvement methodology to reduce rates of NECby standardizing the care across multiple neonatal intensive care units (feeding protocol for very low birth weight) and apply evidence-based practices (increase use of human milk, maximize intestinal perfusion, promote healthy microbiome). NEC in VLBW infants decreased by 83% from 0.17 cases per 100 infants to 0.0029cases per 100 infants.

A quality improvement intervention to improve inpatient pediatric asthma controller accuracy (*Hosp Pediatr. 2018;8:127-34*)

The study objective was to determine role of rigorous quality improvement (QI) intervention in improving the accuracy of pediatric asthma controller medication on discharge from inpatient hospitalization. QI interventions included improving documentation and creating standardized language to ensure that patients were discharged on an appropriate asthma controller medication. Study investigators observed that median proportion of patients discharged on appropriate controller therapy improved from 60% in pre-intervention data to 80% in the post-intervention period. Authors concluded that an interdisciplinary QI team successfully improved the accuracy of asthma controller therapy on discharge.

Validity and reliability of a tool to assess quality improvement knowledge and skills in pediatrics residents. (*J Grad Med Educ. 2017;9:79-84*)

Pediatricians need to be trained on quality improvement (QI) strategies during their residency. The present study validated a new tool "Assessment of Quality Improvement Knowledge and Skills (AQIKS)" that provides an assessment of resident's ability to recall QI concepts. After completing a QI curriculum for one year, the second year postgraduate resident's mean score was 40% higher than at baseline ($P<0001$), while the first year postgraduate resident with no QI exposure showed no improvement ($P=0.29$). Interrater reliability was substantial ($\kappa=0.74$). Authors concluded that AQIKS is a useful tool for detecting QI knowledge and skills.

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