

Improving Compliance in Documenting Unintended Dural Punctures Through Automated EHR Tools in the Context of Analyzing Obstetric Anesthesia Complications Database and Epidural Blood Patch Practices

Shalonda Cook, MD, Patricia Fuentes, MD, Shruthi Krishnamurthy, MD, Jacqueline Galvan, MD

Background

- **Safety-net, high-delivery volume hospital (12,000 deliveries/year) maintains an Obstetric Anesthesia Complications Database**
 - Unintended dural puncture (UDP); post dural puncture headache (PDPH), institutional epidural blood patch (EBP) practices
 - Patient suffers UDP → Database → Followed by Ob Anesthesia service until discharge
 - Relies on provider self-reporting of UDP
- **EBP is the gold-standard therapeutic treatment for PDPH**
 - Untreated PDPH can have debilitating consequences; chronic headache, PTSD
 - Existing data indicate lower EBP utilization: safety-net hospitals, teaching institutions, racial and ethnic minority groups
- **Limited data exist on whether implementing automated EHR tools improves provider compliance with UDP self-reporting**



This QI initiative aimed to analyze institutional trends in EBP utilization and improve provider compliance with UDP documentation following implementation of an automated EHR tool

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Design / Methods

QI Interventions:

- Earlier UDP rounding times
- Consistent use of language interpreter services
- Automated “Notable Events” (EHR tool) trigger

All patients in Obstetric Anesthesia Complications Database

Patients with known UDP

Exclude:
Presumed UDP
Non-delivery procedures
Spinal techniques

Pre-Intervention Group

Post-Intervention Group

Primary: Trends in EBP utilization

Secondary: Compliance with UDP documentation (automated EHR tool)

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Results

- Non-statistically significant increase in EBP Pre vs Post Group
 - Promising trend towards increased EBP administration after UDP
- Implementation of an automated EHR tool led to a statistically and clinically significant increase in provider compliance with UDP documentation

Table 1. Epidural Blood Patch Incidence and Documentation of “Notable Events” Before and After Intervention

	Pre (n=106)	Post (n=27)	P-value
EBP incidence (<i>proportion ± se</i>)	68.9% ± 2.6%	74.1% ± 8.4%	.771
	Pre (n = 253)	Post (n = 55)	P-value
Notable Events (<i>proportion ± se</i>)	18.1% ± 2.4%	90.9% ± 3.9%	<.001

Pre = pre-intervention group; Post = post-intervention group; EBP = epidural blood patch



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Conclusions / Future Directions

- Limitations

- Short study period and small sample size
- Cultural, language and medical literacy barriers to acceptance of EBP for PDPH may be under appreciated
- Provider bias to EBP provision?
- Retrospective data and reporting bias in pre-group

- Conclusions

- QI interventions may improve EBP utilization at a high-volume, safety-net, teaching hospital
- Automated EHR tools improve provider compliance with UDP documentation at a high-volume, safety-net, teaching hospital

Future research with a longer post intervention period and larger sample size may provide further insights into EBP practices, documentation trends, and the impact of targeted interventions on clinical outcomes in obstetric patients

1. Uppal V, et al. *Regional Anesthesia & Pain Medicine* Published Online First: 15 August 2023