

Implementing the JADA® System to Reduce Postpartum Hemorrhage in a Rural Setting: A Quality Improvement Project

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The rural environment significantly contributes to maternal morbidity and mortality, especially in hospital systems delivering fewer than 460 newborns annually (Berstein et al., 2023). San Luis Valley Health (SLVH), the only hospital in the San Luis Valley, Colorado, that provides maternal delivery services, faces a unique challenge due to its annual delivery rate of approximately 400 newborns. This article discusses the increasing rates of severe maternal morbidity (SMM) in pregnant women, the preventable nature of maternal deaths due to obstetric hemorrhage (ACOG, 2019), and the integration of the novel JADA® System into treatment protocols to mitigate these risks (Shields et al., 2024).

Introduction

San Luis Valley Health (SLVH) serves about 46,000 residents, with nearly half of the patient population being Hispanic. (SLVIRC, 2024). This demographic experiences higher maternal mortality and postpartum hemorrhage (PPH) rates compared

to white populations (AHRQ, 2022). The Hispanic population faces a 13% higher rate of PPH, than white populations (Feng et al., 2017).

Uterine atony accounts for 80% of PPH cases, representing a significant threat to maternal health, and is a leading cause of SMM (Corbetta-Rastelli et al., 2023). In the United States, pregnant women face increasing maternal and morbidity rates, which has the highest rates compared to other high-income countries (AHRQ, 2022). Deaths in the United States due to obstetric hemorrhage are preventable (ACOG, 2019). Current treatment protocols at SLVH include various interventions such as fundal massage, bimanual examinations, the use of uterotronics, and, in severe cases, surgical options. The Women's Unit follows a nationally approved, evidence-based treatment bundle supported by the American College of Obstetricians and Gynecologists, the Association of Women's Health, Obstetric and Neonatal Nurses, and the California Maternal Quality Care Collaborative (CMQCC).

Shared Governance

Shared governance models are decision-making processes that involve collaboration, shared accountability, and a shared vision, culminating in a partnership that not only supports organizational strategic plans but also enhances professional development (Brennan and Wendt, 2021). Additionally, they improve multidisciplinary collaboration, leading to greater workplace engagement, and allowing clinical nurses to drive change. Shared governance models are vital because they significantly enhance the quality of care and patient outcomes (Brennan and Wendt, 2021).

The Professional Nursing Practice Council at SLVH operates as a shared governance model, researching up-to-date evidence-based practice standards and providing recommendations to nursing leadership on implementing best practices to improve the quality of patient care. This council seeks to evaluate innovative methodologies, including the JADA® System, to optimize patient care and mitigate the adverse outcomes and comorbidities associated with PPH rates in the Women's Unit.

Purpose

This quality improvement project aims to compare the effectiveness of the JADA® System against the Bakri Balloon in reducing blood loss and associated costs during PPH treatment. The purpose encompasses ongoing evaluation of PPH management strategies to enhance early identification and intervention. The council set out to answer the clinical question: In postpartum women, how does using the JADA®

Figure 1. Visual demonstration of the vacuum-induced hemorrhage-control device that is placed in the uterus, to providing low-level suction, prior to inducing uterine contractions. Permission granted for use by Organon Group of Companies, 12/1/2025.

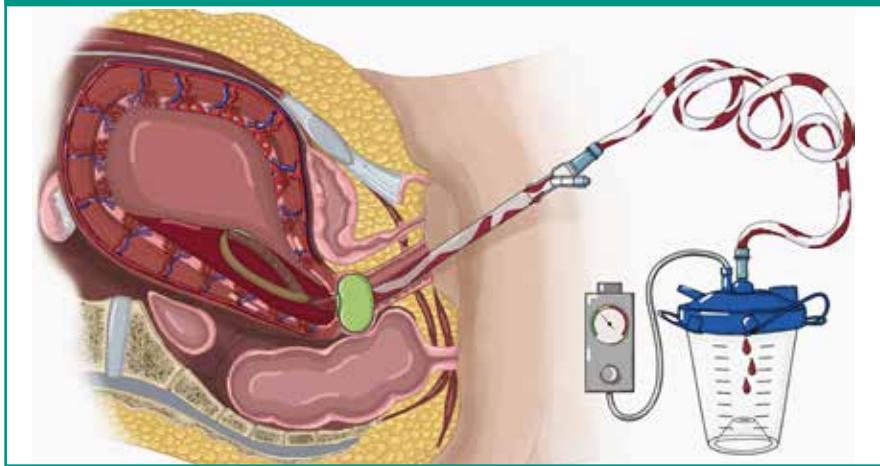
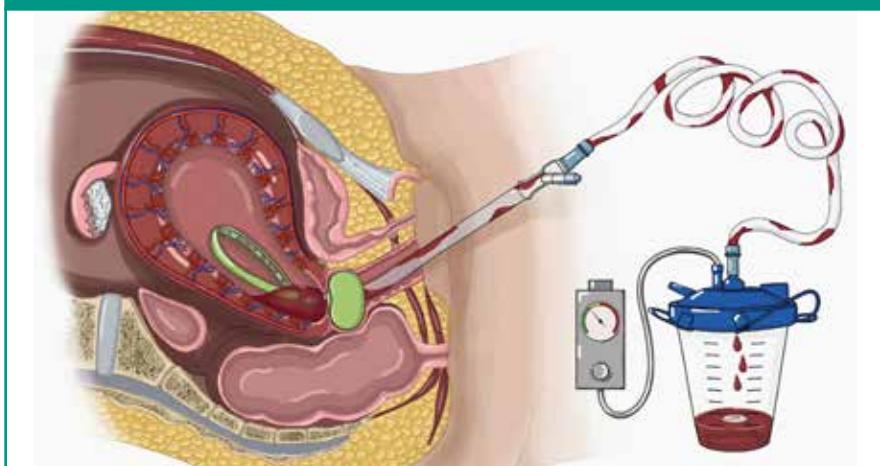


Figure 2. Visual demonstration of the vacuum-induced hemorrhage-control device that is placed in the uterus, providing low-level suction, inducing uterine contractions. Permission granted for use by Organon Group of Companies, 12/1/2025.



device, compared to the Bakri Balloon, reduce blood loss associated with PPH in the first 24 hours after birth?

Methodology

A retrospective study of 675 patients with PPH occurring within 24 hours of delivery at SLVH (January 2022 to August 10, 2023) was conducted. Utilizing the Johns Hopkins Nursing Evidence-Based Practice Model, the study aimed to critically evaluate and apply the latest research and practice standards regarding PPH treatment. Several high-quality research articles and

literature on the FDA-approved JADA® System were utilized to support this initiative. This analysis is critical to understanding the real-world impact of integrating the JADA® System into clinical practice and to ensure that the adopted practices are based on the most current evidence.

Results

During the study period, SLVH recorded 675 deliveries, comprising 529 vaginal births and 146 cesarean sections. A total of 38 PPH cases were documented, with 18 patients requiring blood transfusions

and one patient necessitating a hysterectomy. The observed PPH rate of 5.7% exceeds the national average of 4.3% (Corbetta-Rastelli et al., 2023), while the blood transfusion rate was exceptionally high at 47%, compared to the average of 12.6% (Corbetta-Rastelli et al., 2023) from 2011 to 2019. Furthermore, the hysterectomy rate of 2.6% starkly contrasts with the national average of 0.9% (Corbetta-Rastelli et al., 2023). Analysis of hemorrhagic shock criteria revealed that 24% of patients met class I criteria, 57.6% met class II criteria, 5.26% met class III criteria, and 9.09% met class IV criteria.

Cost Analysis

The average costs associated with vaginal and cesarean deliveries at SLVH are approximately \$9,000 and \$14,000, respectively (CIVHC, n.d.). The total charges for labor, delivery, and postpartum care, including PPH treatment, ranged from \$12,000 to \$34,808. Specifically, costs for PPH treatment ranged from \$3,000 to \$25,808. In a cost analysis comparing a theoretical cohort of 75,000 women with the Bakri or the JADA® system, the JADA® system reduced the amount of charges extensively for a total of \$144,773,439 (Bridges et al., 2023).

Ongoing Patient Analysis

Ongoing analysis of this project evaluates the management of PPH with and without the JADA® System to determine its effectiveness, thereby aiming to increase implementation through early identification. From August to December, the remainder of 2023, there were an additional 148 deliveries, and the PPH rate decreased to 5.4%. There was a significant improvement in the transfusion rate, which decreased to 13%. The peripartum hysterectomy rate also decreased to 1%. It is important to note that the patients who met PPH criteria did not exceed 1,500 mL of blood loss, and no patients in this time frame met class III or IV hemorrhagic shock criteria. In 2024, there were 389 deliveries with a 4.6% PPH rate, 22% blood transfusion rate, and a 0% peri-

partum hysterectomy rate. Ten patients met class II hemorrhagic shock criteria, five met class III, and one met class IV. From January to June this year, there were 207 deliveries. For those deliveries, the PPH rate was 5.3%, the blood transfusion rate was 9%, and the peripartum hysterectomy rate was 0%. Seven patients met class II hemorrhagic shock criteria, and one patient met class III criteria.

Discussion

The JADA® System is a vacuum-induced hemorrhage-control device that is placed in the uterus, providing low-level suction, inducing uterine contractions to control and treat abnormal uterine bleeding caused by atony (D'Alton et al., 2020). The alarming rates of PPH and associated complications stress the necessity for implementing effective treatment protocols. By integrating the JADA® System into existing practices at SLVH, there is potential to improve maternal outcomes significantly.

With dedicated patient surveillance, providers and nursing staff improved patient care delivery. As previously high-

lighted, the rates of PPH, blood transfusions, and peripartum hysterectomies have decreased significantly, thereby enhancing the overall quality of care provided to patients.

Based on the evidence provided to the Perinatal Committee and Nursing Leadership, the Women's Unit has successfully implemented the JADA® System. Since its inception, it has been used four times, each time improving the outcomes for those patients. In these cases, bleeding was controlled within minutes with only an additional blood loss of less than approximate average of 250 mL.

Dr. Carmelo Hernandez, MD, MHA, FACOG, an Obstetrician and the Chief Medical Officer at SLVH, states, "The implementation of the JADA® System at SLV Health has the real potential to reduce comorbidities and eliminate the need for hysterectomy as a solution to PPH". By continuously monitoring patient outcomes, the Women's Unit at SLVH can adapt practices as needed and better address the specific healthcare challenges faced by the local population.

Conclusion

This quality improvement initiative highlights the urgent need for enhanced postpartum hemorrhage management in rural settings. Employing the JADA® System could mitigate severe maternal morbidity and potentially reduce healthcare costs associated with PPH treatment. ■

References online:
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New Mexico: Safe Harbor as a Stand-Alone Protection

New Mexico takes a different approach. Rather than embedding safe harbor in peer review processes under the state nurse practice act, New Mexico establishes it as a stand-alone statutory protection (N.M. Stat. § 61-3A-3). When a nurse believes an assignment or order places a patient—or the nurse—at risk, they may invoke safe harbor to decline or request reassignment. Employers must have internal procedures for this process, but the emphasis is on immediate patient safety and nurse protection, not retrospective peer evaluation. With fewer structural requirements, this model is more adaptable across diverse healthcare settings, including rural or smaller facilities.

A Path Forward in Colorado

The Colorado Nurses Association (CNA) is actively exploring how best to model similar legislation in our state. Both the Workplace Advocacy Advisory and Networking Team (ANT) and the Sunset Review Nursing Group are discussing safe harbor concepts and assessing how a Colorado framework could be designed within our regulatory and organizational environment. Initial discussions suggest that Colorado may benefit from a stand-alone safe harbor statute, similar to New Mexico's approach, rather than incorporating it into the Nurse Practice Act.

CNA welcomes nurses statewide to join the conversation and take part in this work. Whether your interests include advocacy, policy development, patient safety, or shaping a future safe harbor model in Colorado, your perspective is es-

sential. If you would like to get involved, please connect with the Workplace Advocacy ANT or the Sunset Review Nursing Group through the Colorado Nurses Association website or MyCNA. ■