

Standardization and Automation of Postpartum Rh Immune Globulin Management to Reduce Clinician Administrative Burden and Patient Risk of D Alloimmunization

Why do it yourself when Epic can do it for you?

Abbe Kordik, MD, FACOG; Anna Marzano, BSN, RN, C-EFM, CBC

Background

- Individuals with Rh-negative blood types who are exposed to fetal Rh-positive red blood cells during the perinatal period are at risk for anti-D alloimmunization, which **can lead to significant fetal or neonatal morbidity or mortality**.
- Historically, our institution relied on recognition of Rh-negative blood type by the healthcare provider and subsequent ordering of the postpartum Rh evaluation and Rh immune globulin (“Rhogam”) if indicated. The **process resulted in preventable gaps** in Rhogam administration.
- ACOG recommends **standardization to improve outcomes** through decreased variation.
- Automation, reducing the administrative burden within the electronic health record, has been shown to **reduce physician burnout**, which ~50% of all practicing physicians experience.

Aim Statement

- By November 2025, 100% of postpartum patients with Rh-negative blood types will have automated ordering of postpartum Rh evaluation and Rh immune globulin when indicated, reducing reliance on manual processes and minimizing missed administration within the recommended 72-hour postpartum window.

Methods

- Our team identified **recurrent missed Rhogam administration despite repeated clinician education** on the importance of Rh-negative recognition, testing, and postpartum Rhogam administration in the inpatient setting.
 - Rotating clinician groups led to inconsistent knowledge transfer and inevitable relapses in human error.
- PDSA Cycle 1:** Link the postpartum Rh-evaluation order to a reflex Rhogam order for qualifying patients.
 - Removed one manual step but left room for error in initial recognition of Rh status.
- PDSA Cycle 2:** Further automation through leveraging the standard Type & Screen admission order.
 - Postpartum Rh-evaluation with linked Rhogam order placed automatically through a standardized postpartum order set, for all patients with Rh-negative blood types.
 - Improved closed-loop communication through a column with visual cues indicating Rhogam status (not needed, ordered, refused, or given) on the shared nursing-provider postpartum patient list.

Results

- Following full implementation in October 2025, **100% of Rh-negative patients have had the Rh-evaluation order set placed without manual action from the physician team** (n = 141).
- All patients requiring Rhogam (n = 93) have received it** during their inpatient hospitalization.
 - Baseline data beginning January 2024 showed appropriate Rhogam administration for 97% of qualifying postpartum patients. While this is nearly perfect, missed Rhogam administration could be devastating for patients’ future pregnancy outcomes.
- Qualitatively, **reduced cognitive load and manual steps for physicians** due to automated clinical decision support and improved communication tools decrease contributing factors to provider burnout.

Table 1. Comparison of Rh-negative patients who had the Rhogam evaluation ordered before and after intervention in October 2025.

	Rh Neg Adult	Rhogam Eval Ordered
Jan-24	19	18
Feb-24	12	12
Mar-24	14	12
Apr-24	19	18
May-24	17	17
Jun-24	20	17
Jul-24	5	4
Aug-24	23	19
Sep-24	16	15
Oct-24	16	13
Nov-24	10	8
Dec-24	17	15
Jan-25	11	11
Feb-25	17	16
Mar-25	11	9
Apr-25	13	12
May-25	17	16
Jun-25	11	11
Jul-25	19	17
Aug-25	10	10
Sep-25	22	22
Oct-25	16	16
Nov-25	19	19
Dec-25	19	19
Jan-26	17	17
Feb-26	17	17
Mar-26	10	10
Apr-26	13	13
May-26	20	20
Jun-26	9	9
Jul-26	17	17

Table 2. Comparison of patients who needed Rhogam (parent Rh-, baby Rh+, no anti-D alloimmunization) versus who received or refused it (“Rhogam complete”).

	Rhogam Needed	Rhogam Complete
Jan-24	15	13
Feb-24	9	9
Mar-24	9	8
Apr-24	15	15
May-24	12	12
Jun-24	13	14
Jul-24	4	4
Aug-24	15	15
Sep-24	13	12
Oct-24	10	10
Nov-24	6	6
Dec-24	11	12
Jan-25	8	10
Feb-25	12	11
Mar-25	5	5
Apr-25	9	8
May-25	13	13
Jun-25	9	10
Jul-25	14	14
Aug-25	4	4
Sep-25	15	15
Oct-25	13	13
Nov-25	13	13
Dec-25	13	13
Jan-26	9	9
Feb-26	9	9
Mar-26	7	7
Apr-26	10	10
May-26	12	12
Jun-26	7	7
Jul-26	13	13

Conclusion

- Standardization and automation of Rh-evaluation and Rhogam ordering, combined with improved communication tools, eliminated missed inpatient postpartum Rhogam doses at our institution.
- Clinical decision support systems and automated communication tools reduced cognitive load and manual processes for physicians.

Figure 1. Sample of clinical decision support tools and electronic health record automation.

Linked order set within standardized postpartum order set for patients with and Rh-negative blood type including both Rh Immune Globulin Evaluation and immune globulin injection if needed.

☒ Rh Negative Birthing Person (Eval + RHOPHYLAC)

Rh Immune Globulin Evaluation



ROUTINE, ONCE, tomorrow at 0600, For 1 occurrence

Is this for Routine 28 weeks prophylaxis? No

And

immune globulin (RHOPHYLAC) 1,500 unit (300 mcg)/2 mL IM injection 300 mcg Intramuscular, ONCE PRN, 1 dose, Starting today at 1517, Until Fri 5/15 at 2359, ROUTINE

Sample of column on shared patient list displaying patient’s Rhogam status: not needed, ordered and incomplete, refused, given. Column acts as a visual cue to the clinical team to ensure care has been completed prior to discharge.

MMR	Rhogam
	
	
	
	
	
	

Postpartum progress note auto-populates birthing person and newborn blood types with Rhogam status for provider review.

3. Postpartum Care
◦ Rh Status (Birthing Person): B NEG. Rh Status (Baby): B POS. RhoGAM pending.

References

- American College of Obstetricians and Gynecologists, Committee on Patient Safety and Quality Improvement. (2019). *Clinical guidelines and standardization of practice to improve outcomes* (Committee Opinion No. 792). <https://www.acog.org/-/media/project/acog/acogorg/clinical/files/committee-opinion/articles/2019/10/clinical-guidelines-and-standardization-of-practice-to-improve-outcomes.pdf?rev=22c04c65effa409e911ed447640ef02d&hash=FA6EAE5201741E2DC38ABBBF447EF3A2>
- Bradford, L., & Glaser, G. (2020). Addressing physician burnout and ensuring high-quality care of the physician workforce. *Obstetrics & Gynecology*, 137(1), 3–11. <https://doi.org/10.1097/AOG.00000000000004197>