Background

- Iron deficiency anemia is highly prevalent and linked to adverse outcomes
- Inconsistent screening and management contribute to persistent anemia at delivery
- Failure Modes Effect Analysis (FMEA) is a systematic method to identify and prioritize process vulnerabilities and guide interventions
- Failure modes are scored based on their Severity (S), Occurrence (O), and Detection (D). A Risk Priority number (RPN) is the product of S*O*D. Higher RPNs indicate more serious failures.

Study Design and Methods

- The anemia management care process was mapped across key steps including:
  - Initial assessment and screening
  - Diagnosis confirmation
  - Treatment Selection and Initiation
  - Patient counseling and adherence
  - Intravenous (IV) iron administration
  - Peripartum/postpartum care.

Severity (S)	No effect to catastrophic fetal/maternal impact	1 - 10
Occurrence (O)	Remote to near certainty	1 - 10
Detection (D)	Certain to no detection	1 - 10
Risk Priority Number (RPN)	Used to prioritize various process steps identified	S x O x D

Results

- Identified 47 potential failure modes, ranging in RPN from 36 to 392

Process Step	Potential Failure Mode	S	O	D	RPN
Initial Patient Presentation and Assessment	No initial CBC screening at first prenatal visit	6	2	3	36
Screening Intervals	CBC not ordered at routine points (e.g., entry, second/third trimester)	7	5	3	105
Diagnosis Confirmation	Inconsistent anemia thresholds applied (e.g., Hb <11 vs. <10.5 g/dL)	5	4	5	100
	Incorrect ferritin cutoff used (<15 vs. <30 ng/mL)	4	5	5	100
Treatment Selection and Initiation	Oral iron chosen despite indications for IV (e.g., severe anemia, intolerance, late gestation)	8	5	7	280
	Wrong oral dose/formulation (e.g., ignoring elemental iron)	6	5	5	150
Patient Counseling and Adherence	Patient nonadherence due to side effects	6	7	8	336
IV Iron Administration	Scheduling delays or clinic access barriers (e.g., insurance prior auth, denial)	7	8	7	392
Peripartum/Postpartum Management	Iron not continued postpartum (e.g., 6 weeks)	4	5	6	120

Discussion and Conclusion

- Identified critical, preventable gaps in peripartum IDA management
- Prioritizing interventions based on high RPN scores may substantially improve detection and treatment
- IV iron delayed due to scheduling or insurance denial → Creation and dissemination of specific insurance request dot phrases
- FMEA provides a reproducible framework to enhance IDA management and reduce adverse outcomes