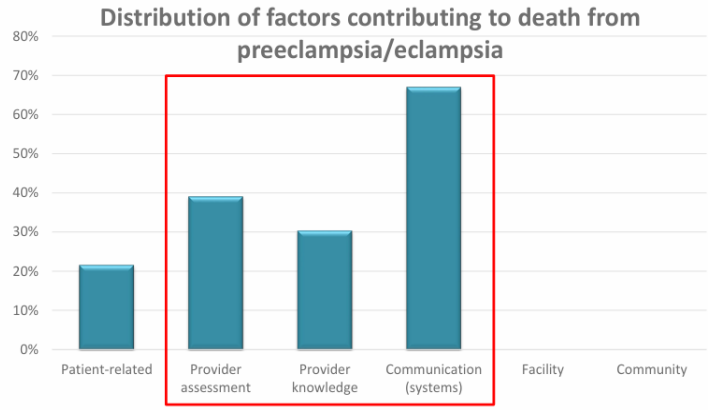
From Awareness to Action:

A Hypertensive Crisis Policy Implementation Workshop

Date: May 30, 2025 Presented By: Teri Mandrak – Perinatal Clinical Nurse Specialist; Patricia Caplinger – OB/GYN; Kelly Wilson – Regional Perinatal Educator

The WHY...

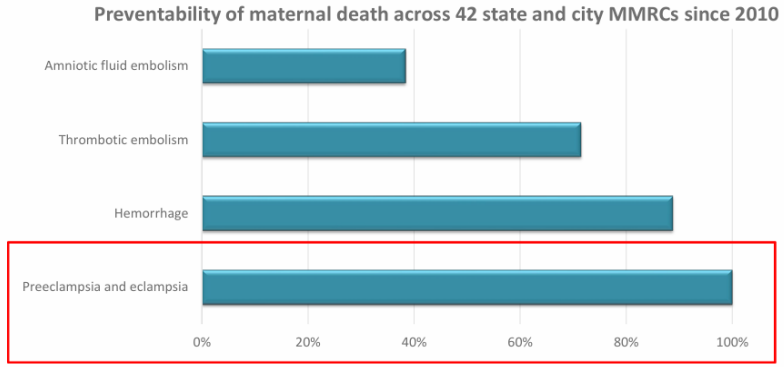
Critical Factors Contributing to Death From Preeclampsia and Eclampsia



SMI Safe Motherhood Initiative

Adapted from the Report from Maternal Mortality Review Committees: A View Into Their Critical Role MMRIAReport.pdf. Accessed 12/30/2024

Pregnancy-Related Deaths from Preeclampsia and Eclampsia Are Highly Preventable



SMI Safe Motherhood Initiative

Adapted from Qian et al. Insights from preventability assessments across 42 state and city maternal mortality reviews in the United States. Am J Obstet Gynecol. 2024 Aug 26:S0002-9378(24)00870-6.

ACOG

Prevalence

- 5-7% of all pregnancies = 10 million pregnancies
- 70,000 maternal deaths
- 50,000 fetal deaths

Incidence

- HDP during delivery hospitalizations increased from 13.3% to 15.9%
- Pregnancy-associated HTN increased from 10.8% to 13%
- Chronic HTN increased from 2.0% to 2.3%
- **Delivery hospitalization deaths = 31.6% HDP**

Rural

- HDP higher among those residing in rural counties (15.5%) and in zip codes in the lowest median household-level income quartile (16.4%)
- Rural counties = higher risk for pregnancy-related mortality

SMM

- HDP accounts for 7.8% maternal deaths
- 60% of deaths from HDP occur in the postpartum period
- **2/3 of preeclampsia deaths occur from Stroke**
- 2nd leading cause of severe morbidity

Topics

- Criteria for Implementation
- Quality Improvement (QI) Integration & Framework:
- Literature Review & Evidence Synthesis
- Needs Assessment
- Design Considerations
- Sustainability Planning
- Failure Mode and Effects Analysis (FMEA)
- Medication Management
- Education and Simulation
- Regulatory Considerations
- Reporting and Compliance
- Wrap-Up and Q&A

Criteria For Implementation

Identify Core Objectives – What does success look like?

What are we trying to accomplish? - BE SPECIFIC

What changes can we make that will result in improvement?

How will we know that a change is an improvement?

Identify Necessary Stakeholders:

Develop a plan for engagement

Example Aim Statement Worksheet

What? What's the problem or opportunity?

To reduce denial and delay of treatment related to hypertension by ensuring that all women with an elevated blood pressure reading (140/90 or above) receive follow-up evaluation and those with a reading of 160/110 or above receive treatment within 60 minutes

How much? By how much will you improve, or "how good" do you want to get?

100% of women with elevated blood pressure receive treatment in under 60 minutes (from a baseline of 60%)

By when? What is the date by which you will achieve the level of improvement you've set out to accomplish?

In 6 months (by August 1, 2021)

For whom? Who is the customer or population who will benefit from the improvement?

All women in the hospital's Labor and Delivery Unit who have elevated blood pressure

Where? What are the boundaries of the process or system you're trying to improve? Where does it begin and end?

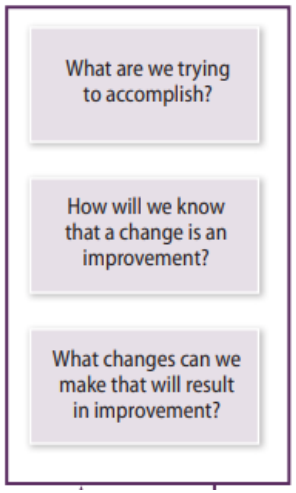
In the Labor and Delivery Unit at ABC Hospital

Completed aim statement:

To prevent denial and delay in treatment of hypertension, we will increase the percentage of women with elevated blood pressure who receive treatment within 60 minutes from 60% to 100% by August 1, 2021.

Ask a colleague to check your work and recommend improvements:

- ❑ Is the problem or opportunity clearly stated?
- ❑ Do you know what the team is going to do about the problem?
- ❑ Has the team set a numerical goal to quantify the amount of improvement they'd like to make?
- ❑ Do you know the calendar date by which the team plans to achieve the goal?
- ❑ Is it clear who will benefit from the improvement?
- ❑ Is the scope of the project clear?
- ❑ Do you know why this improvement effort is important?



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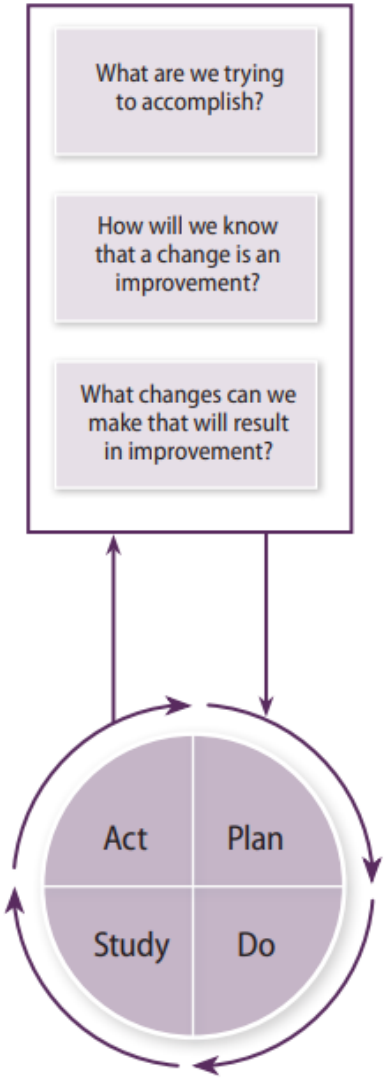
Quality Improvement (QI) Integration & Framework:

EBP vs. QI vs. Implementation Science

- EBP: uses external evidence, (with clinician expertise and pt values), translates evidence into practice
  - Teach about the evidence and they will implement the approach
- QI: uses internal data to improve processes
  - Audits, create checklists, measure compliance
- IS: The scientific study of methods and strategies that facilitate the uptake of EBP and research into regular use by clinicians
  - Audit and feedback, educational outreach, reminders, educational meetings, etc.
  - Evidence and education alone won't change behaviors or systems
  - Design with sustainability from the beginning – continuously monitor and adapt

The best projects use components of all 3!



What we need to do → How do we do it

QI Tools

- IHI HTN QI Workbook
- CDC Change Package
- NHS Sustainability Model
- John Hopkins Evidence Based Practice Model and Guidelines
- IHI QI Essentials Toolkit

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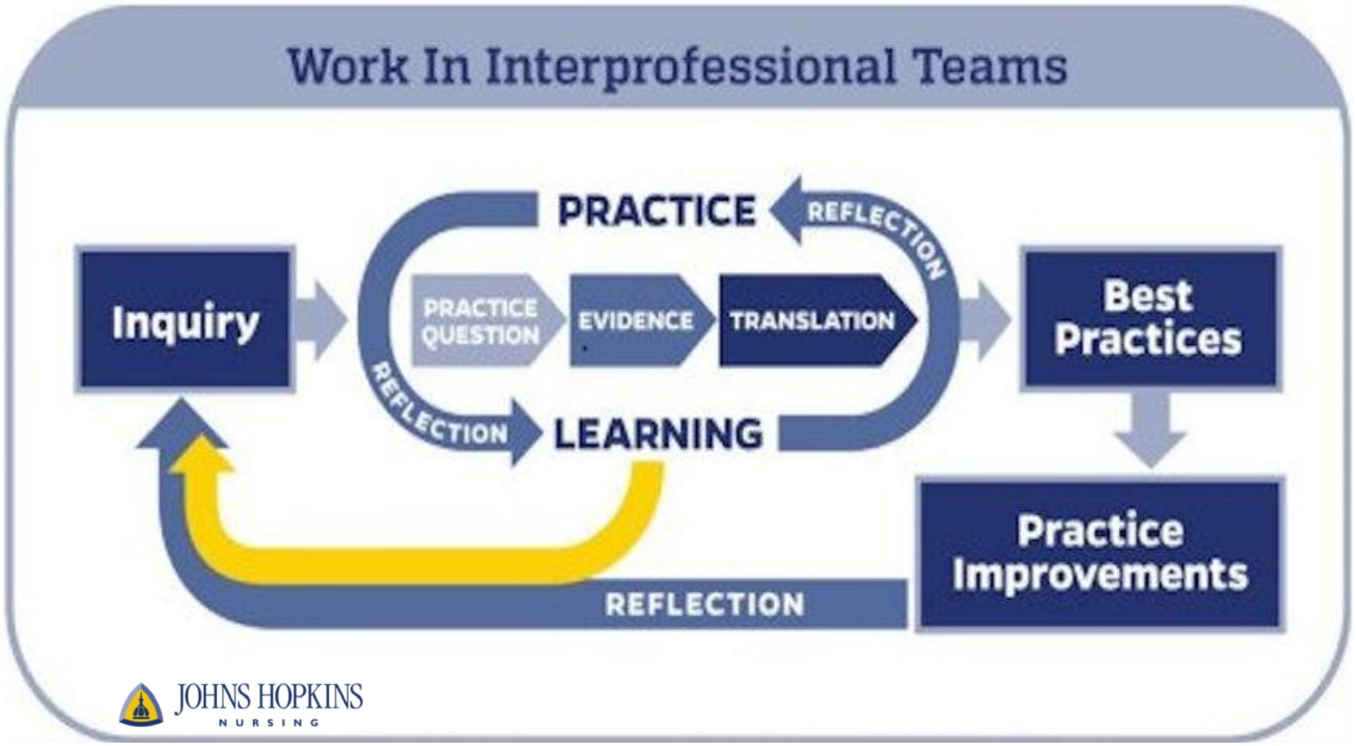
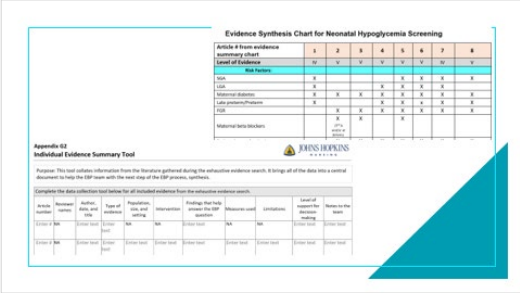
Literature Review & Evidence Synthesis





Supporting evidence examples include:

- **Literature references**
- **Professional organization practice standards**
- **Professional conference session**
- **Benchmark (Best Practice)**

  Data: *(Is internal or external practice data available for a benchmark (target)? If yes, list it with source*

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Evidence Synthesis Chart for Neonatal Hypoglycemia Screening

Article # from evidence summary chart	1	2	3	4	5	6	7	8
Level of Evidence	IV	V	V	V	V	V	IV	V
Risk Factors:								
SGA	X				X	X	X	X
LGA	X			X	X	X	X	
Maternal diabetes	X	X	X	X	X	X	X	X
Late preterm/Preterm	X			X	X	x	X	X
FGR		X	X	X	X	X	X	X
Maternal beta blockers		X (3rd Δ and/or at delivery	X		X			

Appendix G2

Individual Evidence Summary Tool

JOHNS HOPKINS NURSING

Purpose: This tool collates information from the literature gathered during the exhaustive evidence search. It brings all of the data into a central document to help the EBP team with the next step of the EBP process, synthesis.

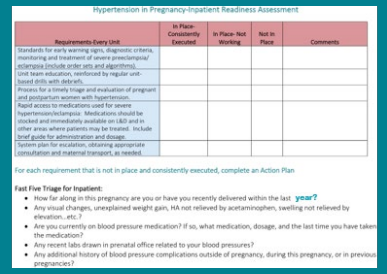
Complete the data collection tool below for all included evidence from the exhaustive evidence search.

Article number	Reviewer names	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Level of support for decision-making	Notes to the team
Enter #	NA	Enter text	Enter text	NA	NA	Enter text	NA	NA	Enter text	Enter text
Enter #	NA	Enter text	Enter text	Enter text	Enter text	Enter text	Enter text	Enter text	Enter text	Enter text

Needs Assessment

Stakeholder Needs Assessment:

Identify needs from those who will be implementing the completed work (e.g. Bedside nurses, providers, etc.)

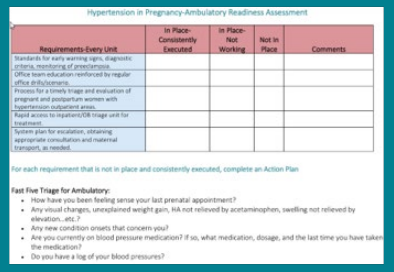

Hypertension in Pregnancy-Inpatient Readiness Assessment

Requirements-Every Unit	In Place-Consistently Executed	In Place- Not Working	Not In Place	Comments
Standards for early warning signs, diagnostic criteria, monitoring and treatment of severe preeclampsia/ eclampsia (include order sets and algorithms).				
Unit team education, reinforced by regular unit-based drills with debrief.				
Process for a timely triage and evaluation of pregnant and postpartum women with hypertension.				
Rapid access to medications used for severe hypertension/eclampsia. Medications should be stocked and immediately available on L&D and in other areas where patients may be treated. Include brief guide for administration and dosage.				
System plan for escalation, obtaining appropriate consultation and maternal transport, as needed.				

For each requirement that is not in place and consistently executed, complete an Action Plan

Fast Five Triage for Inpatient:

- How far along in this pregnancy are you or have you recently delivered within the last **year?**
- Any visual changes, unexplained weight gain, HA not relieved by acetaminophen, swelling not relieved by elevation…etc.?
- Are you currently on blood pressure medication? If so, what medication, dosage, and the last time you have taken the medication?
- Any recent labs drawn in prenatal office related to your blood pressures?
- Any additional history of blood pressure complications outside of pregnancy, during this pregnancy, or in previous pregnancies?


Hypertension in Pregnancy-Ambulatory Readiness Assessment

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Standards for early warning signs, diagnostic criteria, monitoring of preeclampsia.				
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Fast Five Triage for Ambulatory:

- How have you been feeling sense your last prenatal appointment?
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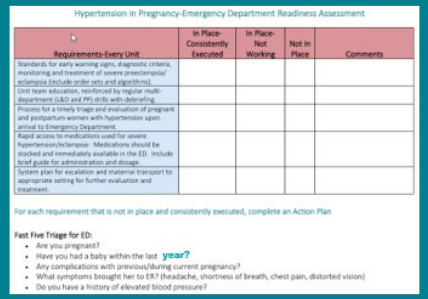
- Any new condition onsets that concern you?
- Are you currently on blood pressure medication? If so, what medication, dosage, and the last time you have taken the medication?
- Do you have a log of your blood pressures?


Hypertension in Pregnancy-Emergency Department Readiness Assessment

Requirements-Every Unit	In Place-Consistently Executed	In Place-Not Working	Not In Place	Comments
Standards for early warning signs, diagnostic criteria, monitoring and treatment of severe preeclampsia/ eclampsia (include order sets and algorithms).				
Unit team education, reinforced by regular multi-department (L&D and PP) drills with debriefing.				
Process for a timely triage and evaluation of pregnant and postpartum women with hypertension upon arrival to Emergency Department.				
Rapid access to medications used for severe hypertension/eclampsia. Medications should be stocked and immediately available in the ED. Include brief guide for administration and dosage.				
System plan for escalation and maternal transport to appropriate setting for further evaluation and treatment.				

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Fast Five Triage for ED:

- Are you pregnant?
- Have you had a baby within the last **year?**
- Any complications with previous/during current pregnancy?
- What symptoms brought her to ER? (headache, shortness of breath, chest pain, distorted vision)
- Do you have a history of elevated blood pressure?

Example Change Ideas to Reduce Harm from Hypertension

Below are some change ideas to reduce hypertension-related morbidity and mortality. You may be reliably doing some of these things, but not others. For each change idea, use an "X" to indicate the current status of testing.

Category	Key Change Idea	Not Yet Tested	Plan to Test	Currently Testing	Implemented
Readiness	Build hypertension cart with supplies, medications, and guidance for administration and dosage				X
Readiness	Conduct quarterly, unit-wide simulation drills			X	
Recognition	Develop and implement standard protocols and training for accurate blood pressure assessment				X
Recognition	Incorporate education about postpartum warning signs in discharge instructions for moms	X			
Response	Develop and implement standard severity-based hypertension management plan with checklist		X		
Response	Develop partnerships with emergency department staff to deliver timely care for returning postpartum patients	X			
Reporting	Conduct regular post-event debriefs with staff and patients/families			X	

Requirement	EP 1: Develop written evidence-based procedures for measuring and remeasuring blood pressure. These procedures include criteria that identify patients with severely elevated blood pressure.

Requirement	EP 2: Develop written evidence-based procedures for managing pregnant and postpartum patients with severe hypertension/preeclampsia that includes the following:

- The use of an evidence-based set of emergency response medications that are stocked and immediately available on the obstetric unit
- The use of seizure prophylaxis
- Guidance on when to consult additional experts and consider transfer to a higher level of care
- Guidance on when to use continuous fetal monitoring
- Guidance on when to consider emergent delivery
- Criteria for when a team debrief is required

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Hypertension in Pregnancy-Inpatient Readiness Assessment

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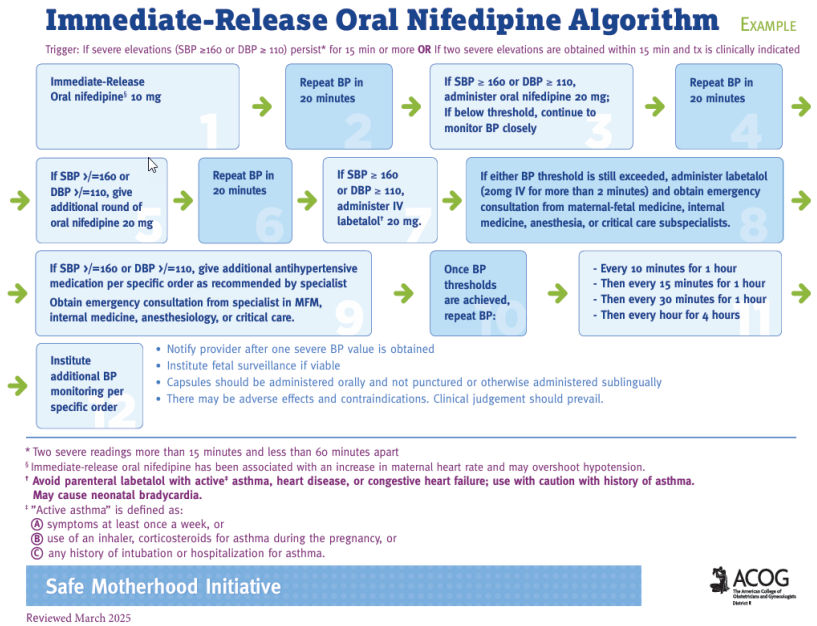
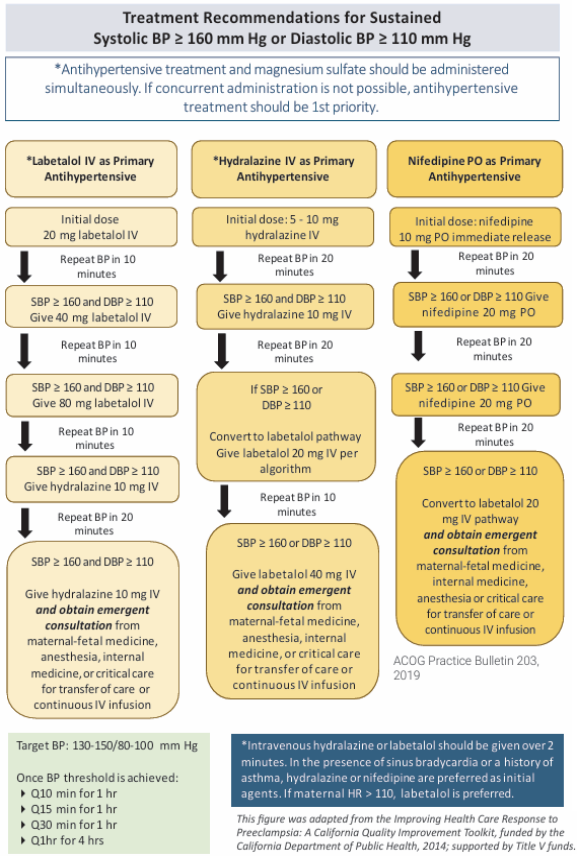
- Do you have a log of your blood pressures?

- Nurse-Driven vs. Provider-Driven vs. Both
- Determine scope
- Design the policy to reflect prioritization
- Create algorithms for easy to follow in emergent events

Policy Design Considerations





Measurement

- What will we continue to measure?
- What will we stop measuring?
- What will we do if we see a negative signal (i.e., special cause variation)?

Ownership

- Who will own the new standard work?
  - Is he or she engaged and onboard with the improvement?

Communication and Training

- How will we communicate about the change and who will be the messengers?
- How will we support individuals in the new “right way”?
- What type of training will we use?

Hardwiring the Change

- How will we make it hard to do the wrong thing and easy to do the right thing?
  - Can we reduce reliance on human memory?
- How will we standardize?
  - Do we need new documentation and resources?

Assessment of Workload

- Are our changes increasing the overall workload to the system?
  - If so, how can we decrease the workload?
  - If not, how will we communicate about what is changing and not changing?

Sustainability Planning

- up to 70% of organizational change is not sustained and 33% of QI projects are not sustained at 1 year after the initial implementation efforts, enthusiasm, and support have dissipated
- Promote a Culture of Safety for Continued Process Evaluation and Improvement
- NHS Sustainability Model
- Debrief after every event – provide sample debrief tool

Elements Associated with Effective Adoption and Use of a Protocol

Provide the healthcare team with the why for adopting the protocol

Train the healthcare team how to use the protocol

Identify key influencers to act as champions

Identify mentors to provide consultation on implementation

Use the EHR to collate and analyze clinical information

Provide regular and timely feedback on performance to the entire healthcare team

Use a registry to identify patients with high blood pressure and allows tracking over time

Make performance data transparent and learn from those who are reaching the goal

CELEBRATE EARLY WINS!

Learn about community resources and recommend them to patients

Fully use the expertise and scope of practice of every member of the healthcare team

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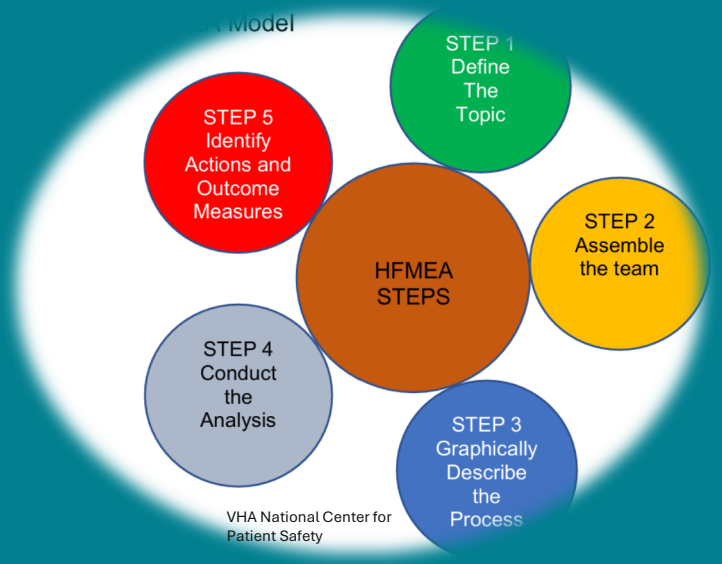
INSIDE INSIGHT

FAILURE MODE & EFFECTS ANALYSIS



A risk management tool that identifies the influence of potential failures in a process to prevent them or create contingency plans

How could it go wrong? → Failure Mode

What could cause it? → Failure Cause

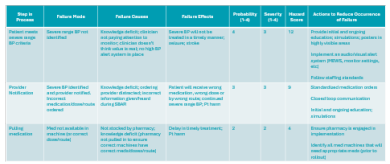
What would the effect be? → Failure Effect

How often could it happen? → Probability

How bad would that be? → Severity

How big of a risk is this? → Hazard Score

What can we do to prevent it? → Control Measure



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Step in Process	Failure Mode	Failure Causes	Failure Effects	Probability (1-4)	Severity (1-4)	Hazard Score	Actions to Reduce Occurrence of Failure
Patient meets severe range BP criteria	Severe range BP not identified	Knowledge deficit; clinician not paying attention to monitor; clinician doesn't think value is real; no high BP alert system in place	Severe BP will not be treated in a timely manner; seizure; stroke	4	3	12	Provide initial and ongoing education; simulations; posters in highly visible areas Implement an audio/visual alert system (MEWS, monitor settings, etc) Follow staffing standards
Provider Notification	Severe BP identified and provider notified. Incorrect medication/dose/route ordered	Knowledge deficit; ordering provider distracted; incorrect information given/heard during SBAR	Patient will receive wrong medication, wrong dose or by wrong route; continued severe range BP; Pt harm	3	3	9	Standardized medication orders Closed loop communication Initial and ongoing education; simulations
Pulling medication	Med not available in machine (or correct dose/route)	Not stocked by pharmacy; knowledge deficit (pharmacy not pulled in to ensure correct machines have correct meds/doses/route)	Delay in timely treatment; Pt harm	2	2	4	Ensure pharmacy is engaged in implementation Identify all med machines that will need appropriate meds (prior to rollout)

Medication Management

Medication Machines

- Are the appropriate meds available in the appropriate machines?
  - Determine what areas are “appropriate”
- Individual meds vs. a “kit”?
- Are the meds overridable?

Medication Orders

- Order set vs. individual orders?
  - Advocate for pre-developed, standardized orders
- Who can place the orders?

Education & Simulation

Education

- TJC Requirements:
  - Role-specific education (at minimum) on orientation, when changes occur, OR every two years
    - Including ED staff and providers
  - Provide printed education to patients
    - Signs/symptoms of severe hypertension/preeclampsia to report (both during hospitalization and post-discharge)
    - When to schedule a post D/C follow up
- How to properly take a BP!

Simulation

- TJC Requirements:
  - Conduct drills at least annually including members from as many disciplines as possible
    - Includes debrief with team
- Plan practical simulations to ensure understanding and preparedness
- Tailor to specific environments

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Additional Regulatory Considerations

IDAPA 16.03.14

"Written policies and procedures involving maternity and newborn service shall be reviewed and revised at least once **yearly**"

TJC PC.06.03.01

"Review severe hypertension/preeclampsia cases that meet criteria established by the hospital to evaluate the effectiveness of the care, treatment, and services provided to the patient during the event"

NEW CMS Health and Safety Standards for Obstetrical Services in Hospitals and Critical Access Hospitals

Regulatory Section(s)	Implementation Date
Emergency Services Readiness for Hospitals (§482.55) and CAHs (§ 485.618) *Transfer Protocols for Hospitals (§482.43)*	6 months following the effective date of the final rule Effective July 1, 2025
Organization, Staffing, and Delivery of Services for Hospitals ((§482.59(a) and (b)) and CAHs (§485.649(a) and (b))	1 year following the effective date of the final rule Effective January 1, 2026
Training for OB Staff in Hospitals (§482.59(c)) and CAHs (§485.649(c)) *QAPI Program for OB Services in Hospitals (§ 482.21) and CAHs (§ 485.641)*	2 years following the effective date of the final rule Effective January 1, 2027

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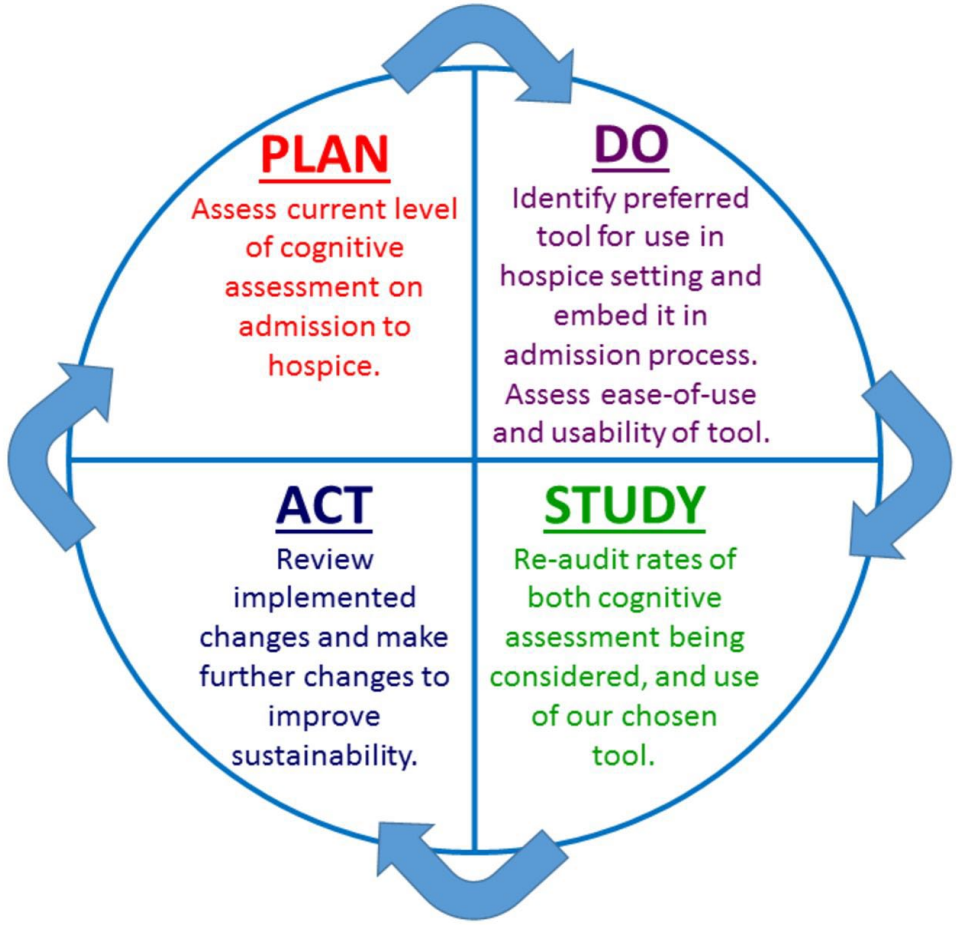
Reporting & Compliance

Develop Reporting Mechanisms:

- Ensure compliance through standardized reporting

Implementation Evaluation



Performance Metrics:

- Define key performance indicators to measure success

Continuous Feedback Loops:

- Implement mechanisms for ongoing feedback and improvements

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Thank You!