



Implementation of a Patient Safety Bundle for Pregnancy-Related Severe Hypertension in the Outpatient Setting



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Objective

To determine whether training, coaching, and simulation are effective strategies for implementation of a community-informed patient safety bundle for severe hypertension (HTN) during pregnancy in the outpatient setting.

Methods

- Pilot for a type 3 effectiveness-implementation study to test strategies for implementation of the AIM Severe HTN in Pregnancy Patient Safety Bundle in the outpatient setting
- Bundle was adapted for use in 3 Federally-Qualified Health Centers (FQHCs) using a community-engaged approach and implemented from 9/2021 to 6/2022 using training, coaching, and simulation:

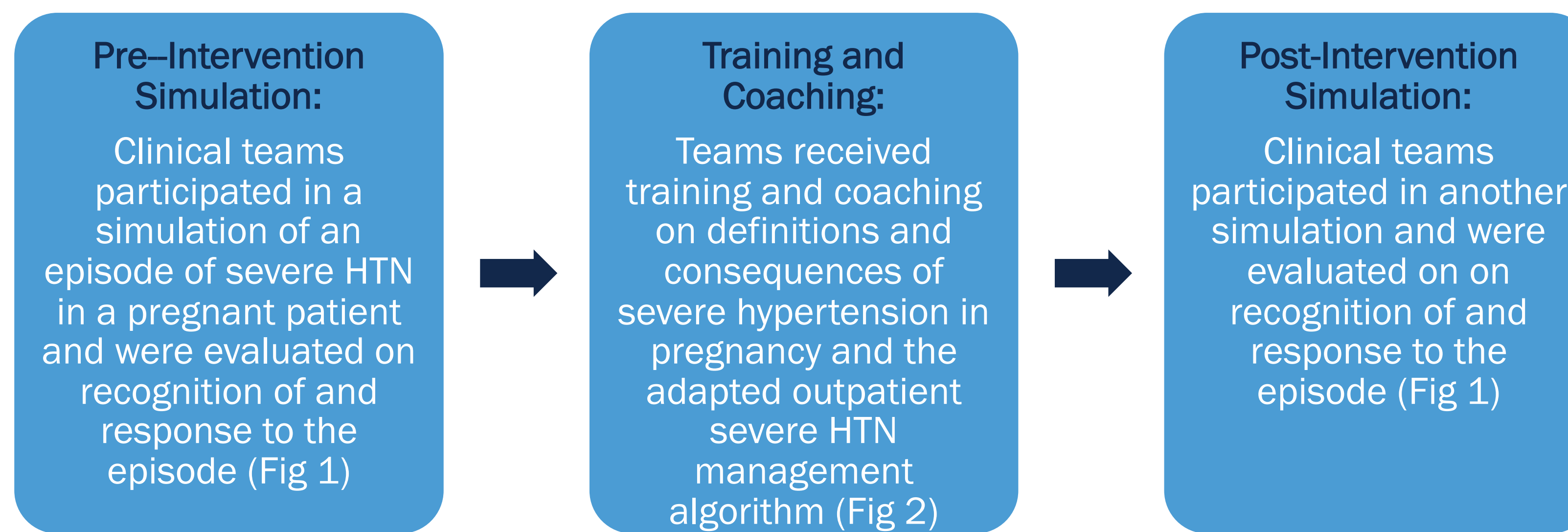


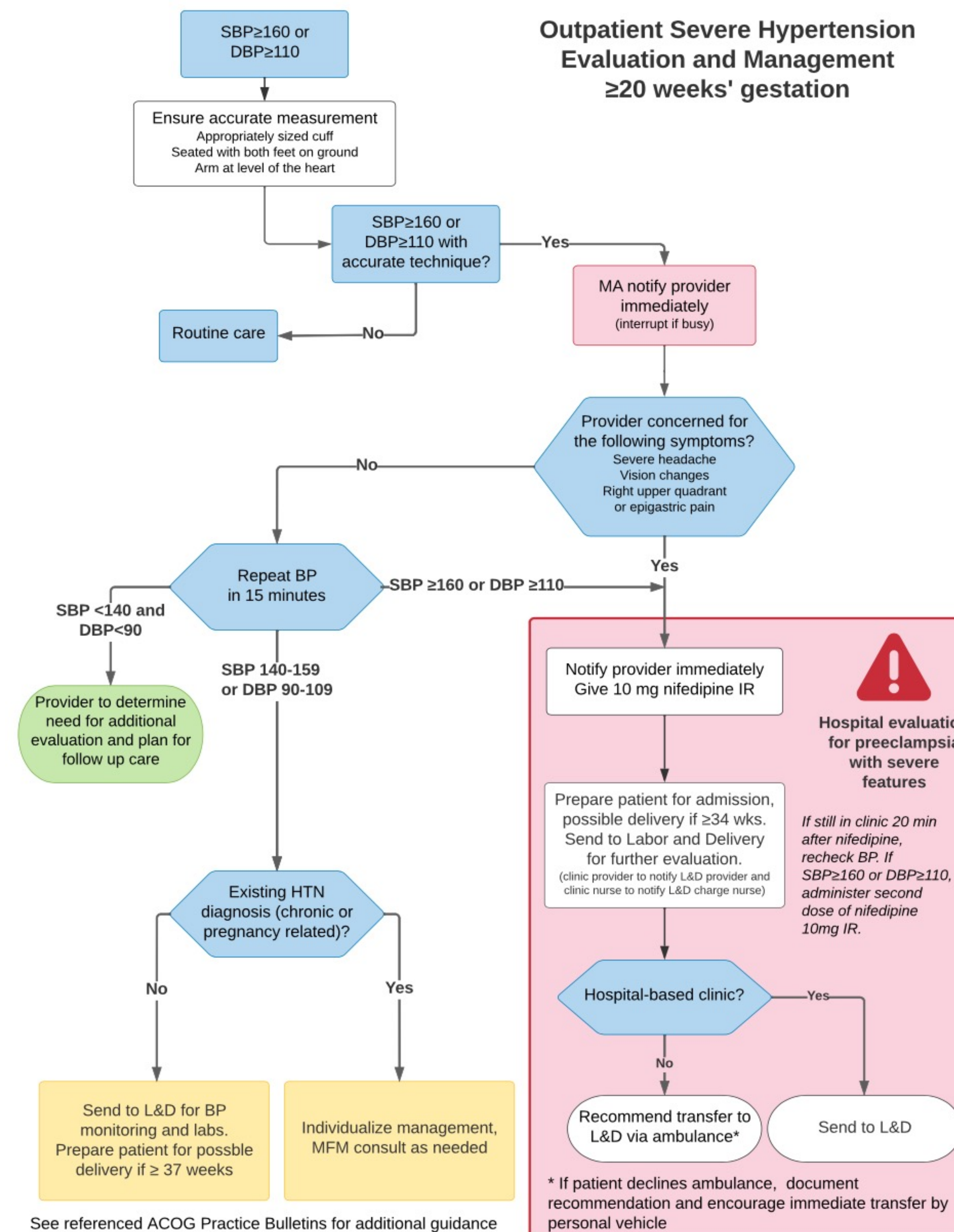
Figure 1. Simulation Evaluation Tool

| Key Behaviors | Performed independently (2 points) | Performed with prompting (1 point) | Not performed (0 points) |
|--|------------------------------------|------------------------------------|--------------------------|
| Recognition | | | |
| MA recognizes severe range BP and notifies provider | | | |
| Provider responds and assesses patient in a timely manner | | | |
| Team member identifies need to retake blood pressure | | | |
| Team identifies need to treat severe hypertension | | | |
| Response | | | |
| Team orders appropriate blood pressure agent for acute BP treatment in perinatal patient | | | |
| Team provides treatment in a timely manner | | | |
| Team recommends escalation to higher level of care | | | |

Total Points:
 Overall Score (%)*:
 *Overall score calculated as (Total Points/Total Available Points) * 100%

- Primary outcome was recognition of and response to severe HTN in the simulation, evaluated using the tool above
- Mean pre- and post-intervention evaluation scores were compared

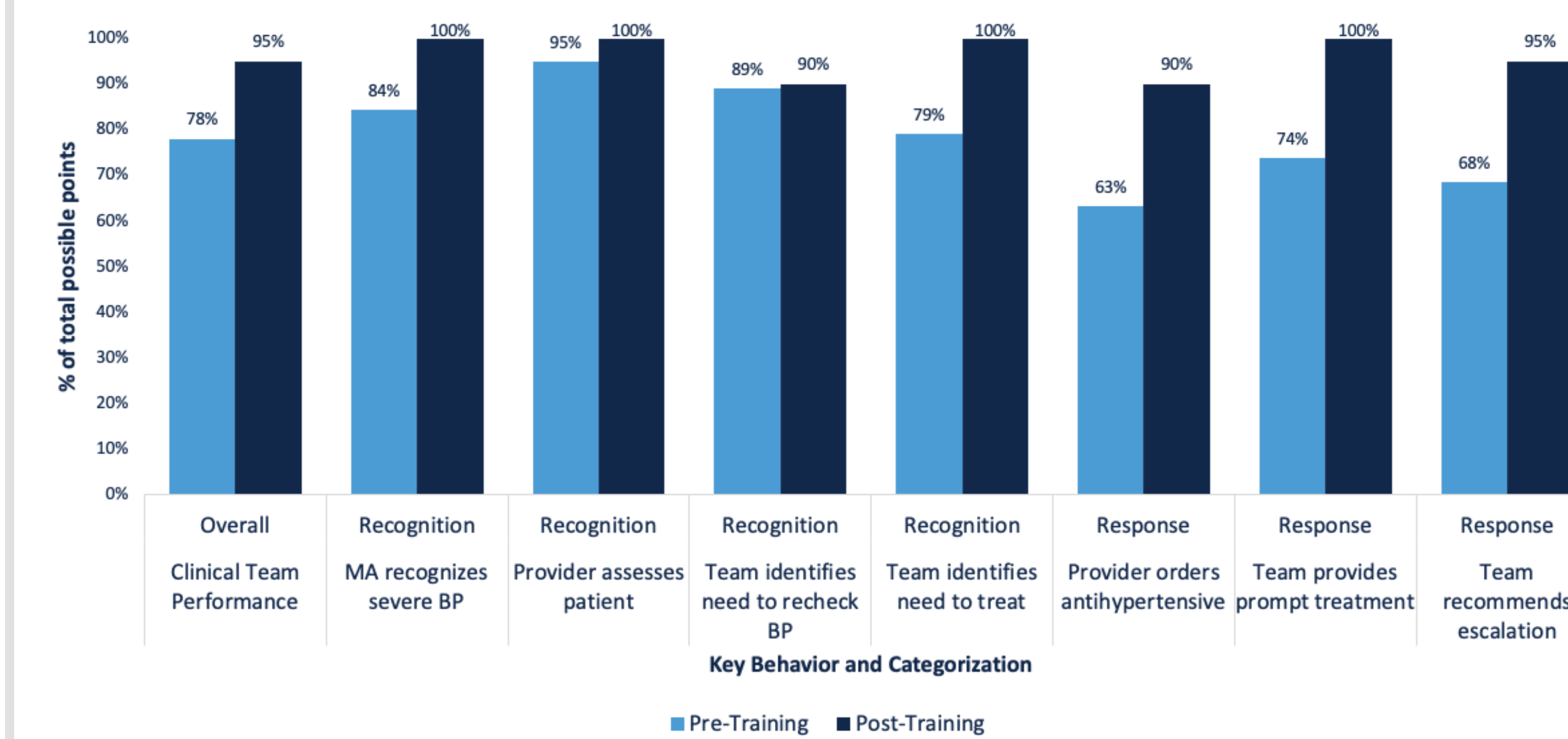
Figure 2. Outpatient Severe HTN Management Algorithm



Results

- 20 clinical teams received the intervention, each consisting of a medical assistant (MA), a nurse, a midwife or physician, and a pharmacy staff member
- Pre-intervention, teams scored a mean of 78% overall on recognition and response to severe HTN in the simulation
- Post-intervention, they improved to a mean score of 95% (p=0.006)
- Significant gains were made on the following key behaviors:
 - Identification of need to treat HTN (77% to 100%)
 - Provision of prompt treatment (74% to 100%)
 - Escalation to higher level of care (68% to 95%)

Figure 3. Pre- and Post-Intervention Mean Simulation Evaluation Scores



Conclusion

- In this pilot study, the strategies of training, coaching, and simulation were effective in improving clinical team recognition of and response to severe HTN during pregnancy in the outpatient setting.
- These strategies hold promise for the broad implementation of an outpatient severe HTN patient safety bundle.
- Our team has received funding for a Phase II during which we will scale up the intervention to 20 clinics in North Carolina in a type 3 effectiveness implementation study.

Funding

This research was funded by the National Institutes of Health (NIH), including the National Heart, Lung, and Blood Institute (NHLBI) and the Office of Research on Women's Health (ORWH). Funding is provided through the Maternal Health Community Implementation Project (MH-CIP) OT2HL158287. The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the official policies, either expressed or implied, of the NIH.

