Novel Education Image to Improve Recognition and Reporting of an Urgent Maternal Warning Sign: A Pilot Study

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BACKGROUND

71.4% of maternal deaths occur postpartum

87% of maternal deaths are preventable

Lack of knowledge identified as the largest contributing factor[1]

Visual communication improves recall versus verbal instructions

- Demonstrated by patient knowledge of preeclampsia[2]

Existing patient education on maternal warning signs

- Lack anatomical accuracy
- Do not convey urgency

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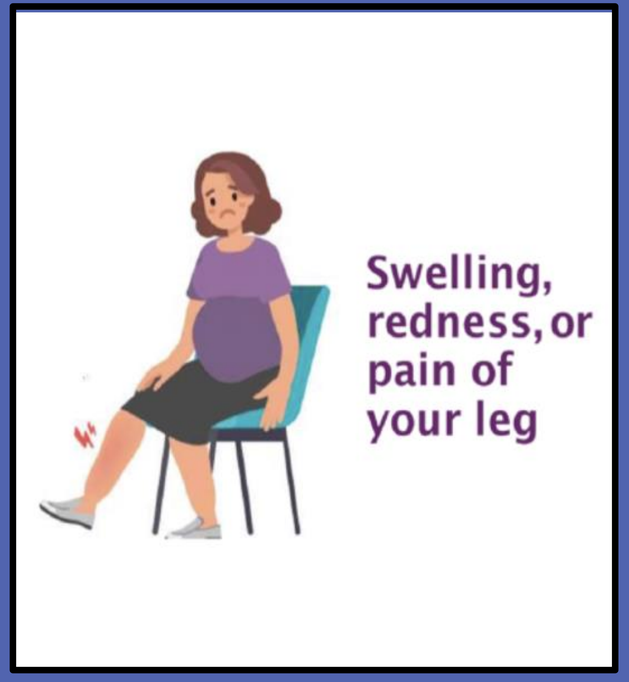
STUDY AIM

To create a visual education tool on urgent maternal warning signs during the postpartum period and compare it to an already existing visual tool.
In this pilot study, we compare a **novel deep vein thrombosis (DVT) image** to the **standard Alliance for Innovation on Maternal Health (AIM) DVT image** for patient recognition and conveyance of urgency of the warning sign.

STUDY DESIGN

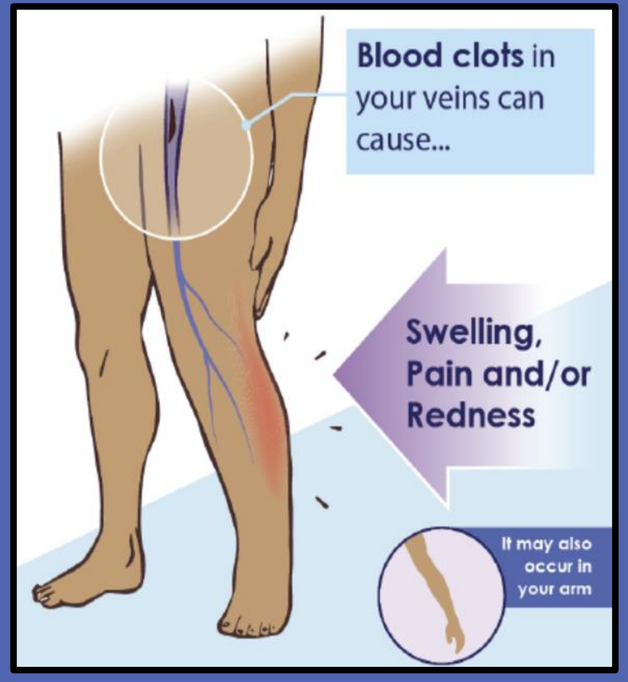
Screening and Consent	Women screened for exclusion/inclusion criteria on PPD 0-1
REDcap Survey	Demographics and maternal warning signs baseline knowledge survey
Randomization	Patients randomized to group 1 or 2; groups differ by which visual image a participant will see first with all participants seeing both standard and novel DVT visual aids
Voice - Recorded Interview	Patients asked a series of qualitative and quantitative questions for each image (separately as well as comparing images) assessing recognition, understanding and conveyance of urgency of the warning sign
Statistical Analysis	Repeated measures ANOVA: image type (A vs B) as within-subject factor, presentation order included as covariant of no interest

Image A



Standard Image from AIM

Image B



Novel Image Created for Study

Research supported by a grant from The Shane Foundation

RESULTS

77 patients approached

40 patients met inclusion criteria

33 included in analysis

- Exclusions **(n=7):**
  - Identification of a nurse
  - Missing demographics
  - Incorrect randomization
  - Loss of audio recording

Most patients lacked familiarity with postpartum warning signs

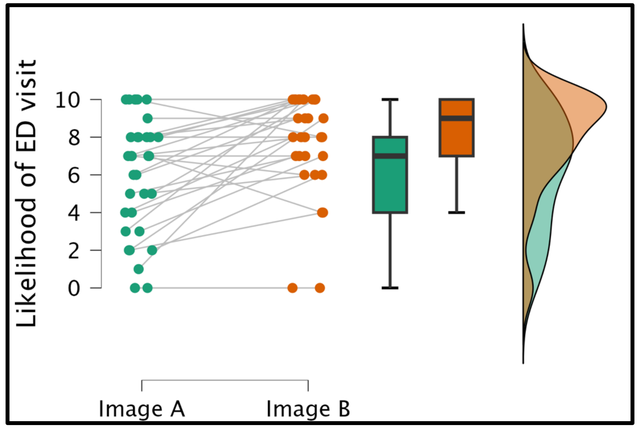
- **78.8%** of participants reported being “somewhat familiar”, “unfamiliar”, or “very unfamiliar”

Novel DVT image found to be superior to the standard DVT image

- Illustrates DVT best: **90.9%**
- Conveys seriousness/urgency best: **96.9%**
- Most likely to prompt action: **87.8%**

Novel DVT image increased the likelihood of going to the Emergency Department (ED) or contacting a physician (Likert scale 1-10)

- Novel image increased likelihood to go to ED (6.6→8.4), $p=0.044$, $\eta p^2=0.13$
- Novel image increased likelihood to call a physician (6.9→8.9), $p=0.008$, $\eta p^2=0.21$



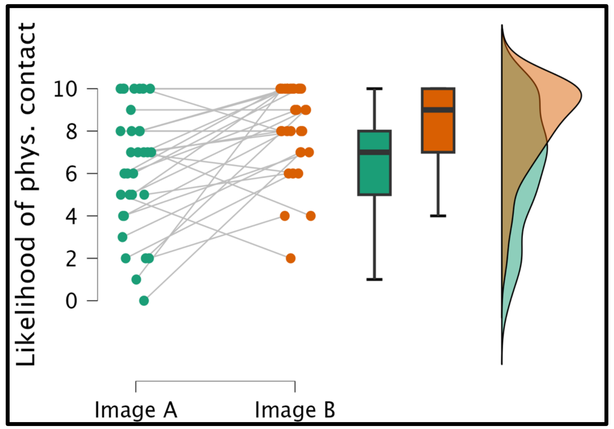


Image A: standard DVT AIM image, Image B: novel DVT image created for the study

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CONCLUSIONS

Novel image **improved recognition of and urgency portrayal** of DVT postpartum warning sign, as well as **increased likelihood of reporting symptoms** compared to standard existing AIM image

Given the poor baseline knowledge of maternal warning signs, **improved postpartum patient education may help decrease preventable postpartum maternal deaths**

Citations

1. CDC:Pregnancy-related deaths (MMRC data), 2025.
2. You et al. *Am J Obstet Gynecol*, 2012.

FUTURE DIRECTIONS

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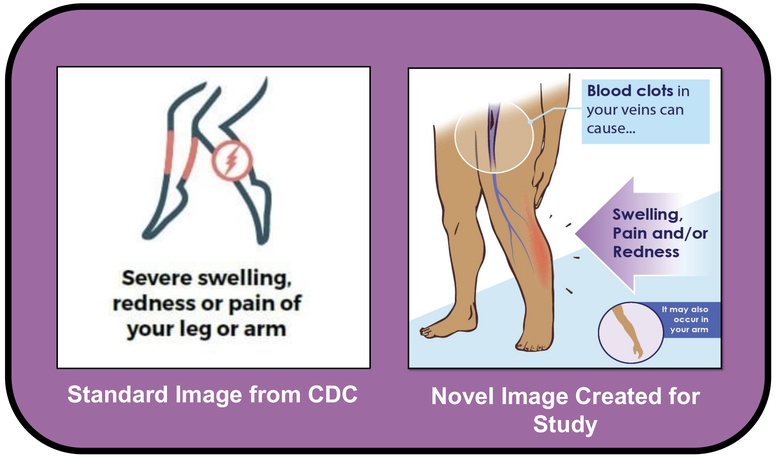
Comparing novel DVT image shown in this study to other standard CDC DVT image



Validating novel images for additional peripartum maternal warning signs

Creating a comprehensive visual aid with high yield maternal warning signs for patient education and physician counseling