## Appendix D: Preeclampsia Screening Tools

# A. Preeclampsia Early Recognition Tool integrated within a Maternal Early Warning System

|  |                | (Yellow) Triggers                          | (Red) Triggers                               | Abnormal Maternal Assessment   |  |
|--|----------------|--|--|--|--|
| Physiological Parameters   |                | (Two or more)                              | (One or more)                                | L  |  |
| Systolic BP, mm Hg (repeat in 15 min)  |                | < 90 or > 155* – 159                       | ≥ 160  | •  |  |
| Diastolic BP, mm Hg (repeat in 15 min)   |                | 105* - 109                                 | ≥ 110  | If sustained for <b>15</b> minutes<br>OR<br>If the nurse is clinically concerned with patient status<br>REQUEST PROVIDER EVALUATION                        |  |
| Mean Arterial Pressure: mm Hg  |                | < 65 or > 110                              | < 55   |  |  |
| Heart Rate: beats per min  |                | < 50 or 110-120                            | > 120  |  |  |
| Respiratory Rate: breaths per min  |                | < 12 or 25-30                              | > 30   |  |  |
| Oxygen Saturation: % on room air   |                | < 95                                       | < 93   | •  |  |
| Oliguria: ml/hr for≥2 hours  |                | 35-49                                      | < 35   | Sustained BP ≥ 160 systolic OR ≥ 110 diastolic   |  |
|  |                |  | Initiate Hypertension in Pregnancy Protocol: |  |  |
| Altered mental status  | Maternal agit  | ation, confusion or unres                  | ponsiveness                                  | Treat blood pressure with antihypertensive therapy<br>within 30-60 minutes of the initial severe-range BP  |  |
| Neurologic   | Unrelenting, s | severe headache unresponsive to medication |  | and<br>Treat with Magnesium Sulfate – 4-6** gm bolus,<br>followed by maintenance dose 1-2 gm per hour<br>based upon renal status<br>**Use 6 gm if BMI > 35 |  |
| Visual Disturbances  | Blurred or imp | red or impaired vision                     |  |  |  |
| Physical   | Shortness of b | hortness of breath or epigastric pain      |  |  |  |
| וf "۱  | ellow" o       | r "Red" BP Trig                            |  |  |  |
| re   | check BP       | within 15 minu                             | ţ  |  |  |
| *Lowering the threshold for treatment should be considered at systolic BP of 155 mm Hg or diastolic BP of 105 mm Hg. See Section Borderline Severe-Range Blood Pressures |                |  |  | IF O2 Sat < 93% or RR > 24<br>CONSIDER PULMONARY EDEMA   |  |

This figure was adapted from the Improving Health Care Response to Preeclampsia: A California Quality Improvement Toolkit, funded by the California Department of Public Health, 2014; supported by Title V funds.

## B. Preeclampsia Early Recognition Tool (PERT), page 1 of 2

| ASSESS                        | NORMAL<br>(GREEN)                                  | WORRISOME<br>(YELLOW)  | SEVERE<br>(RED)  |
|-------------------------------|--|--|--|
| Awareness                     | Alert/oriented                                     | <ul> <li>Agitated/confused</li> <li>Drowsy</li> <li>Difficulty speaking</li> </ul> | Unresponsive   |
| Headache                      | None   | <ul><li>Mild headache</li><li>Nausea, vomiting</li></ul>                           | Unrelieved headache  |
| Vision                        | None   | Blurred or impaired  | Temporary blindness  |
| Systolic BP (mm Hg)           | 100-139  | ≥ 155-159  | ≥ 160  |
| Diastolic BP (mm Hg)          | 50-89  | 90-109   | ≥ 110  |
| HR                            | 61-110   | 110-120  | > 120  |
| Respiration                   | 11-24  | < 12 or 25-30  | < 10 or > 30   |
| SOB                           | Absent   | Present  | Present  |
| O2 Sat (%)                    | ≥ 95   | < 95   | < 93   |
| Pain: Abdomen or<br>Chest     | None   | <ul> <li>Nausea, vomiting</li> <li>Chest pain</li> <li>Abdominal pain</li> </ul>   | <ul> <li>Nausea, vomiting</li> <li>Chest pain</li> <li>Abdominal pain</li> </ul> |
| Fetal Signs                   | <ul><li>Category I</li><li>Reactive NS</li></ul>   | <ul> <li>Category II</li> <li>IUGR</li> <li>Non-reactive NST</li> </ul>            | Category III   |
| Urine Output (ml/hr)          | ≥50  | 35-49  | ≤ 35 (in 2 hrs)  |
| Proteinuria*                  | Trace  | <ul> <li>≥ +1**</li> <li>≥ 300mg/24 hours</li> </ul>                               | Protein/Creatinine<br>Ratio (PCR) > 0.3<br>Dipstick ≥ 2+                         |
| Platelets                     | >100   | 50-100   | < 50   |
| AST/ALT                       | < 70   | > 70   | > 70   |
| Creatinine                    | <u>≤</u> 0.8                                       | 0.9-1.1  | ≥ 1.1  |
| Magnesium Sulfate<br>Toxicity | <ul><li>DTR +1</li><li>Respiration 16-20</li></ul> | Depression of patellar reflexes  | Respiration < 12   |

### B. Preeclampsia Early Recognition Tool (PERT), page 2 of 2

\*Level of proteinuria is not an accurate predictor of pregnancy outcome

#### GREEN=NORMAL: proceed with caution

YELLOW=WORRISOME: Increase assessment frequency

**1 Trigger, TO DO:** Notify provider

#### ≥ 2 Triggers, TO DO:

- Notify charge RN
- In-person evaluation
- Order labs/test
- Anesthesia consult
- Consider magnesium sulfate
- Supplemental oxygen

\*\*Provider should be made aware of worsening or new-onset proteinuria

#### RED=SEVERE: Trigger, 1 of any type listed below

1 of any type:

- Immediate evaluation
- Transfer to higher acuity level
- 1:1 staff ratio

Awareness, Headache, Visual

- Consider Neurology consult
- CT Scan
- ▶ R/O SAH/intracranial hemorrhage

#### BP

- Labetalol/Hydralazine/nifedipine within 30-60 min
- In-person evaluation
- Magnesium sulfate loading or maintenance infusion

#### **Chest Pain**

Consider CT angiogram

#### **Respiration SOB**

• O2 at 10L per non-rebreather mask

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