▸ **Click here** to view the complete care process model, ***Prevention and Management of Preterm Birth (Spontaneous and Indicated)***

Estimating PTB Recurrence

A previous PTB is the single greatest risk factor for subsequent PTB. In several studies the recurrence rate ranges from 25% to 40% depending on the number and severity (very early or late preterm) of spontaneous PTBs, the number of term births, and birth order.[17,19,20] Approximately 15% of all spontaneous PTBs occur in women with a prior spontaneous PTB.[21]

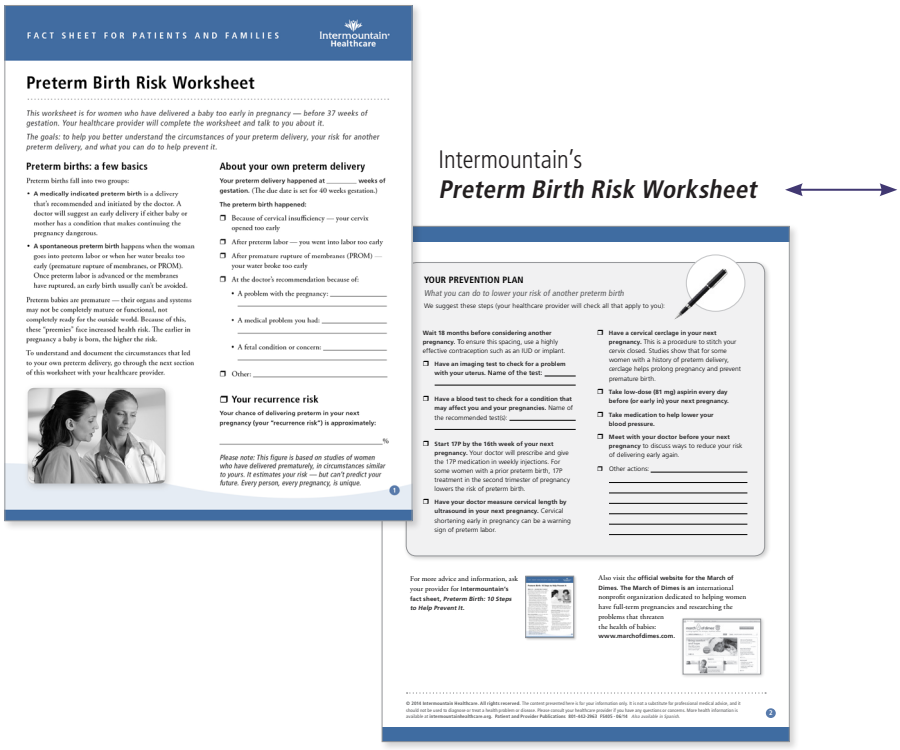
This CPM recommends estimating — and communicating to the patient — the risk of PTB recurrence. Doing so can powerfully support best-practice interventions in subsequent pregnancies, allowing you to:

- Highlight the importance of early and aggressive intervention
- Estimate the impact of potential interventions
- Emphasize warning signs and need for evaluation

Research suggests that this aspect of care is often overlooked: Among women whose pregnancies had ended in very preterm birth, only 24.3% were aware of their individual PTB risk.[22] The following sections explain how to estimate a patient's individual risk based on the figures provided.

About the risk estimate tools

Estimates of PTB recurrence risk use data from several sources depending on the cause of the previous PTB. Most recurrence risks are based on the number and severity of previous PTB and whether or not the patient has had an intervening uncomplicated pregnancy. All of the estimation tools included in this CPM use information that is readily available at the time of a preconception consultation or even a first prenatal visit.


FACT SHEET FOR PATIENTS AND FAMILIES

Intermountain Healthcare

Preterm Birth Risk Worksheet

This worksheet is for women who have delivered a baby too early in pregnancy — before 37 weeks of gestation. Your healthcare provider will complete the worksheet and talk to you about it.

The goals: to help you better understand the circumstances of your preterm delivery, your risk for another preterm delivery, and what you can do to help prevent it.

Preterm births: a few basics

Preterm births fall into two groups:

- **A medically indicated preterm birth** is a delivery that's recommended and initiated by the doctor. A doctor will suggest an early delivery if either baby or mother has a condition that makes continuing the pregnancy dangerous.
- **A spontaneous preterm birth** happens when the woman goes into preterm labor or when her water breaks too early (premature rupture of membranes, or PROM). Once preterm labor is advanced or the membranes have ruptured, an early birth usually can't be avoided.

Preterm babies are premature — their organs and systems may not be completely mature or functional, not completely ready for the outside world. Because of this, these "premies" face increased health risk. The earlier in pregnancy a baby is born, the higher the risk.

To understand and document the circumstances that led to your own preterm delivery, go through the next section of this worksheet with your healthcare provider.

About your own preterm delivery

Your preterm delivery happened at _____ weeks of gestation. (The due date is set for 40 weeks gestation.)

The preterm birth happened:

- ❒ Because of cervical insufficiency — your cervix opened too early
- ❒ After preterm labor — you went into labor too early
- ❒ After premature rupture of membranes (PROM) — your water broke too early
- ❒ At the doctor's recommendation because of:
  - A problem with the pregnancy: _____
  - A medical problem you had: _____
  - A fetal condition or concern: _____
- ❒ Other: _____

❒ **Your recurrence risk**

Your chance of delivering preterm in your next pregnancy (your "recurrence risk") is approximately:

_____ %

Please note: This figure is based on studies of women who have delivered prematurely, in circumstances similar to yours. It estimates your risk — but can't predict your future. Every person, every pregnancy, is unique.

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Intermountain's
Preterm Birth Risk Worksheet

YOUR PREVENTION PLAN

What you can do to lower your risk of another preterm birth

We suggest these steps (your healthcare provider will check all that apply to you):

Wait 18 months before considering another pregnancy. To ensure this spacing, use a highly effective contraception such as an IUD or implant.

❒ **Have an imaging test to check for a problem with your uterus. Name of the test:** _____

❒ **Have a blood test to check for a condition that may affect you and your pregnancies.** Name of the recommended test(s): _____

❒ **Start 17P by the 16th week of your next pregnancy.** Your doctor will prescribe and give the 17P medication in weekly injections. For some women with a prior preterm birth, 17P treatment in the second trimester of pregnancy lowers the risk of preterm birth.

❒ **Have your doctor measure cervical length by ultrasound in your next pregnancy.** Cervical shortening early in pregnancy can be a warning sign of preterm labor.

❒ **Have a cervical cerclage in your next pregnancy.** This is a procedure to stitch your cervix closed. Studies show that for some women with a history of preterm delivery, cerclage helps prolong pregnancy and prevent premature birth.

❒ **Take low-dose (81 mg) aspirin every day before (or early in) your next pregnancy.**

❒ **Take medication to help lower your blood pressure.**

❒ **Meet with your doctor before your next pregnancy** to discuss ways to reduce your risk of delivering early again.

❒ Other actions: _____

For more advice and information, ask your provider for **Intermountain's fact sheet, *Preterm Birth: 10 Steps to Help Prevent It.***

Also visit the **official website for the March of Dimes. The March of Dimes is an** international nonprofit organization dedicated to helping women have full-term pregnancies and researching the problems that threaten the health of babies: **www.marchofdimes.com.**

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KEY MOMENTS, KEY QUESTIONS

After a preterm birth, take every opportunity to teach your patient:

- Postpartum, before she is discharged from the hospital
- At the NICU bedside
- In maternal follow-up visits at the clinic
- In pediatric clinic visits
- Through outreach by your practice (letters, emails, phone calls)

Teaching should answer these three patient questions[23]:

- *"Why did this happen?"*
- *"What are the chances of this happening again?"*
- *"How can I prevent another preterm birth?"*

PATIENT COMMUNICATION TOOL: PTB RISK WORKSHEET

Use Intermountain's fact sheet, ***Preterm Birth Risk Worksheet***, to create personalized education for women who have had a previous PTB. The worksheet can help you communicate:

- Individual circumstances and factors in the patient's PTB
- Her individual risk assessment
- Recommended evaluations or follow-up
- Opportunities to lower PTB risk for future pregnancies: contraception to achieve pregnancy interval greater than 18 months, smoking cessation, etc.
- Expectation of special prenatal care in the future (for example, a patient with IDDM will require extra monitoring during pregnancy)

Give this worksheet along with the general-use fact sheet, ***Preterm Birth: 10 Steps to Help Prevent It.*** See page 25 for a list of all related patient and provider resources and instructions for accessing them.

Women with prior PTB may have lower rates of recurrent PTB when prenatal care emphasizes open communication between the patient and her caregivers.[9]

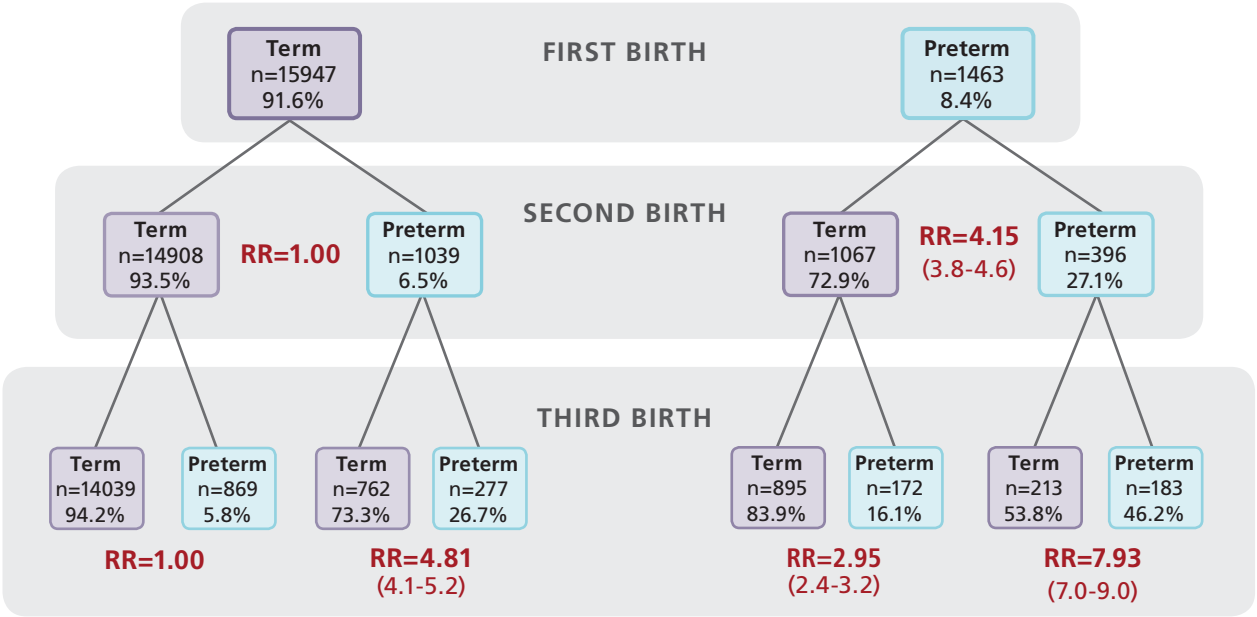
Spontaneous preterm birth: risk of recurrence

For patients with a history of spontaneous PTB, the number and order of previous deliveries, both term and preterm, may be used to estimate the risk in a subsequent pregnancy. The recurrence risk estimation tool below (Figure 1) uses information gathered on all singleton preterm births in the state of Utah between 1989 and 2002.[17] The tool shows the outcomes of a subset of study participants (17,410 women) with three consecutive births.

To use this tool to calculate the risk of spontaneous PTB in the current pregnancy, follow the order of the 2 most recent pregnancies of the patient. For example, a woman with a history of spontaneous PTB in her penultimate (second to last) pregnancy and a term birth in her most recent pregnancy would be estimated to have a risk of 16.1% for spontaneous PTB in the current pregnancy. A woman with two previous spontaneous PTBs would be expected to have a risk of 46.2%.

FIGURE 1. Spontaneous Preterm Birth: Risk of Recurrence[17]

Proportion of preterm births (<37 weeks) in a woman's first, second, and third birth, excluding women with any indicated preterm inductions (n=17410).



Indicated preterm birth: risk of recurrence

In general, maternal and fetal factors that necessitate preterm delivery also increase the risk of recurrent PTB, both indicated and spontaneous. An indicated PTB is associated with an increased risk for subsequent spontaneous PTB because indicated and spontaneous PTBs often share the same underlying etiologies, such as inflammation or stress.

- **Use the tool below (Figure 2) to calculate recurrence risk after an indicated PTB due to preeclampsia.**
- **To calculate recurrence risk after a PTB due to any other maternal or fetal indication, use the tool (Figure 3) on the following page.**

KEY ACTIONS for providers:

- ❒ For all women with prior PTB, counsel on recurrence risk, recommended interventions.

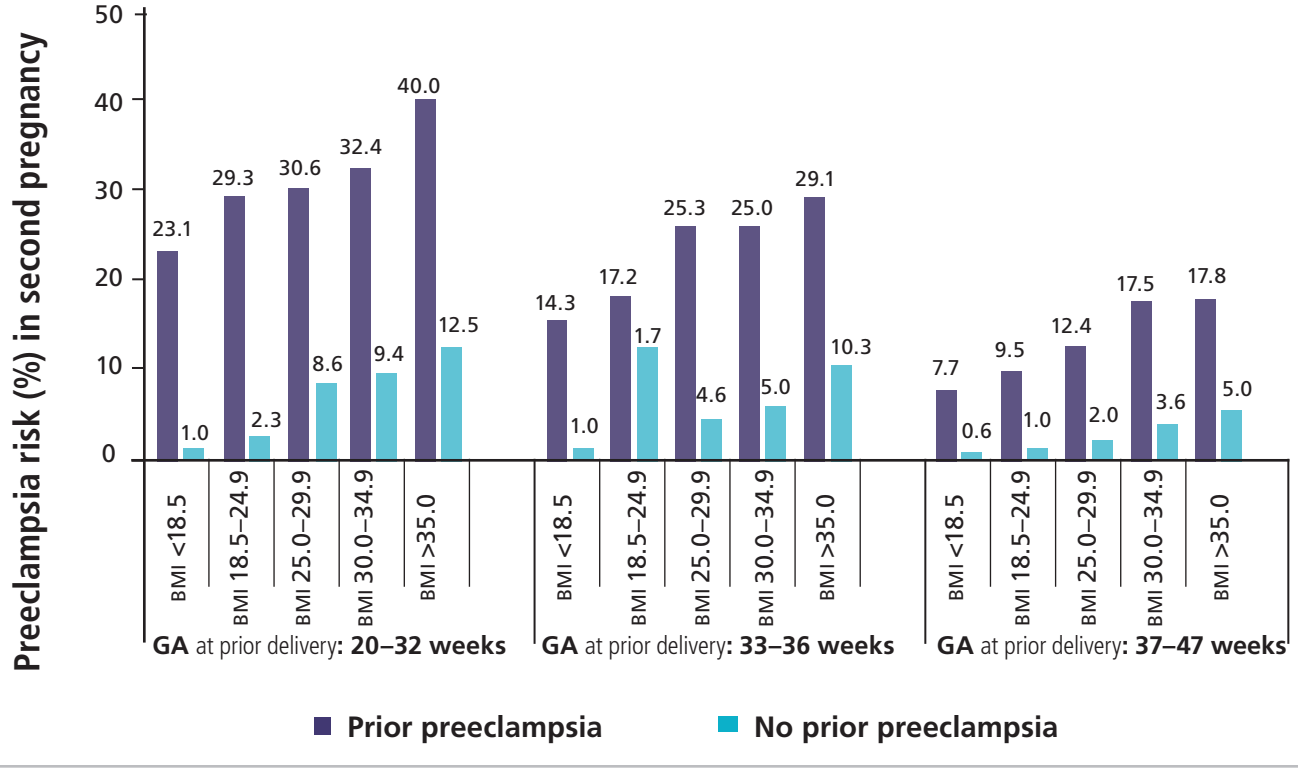
Risk after an indicated PTB due to preeclampsia

An estimate of the risk of recurrence following a PTB due to preeclampsia can be made using information reported in the literature.[24] Investigators found that the rate of recurrence in this situation is influenced by two factors: the gestational age of the most recent PTB and the patient's BMI. Earlier gestational age and increasing BMI are both associated with an increasing risk of recurrence.

To use the Figure 2 tool to calculate the risk of preeclampsia recurrence, locate the patient's BMI in the appropriate GA category (categories are gestational age at time of previous PTB due to preeclampsia). For example, a woman with a previous PTB due to preeclampsia at 30 weeks gestation and a BMI of 23.0 would be expected to have a recurrence risk of 29.3%.

FIGURE 2. Preeclampsia: Risk of Recurrence[24]

Preeclampsia recurrence risk estimates, based on maternal BMI and gestational age at time of prior indicated PTB due to preeclampsia. Developed from outcome data for singleton births in more than 100,000 women between 1989 and 1997.



Risk after an indicated PTB due to maternal or fetal factors

The recurrence risk estimation tool below (Figure 3) was developed based on outcomes of more than 70,000 women who delivered in the state of Utah between 1989 and 2007.[25]

To use this tool to calculate the risk of PTB in the current pregnancy, track the outcome(s) beginning with the patient's first indicated PTB. For example, a woman who experienced an indicated PTB in her first pregnancy has an overall PTB risk of 17.5% (1.3% risk for preterm premature rupture of membranes (pPROM) + 7.2% risk for spontaneous PTB (sPTB) + 9.0% risk of indicated PTB) in her next pregnancy. In addition, if the woman experiences another indicated PTB in her second pregnancy, her overall risk for recurrence of any type of PTB in her third pregnancy is estimated to be 51.3% (4.3% risk for pPROM + 9.4% risk for sPTB + 37.6% risk for indicated PTB).

FIGURE 3. PTB Recurrence Risk After Indicated Preterm Birth[25]

Outcomes across Utah women's first through third live births between 1989 and 2007, stratified by outcome in first live birth (N=76,657 women).