

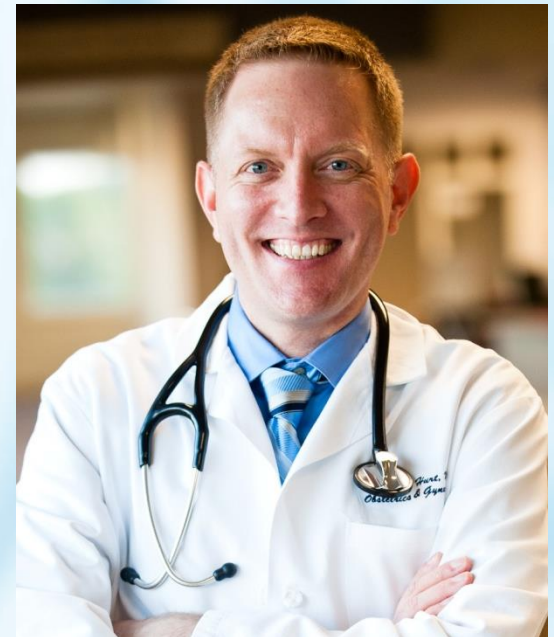
Safe Deliveries Colorado



University of Colorado Hospital
Children's Hospital Colorado
University of Colorado School of Medicine

Webinar: Preterm Labor Assessment
and Management Guidelines

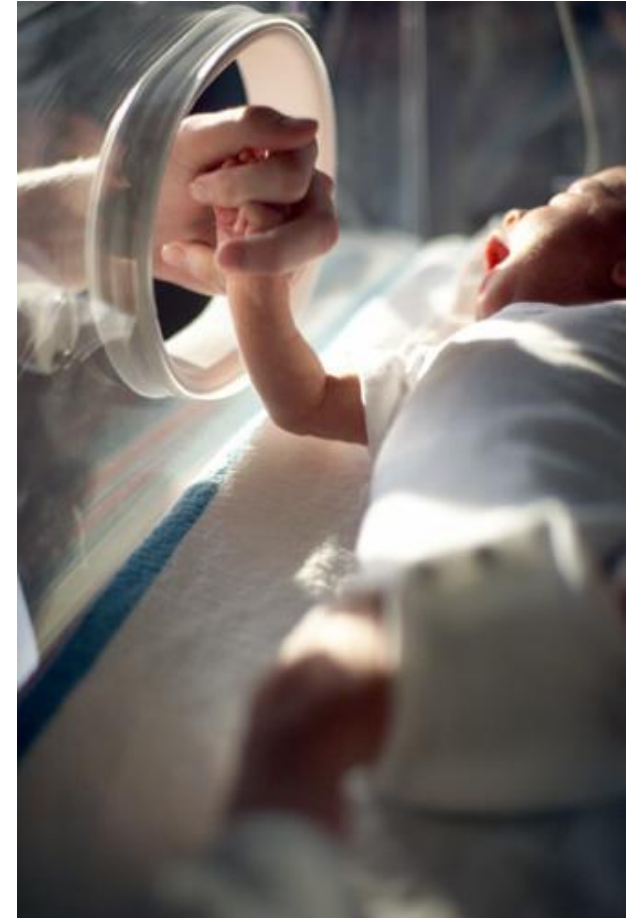
K. Joseph Hurt, MD PhD
Maternal Fetal Medicine



The problem – big picture



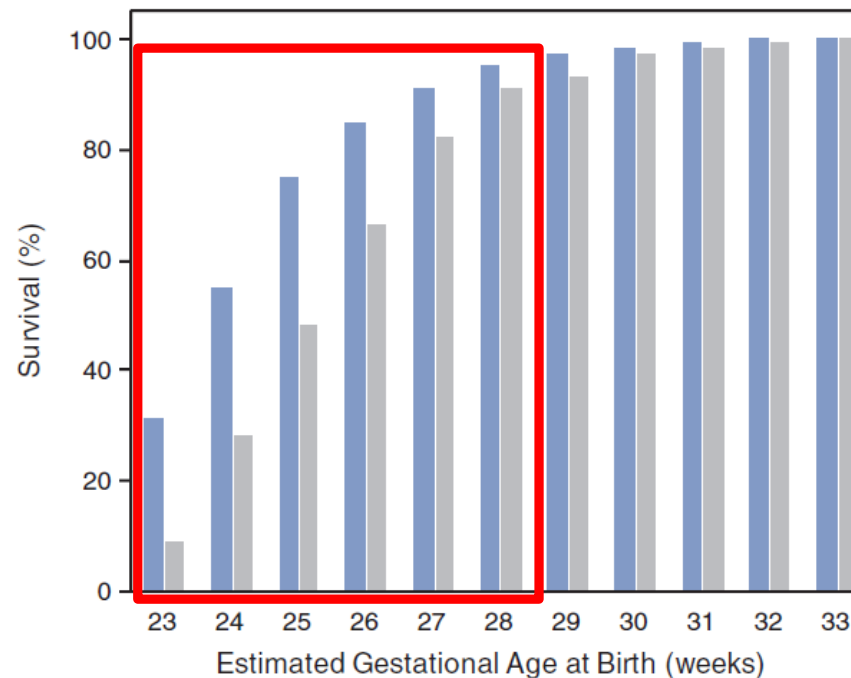
- Preterm Labor is an important clinical problem
 - 12% of births in the USA
 - \$26 billion annually
- Three-quarters of perinatal mortality
- Half of long term morbidity
- Up 50% preceded by “preterm labor”



Preterm Birth: Later is Better

Survival and major disability for preterm birth by gestational age and birthweight (2003–2004)

■ Total Survival (%)	31	55	75	85	91	95	97	98	99	100	100
■ without IVH/ROP (%)	9	28	48	66	82	91	93	97	98	99	100



Hurt, Guile, Bienstock, et al (eds). Johns Hopkins Manual of Gynecology and Obstetrics 4th ed. (2011) Dennis and Althaus. Preterm Labor and PPROM. Adapted from Pediatrix/Obstetrix Medical Group outcomes data at: www.pediatrix.com/body_university.cfm.

The problem – Colorado



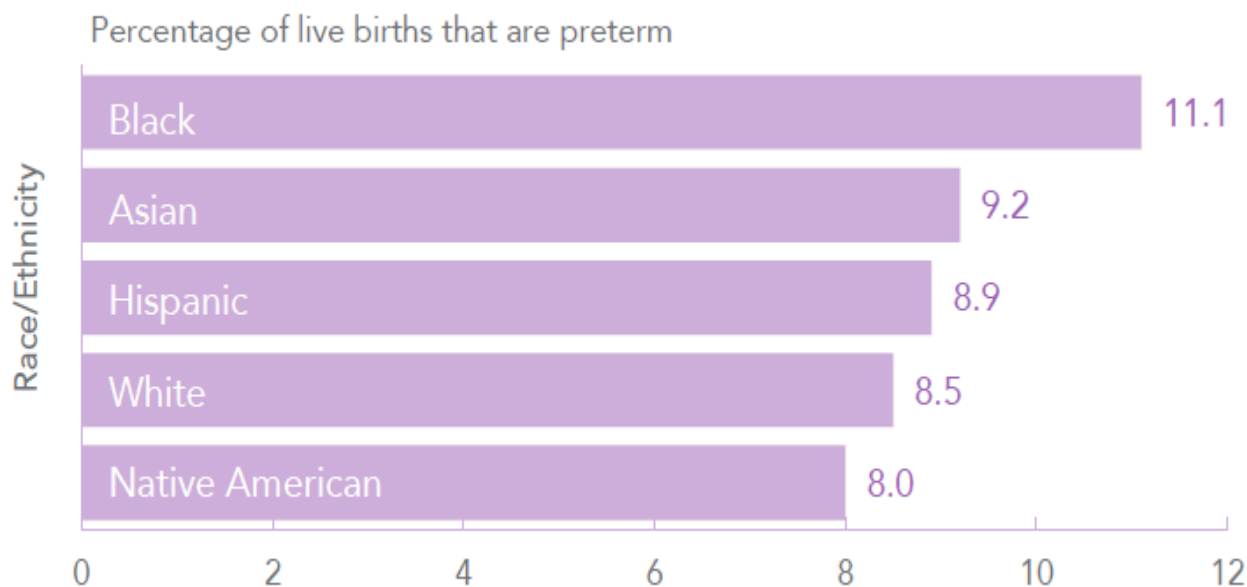
2015 PREMATURE BIRTH REPORT CARD

	Preterm Birth Rate	Grade
Colorado	8.4%	B

The March of Dimes Prematurity Campaign aims to reduce preterm birth rates across the United States. Premature Birth Report Card grades are assigned by comparing the 2014 preterm birth rate in a state or locality to the March of Dimes goal of 8.1 percent by 2020. The Report Card also provides city or county and race/ethnicity data to highlight areas of increased burden and elevated risks of prematurity.

<http://www.marchofdimes.org/peristats/pdflib/998/premature-birth-report-card-Colorado.pdf>

The problem – Colorado



Disparity index
18
State rank
#10

<http://www.marchofdimes.org/peristats/pdflib/998/premature-birth-report-card-Colorado.pdf>

The problem – Locally

CITIES

Cities with the greatest number of births are graded based on their 2013 preterm birth rates. The status indicator shows whether the 2013 city rate is higher (●), lower (●), or the same (●) as the 2013 state rate (8.6%).

City	Preterm birth rate	Grade	Status
Denver	8.4%	B	●
Colorado Springs	10.0%	C	●
Aurora	9.1%	B	●
Fort Collins	6.8%	A	●
Lakewood	8.2%	B	●
Pueblo	10.3%	C	●

<http://www.marchofdimes.org/peristats/pdflib/998/premature-birth-report-card-Colorado.pdf>

March of Dimes Toolkit: PLAT



A screenshot of the March of Dimes website. The header includes navigation links: "SHARE YOUR STORY | MARCH FOR BABIES | NACERSANO", "SIGN IN", "SIGN UP", and "DONATE". The main navigation bar has "OUR CAUSE | HEALTH TOPICS | STORIES & MEDIA | RESEARCH & PROFESSIONALS | GET INVOLVED | Q". The page title is "Preterm labor assessment toolkit", which is circled in red. Below the title is a paragraph about recent studies and a photo of a family. To the right, there are sections for "Professionals" (Awards, scholarships & grants; Info for your patients; Medical resources; Professional education), "Have questions?" (FAQ), "Prematurity prevention" (Find toolkits, reports and other resources at our prematurity prevention website.), and "In this topic" (Pregnancy and health profile: A screening and risk assessment tool; Prematurity prevention website; Healthy Babies are Worth the Wait; Toward Improving the). The footer of the page includes the URL "www.prematurityprevention.org".

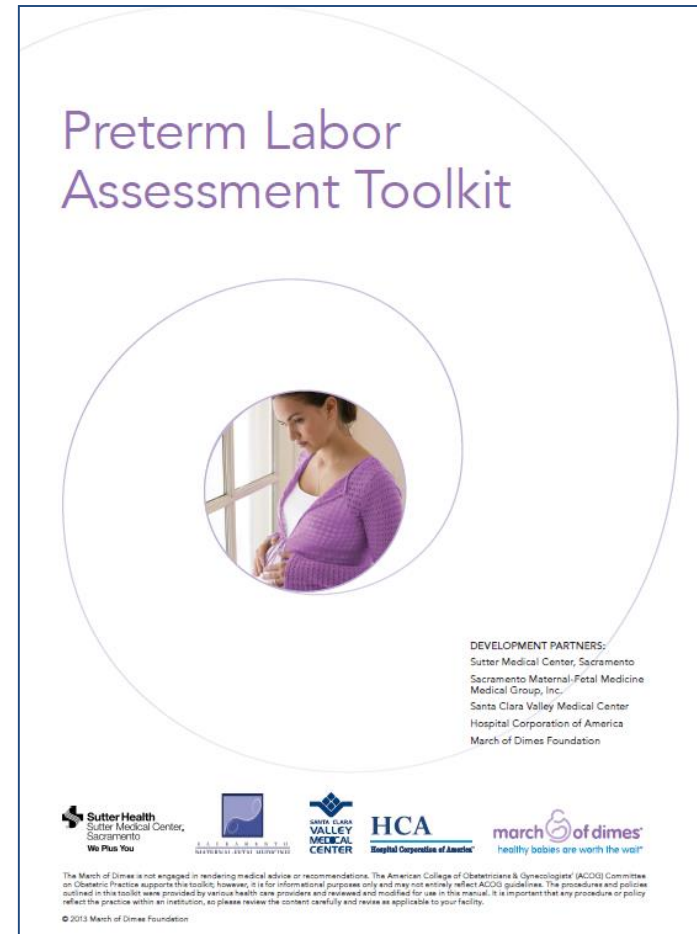
www.prematurityprevention.org

- Step-by-step guide
- Standard clinical pathway
- Assessment and disposition of preterm labor
- Reduce unnecessary hospitalization
- Increase appropriate corticosteroid administration
- Facilitate transfer decisions for NICU care

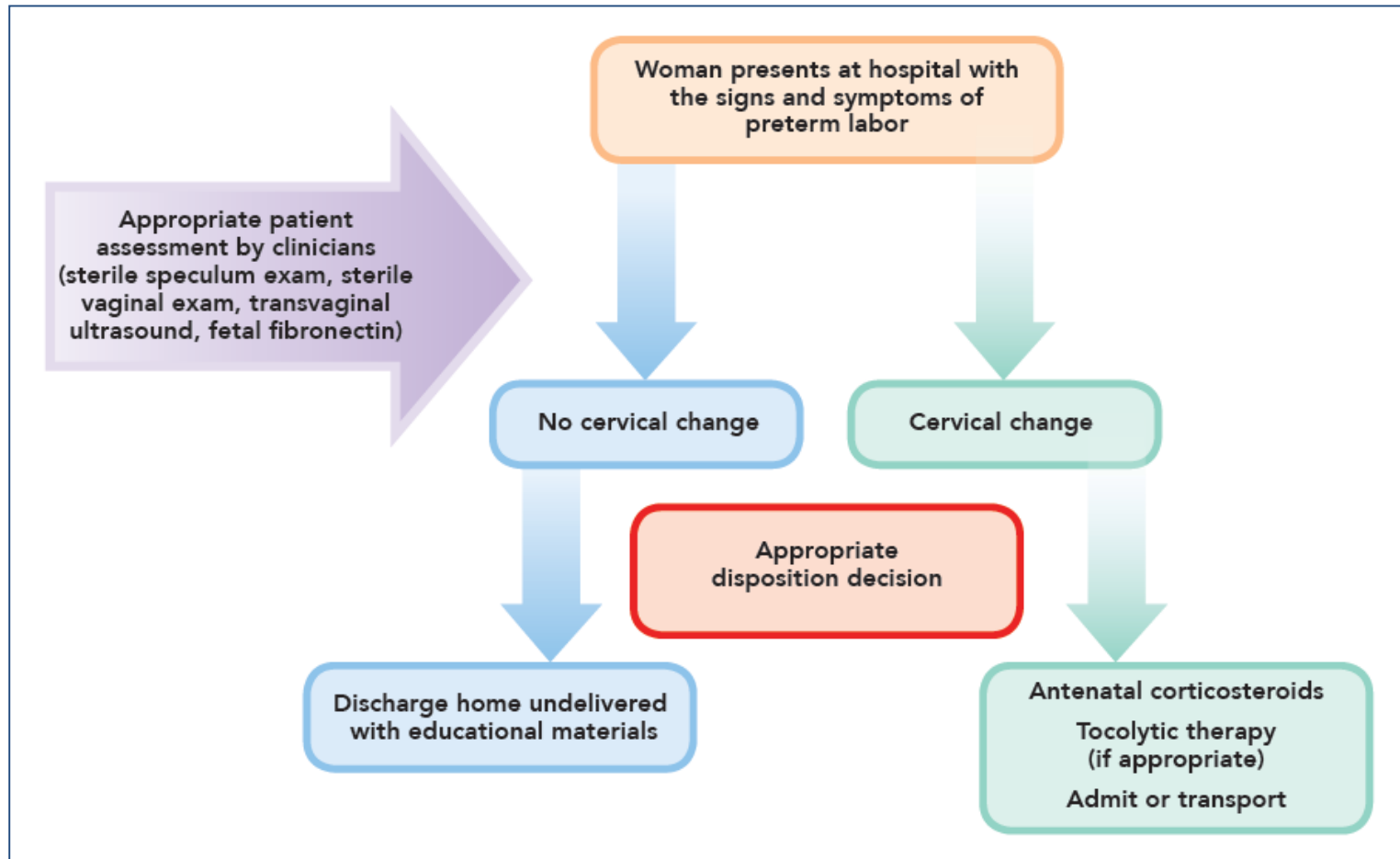
Components of the PLAT



- Overview of preterm labor and clinical issues
- Algorithm/decision model, protocol, and order set
- Data collection recommendations
- Implementation guidelines
- Patient education and home care materials

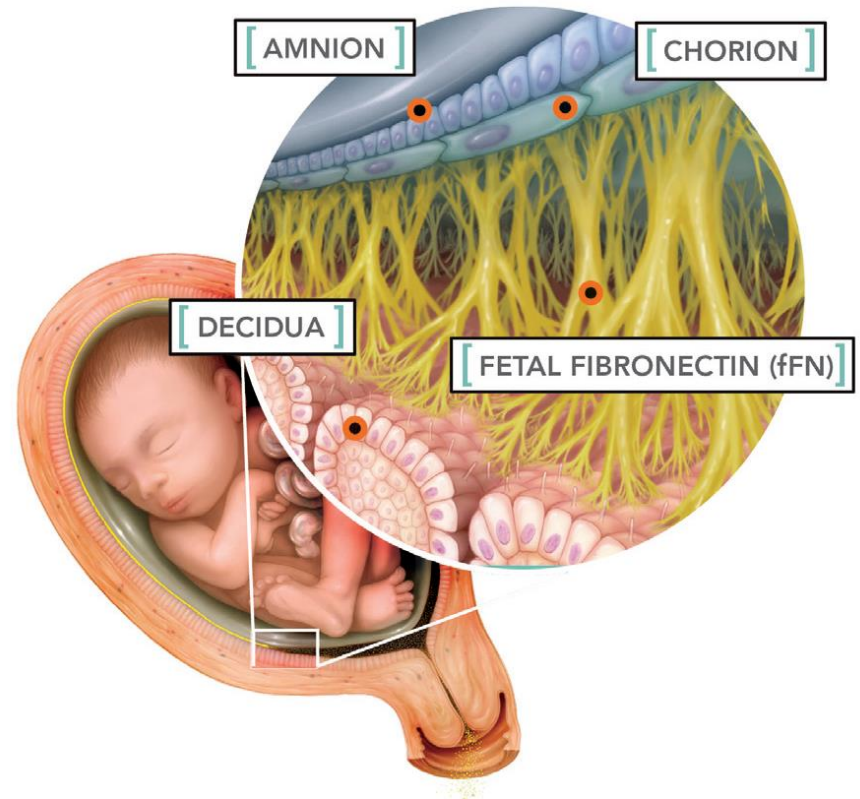


PLAT: Overview



PLAT: Evidence Base

- IV hydration has no benefit
- Terbutaline does not improve outcomes
- Preterm contractions are overtreated
- Preterm labor is undertreated
- ~3/4's of preterm labor delivers at term
- Negative fFN and contractions are overtreated
- fFN decreases triage time, admission, cost
- Overdiagnosis of preterm labor is common

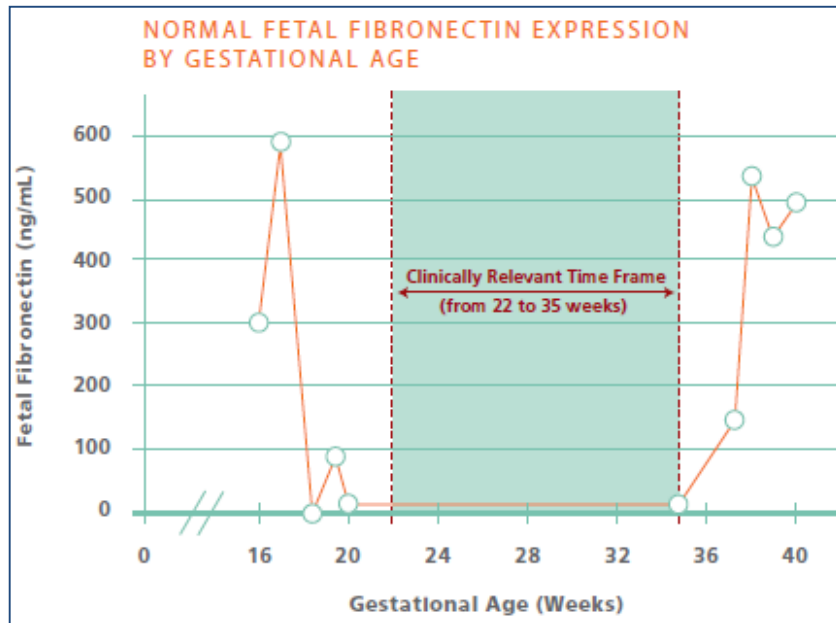


Diagnosis of “preterm labor”

- Painful contractions 6/hour
- Cervical dilation of 3 cm
- Cervical effacement of 80%
- Vaginal bleeding or PROM



PLAT tools: fetal Fibronectin (fFN)



- Negative predictive value 95-99%
- Positive predictive value 13-40%

Table 1: Predictive value of fetal fibronectin assay within 7 to 14 days

fFN Result	Likelihood of delivery within 7 to 14 days
Negative	0.5 percent to 5.0 percent
Positive	13 percent to 40 percent

PLAT tools: fetal Fibronectin (fFN)

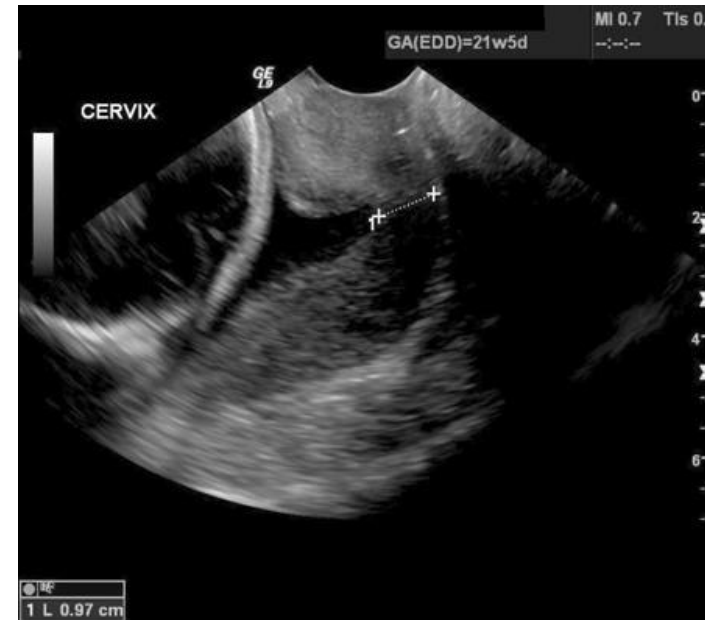


- Not useful at less than 24w
- Not useful at more than 34w
- Sterile speculum exam
- Not if
 - Bleeding
 - Exam or intercourse <24h
 - Cervix 3cm dilated
 - PPROM/BBOW
 - Cervical or vaginal lesions



PLAT tools: transvaginal cervical length ultrasound (TVCL)

- Better than digital exam
- Alone or in combination with fFN
- >25mm TVCL has negative predictive value of 95% for <32week delivery
- Not if
 - <15w or >28w
 - Vaginal bleeding present
 - With bleeding previa
 - With full bladder

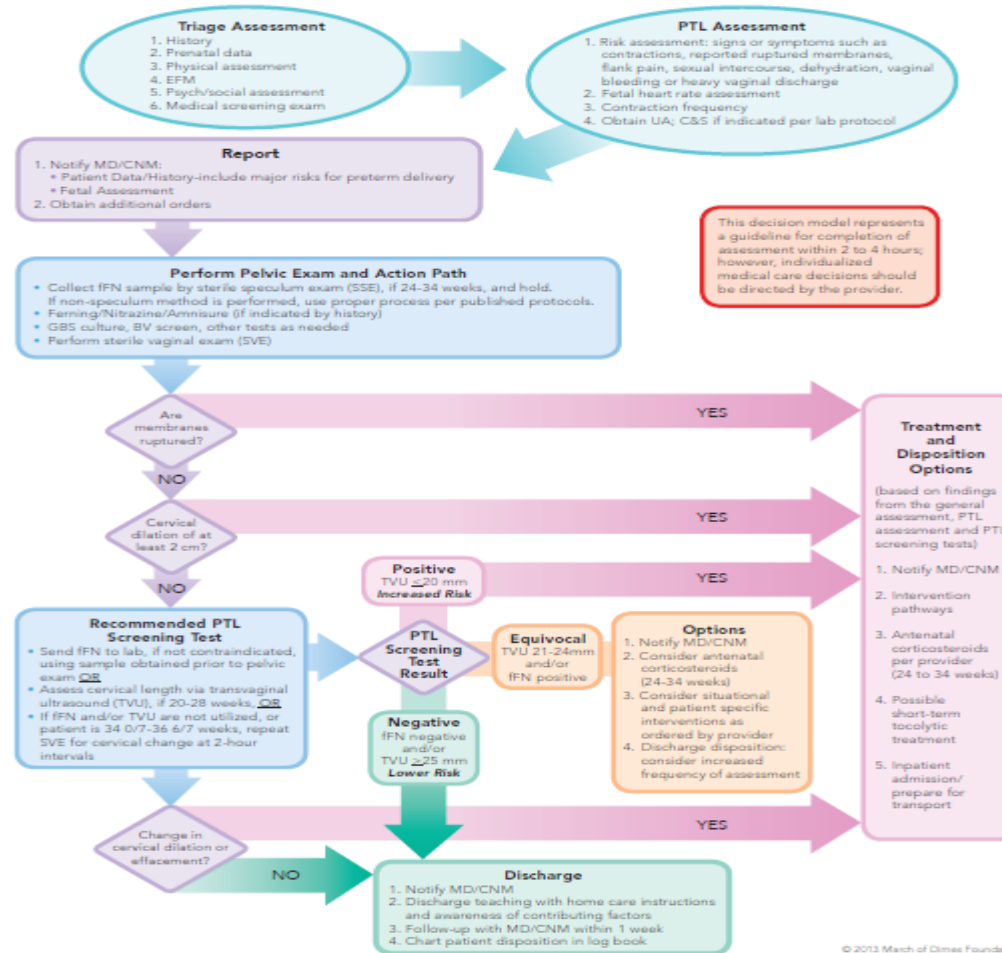


Disposition using fFN and TVCL



Test Result	Antenatal Corticosteroids if 24 to 34 Weeks Gestation	Admit/ Prepare for Transport	Discharge
Cervical dilation of at least 2 cm by SVE, and/or Cervix ≤ 20 mm long by TVU between 20 and 28 weeks, or Repeat exam notes change in cervix (dilation and/or effacement)			
Cervix 21-24 mm long by TVU between 20 and 28 weeks, and/or Positive fFN between 22 and 34 weeks			
Results of ALL factors assessed are negative (cervical dilation less than 2 cm by SVE, cervix ≥ 25 mm long by TVU, negative fFN)			
<i>SVE is the only means of cervical evaluation and neither fFN nor TVU are assessed:</i> (A) Cervical dilation of less than 2 cm by SVE (B) Repeat SVE after two hours (C) Cervical change is detected at second SVE			
<i>SVE is the only means of cervical evaluation and neither fFN nor TVU are assessed:</i> (A) Cervical dilation of less than 2 cm by SVE (B) Repeat SVE after two hours (C) No cervical change is detected at second SVE			

PLAT: the algorithm



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PLAT: the algorithm



Triage Assessment

1. History
2. Prenatal data
3. Physical assessment
4. EFM
5. Psych/social assessment
6. Medical screening exam



PLAT: Sample Orderset



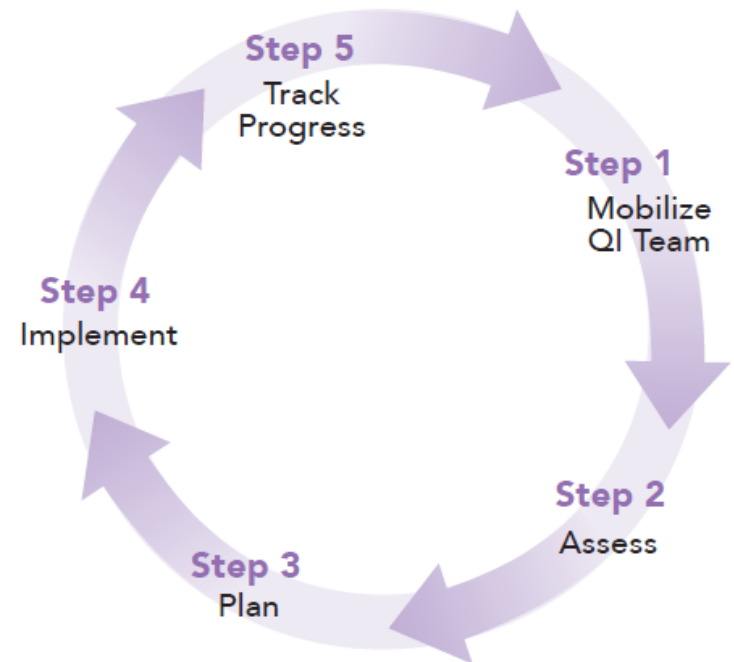
Date: _____ Time: _____

Preterm labor assessment orders as follows:

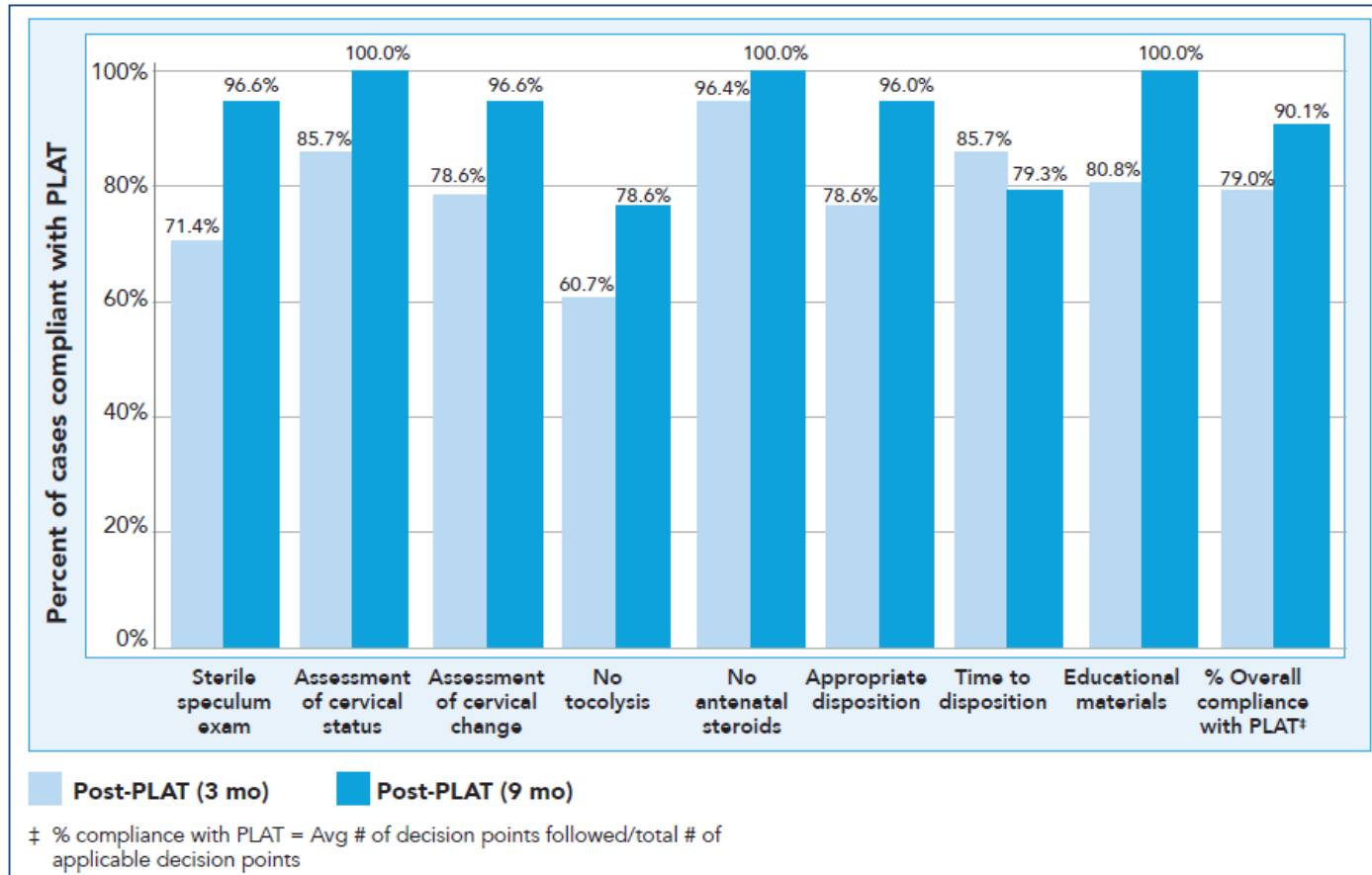
1. ☐ Admit patient to OB for observation.
2. ☐ Implement Protocol for Care/Disposition of Women Presenting with Symptoms of Preterm Labor.
3. ☐ Obtain and send clean catch urine specimen for UA and complete C&S, if indicated.
4. ☐ Perform sterile speculum exam to collect fFN specimen (before the SVE), Fern test specimen and cultures, if indicated.
fFN test for patients:
 - 24 through 34 weeks GA
 - Without ROM
 - Not actively bleeding
 - No sexual intercourse during past 24 hours
5. ☐ Obtain a transvaginal ultrasound for cervical length if between 20 and 28 weeks gestation (if TVU available).
6. ☐ Perform a sterile vaginal exam to determine cervical status.
7. ☐ Send fFN specimen to lab if patient <3 cm dilated and no evidence of PPROM.
8. ☐ Monitor continuously using EFM.
9. ☐ Other: _____

PLAT: Implementation

- Physician and nurse champions
- Support from key hospital leadership
- Hospital policies and protocols that standardize preterm labor assessment
- Laboratory and radiology equipment, i.e., Group B Beta-streptococcus screen, fern test, fFN collection and testing, and transvaginal ultrasound
- Order sets
- Preterm labor patient education materials and home care instructions
- Maternal transport process



PLAT: Implementation



Thank you!



Next:

PLAT: Real Life in Colorado