QUiPP

hin Health Innovation Network South London

KING'S College LONDON

NHS Guy's and St Thomas' NHS Foundation Trust

USING THE QUIPP TOOLKIT

FOR WOMEN IN THREATENED PRETERM LABOUR

www.quippapp.org

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@theQUiPPapp

THE PROBLEM OF PRETERM BIRTH

WHAT IS PRETERM BIRTH?

Preterm birth: delivery before 37 completed weeks of pregnancy
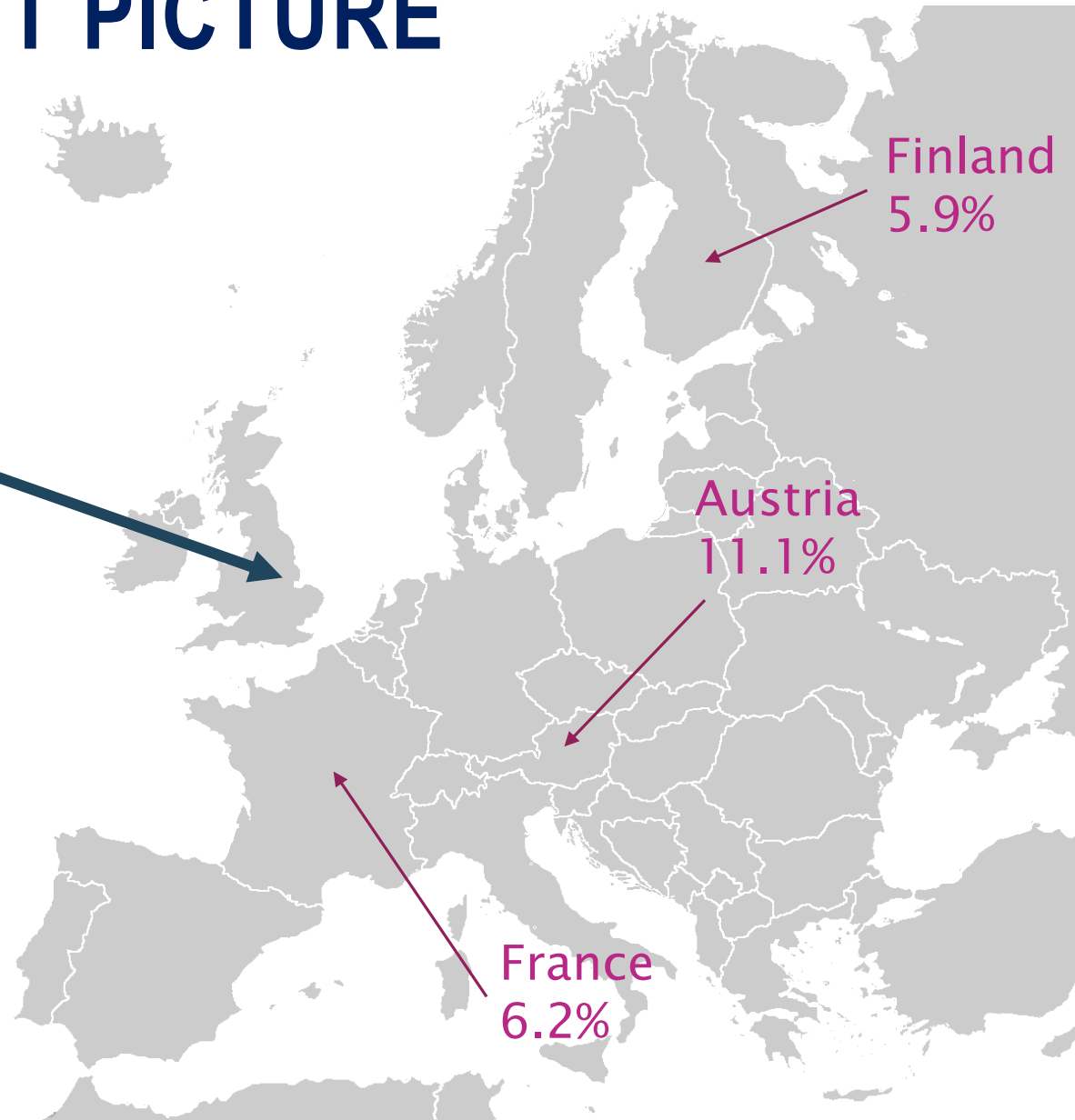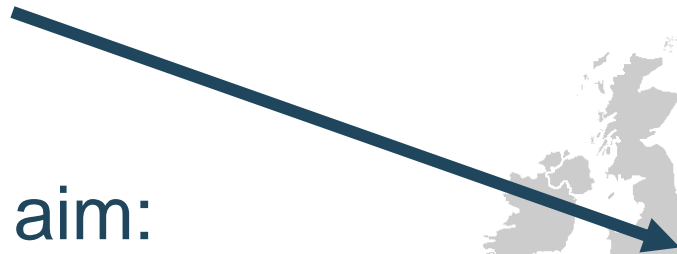
- Spontaneous
- Iatrogenic

Second trimester/'late' miscarriage: delivery after 14 weeks' of pregnancy

Similar mechanism (Ugwumadu, 2010)

THE CURRENT PICTURE
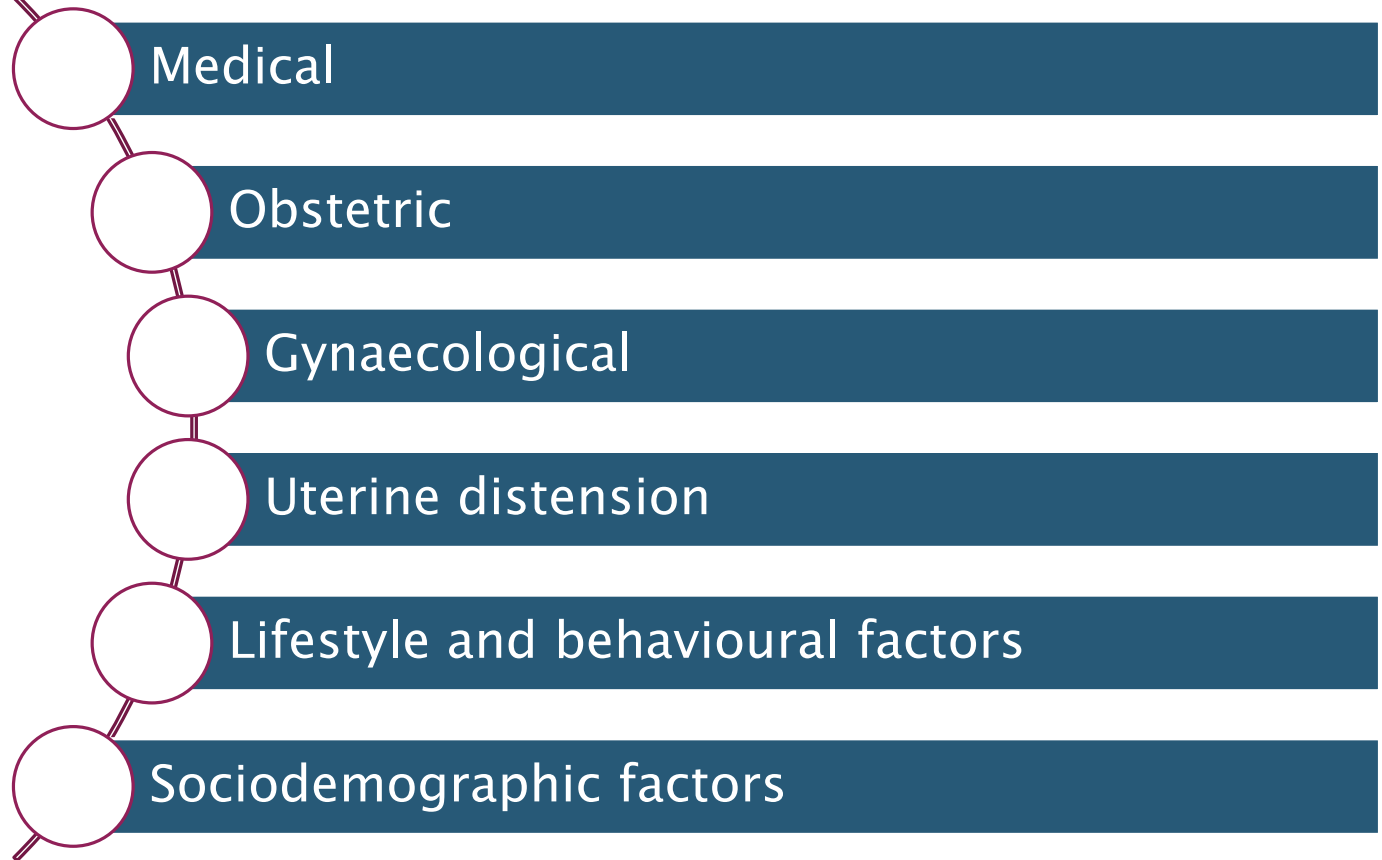
UK
8%

2025 aim:
6%

Finland
5.9%

Austria
11.1%

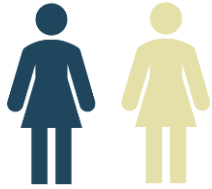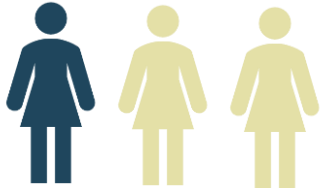France
6.2%

DIAGNOSING PRETERM LABOUR

KNOWN CAUSES AND RISK FACTORS

Medical

Obstetric

Gynaecological

Uterine distension

Lifestyle and behavioural factors

Sociodemographic factors

MANY WOMEN HAVE NO RISK FACTORS

More than 50% of women who deliver preterm do **not** have identifiable risk factors[1]

Approximately 2/3 of women with traditional risk factors do **not** go on to deliver preterm[2,3]

1. Iams JD, et al. The preterm prediction study: can low-risk women destined for spontaneous preterm birth be identified? *Am J Obstet Gynecol.* 2001;184(4):652-655.
2. Nageotte MP et al. Fetal fibronectin in patients at increased risk for premature birth. Am J Obstet Gynecol. 1994 Jan; 170(1 Pt 1): 20-5.
3. Phillips C, Velji Z, Hanly C, et al Risk of recurrent spontaneous preterm birth: a systematic review and meta-analysis BMJ Open 2017;7:e015402. doi: 10.1136/bmjopen-2016-015402

THREATENED PRETERM LABOUR

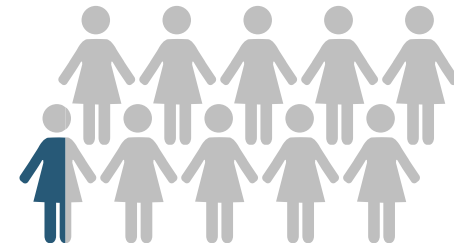## Determining patients at greatest risk of preterm labour is a challenge:
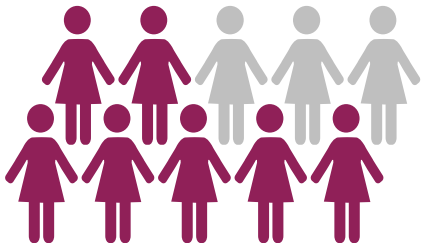
70%

of women presenting with symptoms of threatened preterm labour give birth at term

Less Than **4%**

of women with symptoms of preterm labour actually give birth within 7 days of presentation

1. Emily A. DeFranco, David F. Lewis, Anthony O. Odibo, 2013. Improving the screening accuracy for preterm labor: is the combination of fetal fibronectin and cervical length in symptomatic patients a useful predictor of preterm birth? A systematic review. American Journal of Obstetrics and Gynecology, 208 (3), pp 233.e1-233.e6. https://doi.org/10.1016/j.ajog.2012.12.015.

WHY IS IT IMPORTANT?

BENEFITS OF ACCURATELY DIAGNOSING THREATENED PRETERM LABOUR

- Appropriate women admitted

- Appropriate women sent home

- Appropriate women can be transferred in-utero

- Only appropriate women given steroids and other interventions

PREDICTIVE TESTS FOR PRETERM LABOUR

TRANSVAGINAL ULTRASOUND CERVICAL LENGTH MEASUREMENT

Normal Cervix

Short and Funneled Cervix

- Shorter cervical length = greater risk woman will deliver preterm

- Cut off varies – often 25mm short

1. Reprinted with permission from Berghella V. Grand rounds: the short and funneled cervix: what do I do now? *Contemp Ob Gyn*. 2004;49:26-34.
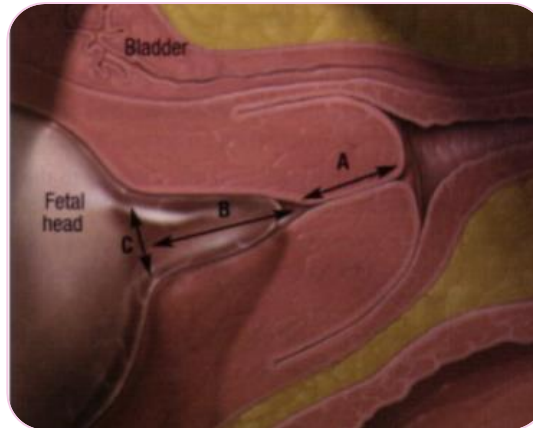
FETAL FIBRONECTIN

- Adhesive glycoprotein "glue" at the maternal-fetal interface

- Absent from cervicovaginal secretions until typically near term at onset of labour

- Clinically validated test from 22 weeks until 36 weeks

- Only clinical biomarker test recommended by NICE

- Truly objective

- Can produce a result in around 10 minutes
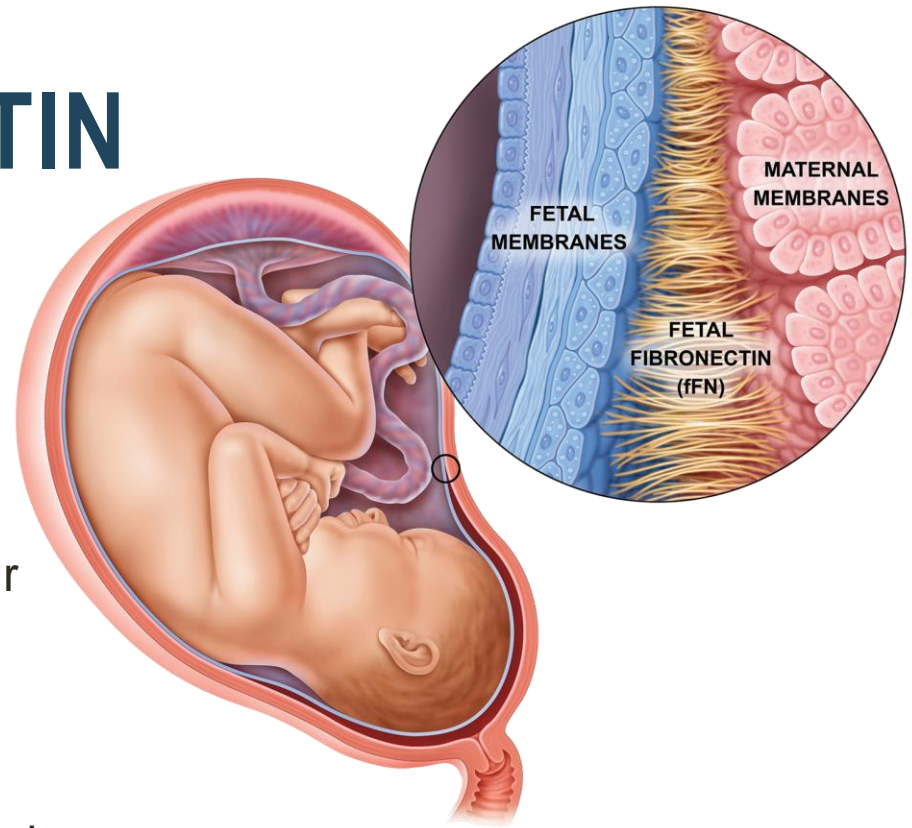
FETAL FIBRONECTIN SPECIMEN COLLECTION
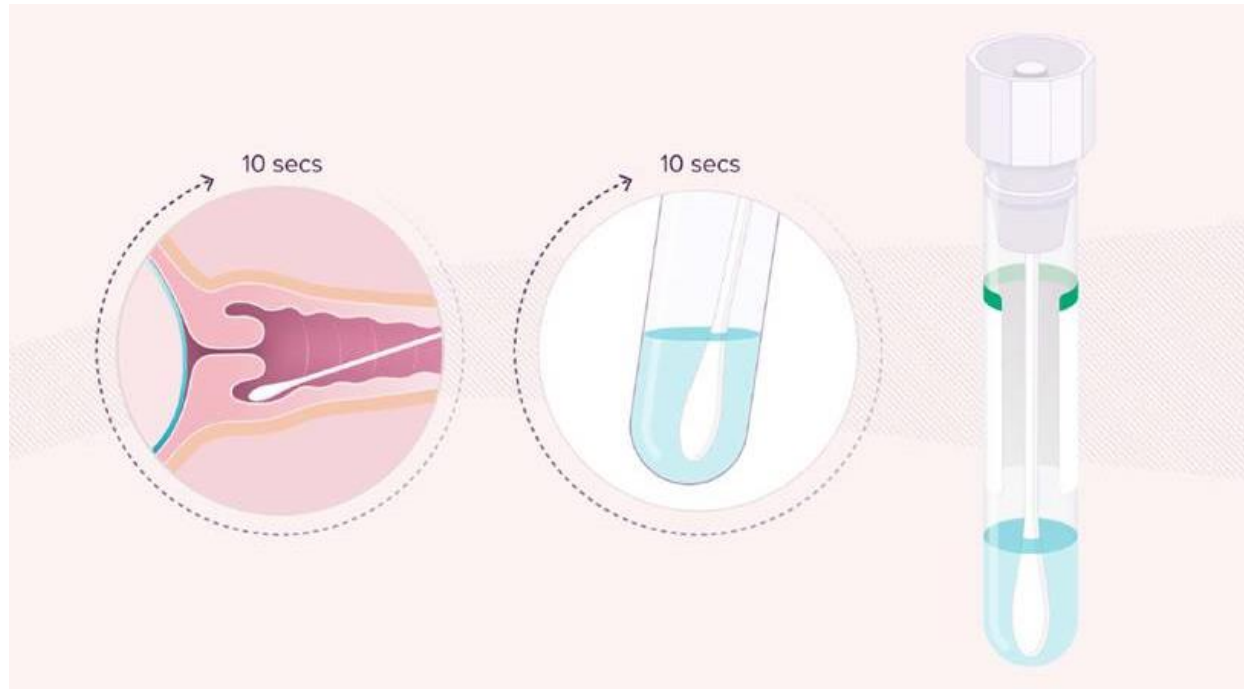
There is NO CHARGE for collection kits!

Before digital exam/swabs/transvaginal scan

Collect fFN specimen first!

Image provided courtesy of HOLOGIC ®, Inc. and affiliates

FETAL FIBRONECTIN TEST RESULTS

Early versions of the 10Q Fetal Fibronectin analyser would give a qualitative result, under 50ng/mL = negative and over 50ng/mL = positive

More recent 10Q and PeriLynx Fetal Fibronectin analysers produce quantitative results of 0 to >500ng/mL

- The lower the result, less likely to deliver early
- Under 10ng/mL= very low
- Working with quantitative results allows us to discriminate better (a woman with a risk of 400ng/mL has a lot higher chance of delivery compared to a woman with 51ng/mL – before they would both have been called 'positive')

THE QUIPP APP

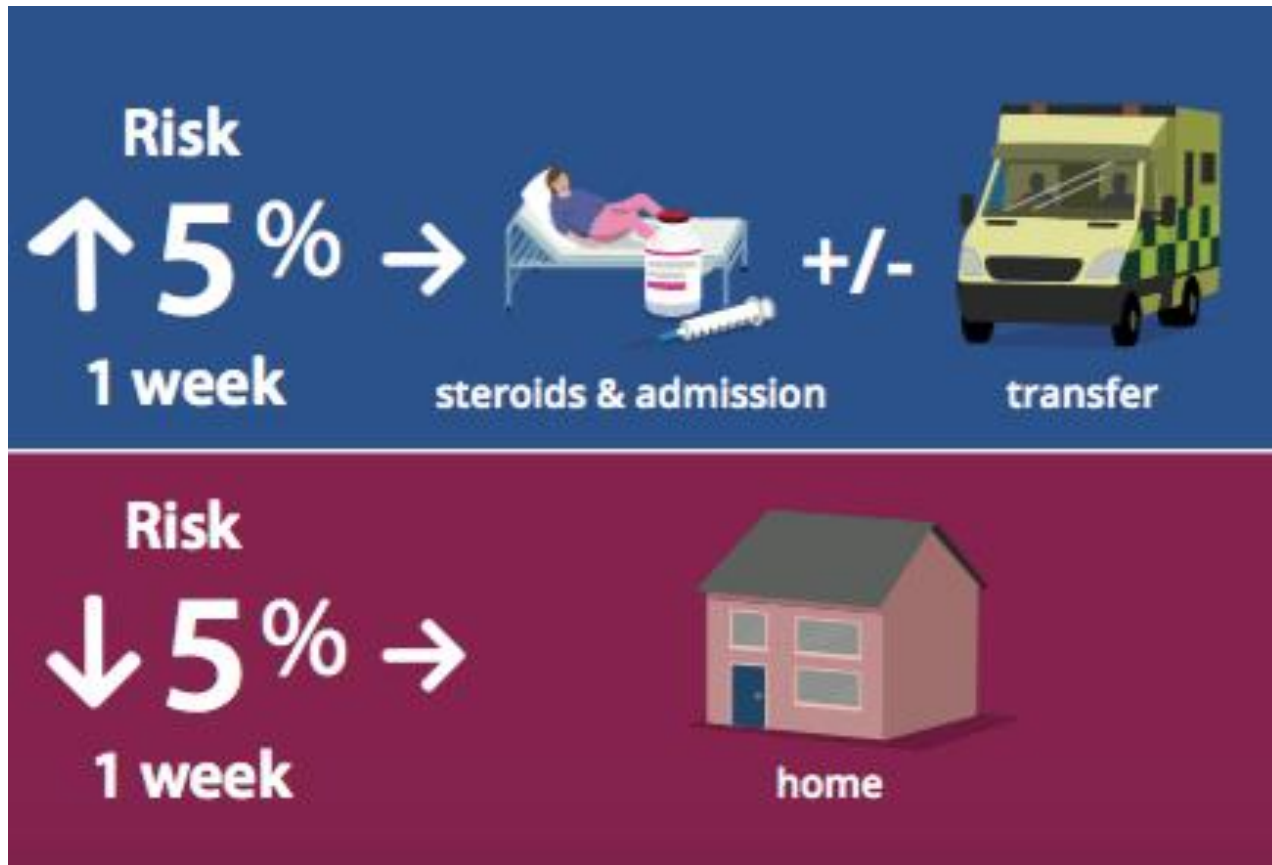# THE QUIPP APP

- Free to download on Apple and Android– search 'QUiPP'

- Website version available at: www.quipp.org

- Gives individualised scores for risk of having a spontaneous preterm delivery

- Uses medical history, her quantitative Fetal Fibronectin result and/or cervical length

- Decision-support tool

MANAGEMENT GUIDANCE

Symptomatic

1. SYMPTOMS SUGGESTIVE OF ABNORMAL OR PREMATURE UTERINE ACTIVITY?

   - Yes
   - ✓ No

2. PREVIOUS CERVICAL SURGERY?

   - Yes
   - ✓ No

3. PREVIOUS PRETERM BIRTH ≤36^{+6}?

   - Yes
   - ✓ No

4. PREVIOUS PPROM?

   - Yes
   - ✓ No

5. NUMBER OF FETUSES

   Please select   1 ▾

6. GESTATION OF TEST

   Weeks   18 ▾   Days   0 ▾

7. SHORTEST CERVICAL LENGTH (MM)

8. fFN RESULT (NG/ML)

Symptomatic   Asymptomatic   Information

EXAMPLE 1: THERESA

- G1P0, 24^{+0}, singleton

- Smoker

- Abdo pain, anxiety

- Sexual intercourse in last 48 hours

- qfFN 51

Risk of sPTB

- Risk calculated without cervical length

Probability of spontaneous delivery

Before 30 weeks	0.9%		>
Before 34 weeks	3.6%		>
Before 37 weeks	7.8%		>
Within 1 week	<0.1%	25 + 0/7	>
Within 2 weeks	0.1%	26 + 0/7	>
Within 4 weeks	0.3%	28 + 0/7	>

New Episode

Symptomatic   Asymptomatic   Information

Risk of sPTB

Within 1 week	<0.1%	25 + 0/7	⌄

<0.1%

New Episode

Symptomatic   Asymptomatic   Information
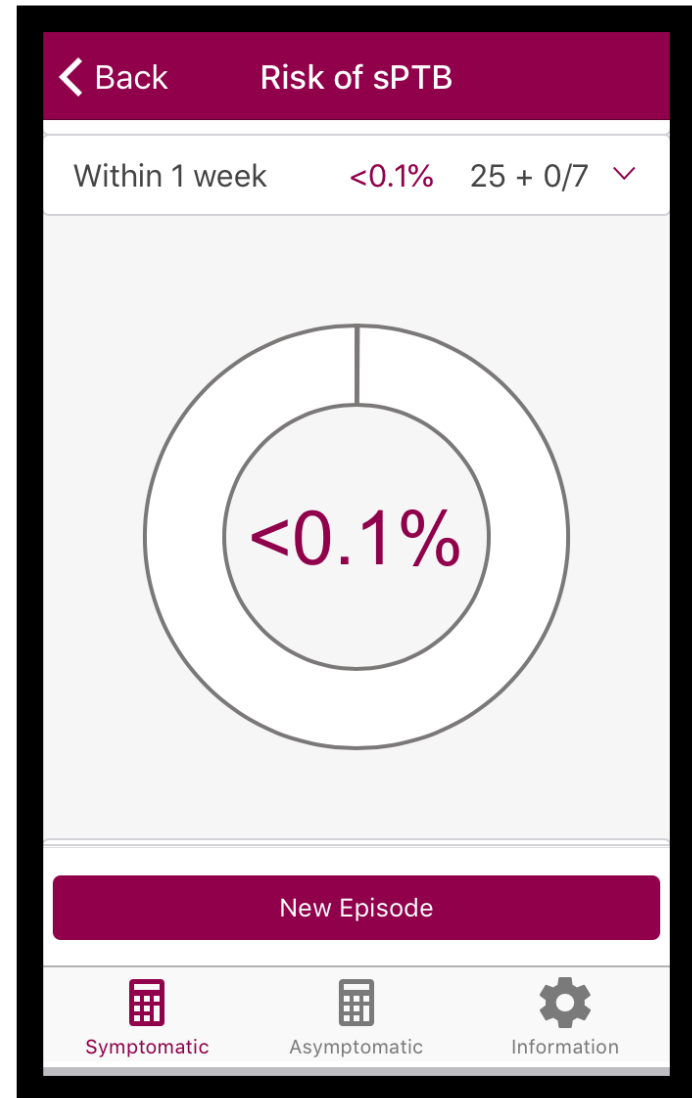
EXAMPLE 2: ANGELA

- Previous cervical laser treatment

- Cerclage for CL 22mm at 18 weeks

- 26^{+2} tightenings

- Urine- NAD

- qfFN 70

‹ Back   **Risk of sPTB**

- Risk calculated without cervical length

Probability of spontaneous delivery

|		
Before 30 weeks	6.1%	›
Before 34 weeks	18.7%	›
Before 37 weeks	31.5%	›
Within 1 week	1.1%	27 + 2/7 ›
Within 2 weeks	2.6%	28 + 2/7 ›
Within 4 weeks	6.8%	30 + 2/7 ›

New Episode

Symptomatic   Asymptomatic   Information

EXAMPLE 3: JACINDA

- DCDA twins

- 32+0

- CL 20mm

- qfFN 30

Risk of sPTB

< Back

Probability of spontaneous delivery

Before 30 weeks	<0.1%		>
Before 34 weeks	14.3%		>
Before 37 weeks	37.9%		>
Within 1 week	6.8%	33 + 0/7	>
Within 2 weeks	14.3%	34 + 0/7	>
Within 4 weeks	30.0%	36 + 0/7	>

New Episode

Symptomatic   Asymptomatic   Information
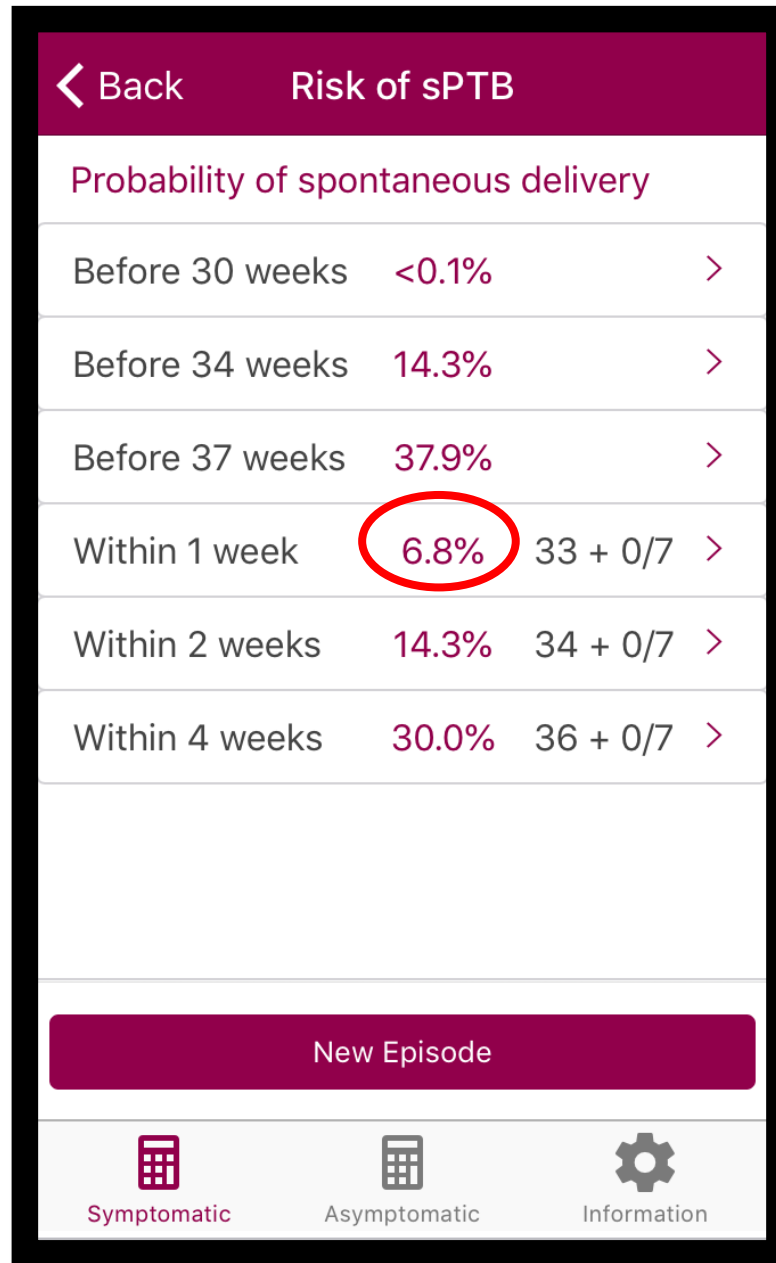
EVIDENCE FOR THE QUIPP APP

A VALIDATED TOOL

ULTRASOUND in Obstetrics & Gynecology

isuog

Original Paper | 🔓 Free Access |

Development and validation of a tool incorporating cervical length and quantitative fetal fibronectin to predict spontaneous preterm birth in asymptomatic high-risk women

K. Kuhrt, E. Smout, N. Hezelgrave, P. T. Seed, J. Carter, A. H. Shennan ✉

ULTRASOUND in Obstetrics & Gynecology

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Original Paper | 🔓 Free Access |

The QUiPP App: a safe alternative to a treat-all strategy for threatened preterm labor

H. A. Watson, First... Carter, P. T. Seed, R. M. Tribe, A. H. Shennan ✉

April 2017 | https://doi.org/10.1002/uog.17499 | Citations: 21

Development and validation of predictive models for QUiPP App v.2: tool for predicting preterm birth in women with symptoms of threatened preterm labor

J. CARTER[1], P. T. SEED[1], H. A. WATSON[1], A. L. DAVID[2,3], J. SANDALL[1], A. H. SHENNAN[1#] and R. M. TRIBE[1#]

[1]Department of Women and Children's Health, School of Life Course Sciences, King's College London, London, UK; [2]Institute for Women's Health, University College London, London, UK; [3]National Institute for Health Research, University College London Hospitals, Biomedical Research Centre, London, UK

89% of hospital admissions avoided, and associated risks and costs

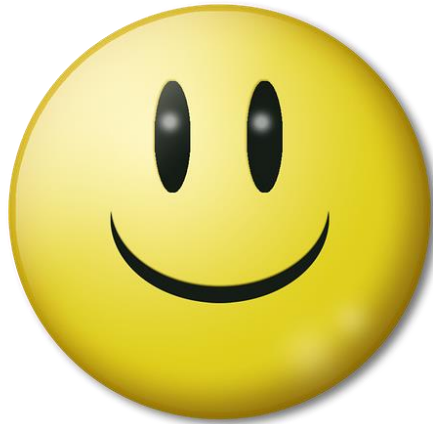**NICE 'TREAT ALL' POLICY**
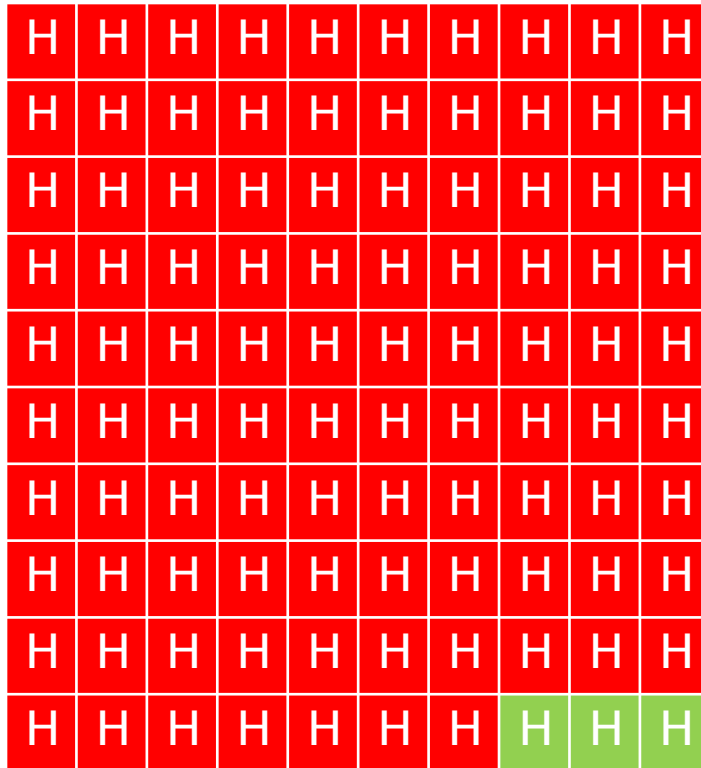
QUIPP TREAT ONLY > 5% RISK POLICY

🏠 sent home appropriately   **H** hospitalised inappropriately

🏠 sent home inappropriately   H hospitalised appropriately

Watson et al. UOG 2017

AUDIT YOUR OWN HOSPITAL USE

Using the audit proforma included in the QUiPP Toolkit!

ANY QUESTIONS?

EMAIL US AT QUIPPAPP@GMAIL.COM

Produced by the
QUiPP App Toolkit Group©

QUiPP

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- Version 1, 2/4/2020