Sera Prognostics Update

September 25, 2023

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Disclaimer

This presentation contains forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, contained in this presentation, including statements regarding our strategy, future operations, future financial position, future revenue, projected costs, prospects, plans and objectives of management, are forward-looking statements. The words “anticipate,” “believe,” “estimate,” “expect,” “intend,” “may,” “plan,” “predict,” “project,” “target,” “potential,” “will,” “would,” “could,” “should,” “continue” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make.

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Our Vision

Sera Prognostics aims to be a global leader in high-value women's health diagnostics, delivering **pivotal pregnancy information** to improve the health of women and newborns, and to simultaneously improve the economics of healthcare

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Who We Are – The Pregnancy Company®

- Proteomics and bioinformatics platform company focusing on creating valuable pregnancy information to improve the well-being of mothers and babies
- Long-term goal to comprehensively characterize pregnancy and build pregnancy information tools/ apps/services that benefit patients, doctors, insurers, researchers and other pregnancy stakeholders
- We are working to extend our strong clinical and scientific data in our journey to build expansive data and insights into pregnancy
- We have assembled a team of dedicated individuals with demonstrated expertise and knowledge to accomplish our vision

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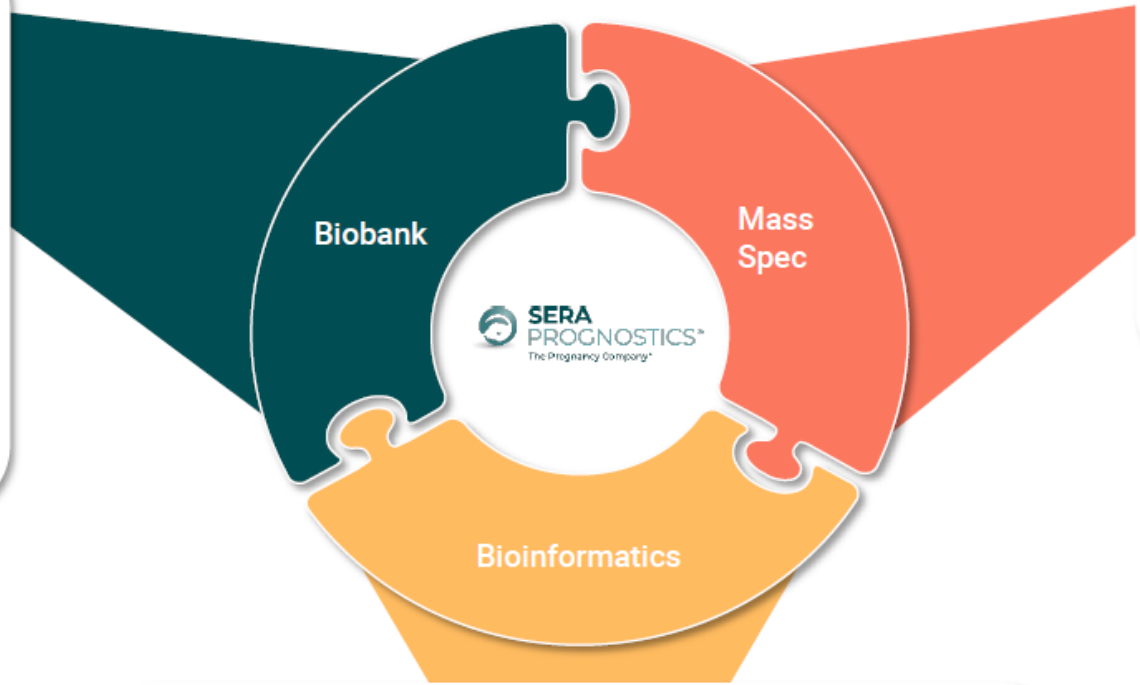
Extensible Proprietary Bioinformatics and Proteomics Platform

- Expanding proprietary pregnancy database from more than 20,000 collected pregnancy samples
- Specimen diversity through collaborations with leading maternal fetal medicine experts
- Encompasses a wide range of pregnancy outcomes



- Advanced mass spectrometry proteomics expertise
- Ligand-binding assays (immunologic and others)
- RNA analyses
- Proteomic pathway analyses

- Internal and external expertise
- Machine learning
- Artificial intelligence
- Causal inference
- Supervised learning methods
- Dimensionality reduction methods
- Advanced statistics

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Sera's Robust Biomarker Pregnancy Pipeline

Predictor	Est. U.S. Prevalence in Pregnancy	Discovery	Verification	Validation	Commercialized	Upcoming Expected Milestones and Anticipated Timing
PreTRM® Test for Risk of Preterm Birth	10%					• Publications of additional clinical and economic outcome studies (2024-2025) • PRIME: interim in late 2023; final expected 12-15 months from full enrollment
Preeclampsia with PreTRM®	5-8%					• Submission of validation data in 2023
Time-to-Birth	56%					• Public release of validation results in 2024
Gestational Diabetes Mellitus (GDM)	10%					• Select lead GDM predictor candidate for validation (2024)
Pregnancy Risk Prediction Panel	30%					• Research underway to assess which risk factors and other major pregnancy complications to be included

1. Company estimate.

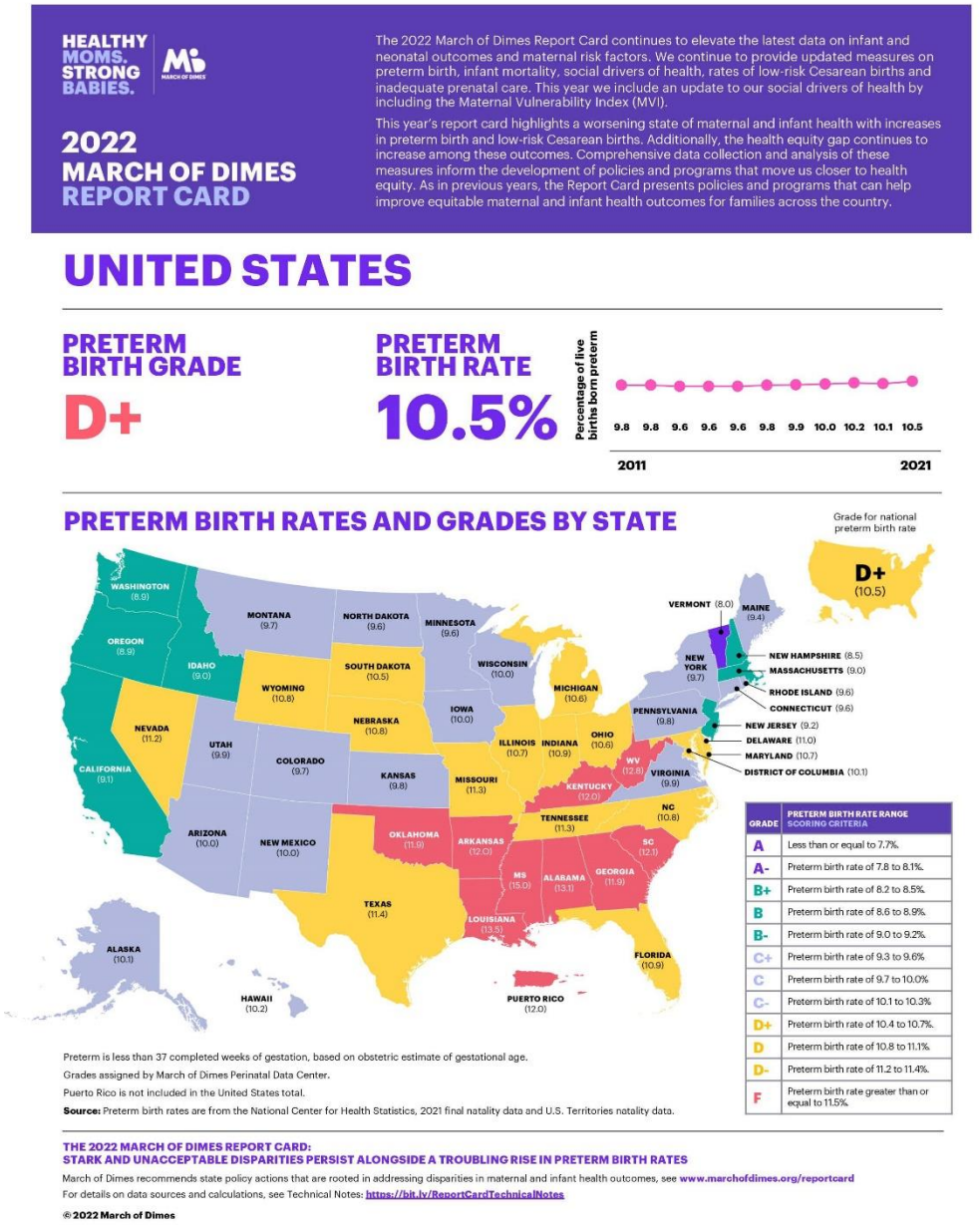
U.S. Preterm Birth Crisis

Prevalence

- Preterm birth (PTB) is defined as any delivery occurring before 37 weeks' gestation
- U.S. preterm birth rate now at 10.5%, over 10% for 4 consecutive years[1]
- A leading cause of neonatal morbidity and mortality, ~22,000 annual newborn deaths from prematurity[1]
- Additionally, the health equity gap continues to increase among underserved populations[1]

Significant Cost to Mothers, Babies and Healthcare System

- $25 billion in annual U.S. healthcare costs to manage profound short- and long-term medical complications[2]
- $65,000 average expense per preterm delivery[2]
- Long-term effects on individuals, families and societies



1. March of Dimes Report Card —November 2022.
2. Preterm birth lifetime costs in the United States in 2016, Norman J Waitzman, Ali Jalali, Scott D Grosse.

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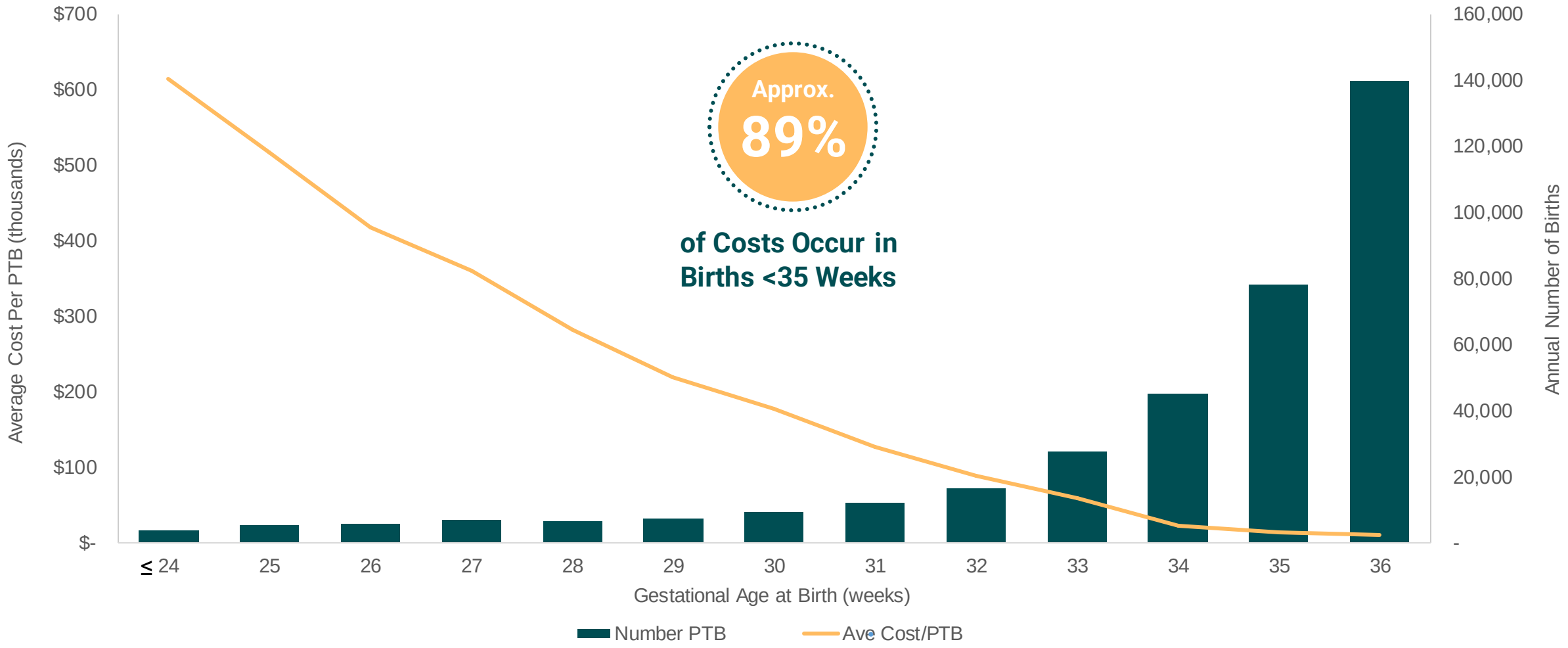
Economic Benefit of a Test Enabling Effective Interventions Has Profound Impact

Distribution of U.S. Preterm Births and Estimated Average First Year of Life Cost per PTB by Gestational Age at Birth [1][2]



1. Martin JA, Hamilton B, et al. (2015). Births: Final Data for 2013. National Vital Statistics Report. Centers for Disease Control and Prevention
2. Phibbs: Estimates of the cost and length of stay changes that can be attributed to one-week increases in gestational age for premature infants. Early Hum Dvlpt. 2006;82:85-95, adjusted for inflation.

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PAPR & TREETOP Studies: Validating Biomarker Signature for Preterm Birth Risk

PAPR Study

- Groundbreaking prediction validation study
- 5,501 patients, 11 U.S. sites
- Validated proprietary biomarker signature highly predictive of preterm birth risk
- Results demonstrate strong prediction of preterm birth occurring before 37 weeks, and even stronger prediction before 35 weeks

TREETOP Study

- 5,011 patients, 18 U.S. sites
- Broadly validates biomarker prediction of:
  - Any preterm delivery <32 weeks' gestation
  - Adverse neonatal outcomes
  - Neonatal hospital length of stay
- Identifies pregnancies at highest risk for severe complications


Original Research ajog.org

OBSTETRICS

Development and validation of a spontaneous preterm delivery predictor in asymptomatic women

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SMFM

BACKGROUND: Preterm delivery remains the leading cause of perinatal mortality. Risk factors and biomarkers have traditionally failed to identify the majority of preterm deliveries.
OBJECTIVE: To develop and validate a mass spectrometry–based serum test to predict spontaneous preterm delivery in asymptomatic pregnant women.
STUDY DESIGN: A total of 5501 pregnant women were enrolled between $17^{0/7}$ and $28^{6/7}$ weeks gestational age in the prospective Proteomic Assessment of Preterm Risk study at 11 sites in the United States between 2011 and 2013. Maternal blood was collected at enrollment and outcomes collected following delivery. Maternal serum was processed by a proteomic workflow, and proteins were quantified by multiple reaction monitoring mass spectrometry. The discovery and verification process identified 2 serum proteins, insulin-like growth factor–binding protein 4 (IBP4) and sex hormone–binding globulin (SHBG), as predictors of spontaneous preterm delivery. We evaluated a predictor using the log ratio of the measures of IBP4 and SHBG (IBP4/SHBG) in a clinical validation study to classify spontaneous preterm delivery cases ($<37^{0/7}$ weeks gestational age) in a nested case-control cohort different from subjects used in discovery and verification. Strict blinding and independent statistical analyses were employed.
RESULTS: The predictor had an area under the receiver operating characteristic curve value of 0.75 and sensitivity and specificity of 0.75 and 0.74, respectively. The IBP4/SHBG predictor at this sensitivity and specificity had an odds ratio of 5.04 for spontaneous preterm delivery. Accuracy of the IBP4/SHBG predictor increased using earlier case-vs-control gestational age cutoffs (eg, $<35^{0/7}$ vs $\geq 35^{0/7}$ weeks gestational age). Importantly, higher-risk subjects defined by the IBP4/SHBG predictor score generally gave birth earlier than lower-risk subjects.
CONCLUSION: A serum-based molecular predictor identifies asymptomatic pregnant women at risk of spontaneous preterm delivery, which may provide utility in identifying women at risk at an early stage of pregnancy to allow for clinical intervention. This early detection would guide enhanced levels of care and accelerate development of clinical strategies to prevent preterm delivery.

Key words: biomarker, pregnancy, preterm birth, proteomics, IGFBP4, IBP4, SHBG

Preterm birth (PTB), defined as delivery before 37 weeks of gestation, affects 15 million infants born each year, varying from approximately 5% to 18% of all births across different geographies worldwide.[1] In the United States, it is the leading cause of neonatal death and the second-leading cause of death in children before age 5 years. PTB is also a major source of long-term health consequences, including chronic lung disease, hearing and visual impairments, and neurodevelopmental disabilities, such as cerebral palsy. The health-economic impact of PTB in the Un… $26…

EDITORS' CHOICE

factors or using measured serum or vaginal biomarkers have not resulted in clinically useful tests.[14-17] More accurate methods to identify women at risk dur-

Cite this article as: Saade GR, Boggess KA, Sullivan SA, et al. Development and validation of a spontaneous preterm delivery predictor in asymptomatic women. Am J Obstet Gynecol 2016;214:633.e1-24.

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AJOG American Journal of Obstetrics & Gynecology


Research

of a proteomic preterm delivery predictor
ependent prospective cohort

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birth remains a common and devastating here remains a need for effective and accurate rm birth. Using a proteomic approach, we idated (Proteomic Assessment of Preterm Risk eterm birth predictor comprising a ratio of ling protein 4 to sex hormone-binding globulin. e the performance of the ratio of insulin-like n 4 to sex hormone-binding globulin to pre-nedically indicated very preterm births, in an from the one in which it was developed. as a prospective observational study (Multi-pontaneous Preterm Birth Risk Predictor, the United States. Women had blood drawn ation. For confirmation, we planned to analyze up of women having blood drawn between ation, with the results of the remaining study validation studies. Serum from participants ctrometry. Neonatal morbidity and mortality osite score by a method from the PREGNANT n et al). Scores of 0–3 reflect increasing th of neonatal intensive care unit stay, and 4

women were enrolled, with 847 included in There were 9 preterm birth cases at $<32^{0/7}$ ases at $\geq 32^{0/7}$ weeks' gestation; 21 of 847 morbidity and mortality index scores of ≥ 3. The ratio of insulin-like growth factor-binding ing globulin ratio was substantially higher in

both preterm births at $<32^{0/7}$ weeks' gestation and there were more severe neonatal outcomes. The ratio of insulin-like growth factor-binding protein 4 to sex hormone-binding globulin ratio was significantly predictive of birth at $<32^{0/7}$ weeks' gestation (area under the receiver operating characteristic curve, 0.71; 95% confidence interval, 0.55–0.87; $P=.016$). Stratification by body mass index, optimized in the previous validation study (22<body mass index≤37 kg/m^2), resulted in an area under the receiver operating characteristic curve of 0.76 (95% confidence interval, 0.59–0.93; $P=.023$). The ratio of insulin-like growth factor-binding protein 4 to sex hormone-binding globulin ratio predicted neonatal outcomes with respective area under the receiver operating characteristic curve of 0.67 (95% confidence interval, 0.57–0.77; $P=.005$) and 0.78 (95% confidence interval, 0.63–0.93; $P=.026$) for neonatal composite morbidity and mortality scores of ≥ 3 or 4. In addition, the ratio of insulin-like growth factor-binding protein 4 to sex hormone binding globulin significantly stratified neonates with increased length of hospital stay (log rank $P=.023$).
CONCLUSION: We confirmed in an independent cohort the ratio of insulin-like growth factor-binding protein 4 to sex hormone-binding globulin ratio as a predictor of very preterm birth, with additional prediction of increased length of neonatal hospital stay and increased severity of adverse neonatal outcomes. Potential uses of the ratio of insulin-like growth factor-binding protein 4 to sex hormone-binding globulin predictor may be to risk stratify patients for implementation of preterm birth preventive strategies and direct patients to appropriate levels of care.

Key words: biomarker, insulin-like growth factor-binding protein 4, IGFBP4, neonatal morbidity and mortality, pregnancy, prematurity, preterm birth, proteomics, sex hormone-binding globulin

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EDITOR'S CHOICE

who are born as very preterm ($<32^{0/7}$ weeks' gestation) are at greatest risk of lifelong di

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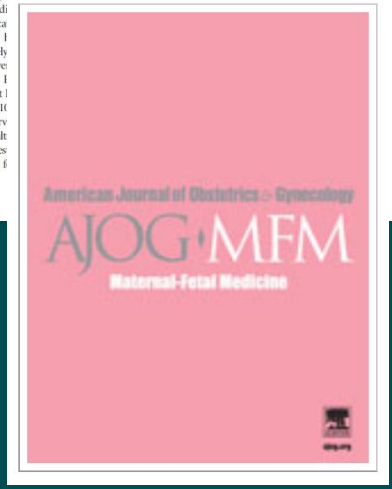
Medical indications are responsible for approximately 40% of all PTBs.[3] For a risk assessment tool for PTB to be the most clinically effective, it should predict


American Journal of Obstetrics & Gynecology
AJOG·MFM
Maternal-Fetal Medicine

PREVENT-PTB Prospective Randomized Controlled Study Readout Published July 16, 2021 in *American Journal of Perinatology*

Overview

- Assessed benefit of identifying higher risk pregnancies coupled with earlier proactive interventions vs. standard practice
- 1,208 patients enrolled,, conducted at Intermountain Healthcare in Utah
- Examined outcomes of clinical and economic importance, including NICU length of stay, total hospitalization length of stay reduction, and neonatal morbidity/mortality
- Data show a clear benefit of the PreTRM test-and-treat strategy compared to standard care
  - Hospital and NICU length-of-stay reduced by more than 70%
  - Severe neonatal morbidity or death reduced by 66% across infants affected by complications of prematurity
  - Significantly faster NICU discharge rates of all deliveries, any preterm deliveries and spontaneous preterm deliveries
  - Observed 23-80% reductions in preterm delivery rates across all three reported intervals of prematurity in infants born <37, <35 or <32 weeks' gestation

Impact of PreTRM Test and Treat Strategy on NICU Length of Stay

Outcome	Control Arm (n=592) Number Median (Days)		Screened Arm (n=589) Number Median (Days)	(%) Reduction	P-value
NICU stay admitted sPTBs	5 45.5	→	6 6.8	85.1%	0.008
NICU stay admitted PTBs	12 35.6	→	10 7.6	78.7%	0.038

PreTRM test and treat strategy demonstrated statistically significant reduction, approx. 80%, in median NICU length of stay

Length of stay in the NICU is an important measure of the clinical and economic impact of preterm birth

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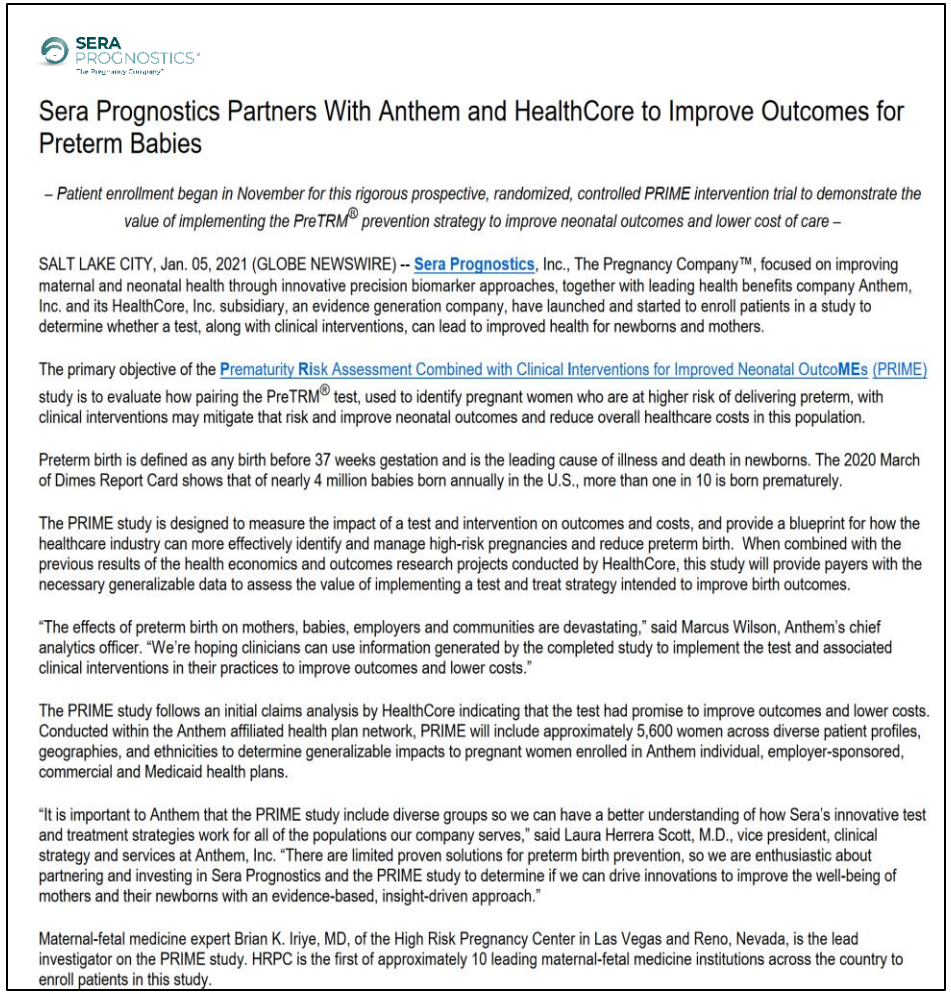
Elevance Health (formerly Anthem) and Sera Collaborate to Improve Maternal and Neonatal Health



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Sera Prognostics Partners With Anthem and HealthCore to Improve Outcomes for Preterm Babies

– Patient enrollment began in November for this rigorous prospective, randomized, controlled PRIME intervention trial to demonstrate the value of implementing the PreTRM® prevention strategy to improve neonatal outcomes and lower cost of care –

SALT LAKE CITY, Jan. 05, 2021 (GLOBE NEWSWIRE) -- **Sera Prognostics**, Inc., The Pregnancy Company™, focused on improving maternal and neonatal health through innovative precision biomarker approaches, together with leading health benefits company Anthem, Inc. and its HealthCore, Inc. subsidiary, an evidence generation company, have launched and started to enroll patients in a study to determine whether a test, along with clinical interventions, can lead to improved health for newborns and mothers.

The primary objective of the **P**rematurity **R**isk Assessment Combined with Clinical **I**nterventions for Improved Neonatal Outco**ME**s (PRIME) study is to evaluate how pairing the PreTRM® test, used to identify pregnant women who are at higher risk of delivering preterm, with clinical interventions may mitigate that risk and improve neonatal outcomes and reduce overall healthcare costs in this population.

Preterm birth is defined as any birth before 37 weeks gestation and is the leading cause of illness and death in newborns. The 2020 March of Dimes Report Card shows that of nearly 4 million babies born annually in the U.S., more than one in 10 is born prematurely.

The PRIME study is designed to measure the impact of a test and intervention on outcomes and costs, and provide a blueprint for how the healthcare industry can more effectively identify and manage high-risk pregnancies and reduce preterm birth. When combined with the previous results of the health economics and outcomes research projects conducted by HealthCore, this study will provide payers with the necessary generalizable data to assess the value of implementing a test and treat strategy intended to improve birth outcomes.

"The effects of preterm birth on mothers, babies, employers and communities are devastating," said Marcus Wilson, Anthem's chief analytics officer. "We're hoping clinicians can use information generated by the completed study to implement the test and associated clinical interventions in their practices to improve outcomes and lower costs."

The PRIME study follows an initial claims analysis by HealthCore indicating that the test had promise to improve outcomes and lower costs. Conducted within the Anthem affiliated health plan network, PRIME will include approximately 5,600 women across diverse patient profiles, geographies, and ethnicities to determine generalizable impacts to pregnant women enrolled in Anthem individual, employer-sponsored, commercial and Medicaid health plans.

"It is important to Anthem that the PRIME study include diverse groups so we can have a better understanding of how Sera's innovative test and treatment strategies work for all of the populations our company serves," said Laura Herrera Scott, M.D., vice president, clinical strategy and services at Anthem, Inc. "There are limited proven solutions for preterm birth prevention, so we are enthusiastic about partnering and investing in Sera Prognostics and the PRIME study to determine if we can drive innovations to improve the well-being of mothers and their newborns with an evidence-based, insight-driven approach."

Maternal-fetal medicine expert Brian K. Iriye, MD, of the High Risk Pregnancy Center in Las Vegas and Reno, Nevada, is the lead investigator on the PRIME study. HRPC is the first of approximately 10 leading maternal-fetal medicine institutions across the country to enroll patients in this study.

PRIME Study: Prematurity Risk Assessment Combined with Clinical Interventions for Improved Neonatal OutcoMEs

- Collaboration with Elevance based on health economic analysis from HealthCore
- Multicenter prospective randomized controlled study within Elevance network
- Up to 6,500 participants in approx. 15 U.S. sites
- Evaluates benefit of PreTRM identification of higher risk pregnancies coupled with proactive interventions
- Primary outcomes are hospital length of stay and neonatal morbidity / mortality
- Builds data that can be a template for future clinical use of PreTRM

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Published Elevance (formerly Anthem) Cost-Effectiveness Model*

Anthem Claims Data

- Analysis of >40,000 mothers and babies within commercially insured Elevance membership
  - Evaluated screening with PreTRM along with proactive interventions given to PreTRM-higher risk patients vs. standard care
  - Demonstrated robust clinical and economic impacts of the PreTRM test-and-treat strategy

Results(1)

- 20% reduction in PTB
- $1,608 gross savings, excluding a $745 PreTRM list price per pregnant woman (amortized over all pregnancies including non-tested)
- 10% reduction in neonatal intensive care admissions
- 7% reduction in overall hospital length-of-stay
- 33% reduction in births <32 weeks
- The test-and-treat strategy is dominant with respect to cost savings across all conservative probabilistic sensitivity analyses and scenarios

* Grabner M, *et al.* Cost-effectiveness of a proteomic pest for preterm birth prediction; *ClinicoEconomics and Outcomes Research* 2021:13 809–820

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Near-term Execution

Accelerate PreTRM Adoption and Revenue

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Distinct Levers to Near-Term Revenue

Reengaging **institutions** with the data

- PREVENT Sub-analysis
- AVERT PRETERM TRIAL
- PRIME
- Vietnam Study
- RWEs

Piloting a **care coordination offering**

Launching **real-world evidence** studies illustrating the value of PreTRM

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Adding outcome evidence to our data story

A strong foundation of evidence

CLINICAL STUDIES	ANALYTICAL VALIDATION	CLINICAL VALIDATION	CLINICAL UTILITY	ECONOMIC UTILITY
CLINICAL MASS SPECTROMETRY | Bradford et al., 2017 *Achieved robust analytical validation of protein biomarkers for risk of spontaneous preterm birth*	✓			
PAPR | Saade et al., 2016 *AJOG editor's choice establishing PreTRM® analytical validation*		✓		
ACCORDANT & ACCORDANT THRESHOLD | Burchard et al., 2021 • *Modeled clinical and economic benefits of the PreTRM® test and treat strategy illustrated amongst diverse racial and ethnic backgrounds* • *Validated PreTRM® threshold for clinical decision-making for risk of spontaneous preterm birth (sPTB)*		✓ ✓		
AJP REPORTS | Caughey et al., 2016 *Empirical data demonstrating the clinical and cost impact of prognostic test for early detection of preterm birth*			✓	✓

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Building on the foundation with new clinical utility evidence

CLINICAL STUDIES	ANALYTICAL VALIDATION	CLINICAL VALIDATION	CLINICAL UTILITY	ECONOMIC UTILITY
COST-EFFECTIVENESS OF A PROTEOMIC TEST FOR PRETERM BIRTH PREDICTION | Grabner et al., 2021 *Showed both improved neonatal outcomes and reduced immediate and long-term treatment costs associated with premature birth, when compared to routine care*			✓	✓
PREVENT | Branch et al., 2021 *Study demonstrates positive impact of the company's PreTRM® test and treat strategy on improving neonatal healthcare*			✓	
ACCORDANT CU (TREETOP) | Burchard et al., 2022 *Combines real-world observational data with simulation to project significant potential improvements in neonatal outcomes among racially and ethnically diverse populations*			✓	✓
PREDICTION AND PREVENTION OF PTB | Combs et al., 2023 *Study concludes that screening with the PreTRM Test followed by care management intervention and LDA prolonged pregnancy and reduced adverse outcomes*			✓	
AVERT | Hoffman et al., 2023 *PreTRM® test-and-treat strategy demonstrates statistically and clinically significant improvement in neonatal health outcomes and hospital length-of-stay*			✓	
PRIME | Iriye et al., ongoing *Further investigates the value of implementing the PreTRM® test-and-treat strategy to reduce both adverse singleton pregnancy outcomes and overall healthcare costs*			✓	✓

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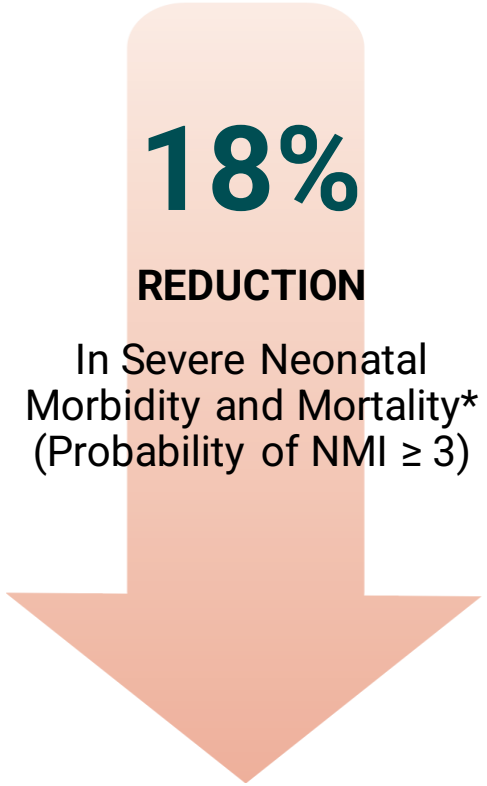
AVERT PRETERM TRIAL

Severe morbidity and mortality rates were significantly reduced

NMI scores were significantly reduced in the prospective arm vs the historical arm

(OR 0.81; 95% CI 0.67-0.98; *P*=0.03)



***Severe neonatal morbidity and mortality are defined as Neonatal Composite Morbidity & Mortality Index (NMI) ≥3**

- 1-4 score given (4 = infant mortality).
- The score increases by 1 point for each additional diagnosis of:
  - Respiratory distress syndrome
  - Bronchopulmonary dysplasia
  - Intraventricular hemorrhage grade III or IV
  - All stages of necrotizing enterocolitis
  - Periventricular leukomalacia
  - Proven severe sepsis
- The scale uses NICU stays to determine index scores if the length of stay gives a higher score than concomitant diagnoses: 1-4 days give a score of 1, 5-20 days a score of 2 and >20 days a score of 3.1

NMI = Neonatal Composite Morbidity & Mortality Index

Reference: Matthew K. Hoffman, Carrie Kitto, Zugui Zhang, et al. Neonatal outcomes after proteomic biomarker-guided intervention: the AVERT PRETERM TRIAL. medRxiv 2023.09.13.23295503; doi: https://doi.org/10.1101/2023.09.13.23295503

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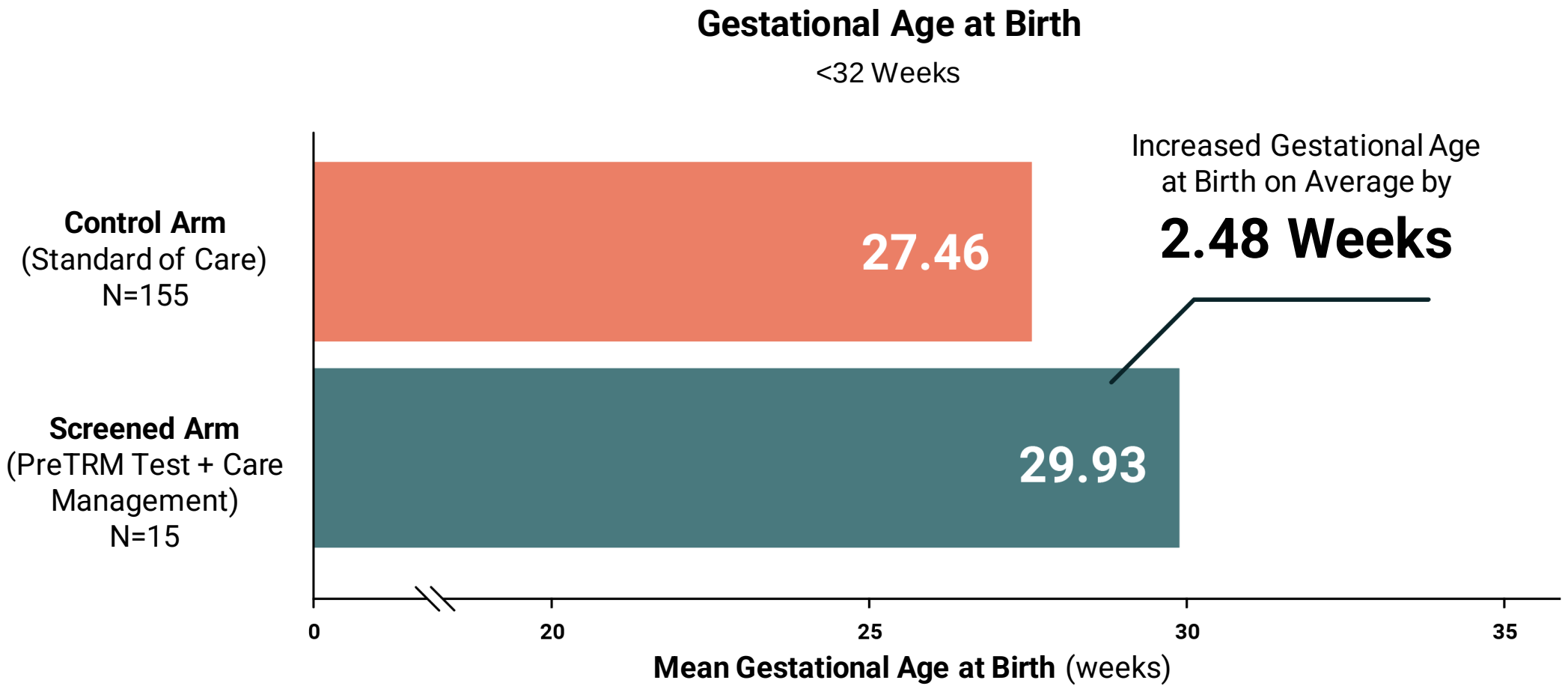
Gestational age at birth was increased for those at risk of earliest delivery



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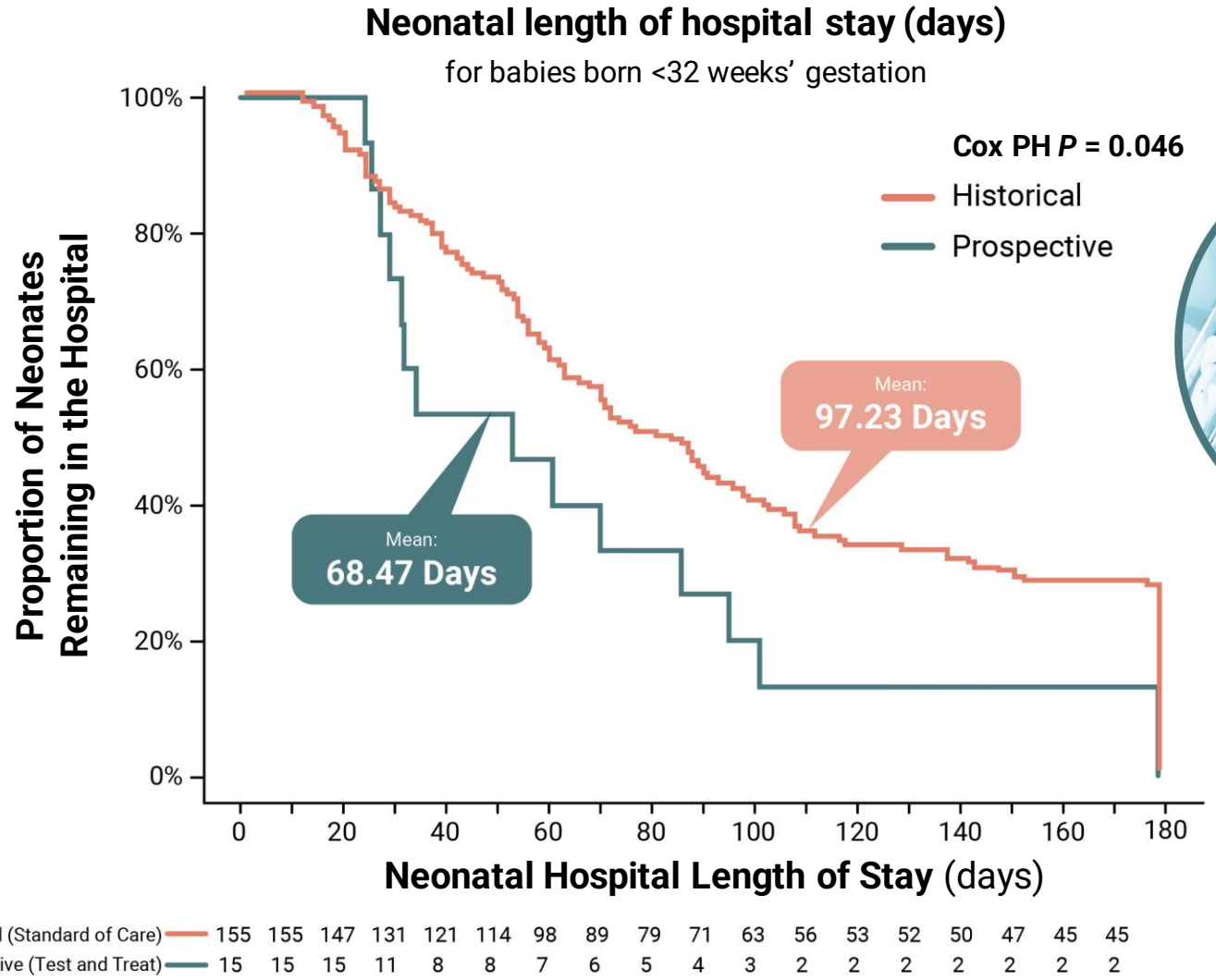
Time spent in the hospital reduced for those at risk of earliest delivery



28 Day

Reduction in neonatal length of hospital stay for patients born before 32 weeks' gestation

Reference: Matthew K. Hoffman, Carrie Kitto, Zugui Zhang, et al. Neonatal outcomes after proteomic biomarker-guided intervention: the AVERT PRETERM TRIAL. medRxiv 2023.09.13.23295503; doi: https://doi.org/10.1101/2023.09.13.23295503

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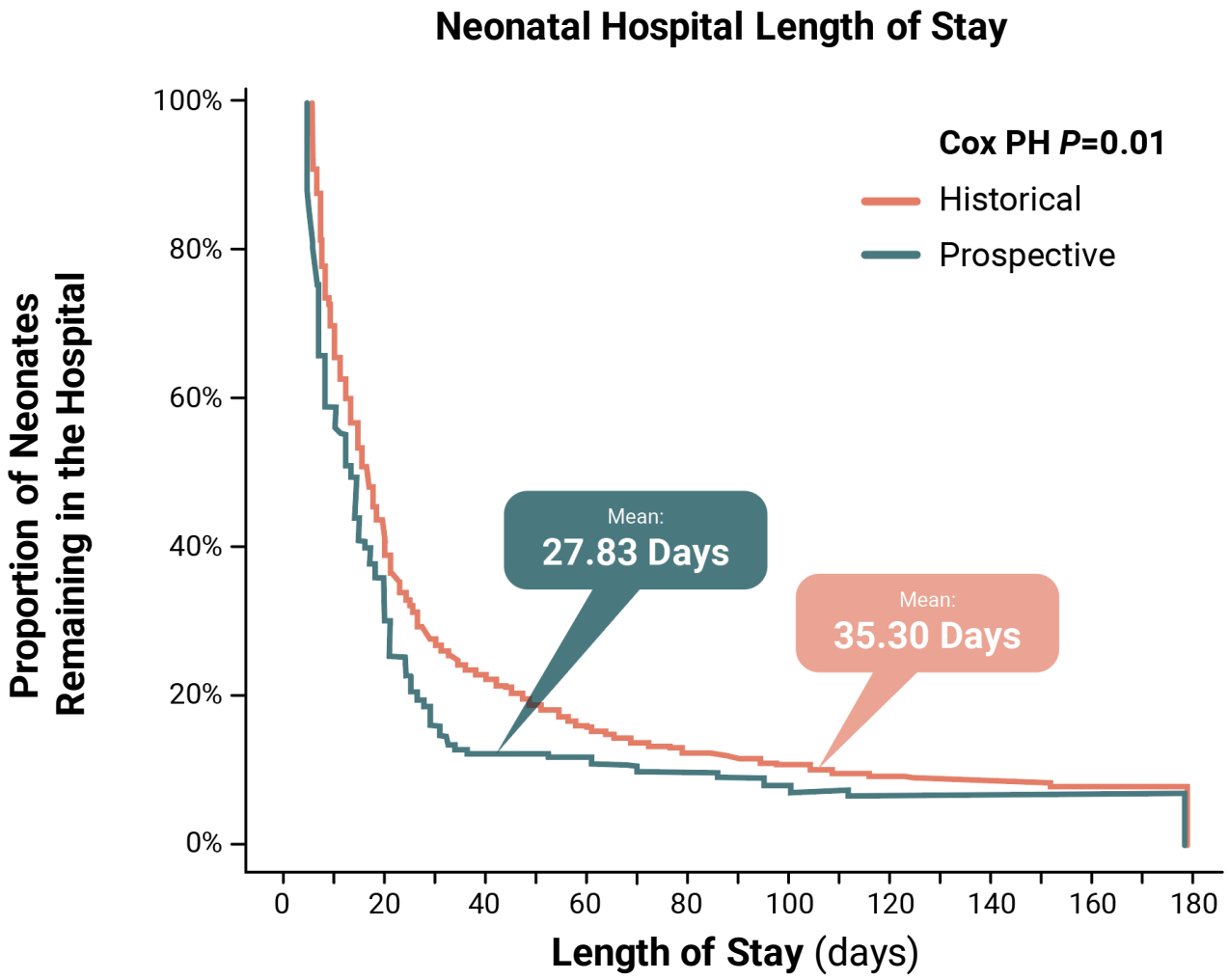
Reduction in the time a baby stays in the hospital



7 Day

Reduction in neonatal hospital length of stay

Reference: Matthew K. Hoffman, Carrie Kitto, Zugui Zhang, et al. Neonatal outcomes after proteomic biomarker-guided intervention: the AVERT PRETERM TRIAL. medRxiv 2023.09.13.23295503; doi: https://doi.org/10.1101/2023.09.13.23295503

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PREVENT-PTB Study – Sub-analysis

Impacts of care management for patients screened with the PreTRM® Test was demonstrated in a recent publication

Secondary analysis of the PREVENT-PTB randomized trial comparing screening with the PreTRM test versus no screening

- Assessment of gestational age shift in PREVENT-PTB study
- Assessment of the impact of care management on Neonatal Intensive Care Unit (NICU) length of stay
- Analyzed the subgroup of patients with the lowest decile of each outcome to avoid diluting the outcome by the majority who delivered at term

Risk-reduction protocol for patients screened at higher risk with the PreTRM® Test

1. **Care Management**
   - Weekly calls or app-based platform
   - Focused patient education
   - Directed lifestyle modification
   - Premature birth prevention visit (OB and/or MFM)
     - Scheduled at <24 weeks, and 26-30 weeks gestational age
     - The second preterm birth prevention visit included an ultrasound measurement of cervical length
     - Providers to emphasize vigilance and prompt action for early signs and symptoms of premature labor

2. **Low-Dose Aspirin** (LDA; 81 mg daily)

Journal of Clinical Medicine
MDPI
Article

Prediction and Prevention of Preterm Birth: Secondary Analysis of a Randomized Intervention Trial

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Abstract: Our objective was to evaluate whether pregnancy is prolonged by the use of a proteomics-based maternal serum screening test followed by treatment interventions. This is a secondary analysis of the PREVENT-PTB randomized trial comparing screening with the PreTRM test versus no screening. The primary trial analysis found no significant between-group difference in the preterm birth rate. Rather than considering a dichotomous outcome (preterm versus term), we treated gestational age at birth as a continuous variable using survival analysis. We also evaluated between-group difference in NICU length of stay and duration of respiratory support. Results indicated that pregnancy was significantly prolonged in subjects screened with the PreTRM test compared to controls (adjusted hazard ratio 0.53, 95% confidence interval 0.36–0.78, $p < 0.01$). Newborns of screened subjects had significantly shorter NICU stays but no significant decrease in duration of respiratory support. In the PreTRM screen-positive group, interventions that were associated with pregnancy prolongation included care management and low-dose aspirin but not 17-hydroxyprogesterone caproate. We conclude that screening with the PreTRM test followed by interventions for screen-positive pregnancies may prolong pregnancy and reduce NICU LOS, but these observations need to be confirmed by additional research.

Keywords: 17-hydroxyprogesterone caproate; care management; length of stay; low-dose aspirin; neonatal respiratory morbidity; preterm birth; proteomic biomarkers; risk assessment

check for updates

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1. Introduction

Preterm birth (PTB) complicates over 10% of pregnancies in the USA [1] and is a leading cause of neonatal morbidity and mortality [2]. A potential strategy to reduce the rate of PTB is to identify patients at increased risk and to target specific interventions to those patients. As examples, vaginal progesterone reduces early PTB in patients with mid-trimester sonographic short cervix [3,4], and low-dose aspirin reduces preterm preeclampsia in patients with preeclampsia risk factors [5] and reduces spontaneous PTB in patients with prior PTB [6]. These interventions have been in widespread use for a decade, but the overall rate of PTB has not decreased, in part because only a small percentage of patients are identified as candidates for treatment.

A newer method of identifying patients at risk for PTB is the PreTRM™ test (Sera Prognostics Inc., Salt Lake City, UT, USA), developed through analysis of the maternal serum proteome. This test designates a patient at increased risk if a second-trimester blood sample has an elevated ratio of insulin-like growth factor binding protein-4 (IGFBP4) to sex hormone binding globulin (SHBG) [7]. The test is a significant predictor of both indicated and spontaneous PTB < 32 weeks, neonatal morbidity, and neonatal length of stay (LOS) [8,9], and has been suggested to be both cost-effective and cost-saving [10,11].

Prediction of PTB is of clinical value only if it leads to interventions that reduce the risk of PTB or its complications. For patients identified by the PreTRM test as having

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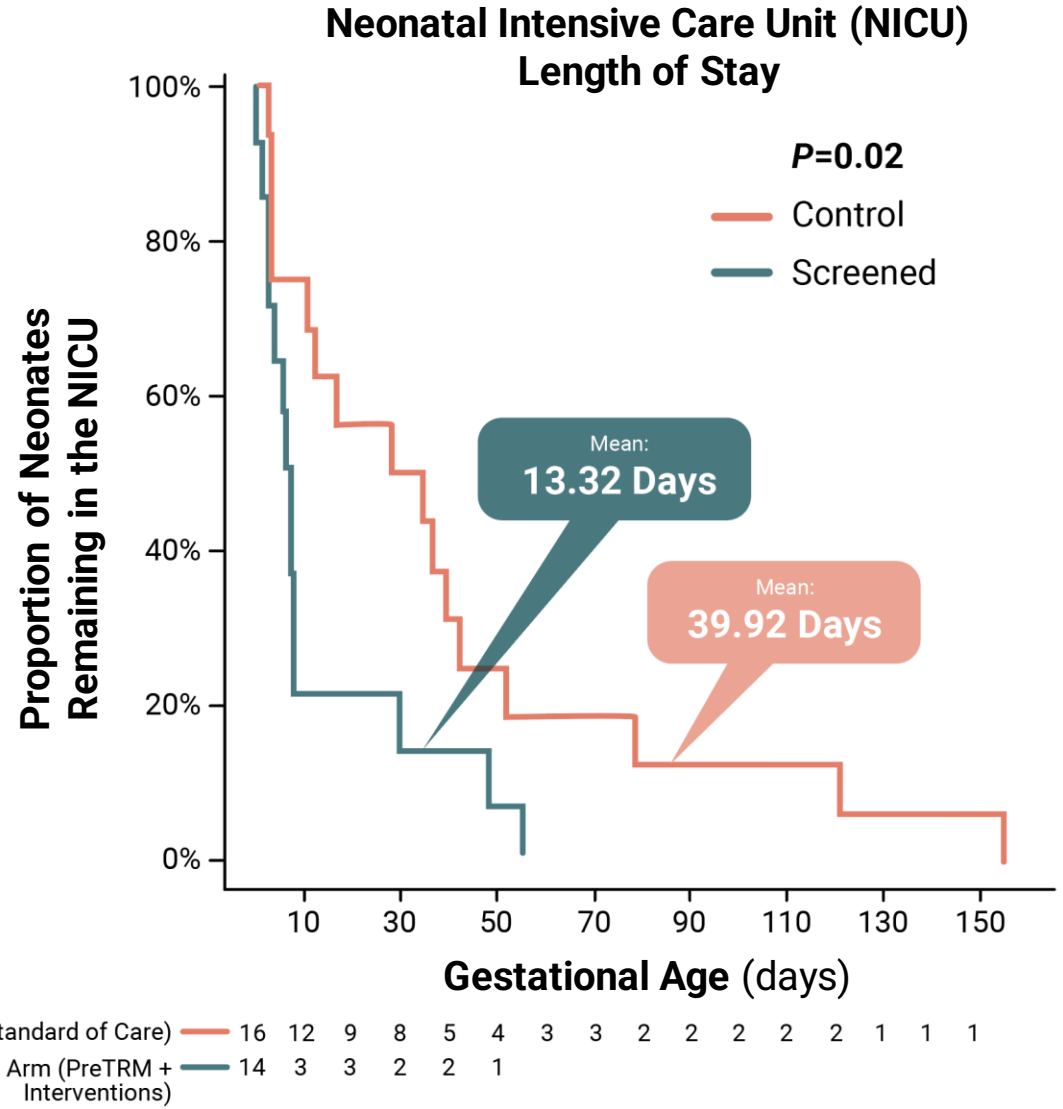
Care management for patients screened with the PreTRM® Test demonstrated significant reductions in NICU length of stay for those at the greatest risk for preterm birth



26.6 Day

Reduction in neonatal Intensive Care Unit (NICU) length of stay

Subgroup defined by the earliest decile of each group, i.e., the 10% of subjects with the lowest Ga_{birth} From the PREVENT-PTB Study.

Reference: C. Andrew Combs, John A.F. Zupancic, Mike Walker, Jing Shi. Prediction and Prevention of Preterm Birth: Secondary Analysis of a Randomized Intervention Trial. J Clin Med 2023;12(17). DOI: 10.3390/jcm12175459.

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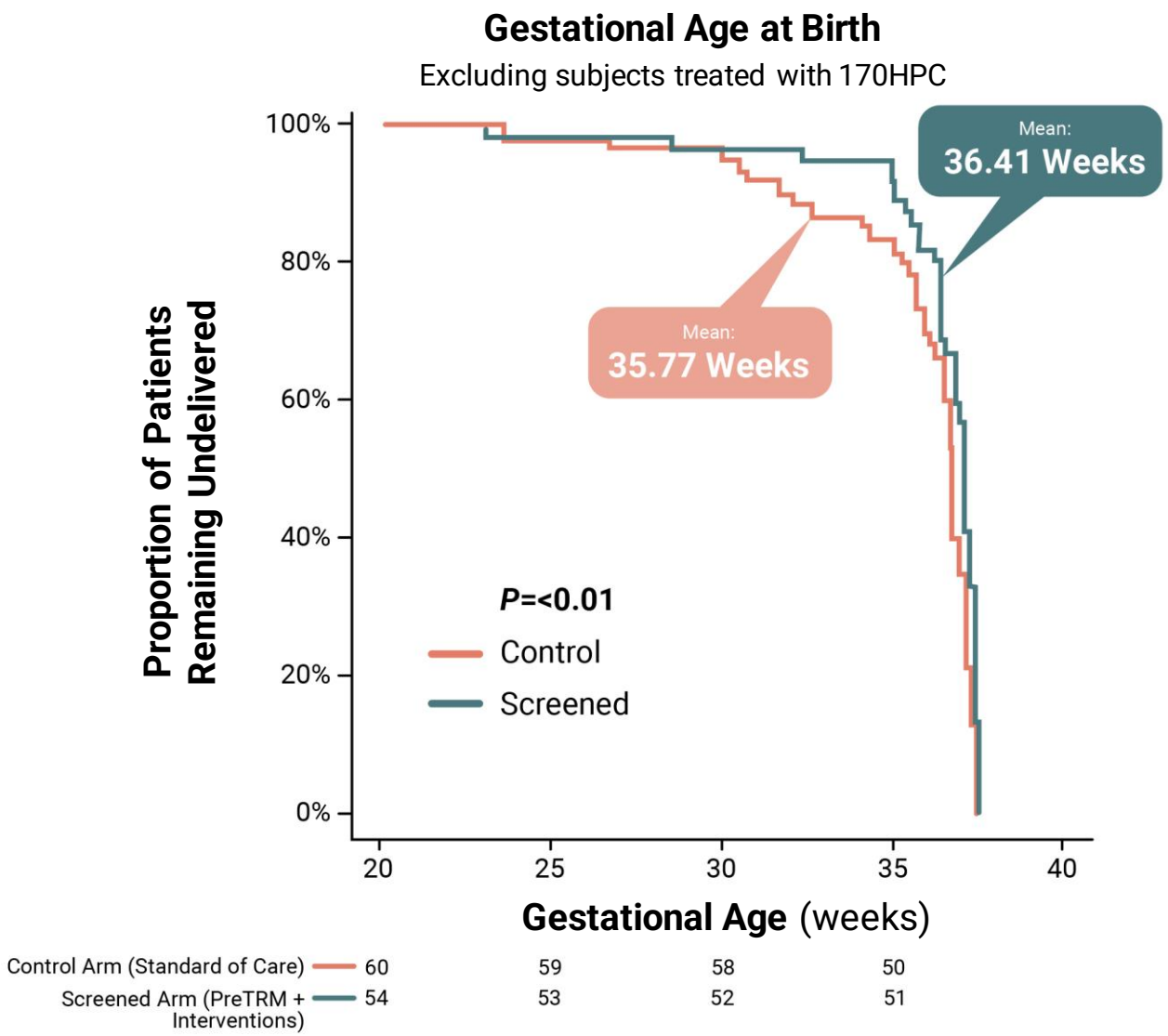
Care management for patients screened with the PreTRM® Test demonstrated significant improvements gestational age at birth for those at the greatest risk for preterm birth



67%

Reduction in babies born before 35 weeks

Subgroup defined by the earliest decile of each group, i.e., the 10% of subjects with the lowest Ga_{birth} From the PREVENT-PTB Study.

Reference: C. Andrew Combs, John A.F. Zupancic, Mike Walker, Jing Shi. Prediction and Prevention of Preterm Birth: Secondary Analysis of a Randomized Intervention Trial. J Clin Med 2023;12(17). DOI: 10.3390/jcm12175459.

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Care Coordination Pilot

Care Coordination

Piloting offering to support higher risk patients by coordinating with physician's care

- Addresses a hurdle to test adoption by increasing the comfort level of physicians
- May help establish care guidelines as soon as possible

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Real-world Evidence Development

Real-World Evidence Implementation Programs

Systems participating in RWEs with influential KOLs may convert to ongoing customers upon completion of a successful pilot – may not need to wait for PRIME or Guidelines and may become advocates for payer coverage

MFM CHAMPION | KEY OPINION LEADER

Objective:	Expand PreTRM clinical utility data and replicate RCT evidence in the real world
Potential Numbers:	MFM driven top-down strategy with implementations yielding 1500-2000 units per site
Planned Timing:	Launch multiple programs in the coming year
Metrics:	Process metrics (testing & intervention bundles with compliance rates) and outcome metrics
Publication:	Plan to publish real-world outcomes

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Medium-term Vision

Building a multi-product platform

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Product Portfolio: Time To Birth (TTB)

Intended Use	To provide a more accurate estimate of when a mother's baby will be delivered for the purposes of planning maternity leave, travel, visitors, etc. This is not a clinical test and should not be used to plan interventions. Only reports results for term pregnancies
Value Proposition	For a significant population of Moms-to-be, TTB can offer planning, preparations, and expectations filled with hope and anticipation rather than anxiety and uncertainty by avoiding unwelcome surprises
Market Assessment	Two independent market surveys of consumers show a strong demand for the TTB test
Validation Status	Verification and validation done on two cohorts (PAPR, TREETOP)
Performance	More accurate than the traditionally estimated due date.
Commercial Model	Consumer pay, direct-to-consumer and business-to-business arrangements

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Product Portfolio: Pregnancy Risk Prediction Panel

Intended Use	To provide a woman and her physician a risk assessment for multiple pregnancy complications assessing both High Risk (rule-in) and Low Risk (rule-out) results in a single test
Value Proposition	**For OB/GYNs** managing high patient volume and focused on preventive care; **For Moms** seeking to understand the individual risks to their pregnancy journey; **For Systems** seeking to triage pregnancies to the appropriate level of care
Market Assessment	Market survey of consumers show a strong demand for predictors of pregnancy complications.
Validation Status	Clinical validation in 2024
Performance	Prototypes have shown very high positive and negative predictive value
Commercial Model	Physician ordered, payer billed

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Long-term Vision

A Bigger Picture

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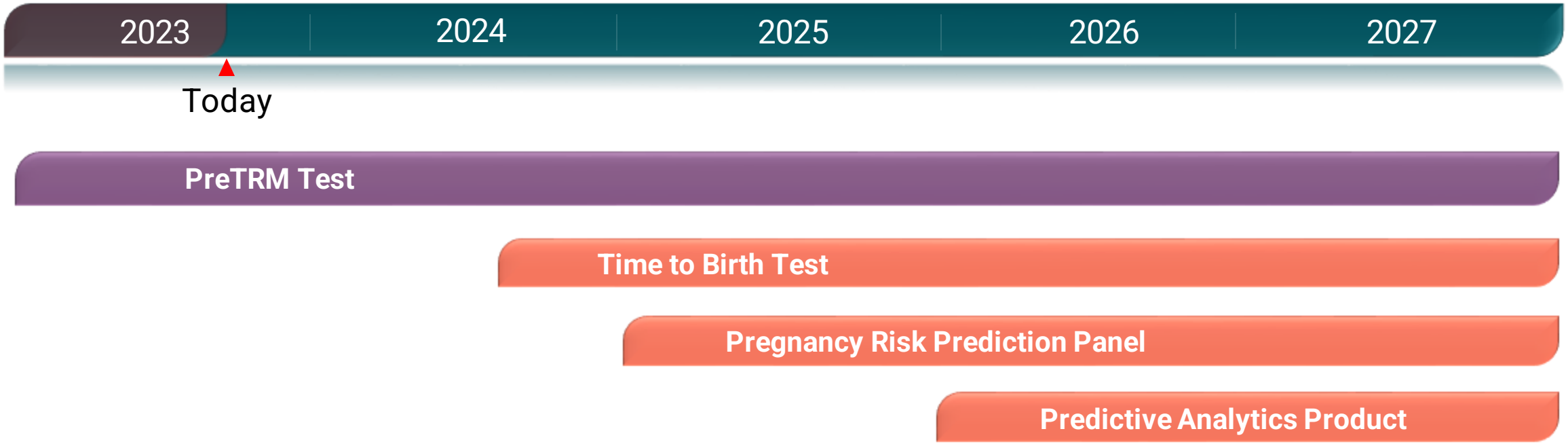
Sera is more than just PreTRM



*All dates estimated

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Data As An Asset

As many as 30% of pregnancies are affected by various complications (i.e., a high-risk pregnancy), including: preterm birth, preeclampsia, fetal growth restriction, stillbirth, hypertension of pregnancy, gestational diabetes, and others

The economic consequences of preterm birth alone are estimated to be approximately $25 billion annually

We see a compelling opportunity to partner on the use of proteomics and predictive analytics using our high-value data set across nearly 20,000 pregnancies

We have the capability to integrate our pregnancy complication datasets with clinical and demographic data within our proprietary pregnancy assays

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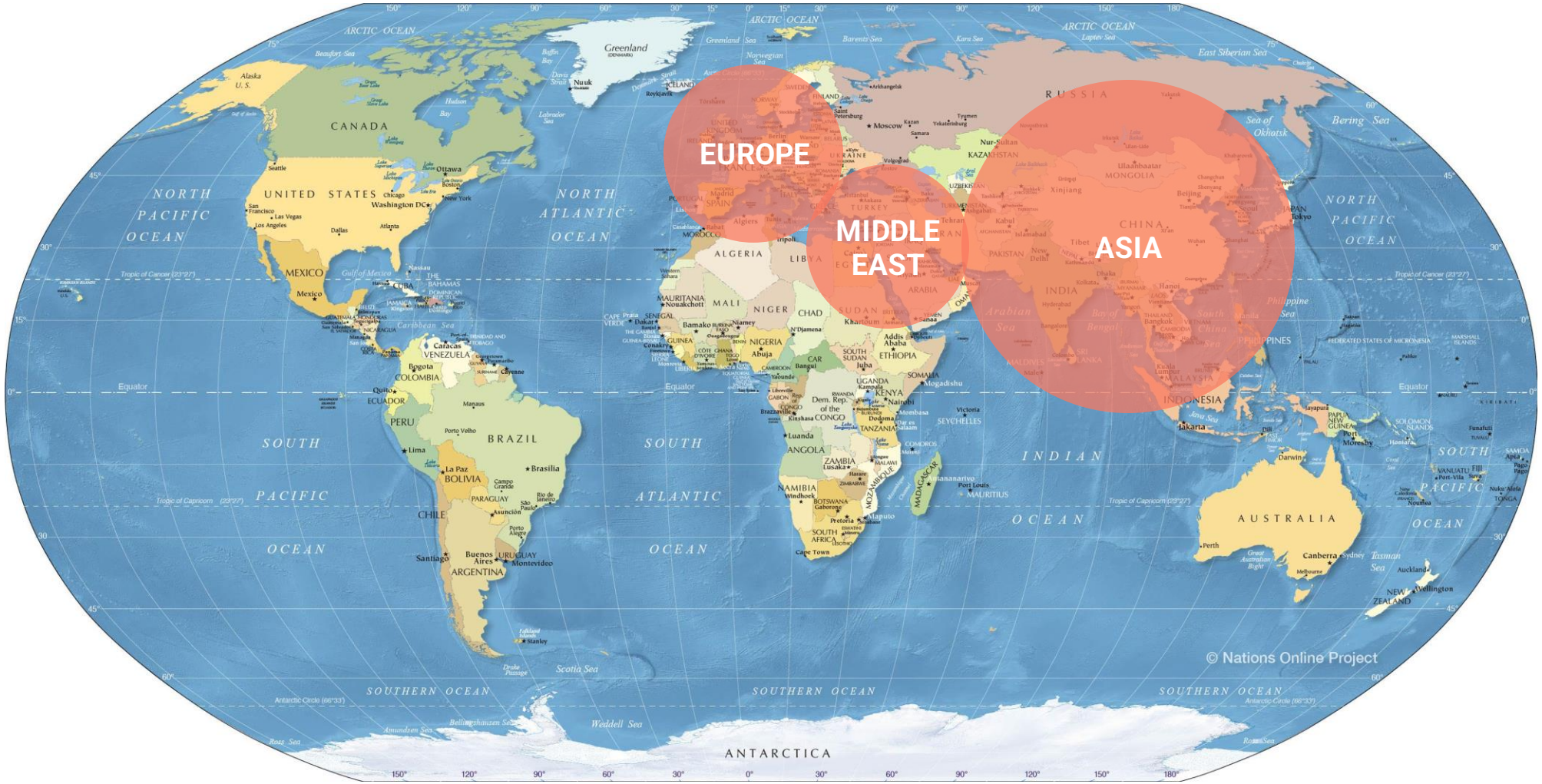
International Expansion

Currently exploring opportunities with partners in:



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Key Upcoming Events

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Upcoming Events - next 6 months

Date	Event
September 26, 2023	Cantor Global Healthcare Conference
November 8, 2023	Q3 Earnings Call (expected date)
March 20, 2024	FY 2023 Earnings Call (expected date)

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Questions?

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