



TOO MANY TRENDS IN THE WRONG DIRECTION

PRETERM BIRTH RATES have risen for 3 consecutive years

INFANT MORTALITY RATES unacceptably high in many communities

OPIOID EXPOSURE rising among newborns

STARK DISPARITIES in maternal-child outcomes among African American women and babies



THE MATERNAL **HEALTH CRISIS**

OVER 700 WOMEN die in the US each year from complications related to childbirth.

2 WOMEN will die from childbirth in the US today. And every day.

50,000 WOMEN in the USsuffer lifethreatening complications every year during pregnancy.

WOMEN OF COLOR share over 3X more likely than white women to die fro pregnancy-related causes.



#BlanketChange



CT 17P/LOW DOSE ASPIRIN CPQC WORKGROUP

- Chris Nold, MD Hartford Health Care (HHC)
- ➢ Beth Deckers, MD − HHC
- Erica Hammer, MD HHC
- > Veronica Pimentel, MD -St. Francis
- Veronica Finiteriter, MD St. Francis
 Mary Beth Janicki, MD St. Francis
 Shefali Pathy, MD Yale New Haven Health (YNHH)
- > Doreen Picagli, DNP, APRN Yale Women's Health Center
- > Jordana Frost, DrPH, MPH March of Dimes
- Chris Morosky, MD UCONN Health & Co-Chair of Connecticut Perinatal Quality Collaborative (CPQC)*

 * CPQC is staffed and administered by Connecticut Hospital Association (CHA)

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Connecticut Perinatal Quality Collaborative

An initiative of the Connecticut Hospital Association,

focused on: · Promoting high quality maternal and newborn care

- Cooperation between hospitals and providers
- · Supporting evidence-based practices
- · Sharing educational and training resources





Healthy Mons and Babie

CT ACTIVITIES THUS FAR

- 2015 March of Dimes issued Prematurity Prevention Intervention Roadmap, which included 17P and Low Dose Aspirin
- Spring 2017 Developed workgroup as part of CPQC
- >Fall 2017 Collected provider survey responses
- Jan. 2018 Hosted provider educational conference through CPQC
- Nov. 2018 Participated in regional convener meeting (CT, MA, RI, NY) hosted by March of Dimes

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LOW DOSE ASPIRIN FOR PREVENTION OF PREECLAMPSIA AND WOMEN'S CARDIAC HEALTH REGIONAL CONVENER

NOVEMBER 27TH 2018 BURLINGTON, MA

CT, MA, NY, RI

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Background

- As maternal age advances, preexisting heart conditions more likely
- Rise in multifetal pregnancies
- Increase in obesity and diabetes in population increase risk of CV complications during pregnancy
- Patients with congenital heart disease are surviving to reproductive age
- Childhood cancer survivors with cardiotoxic effects from therapy









Mo	dified WHO C	Classification of	of Pregnancy F	Risk	
	mWHO 1	mWHO II	mWHO II-III	mWHO III	mWHO IV
Diagnosis	Mid PS smal PDA MVP repaired ASD/VSD/PDA Edopy	ASDAYSD Repaired ToF Turner with normal aorta Most arrhythmias	Mid LV EF impairment HCM Native or tissue valve disease not WHO 1 or V Man without Avian without Avian without Avian 4 fain BAV AVSD Repaired coarctation	Noderate LV systelic dysfunction Prior PPCM with normal LV EF Mechanical valve Fontan circulation Noderate Action distation in Martan or BAV VT Systemic RV Unrepaired cyanotic	PAH LV EF × 30% Prior PPCM with impairment Severe MS Severe symptomatic AS Systemic RV with moderate ror more impairment Vascular EDS Severe coarctation Fontan with any complication
Mortality Risk	None	Small increase	Intermediate	Significant increased	Extremely high
Morbidity Risk	No/mild	Moderate	Moderate to severe	Severe	Severe
Maternal cardiac event rate	2.5 - 5%	5.7-10.5%	10-19%	19-27%	40-100%
Care During Pregnancy	Local	Local	Referral hospital	Expert center	Expert center
1Eollowup	Once or twice	Once per trimester	Bimonthly	Monthly or bimonthly	Monthly

Mode of Delivery

- Vaginal delivery remains optimal method of delivery
- Cesarian section increases risk of maternal infection, has greater hemodynamic shifts and blood loss, risk of surgical injury and greater risk for thrombotic events
- Option for assisted 2nd stage
- No consensus absolute contra indications to vaginal delivery, in a few unique situations, can be considered first
 - preterm labor in the presence of full oral anticoagulation
 - Marfans with aorta over 45 mm
 - Acute or chronic aortic dissection

- Intractable heart failure

MASSACHUSETTS GENERAL HOSPITAL CORRIGAN MINEH HEART CENTER

Multidisciplinary Care

- Managing pregnant women with heart disease implicates several stakeholders, all with different perspectives but COMMON goals
- Team should include Cardiologist with expertise, OB anesthesia, Maternal-Fetal Medicine and Nursing
- Meet regularly to discuss, anticipate and plan for any potential difficulties

MASSACHUSETTS GENERAL HOSPITAL CORRIGAN MINEH





Hypertensive Disorders of Pregnancy

- Preeclampsia (5% incidence) can lead to significant pregnancy complications:
 IUGR Preterm birth Hemorrhage Placental Ruptured Liver Eclampsia Abruption Renal failure
- Preeclampsia responsible for 50,000 to 60,000 deaths worldwide and there are many near misses that result in significant health risk and care cost

GENERAL HOSPI

CORRIGAN MINI HEART CENTER

- Preeclampsia is a risk factor for future cardiovascular and neurological disease
- Etiology remains unclear









Who s	hould receive low dose a	spirin?
Risk Level	Risk Factors	Recommendation
High	History of Preeclampsia	Low dose aspirin if any one of these risk factors
	Multifetal gestation	
	Chronic hypertension	
	Diabetes	
	Renal disease	
	Autoimmune disease	
Moderate	Nulliparity	Low dose aspirin if "several" of these risk factors
	Obesity	
	Family history (mother, sister)	
	Socio economic factors	
	Age ≥ 35 Personal history(low birthweight or SGA, prior adverse pregnancy outcome, interpregnancy interval > 10 years	
Ψow	Previous uncomplicated full term delivery	Do not recommend low dose aspirin



Epidemiology

National

- Preeclampsia in 2-5% of all pregnancies in the U.S.
- Leading cause of maternal morbidity and up to 19% maternal mortality
- Rates of hypertension in pregnancy are increasing
- Approximately 30% of pregnancies complicated by preeclampsia/ Gestational HTN and/or IUGR

BMC

 Approximately 40% of preterm births are due to preeclampsia/ Gestational HTN and/or IUGR

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BMC

 Approximately 40% of preterm births are due to preeclampsia Gestational HTN IUGR











































Two Pharmacist Surveys

►Survey of Pharmacists at BMC

►(n=22)

•Staff working at the outpatient pharmacies in the hospital

 The survey, conducted via email using SurveyMonkey, was sent to 26 staff and 22 responded, which included a mix of both pharmacists and pharmacy technicians. MA Pharmacists Needs Assessment Survey
 Sent out to over 4,000 pharmacists

in New England, and 50 responded The majority of respondents reported working in a hospital inpatient or outpatient pharmacy (48.9%), 22.4% in a community pharmacy, 14.2% in ambulatory care, and 12.2% in Other.

•Most pharmacists had been in practice for 21+ years (48.9%), between 11 and 20 years (22.4%), and between 0 and 5 years (20.4%).





























































Strategy for Postpartum Hypertension

- During the postpartum period, there are marked cardiovascular and hemodynamic shifts
- There are few standardized approaches for identification and management of women most at risk for postpartum hypertensive complications leading to variability in practice
- Opportunities for inequities in care
 - practitioners vulnerable to management errors •
 - . women at risk of harm

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Strategy for Postpartum Hypertension

- ACOG provides detailed protocols for management of severe and acute hypertension during pregnancy
- There are no specific guidelines for the initiation of antihypertensive medications in the postpartum period for women with blood pressure elevations that are not severe.
- MGH Plan: Electronically-Integrated Management Strategy in women with hypertension or preeclampsia post partum

need	clampsia?		
	Research	www.AJOG.org	
	The maternal health clinic: an initiative for cardiovascular risk identification in women with pregnancy-related complications Mutic Couloms, INSI: biologic Michigh Riddle Riddy, RY, BION Cline Ryage Jeer Chi, RM Generry X Bailty, RM Phil		
	SACCINE: Bioms the design costs: costson proyoursy complications have a praint character of developing caleshoncolar deases (2K3) list in this However, most heath care predetes to no provide propriation: candidancellar in its countility of bible up. The Maternal Health Chine was established to address this gain care. It appears allow care and the cost of CAD to program Margine works, text, was commarise multi beam the first 17 montes of completed circle value.	NSRUE: Complications most commonly leading to referral were genetized diabetis or impaired glucose telescose (227-18), pre- clamação 257-30, pre- entingação 257-30, pre- clamação 257-30, pre- clamação 257-30, pre- tentes para form ter Pecicianpas illes interrigos fram study (n- tente) pre- tente pre- tentes a telescose a sector a sector a sector a sec- tor diabetes arcitos que o finar diabetes que telescose ($P < 4000$), furtemento, 174-6 d'he clinic analysis guas had mediades protonos queraversite AT-576 hadreng votes (P < 400).	
	STUDY DESIGN: Patients experiencing at least one relevant compli- cation in their index pregnancy were referred to the Maternal Health Clinic through standard polypartum order sheets. Patients underwent a complete accessment including screening history, physical exami-	CONCLUSION: This study demonstrates that the Maternal Health Clinic accurately identifies postpartum patients that have underlying car- diovascular risks which make them susceptible to CMD. The clinic may some as an effective primary prevention stategy.	
	nation, fasting bloodwork, and urinalysis. Lifetime and 30-year CVD risk estimates, along with a metabolic syndrome calculation, were determined for each catient.	Key words: cardiovascular diseases, maternal health clinic, preg- nancy, pregnancy complications, risk factor	

Brigham and Women's Hospital Cardiometabolic Clinic in Maternal Fetal Medicine 2011-present

Ann C. Celi MD, MPH Assistant Professor Harvard Medical School Division of General Medicine and Primary Care, Department of Medicine, Brigham and Women's Hospital

BWH Cardiometabolic Clinic in MFM Thursday mornings 732-4840

Clinical Care for Postpartum women with complex hypertensive pregnancies

- started October 2011
- >600 patients seen and followed

Louise Wilkins-Haug MD, PhD- Maternal Fetal Medicine

Ann Celi MD, MPH – Primary Care Medicine

BWH Cardiometabolic Clinic Design

- Early postpartum hypertension medical management
- Patient and provider education around cardiovascular risk
- Clinical bridge with primary obstetric and medicine providers
- Sustainable clinical model reimbursed by private and public insurances

Innovations

- Blood pressure monitors
- Medical Home and Primary Care
- Breastfeeding education/support: includes compatibility of medications
- Contraception counseling informed by complex pregnancy/delivery and hypertension history
- Resources including housing, WIC, food stamps, summer camp, Globe Santa
- Nutrition to optimize heart healthy lifestyle
- Paternal leave to help care for maternal and infant medical issues
- Maternal leave and transition back to work.
- Community engagement- family, friends, church to provide additional help after complex pregnancy



CT OPPORTUNITIES

- Greater coordination of care throughout the life course, and particularly before, during, and after/between pregnancies
 - >Women's health care providers (gynecology, obstetrics, midwifery)
 - Primary care providers (internal medicine and pediatrics)
 - Family medicine providers
 - EMR changes? Patient
 - advocates/navigators? Special Postpartum Clinics? Digital BP cuffs?
 - ≻Paid family medical leave?

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CT OPPORTUNITIES

➢Patient education

- Acceptability and tailored messaging
- > Patient education handout (MOD→ HH)
- > Patient education video clips (DPH)
- CHNCT perinatal intensive care management program?

Clinical provider education and quality measures

- Traveling grand rounds (CPQC workgroup)
- > Effectiveness, safety, indications, Medicaid OTC coverage
- > Video? Podcast episode? (DPH)
- Uniform screeningOB P4P?

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CT OPPORTUNITIES (CONT'D)

- Pharmacy professional education
 - Professional association conferences & meetings?
 - Partnership with major pharmaceutical companies (CVS, Walgreens, Walmart, RiteAid, etc.)?
- Pharmaceutical labeling >"Prenatal aspirin" (PNA)?



Public health approaches to chronic disease prevention, pre-/interconception health, and pregnancy intentionality

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2018 PREMATURE BIRTH REPORT CAR COUNTIES IN CONNECTICUT					
es with the greatest number of births are graded based on their 2016 preterm birth					
COUNTY	GRADE	PRETERM BIRTH RATE	CHANGE FROM LAST YEAR		
Fairfield	I B	9.2%	Improved		
Hartford		10.5%	Worseped		
Litchfield	Ā	7.8%	Improved		
Middlesex	А	7.5%	Improved		
New Haven	с	9.6%	Worsened		
New London	в	8.3%	Improved		
Grade and Range A	8.1 or less 8 🔜 8.2 - 9.2	C 93-10.3 D 10.4-	11.4 F 📰 11.5 or greater		
	station based on obstatric estimate. h Statistics, 2016 natality data		MARCHOFDIMES.		





