Pre- and Interconception Care

Integration into Primary Care: Principles and Practice

Victoria H. Burslem, MSN, CNM

<table>
<thead>
<tr>
<th>The Why</th>
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<td>• Almost half of all pregnancies are unintended</td>
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<td>• Chronic diseases and adverse health behavior known to affect pregnancy outcomes are prevalent among women of reproductive age (15–44 years).</td>
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<td>• A specific element of interconception care is the identification and reduction of risks indicated by a prior adverse pregnancy outcome.</td>
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<th>Take-home Goals: The why, the what, the how</th>
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<td>• To review why pre- and interconception care should be an integral part of primary care</td>
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<td>• To review medical conditions commonly seen by primary care providers that have an impact on pregnancy, perinatal, and neonatal outcomes</td>
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<td>• To review components of pre-conception assessments, labs, &amp; counseling</td>
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<td>• To review some medications commonly used in primary care in relation to impact on pregnancy</td>
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<th>The U.S. Public Health Service has designated preconception care as a critical component of prenatal care because.....</th>
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<td>• Preconception care seeks to ensure that conditions and behaviors which may pose a risk to mothers and infants are identified and managed.</td>
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<td>• Most organogenesis is complete by day 56 following conception; discontinuing potentially teratogenic medications &amp; starting supplements at the initial prenatal visit is too late.</td>
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Very-low-birthweight (VLBW; <1500 g) delivery accounts for greater than 50% of infant mortality

- Best predictor of whether a woman will have a VLBW delivery is her history of a previous VLBW delivery
- History of prior VLBW delivery gives increased risk of subsequently delivering a stillborn
- Reason for recurrence of VLBW delivery is likely that the woman's pre-existing health status that contributed to first VLBW delivery persists

Continued...

2) Management of chronic disease (if present) through the promotion of self-care and adherence to scheduled appointments that are facilitated by nurse case management;

3) Screening and treatment for nutritional deficiencies;

4) Prevention, screening, and treatment for STIs and reproductive tract infections;

The What

An interconception care plan addresses the following seven areas epidemiologically linked to LBW delivery:

1) Pregnancy intendedness and child-spacing through the provision of health education concerning the importance of achieving at least a 9-month (and preferably an 18-month) interpregnancy interval, assisting the woman to articulate her own reproductive plan and select a corresponding contraceptive method;

Continued...

5) Treatment and referral for substance abuse (if present) including linkage with rehabilitation programs for illicit substance abuse, and support in and linkage with existing programs for tobacco and alcohol abuse;

6) Screening and treatment or support for depression, psychosocial stressors, and domestic violence;

7) Prevention, screening and treatment for periodontal disease.
Developmental origins of adult health and disease

Gestational programming
- Mother’s nutritional, hormonal, and metabolic environment permanently alters organ structure, cellular responses, & gene expression that ultimately affect metabolism and physiology of her offspring
- Effects may be immediate or deferred until later age; teratogenic or long-term sequela

Impact of chronic illness on perinatal and neonatal outcomes
- Chronic health condition increases risk of maternal morbidity 6-fold and maternal mortality 158-fold
- Main causes of indirect obstetric deaths: Asthma, heart disease, Type I diabetes, systemic lupus erythematos (SLE), & other conditions where pregnancy worsens the disease process

Developmental origins of adult health and disease continued...
- Nutrition
  - Supplements
  - Metabolic syndrome, obesity
  - Deficiencies
- U-shaped curve in terms of effect
  - Increased in both LBW & LGA

Other disease processes with significant impact on pregnancy
- Renal disease
- Thyroid disease
- Infectious diseases (e.g., UTI, TB, syphilis, herpes)
- Obesity
- Anemia
- Periodontal disease
- Mental health
Lifestyle

- Occupational hazards
- Smoking
- Alcohol
- Substance abuse

Assess for health status, genetic risks

- Assess and referral for genetic counseling
  - Tay-Sachs & Canavan’s disease
    (especially Jewish & French-Canadian descent)
  - Cystic fibrosis (higher incidence in Caucasian population;
    universal screening now offered)
- CBC, thyroid, HIV, STI testing, hemoglobinopathies, immunity screening

The How

- Assist with child spacing
- Assess for immunity status & update
  - MMR, varicella, Hepatitis A & B, Tdap, HPV
  - Recommendation: wait 3 months before conception after vaccinated
  - OK for pregnancy: Hep A & B, influenza (inactivated), Tdap
  - No teratogenic effects noted if given with undiagnosed pregnancy: MMR, HPV
  - If at risk: toxoplasmosis, CMV

Nutrition

- Supplements
  - Prenatal vitamin (OTC)
  - Folic acid 400 mcg/d; 4 mg/d if has previously affected child x 4 weeks before conception x first 12 weeks of pregnancy
- Protein
- Fish – recommendation regarding quantity related to mercury content
- Vitamins – A & D
- Vegans
### Nutrition

- **Weight gain recommendations**
  - Underweight <18.5  28-40#
  - Normal BMI >18.5-24.9  25-35#
  - Overweight 25-29.9  15-25#
  - Obese all classes  11-20#
  - Possibly no weight gain if morbidly obese
  - Focus on nutrient intake, avoidance of urinary ketones, and appropriate growth

### Hypertension

- **Avoid:** ACE inhibitors, angiotensin II receptor antagonists, beta-blockers (limited data)
- **Recommended:** Labetalol – first choice,
  - Add Nifedipine prn
  - Methyldopa and hydralazine – widely used

### Goal: improved control of chronic illness prior to conception

**Educate regarding -**
- **benefit of good control**
- **potential negative impact of poor control on fetus and pregnancy outcome**

### Asthma

- All medications commonly used in the management of asthma are recommended in pregnancy
- Oral corticosteroids are recommended when indicated for the long-term management of severe asthma or for exacerbations
- Intranasal corticosteroids recommended for control of allergic rhinitis; loratadine and cetirizine for antihistamines.
Seizure disorders

- While valproic acid and carbamazepine each carry about a 1% risk of NTDs and other anomalies, most authorities agree that the benefits of anticonvulsant therapy during pregnancy outweigh risk of discontinuation.
- Valproate should not be used as a first choice drug in women of reproductive age.

Other medications not recommended in pregnancy (**not all inclusive**)

- Tetracyclines – teeth discoloration
- Streptomycin – congenital deafness
- Kanamycin – congenital deafness
- Acutane – Category X
- NSAIDS – no teratogenic effects,
  » Long-term: potential oligohydramnios, clotting decrease, patent ductus arteriosus
- Benzodiazepines – no teratogenic effects, possible impact on fetal neurodevelopment

Mental Health

ACOG and APA consensus document

- Mild depression – psychotherapy treatment of choice
- Mod-severe depression – psychotherapy plus pharmacotherapy should be considered.
- Sertraline (Zoloft) is best choice when starting treatment for moderate to severe mood depressive episode; also first choice when breastfeeding

Miscellaneous medications acceptable in pregnancy

TB medications
- Isoniazid, rifampin, ethambutol, para-aminosalicylic acid

Fluoroquinolones – use only as indicated
  (not first choice)
- Flagyl
- Thyroid disease hypo: levothyroxine;
  hyper: PTU 1st tri then Tapazole
Educate and Encourage Breastfeeding

• Formula is not equivalent to breast milk
• Breastfed infants:
  – Faster linear & head growth
  – Less risk childhood obesity, CV disease
  – Higher IQ & psychometric testing results
  – Anti-infective & decreased allergies benefit: acute OM, GI infections, lower respiratory infections, asthma, atopic dermatitis, Type I DM, leukemia, SIDS
  – Less cost & less lost work days due to childhood illnesses

References