Advanced Concepts:
Preconception Counseling

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Dr. Paladine is a family physician who lives and practices in Manhattan, New York, where she supervises residents and medical students, and treats a predominantly Latino, low-income patient population. She focuses on women's health, including maternity care and reproductive health. In addition to her work as a physician, Dr. Paladine mentors residents and medical students as a preceptor in clinic and hospital environments. She is a member of the board of directors of the New York State Academy of Family Physicians and a member of its Education Commission. She believes that the United States needs a health care system based on primary care and that the public must learn more about family medicine to pave the way.
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Dr. MacKenzie has been an outpatient primary care clinician at the UCSF Family Medicine Center at Lakeshore since 2014. She teaches UCSF medical students and provides pediatric, adult, and prenatal care. She earned her medical degree at the University of Florida in Gainesville in 2009 and completed a residency in family medicine at Beth Israel Medical Center in New York in 2012. Prior to joining UCSF, Dr. MacKenzie worked as a locum tenens physician in Canada and New Zealand. In 2016, she completed the UCSF Family Medicine Faculty Development Fellowship Program. Her clinical interests include comprehensive women's health care, outpatient procedures, pediatrics, medical education, and healthy lifestyle counseling.

Learning Objectives

1. Effectively manage medical conditions such as obesity, diabetes mellitus, and hypothyroidism in women of reproductive age in order to improve maternal and neonatal outcomes.

2. Develop a framework for counseling women with opioid use disorder in the preconception period and will be aware of evidence-based recommendations for buprenorphine therapy for women planning and in the early stages of pregnancy.

3. Develop a strategy for how and when to order preconception carrier screening tests based on patient and partner risk factors.
Outline

Introduction
Common medical conditions in women of reproductive age
- Hypertension
- Diabetes mellitus
- Hypothyroidism
- Opioid use disorder

Contraception
Preconception carrier screening
Preconception health care is focused on:
- Reducing maternal and fetal morbidity
- Increasing the chances of conception when pregnancy is desired
- Contraceptive counseling to prevent unintended pregnancy
- Providing resources and access to termination when pregnancy is not desired

Preconception care IS primary care

Basic preconception counseling talk

- Obstacles & opportunities for preconception care
- Pregnancy intention- consider using One Key Question: Would you like to become pregnant in the next year?
- Preventive care— folic acid, caffeine, alcohol, tobacco, vaccines, infections, obesity, and more!
- Preconception counseling for men
- Coding and reimbursement
Consider a case

36yo female patient G2 P1011
NSVD 2 years ago, pregnancy complicated by mild pre-eclampsia
BP 150s/80s at 6-12 months postpartum
Started HCTZ 25mg 6 months ago, today BP 125/70
Using condoms (sometimes) for contraception
Considering another pregnancy

Polling Question 1:
Your patient is considering pregnancy. Hx pre-eclampsia, currently taking HCTZ 25mg for chronic HTN. How do you counsel this patient? (Choose ALL correct answers)

a. Stop HCTZ now & counsel on lifestyle modifications
b. Continue HCTZ
c. Switch HCTZ to Nifedipine
d. Start prenatal vitamin with at least 400mcg folic acid and 150mcg iodine
e. Start baby aspirin
Hypertension

Prevalence in women of reproductive age: about 8% (NHANES 1999-2008)

Prevalence in pregnancy: 0.9-1.5%

- Increased rates in obese, African Americans, advancing age


ACOG Practice Bulletin No. 203: Chronic Hypertension and Pregnancy, 2019

Effects of chronic HTN on pregnancy

Maternal
- end-organ damage
- preeclampsia
- planned C-section
- postpartum hemorrhage
- placental abruption

Fetal
- stillbirth
- preterm delivery
- fetal growth restriction
- congenital anomalies

ACOG Practice Bulletin No. 203: Chronic Hypertension and Pregnancy, 2019
Hypertension management

- Discuss risk of complications
  - Emphasis on severe uncontrolled HTN
- Lifestyle and dietary education
- No evidence that treating mild to moderate hypertension in pregnancy improves perinatal outcomes
  - Mild essential HTN: consider stopping meds (short term)

Severe HTN, BP>160/110
- Start antihypertensive therapy
- BP goal in pregnancy <160/100
- Start aspirin 81mg ideally between 12-16 weeks, continue until delivery

Medication recommendations
- Avoid ACE inhibitors, ARB, spironolactone
- Choose Nifedipine, Labetalol; (HCTZ is 2nd line)

ACOG Practice Bulletin No. 203: Chronic Hypertension and Pregnancy, 2019
ACOG Practice Bulletin No. 212: Pregnancy and Heart Disease, 2019
Contraception and Blood Pressure

BP <140/90 (not on antihypertensives): may use any method (USMEC category 2)

BP 140-159/90-99: avoid CHC, unless no other method is appropriate/acceptable to patient (USMEC category 3)

BP>160/100: should not use CHC (USMEC category 4)

ACOG Practice Bulletin No. 206: Use of Hormonal Contraception in Women with Coexisting Medical Conditions, 2019

Polling Question 2:
Your patient is considering pregnancy. Hx pre-eclampsia, currently taking HCTZ 25mg for chronic HTN. How do you counsel this patient? (Choose ALL correct answers)

a. Stop HCTZ now & counsel on lifestyle modifications
b. Continue HCTZ
c. Switch HCTZ to Nifedipine
d. Start prenatal vitamin with at least 400mcg folic acid and 150mcg iodine
e. Start baby aspirin
Polling Question 3:
Which of the following statements regarding diabetes is FALSE?

a. HbA1c levels between 5-6% are associated with rates of congenital malformations close to that observed in normal pregnancies
b. Glucose is teratogenic at high levels
c. Patients with diabetes should not use combined hormonal contraceptives (USMEC category 3-4)
d. The 2-hour OGTT at 6-12 weeks postpartum is the preferred screening test for diabetes for patients with a history of GDM

Diabetes mellitus
Prevalence in women of reproductive age: 3-7%

Pregestational/preexisting DM in 1-2% of pregnancies

- Increased rates in older, non-Hispanic black, and Hispanic women
- Undiagnosed diabetes poses challenges

ACOG Practice Bulletin No. 201: Pregestational Diabetes Mellitus, 2018

Effects of diabetes on pregnancy

Decreased fertility
Increased risk of SAB
Increased risk of fetal malformations
- Anomalies occur before 8 weeks gestation
- Common: heart defects, sacral agenesis, GU malformations
- A1c levels correlate directly with frequency of anomalies
  (a1c 10 associated with fetal anomaly rate 20-25%)

ACOG Practice Bulletin No. 201: Pregestational Diabetes Mellitus, 2018

Diabetes management

- Discuss risks of complications
- Use contraception until blood glucose is optimized
- Lifestyle and dietary education
- Optimize HbA1c<6
- Generally switch to insulin, but can continue metformin/glyburide until pregnant
- Stop ACE-I, ARB, statins, ASA

ACOG Practice Bulletin No. 201: Pregestational Diabetes Mellitus, 2018

### Interconception care: Screening for T2DM after pregnancy with h/o GDM

#### Table 1. Preferred Testing Strategy Based on Postpartum Timeframe

<table>
<thead>
<tr>
<th>Postpartum Timeframe</th>
<th>Oral Glucose Tolerance Test</th>
<th>Fasting Plasma Glucose</th>
<th>Hemoglobin A1c</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 weeks–6 months</td>
<td>Preferred</td>
<td>Acceptable</td>
<td>Consider only when recommended alternatives are not feasible</td>
</tr>
<tr>
<td>After 6 months</td>
<td>Acceptable</td>
<td>Acceptable</td>
<td>Acceptable</td>
</tr>
</tbody>
</table>

ACOG, Women’s Preventive Services Initiative (WPSI), 2017

### Contraception and Diabetes

Uncomplicated diabetes: may use any method (USMEC category 2)

Diabetes >20 years or evidence of microvascular disease (retinopathy, nephropathy, or neuropathy): should not use CHC (USMEC category 3-4)

ACOG Practice Bulletin No. 206: Use of Hormonal Contraception in Women with Coexisting Medical Conditions, 2019
Polling Question 4:
Which of the following statements regarding diabetes is FALSE?

a. HbA1c levels between 5-6% are associated with rates of congenital malformations close to that observed in normal pregnancies
b. Glucose is teratogenic at high levels
c. **Patients with diabetes should not use combined hormonal contraceptives (USMEC category 3-4)**
d. The 2-hour OGTT at 6-12 weeks postpartum is the preferred screening test for diabetes for patients with a history of GDM

Polling Question 5:
Which of the following statements regarding hypothyroidism is FALSE?

a. Iodine supplementation should be started 3 months prior to pregnancy
b. Routine screening for thyroid disease in pregnancy is recommended
c. Thyroid hormone requirements increase in early pregnancy
d. Patients with hypothyroidism and a positive home pregnancy test should independently increase their levothyroxine dose by 20-30%
Hypothyroidism

Prevalence in women of reproductive age: about 2-4%
Prevalence in pregnancy: 2-10 per 1000 pregnancies

Universal screening for thyroid disease in pregnancy is NOT recommended (A)

Effects of untreated hypothyroidism on pregnancy

- Impacts on fertility, menstrual cycles
- Adverse perinatal outcomes including SAB, preeclampsia, preterm birth, placental abruption, and fetal death
- Associated with low birth weights and cognitive impairment in offspring
Hypothyroidism management

• Discuss risks
  ➢ Reassure no increased risks if adequately controlled before/during pregnancy

• Achieve euthyroidism (TSH<2.5) before pregnancy
  (Strong recommendation, moderate-quality evidence)

  2017 Guidelines of the American Thyroid Association for the Diagnosis and Management of Thyroid Disease During Pregnancy and the Postpartum, Thyroid, Vol. 27, No. 3

  ACOG Practice Bulletin No. 148: Thyroid Disease in Pregnancy, 2015


Hypothyroidism management

• Educate on increased need thyroid replacement therapy in early pregnancy
  ➢ Recommend 2 extra doses per week as soon as finding out about pregnancy, check TSH ASAP
  (Strong recommendation, high-quality evidence)

  2017 Guidelines of the American Thyroid Association for the Diagnosis and Management of Thyroid Disease During Pregnancy and the Postpartum, Thyroid, Vol. 27, No. 3
Iodine supplementation (all patients)

Planning pregnancy:
• supplement diet with 150mcg iodine daily—
  the usual dose in prenatal vitamins
  (Strong recommendation, moderate-quality
  evidence)

Currently pregnant:
• ingest 250mcg iodine daily
  (Strong recommendation, high-quality evidence)

2017 Guidelines of the American Thyroid Association for the
Diagnosis and Management of Thyroid Disease During
Pregnancy and the Postpartum, Thyroid, Vol. 27, No. 3

Polling Question 6:
Which of the following statements regarding
hypothyroidism is FALSE?

a. Iodine supplementation should be started 3 months
prior to pregnancy
b. **Routine screening for thyroid disease in pregnancy
is recommended**
c. Thyroid hormone requirements increase in early
pregnancy
d. Patients with hypothyroidism and a positive home
pregnancy test should independently increase their
levothyroxine dose by 20-30%
Opioid use is common

- Reported **past-month heroin use** among women of childbearing age **increased 31%** from 2011-2012 to 2013-2014 (CBHSQ, 2015, Table 6.71A)

- CDC estimates **1/3 of reproductive-age women** enrolled in Medicaid and **>1/4 of those with private insurance filled a prescription for an opioid pain medication** each year between 2008-2012 (Ailes et al., 2015)

- **OUD during pregnancy** more than **doubled** between 1998 and 2011 to **4 per 1,000 deliveries** (Maeda, Bateman, Clancy, Creanga, & Leffert, 2014)

Obstacles to care

- Legal consequences that sanction pregnant women with OUD
- Shame associated with OUD in pregnancy and motherhood
- Misinformation among health care providers and systems
  - Drive women away from care
  - Increased risks of preterm delivery, low infant birth weight, and transmitting HIV to their infants (Binder & Vavrinková, 2008)
Opportunities

• Patient engagement

• Planning pregnancy or pregnancy is a time of great potential for positive change

• Family physicians can provide continuity of care for the whole family

SAMHSA, Clinical Guidance for Treating Pregnant and Parenting Women With Opioid Use Disorder and Their Infants, 2018

Management of OUD in Pregnancy

• Engage patient in care
• Discuss risks of opioid use in pregnancy
• Offer treatment with medication-assisted therapy (MAT) and provide reassurance
  ➢ safe in preconception period and pregnancy
  ➢ no evidence of increase in birth defects
  ➢ minimal long-term neurodevelopmental impact

SAMHSA, Clinical Guidance for Treating Pregnant and Parenting Women With Opioid Use Disorder and Their Infants, 2018
Medication-assisted therapy (MAT)

Exhibit FS #2.1: Decision Considerations When Selecting an Opioid Agonist Medication for a Pregnant Woman

<table>
<thead>
<tr>
<th>Considerations</th>
<th>Buprenorphine</th>
<th>Methadone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Selection</td>
<td>May be preferable for patients who are new to treatment because it is easier to transfer from buprenorphine to methadone (it can be very difficult to transfer from methadone to buprenorphine), who do not like or want methadone, or who have requested this medication.</td>
<td>May be preferable for patients who do not like or want buprenorphine treatment or who have requested this medication.</td>
</tr>
<tr>
<td>Care</td>
<td>Includes a prenatal healthcare professional, parenting classes, and SUD treatment.</td>
<td>Includes a prenatal healthcare professional, parenting classes, and SUD treatment.</td>
</tr>
<tr>
<td>Dispensing</td>
<td>May be prescribed in an office setting with weekly or biweekly prescribing/dispensing or provided in an opioid treatment program.</td>
<td>Requires daily visits to a federally certified opioid treatment program; take-home medication is provided for patients meeting specific requirements.</td>
</tr>
<tr>
<td>Treatment Retention</td>
<td>Some studies show treatment dropout is higher than that for methadone.</td>
<td>Some studies show treatment retention is higher than that for buprenorphine.</td>
</tr>
</tbody>
</table>

Counseling about MAT effects on infants

<table>
<thead>
<tr>
<th></th>
<th>Buprenorphine</th>
<th>Methadone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of NAS</td>
<td>Approximately 50% of exposed neonates are treated for NAS; NAS may be milder with buprenorphine compared with full mu opioid agonists such as most opioid analgesics and methadone.</td>
<td>Approximately 50% of exposed neonates are treated for NAS.</td>
</tr>
<tr>
<td>Time to NAS Onset</td>
<td>American Academy of Pediatrics (AAP) recommends monitoring prenatally opioid-exposed neonates for a minimum of 4-7 days after delivery (Hudak, Tan, &amp; AAP, 2012).</td>
<td>AAP recommends monitoring prenatally opioid-exposed neonates for a minimum of 4-7 days after delivery (Hudak, Tan, &amp; AAP, 2012).</td>
</tr>
<tr>
<td>Duration of NAS</td>
<td>Most studies show shorter NAS duration compared with methadone.</td>
<td>Most studies show longer NAS duration compared with buprenorphine.</td>
</tr>
<tr>
<td>Breastfeeding</td>
<td>Generally safe if the mother is stable and the ABM Clinical Protocol #21 breastfeeding with SUD guidelines are met.</td>
<td>Generally safe if the mother is stable and the ABM Clinical Protocol #21 breastfeeding with SUD guidelines are met.</td>
</tr>
</tbody>
</table>
Contraception and OUD

• Women of reproductive age who have OUD experience a high rate of unintended pregnancy (Heil et al., 2011)

• One study found that only about half of the women with current opioid use were using contraception (Terplan, Hand, Hutchinson, Salisbury-Afshar, & Heil, 2015)

• Postpartum period is especially vulnerable time to return to substance use

More on contraception

• Observational study over 3 years comparing women with chronic condition receiving prescription contraceptive vs women without chronic condition

• Conclusion: Despite a greater risk for adverse outcomes with an unplanned pregnancy, women with these chronic conditions were less likely to receive prescription contraception
Check for use of teratogenic medications

- Systemic retinoids
- Anticonvulsants
- Warfarin
- ASA, NSAIDS in first trimester
- ACE inhibitors, ARBs
- Statins
- SSRIs, antipsychotics

- No more FDA pregnancy risk categories: revised labeling is coming
Interconception care: Medications and Breastfeeding


Consider a case

You are seeing a couple in their mid-30s who desire pregnancy. No known family history of any genetic disorders. They are concerned about their risks of genetic conditions given their age and ask what testing is recommended before they try to conceive.

Summary of Use during Lactation:

Because of the low levels of buprenorphine in breastmilk, its poor oral bioavailability in infants, and the low drug concentrations found in the serum and urine of breastfed infants, its use is acceptable in nursing mothers. Monitor the
Polling Question 7:
Which of the following is NOT recommended by ACOG as part of routine preconception care?

a. Counsel all patients about the decision to get carrier screening
b. Offer spinal muscular atrophy (SMA) carrier screening to all women
c. Offer cystic fibrosis carrier screening to all women
d. Check a CBC to assess for anemia and screen for hemoglobinopathies in all women
e. Offer Fragile X carrier screening to all women
f. Offer Tay-Sachs screening if either member of a couple is of Ashkenazi Jewish, French–Canadian, or Cajun descent

ACOG Committee Opinion Number 691: Carrier Screening for Genetic Conditions, 2017

Preconception carrier screening

Analyzes genes for conditions you might pass on to a child

Primary purpose is to inform reproductive decision-making

- Carrier screening is different from NIPS (noninvasive prenatal screening) which tests for chromosome conditions in a current pregnancy

ACOG FAQ179: Carrier Screening, 2018
Options for preconception carrier screening

**All:** carrier screening for CF, hemoglobinopathies, SMA

**Targeted:** based on ethnicity or family history
- Fragile X, Tay-Sachs

**Expanded** carrier screening (ECS): screen for many disorders using a single sample without regard to race or ethnicity
- Offered by commercial companies, ex) Counsyl, Natera

Counseling around ECS

- No genetic test can identify all DNA changes with disease potential
  - Carrier screening can only be used to *reduce* the risk of having a child with *some* diseases
- Many genetic diseases caused by random DNA errors
- Might find out unexpected information
- Almost everyone carries at least one genetic disease, so chances are the test will come back 'positive' for something
  - Options to test one person, then partner (consider cost, anxiety); or test both simultaneously

Polling Question 8:
Which of the following is NOT recommended by ACOG as part of routine preconception care?

a. Counsel all patients about the decision to get carrier screening
b. Offer spinal muscular atrophy (SMA) carrier screening to all women
c. Offer cystic fibrosis carrier screening to all women
d. Check a CBC to assess for anemia and screen for hemoglobinopathies in all women
e. **Offer Fragile X carrier screening to all women**
f. Offer Tay-Sachs screening if either member of a couple is of Ashkenazi Jewish, French–Canadian, or Cajun descent

ACOG Committee Opinion Number 691: Carrier Screening for Genetic Conditions, 2017

Practice Recommendations

1. Check for use of teratogenic medications as part of preconception care, and change to safer medications if possible. Use the fewest medications at the lowest dose to control disease (SORT C)

2. Counsel patients with diabetes mellitus about the importance of glycemic control before conception. Assist patients in achieving an A1C level as close to normal as possible to reduce the risk of congenital anomalies (SORT A)

3. Assess the patient’s risk of chromosomal or genetic disorders based on family history, ethnic background, and age; offer cystic fibrosis and other carrier screening as indicated (SORT C)
Resources

Information for providers and patients
https://www.cdc.gov/ncbddd/index.html
https://beforeandbeyond.org
https://www.acog.org/Womens-Health/Prepregnancy-Counseling-and-Interpregnancy-Care

Mobile app- preconception care quick reference

Resources

AAFP articles on preconception care
https://www.aafp.org/afp/2013/1015/p499.html
Resources

Clinical Guidance for Treating Pregnant and Parenting Women With Opioid Use Disorder and Their Infants


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Questions