Addressing Smoking in Pregnant Women with Mental Health Disorders

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2016 Community Health Promotion Summit
Strategies to Advance Health Equity
to Reduce Obesity & Tobacco Use

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Maternal and Infant Health Branch
CDC Division of Reproductive Health
Marriage and Smoking Cessation Have More in Common Than you Think
No More Mistakes with Smoking Cessation
What Zombies Can Teach you about Smoking Cessation
2 Ways You Can Use Smoking Cessation To Become Irresistible to Customers
Fascinating Smoking Cessation Tactics to Help your Business Grown
How You Can (Do) Smoking Cessation Almost Instantly
Are You Making These Smoking cessation Mistakes?
Make Your Smoking Cessation A Reality
**CDC Tobacco and Pregnancy Activities**

- Monitor trends of tobacco use before, during, and after pregnancy
- Conduct research on health outcomes & economic costs
- Evaluate interventions and promote effective interventions and policies
- Provide technical assistance to organizations
- Collaborate with governmental agencies and NGOs

Presentation Outline

- Epidemiology of maternal tobacco use
  - National
  - Subgroups of high risk
  - Kansas

- Intersection with mental health
  - Focus on depression and anxiety

- Effective interventions for perinatal period

- Resources
Maternal Smoking: Health Effects

- Ectopic pregnancy
- Reduced fertility
- Preterm delivery and related deaths
- Restricted fetal growth
- Cleft lip/palate
- Sudden Infant Deaths (SIDS)

Public Health Impact

- Adverse infant outcomes attributable to prenatal smoking are (based on 2002 data)¹:
  - 5%–8% of preterm deliveries
  - 13%–19% of term low birth weight deliveries
  - 5%–7% of preterm-related deaths
  - 23%–34% of SIDS

- In the US, about 1000 infant deaths a year are attributable to prenatal smoking ²

¹) 2014 Surgeon General’s Report
Maternal Quitting: Health Benefits

- Birth weight = same as in never smokers
- Preterm risk decreases
- High prevalence of postpartum relapse but...

- In a cohort study of over 6000 mothers in Australia\(^1\)
  - Quitting during pregnancy correlated with quit status at 6 months, 5 years, 14 years, and 21 years

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1. Ratten, Mamun, Williams, BJOG 2012
Trends in Smoking Before, During, and After Pregnancy, PRAMS 2000-2010

* http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6206a1.htm
+ Significant linear trend over time (p<0.05)
Prenatal Smoking Patterns

- One in 5 women smoke pre-pregnancy
  - Approximately 50% quit smoking by late pregnancy

- Prenatal smokers
  - Higher in <25 years of age; higher among non-Hispanic Whites, American Indians, or Alaska Natives
  - More likely to be low-income and live with a smoker

- Among women who quit during pregnancy, almost half relapsed to smoking after delivery

Maternal Smoking at Any Time During Pregnancy, by State: 46 States and DC, 2014

http://www.cdc.gov/nchs/data/nvsr/nvsr65/nvsr65_01.pdf
Maternal smoking before and at any time during pregnancy, by race and Hispanic origin of mother: 46 states and DC, 2014

http://www.cdc.gov/nchs/data/nvsr/nvsr65/nvsr65_01.pdf
Maternal smoking at any time during pregnancy, by education, delivery insurance, and WIC receipt: 46 states and DC, 2014

http://www.cdc.gov/nchs/data/nvsr/nvsr65/nvsr65_01.pdf
Smoking Cessation During Pregnancy: 46 States and DC, 2014

http://www.cdc.gov/mmwr/volumes/65/wr/mm6522a6.htm?s_cid=mm6522a6_w
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoked in the 3 months before pregnancy</td>
<td>14.1</td>
</tr>
<tr>
<td>Quit smoking before pregnancy¹</td>
<td>15.8</td>
</tr>
<tr>
<td>Smoke anytime during pregnancy</td>
<td>12.0</td>
</tr>
<tr>
<td>First trimester</td>
<td>11.7</td>
</tr>
<tr>
<td>Second trimester</td>
<td>10.3</td>
</tr>
<tr>
<td>Third trimester</td>
<td>9.9</td>
</tr>
<tr>
<td>Quit during pregnancy²</td>
<td>17.2</td>
</tr>
</tbody>
</table>

¹ Includes those women who smoked in the 3 months before pregnancy.
² Includes women who reported smoking in either the first or second trimester and did not report smoking in the third trimester.

http://www.cdc.gov/mmwr/volumes/65/wr/mm6522a6.htm?s_cid=mm6522a6_w
Maternal Smoking from the Birth Certificate, Kansas, 2002-2014

Smoking any time during pregnancy

2003 BC revision implemented new smoking question

http://www.cdc.gov/mmwr/volumes/65/wr/mm6522a6.htm?s_cid=mm6522a6_w
INTERSECTION WITH MENTAL HEALTH
Depression

- Leading cause of disability worldwide

- 16.1 million U.S. adults experience depression

- Those with depression die 8 years earlier all-cause mortality, compared to those without depression

- Increases the risk of suicide
  - Suicide rate: 5.8 per 100,000 U.S. females

WHO 2010; NIMH 2015; Pratt et al. 2016; Curtin & Warner 2016
Depression in Women

- Lifetime and past-year prevalence greater in women
- Average age of onset during reproductive years: 30.4 years of age
- Longest median duration of episode: 22.9 weeks
- One of the top 5 of most common complications during pregnancy

Kessler 2003; Hasin et al., 2005; Kessler et al., 1993; Bruce et al., 2012
Burden of Depression During Pregnancy and Postpartum

*first 3 months postpartum; Gavin et al., 2005; Gaynes et al., 2005
Cross-sectional data from the 2009–2011 Pregnancy Risk Assessment Monitoring System

Smoking status self-reported before and during pregnancy
- 3 months before pregnancy
- Last 3 months of pregnancy
- Quit smoking by last 3 months

Depression and anxiety status was self-reported of having either condition or both during the 3 months before pregnancy
Prevalence of Smoking by Reported Depression or Anxiety Status

### Association Between Reported Smoking and Depression or Anxiety Status

<table>
<thead>
<tr>
<th>Smoking Status</th>
<th>Crude Prevalence Ratio (95% CI)</th>
<th>Adjusted Prevalence Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoked in the 3 mo before pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression or anxiety</td>
<td>2.08 (1.97–2.19)</td>
<td>1.49 (1.41–1.57)†</td>
</tr>
<tr>
<td>None</td>
<td>Reference</td>
<td>Reference</td>
</tr>
<tr>
<td>Smoked in the last 3 mo of pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression or anxiety</td>
<td>2.62 (2.42–2.84)</td>
<td>1.69 (1.56–1.84)‡</td>
</tr>
<tr>
<td>None</td>
<td>Reference</td>
<td>Reference</td>
</tr>
<tr>
<td>Smoking cessation by the last 3 mo of pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression or anxiety</td>
<td>0.77 (0.71–0.83)</td>
<td>0.86 (0.80–0.92)§</td>
</tr>
<tr>
<td>None</td>
<td>Reference</td>
<td>Reference</td>
</tr>
</tbody>
</table>

CI, confidence interval.


† Adjusted for maternal age, race and ethnicity, education, marital status, insurance coverage before pregnancy, parity, alcohol use or binge drinking before pregnancy, physical abuse before and during pregnancy, state and year of neonatal birth.

‡ Adjusted for maternal race and ethnicity, education, marital status, insurance coverage during prenatal care and at delivery, parity, physical abuse before and during pregnancy, and state (n=33,492).

§ Smoking cessation by the last 3 months of pregnancy was calculated among prepregnancy smokers only.

¶ Adjusted for maternal race and ethnicity, education, marital status, insurance coverage before pregnancy, parity, physical abuse before and during pregnancy, and state (n=9,350).
Summary of Findings

- Women who reported depression, anxiety, or both had higher smoking prevalence in the 3 months before pregnancy compared with those not reporting either condition
  - Almost half of women reporting depression or anxiety reported smoking
- Women reporting depression or anxiety were more likely to smoke during pregnancy and less likely to quit by the last 3 months of pregnancy than those not reporting either condition
Tobacco Use & Mental Health

- Tobacco use as an agent to relieve stress and anxiety
- Traditional cessation interventions do not address their mental health needs
- Evidence suggests that continued smoking can worsen mental health conditions
Tobacco Cessation & Mental Health

- Tobacco cessation improves mental health conditions

- A meta-analysis found that tobacco cessation was associated with reduced depression, anxiety, and stress and improved mood and quality of life (1)

- Cessation trials of pregnant smokers have also documented improved mental health status and well-being after tobacco cessation
  - An incentive-based cessation trial increased cessation among pregnant women with diagnosed depression and reduced the severity of postpartum depression symptoms (2)

1) Taylor G., BMJ 2014; 2) Lopez NTR 2015
What Can Be Done?

- Importance to screen for smoking and depression around the time of pregnancy

- Patients and health care providers should be aware that tobacco cessation can contribute to improved mental health and improved pregnancy health

- Conduct research to establish evidence based interventions for high risk groups
EFFECTIVE INTERVENTIONS
Opportunities for Screening and Care

- Clinical recommendations have included routine tobacco use screening at every prenatal care visit.

- In 2015, the American College of Obstetricians and Gynecologists recommends that clinicians screen all pregnant women for depression and anxiety symptoms. Systems should be in place to ensure follow-up for diagnosis and treatment.

- Given the high comorbidity between mental health status and smoking, this presents opportunity for providers to offer evidence-based tobacco cessation interventions and mental health care.

ACOG Committee Opinion 630; Siu & USPSTF, 2016.
### 2015 USPTF Recommendations For Tobacco Cessation Interventions

<table>
<thead>
<tr>
<th>Population</th>
<th>Recommendation</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant women</td>
<td>The USPSTF recommends that clinicians ask all pregnant women about tobacco use, advise them to stop using tobacco, and provide behavioral interventions for cessation to pregnant women who use tobacco.</td>
<td>A</td>
</tr>
<tr>
<td>Pregnant women</td>
<td>The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of pharmacotherapy interventions for tobacco cessation in pregnant women.</td>
<td>I</td>
</tr>
<tr>
<td>All adults, including pregnant women</td>
<td>The USPSTF concludes that the current evidence is insufficient to recommend electronic nicotine delivery systems (ENDS) for tobacco cessation in adults, including pregnant women. The USPSTF recommends that clinicians direct patients who smoke tobacco to other cessation interventions with established effectiveness and safety (previously stated).</td>
<td>I</td>
</tr>
</tbody>
</table>

Perinatal Screening Guidelines

- American College of Obstetricians and Gynecologists (ACOG) recommends routine screening for tobacco use.
- Prenatal care providers deliver a brief counseling session for patients who are willing to try to quit smoking.
- Counseling approaches, such as the 5A’s intervention (ask, advise, assess, assist, and arrange), have been shown to be effective when initiated by health care providers.

Telephone Quitlines

- Telephone quitlines (QL) offer effective, free smoking cessation services
  - High satisfaction among women who participated in counseling
  - Pregnant women may be aware of the QLs but many prefer to try to quit on their own
  - Among those who are referred to QLs, adherence to call schedule is difficult

[Image of Telephone Quitline advertisement]

http://www.naquitline.org/?page=qiiissuepapers
Best Practice for Perinatal Depression Treatment

- Although screening is important for detecting perinatal depression, screening by itself is insufficient to improve clinical outcomes.

- Screening should be coupled with appropriate follow-up and treatment when indicated.

- Clinical staff in obstetrics and gynecology practices should be prepared to initiate medical therapy, refer patients to appropriate behavioral health resources when indicated, or both.
Tobacco Cessation

- Tobacco cessation treatment should be conducted in conjunction with treatment or referral for depression or anxiety.

- At minimum, all smokers before and during pregnancy should be offered standard-of-care tobacco cessation counseling, and women reporting depression or anxiety may need additional cessation support.
Coverage of Cessation Treatment

- As of Oct 2010, the Affordable Care Act (ACA) mandated that state Medicaid programs cover comprehensive tobacco treatment for pregnant women without cost-sharing\(^1\)
  - All states have met this mandate\(^2\)
  - 83% of OB/GYNs were unaware of the benefit; one-third of respondents reported that reimbursement would influence them to increase their cessation services\(^3\)

Coverage of Depression Treatment

- All state programs provide at least some mental health services to Medicaid beneficiaries\(^1\)
- Many states offer coverage of depression screening and treatment for pregnant women\(^2\)
- Most individual and small group health insurance plans and Medicaid Alternative Benefit Plans are required to cover mental health and substance use disorder services\(^1\)

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1. USDHHS: [http://www.mentalhealth.gov/get-help/health-insurance](http://www.mentalhealth.gov/get-help/health-insurance)
RESOURCES
This free web-based training is designed for health care professionals to effectively assist pregnant women and women in the childbearing years to quit smoking

- Physicians, midwives, nurses, health educators, pharmacists, etc...

The training program teaches a best practice approach for smoking cessation, the 5A’s, and is based on current clinical recommendations from the USPHS and ACOG

Program endorsed by ACOG

www.smokingcessationandpregnancy.org/
New module on the harms of E-cigarette use during pregnancy

Caryn Oncken, MD, MPH
Professor of Medicine
Director of Cancer Prevention and Control
UConn Health Farmington, CT

Stated E-cigarette "Facts"

<table>
<thead>
<tr>
<th>Accurate</th>
<th>Inaccurate/Misleading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaled smoke is water vapor</td>
<td>But compared to not smoking at all...there is evidence for harm</td>
</tr>
<tr>
<td>Vapor is not harmful to yourself or others</td>
<td>Nicotine addiction and negative health impacts --evidence from animal models and human studies</td>
</tr>
<tr>
<td>Nicotine and caffeine are equally safe/harmful</td>
<td>Nicotine is toxic to fetus and not safe to use during pregnancy</td>
</tr>
</tbody>
</table>

- E-cigs "satisfy" my smoking needs
- E-cigs reduce the cosmetic harm of smoking
- I can use e-cigarettes "just about anywhere"

News Segment on Vaping While Pregnant
- There's been little research on vaping health effects
- Nicotine's main effect is to restrict placental circulation
- "Vaping" is generally safer than smoking

- Long-term health effects of breathing other components of e-cigarette aerosol are unknown
Resources: Tobacco Cessation

For consumers

- CDC TIPS website: [www.cdc.gov/tips](http://www.cdc.gov/tips)
- Info on smoking and pregnancy: [http://www.cdc.gov/Features/PregnantDontSmoke/](http://www.cdc.gov/Features/PregnantDontSmoke/)
- Smoke free home pledge: [http://www.epa.gov/smokefree/](http://www.epa.gov/smokefree/)

For clinicians and public health practitioners

- CDC factsheet for providers: [http://www.cdc.gov/reproductivehealth/TobaccoUsePregnancy/Providers.html](http://www.cdc.gov/reproductivehealth/TobaccoUsePregnancy/Providers.html)
- Smoking Cessation for Pregnancy & Beyond: Virtual Practicum [www.smokingcessationandpregnancy.org/](http://www.smokingcessationandpregnancy.org/)
- CDC TIPS website: [www.cdc.gov/tips](http://www.cdc.gov/tips)
- ACOG Clinician guide to helping pregnant women quit smoking: [http://www.acog.org/departments/dept_web.cfm?recno=13](http://www.acog.org/departments/dept_web.cfm?recno=13)
Resources: Depression

For consumers

- Postpartum Support International: http://www.postpartum.net
- National Suicide Prevention Lifeline: http://suicidepreventionlifeline.org/
at 1-800-273-TALK (8255), available 24 hours a day, 7 days a week. TTY: 1-800-799-4889

For clinicians and public health practitioners

- ACOG: http://www.acog.org/Womens-Health/Depression-and-Postpartum-Depression
- National Alliance on Mental Illness: https://www.nami.org/
- CDC: http://www.cdc.gov/reproductivehealth/depression/index.htm
Summary

- Quitting smoking has health benefits for mother and baby and improvement of mental health
- 1 in every 10 women continue to smoke during pregnancy
  - Women with depression/anxiety are more likely to smoke and less likely to quit smoking
- Effective interventions exist
  - Ask all pregnant women about tobacco use
  - Screening for perinatal depression
  - Increase awareness that quitting smoking and improve mental health and increase mood and quality of life
  - Provide effective interventions
Acknowledgements

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- Jennifer Bombard
Tobacco Use and Pregnancy Website:
http://www.cdc.gov/reproductivehealth/TobaccoUsePregnancy/index.htm

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.