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Treating Pregnant Women's Tobacco Use and Dependence

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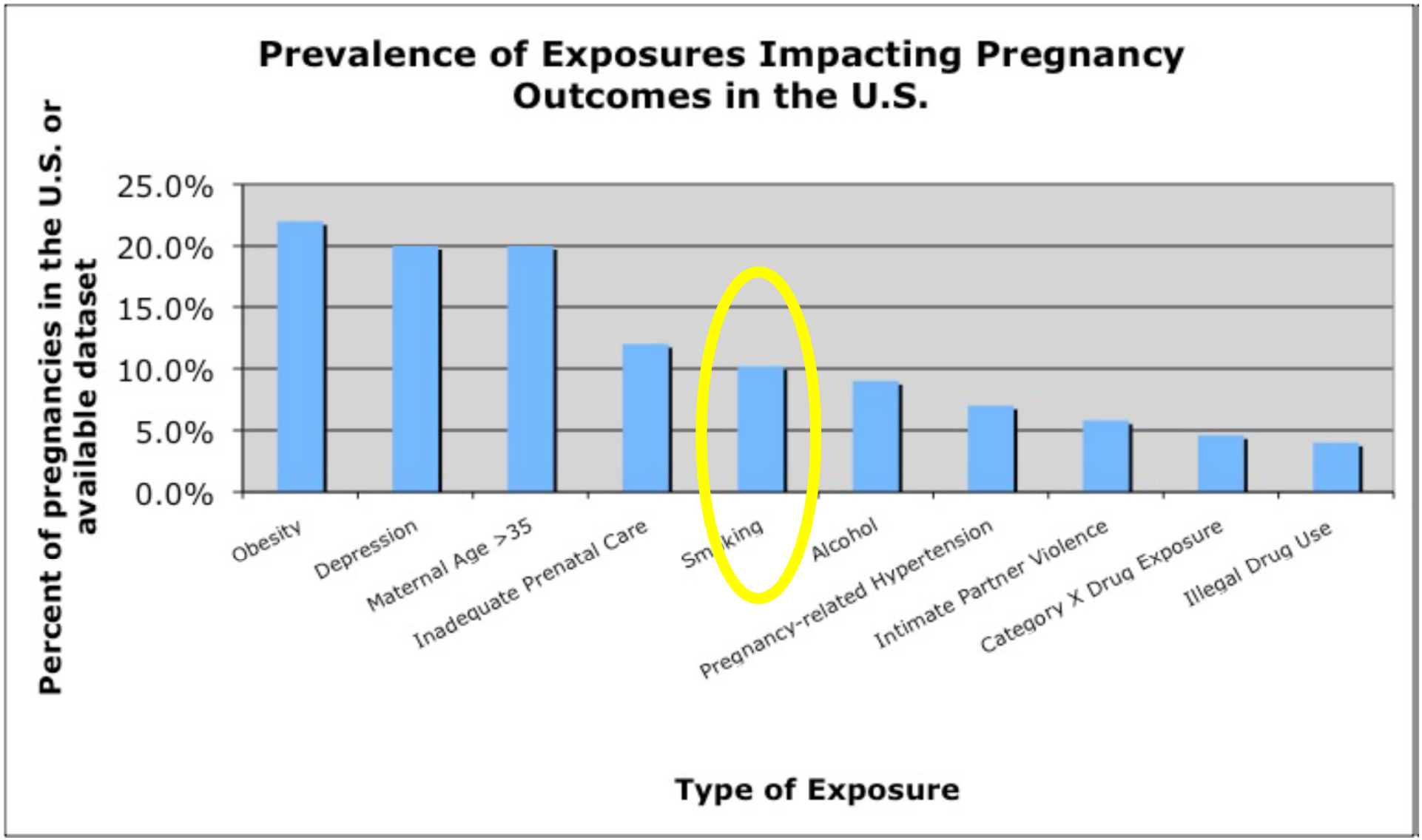
FACULTY DISCLOSURES

- I have no conflicts of Interest for this Presentation

- I have never smoked ☺

OBJECTIVES

- Describe two evidence-based interventions to help pregnant smoker's quit
- Assess an organization's guidelines to treat pregnant women's tobacco use with evidence-based treatment recommendations
- Discuss at least one gain and one challenge when treating pregnant women's tobacco users during the course of their pregnancy and postpartum


Prevalence of Exposures Impacting Pregnancy Outcomes in the U.S.
Percent of pregnancies in the U.S. or available dataset
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Obesity
Depression
Maternal Age >35
Inadequate Prenatal Care
Smoking
Alcohol
Pregnancy-related Hypertension
Intimate Partner Violence
Category X Drug Exposure
Illegal Drug Use
Type of Exposure

Demographics:

- Lower Socioeconomic Class
- Lower Educational Level
- Younger
- Unmarried
- Higher Parity
- Lower Level of Social Support
- Increased Incidence of Depression/Stress
- Internationally (WHO report) – Incidence of Woman smoking is increasing – especially in low-income high population countries

Treating Pregnant Women's Tobacco Use and Dependence

Most important, potentially preventable cause of adverse pregnancy outcomes

- Placental Abruption
- Miscarriage
- Preterm Birth
- Low Birth Weight / Intrauterine Growth Restriction
- Stillbirth

Long-Term Adverse Effects:

- Higher Rate of Attention Deficit Hyperactivity Disorder
- Increased Risk of Asthma
- Adverse Effects on the Immune System
- Possibly Increased Risk of Childhood Cancers

***Association of Stillbirth and Tobacco Use*:**

Stillbirth Collaborative Research Network – NICHHD (Mar 2006-Sept 2008)

Matched Stillbirth and Live Births

Women Self-Reported Smoking

Checked Umbilical and Maternal Levels of Serum Cotinine

Evaluated Risk of Stillbirth

Self Reporting of Tobacco Usage and Still Birth	
	Stilllbirth Risk (Odds Ratio)
Never Smoked	1.0
1-9 Cigs/Day	1.77
> 10 Cigs/day	2.17

Cotinine Concentrations (ng/ml)	
Negative	1.0
50th percentile or less	2.04
> 50th percentile	2.39

They noted a general dose-response effect – strengthening the biologic plausability of the association of tobacco use and stillbirth

Secondhand Smoke and Pregnancy:

Meta-Analysis – 19 studies

	Odds Ratio
Spontaneous Abortion	1.17 (0.88-1.54)
Stillbirth	1.23 (1.09-1.38)
Congenital Malformations	1.13 (1.01-1.26)

23% Increased risk of stillbirth and 13% increase risk of congenital malformation

Environmental Tobacco Smoke on Perinatal Outcomes:

- Retrospective Cohort Study
- 11,852 women
- Primary Outcome Measures:
  - Birthweight
  - Birth Length
  - Head Circumference
  - Stillbirth

Results:

Lower Mean Birth weight

Smaller HC and Birth Length

Stillbirth (OR 3.35)

Preterm Birth (OR 1.87)

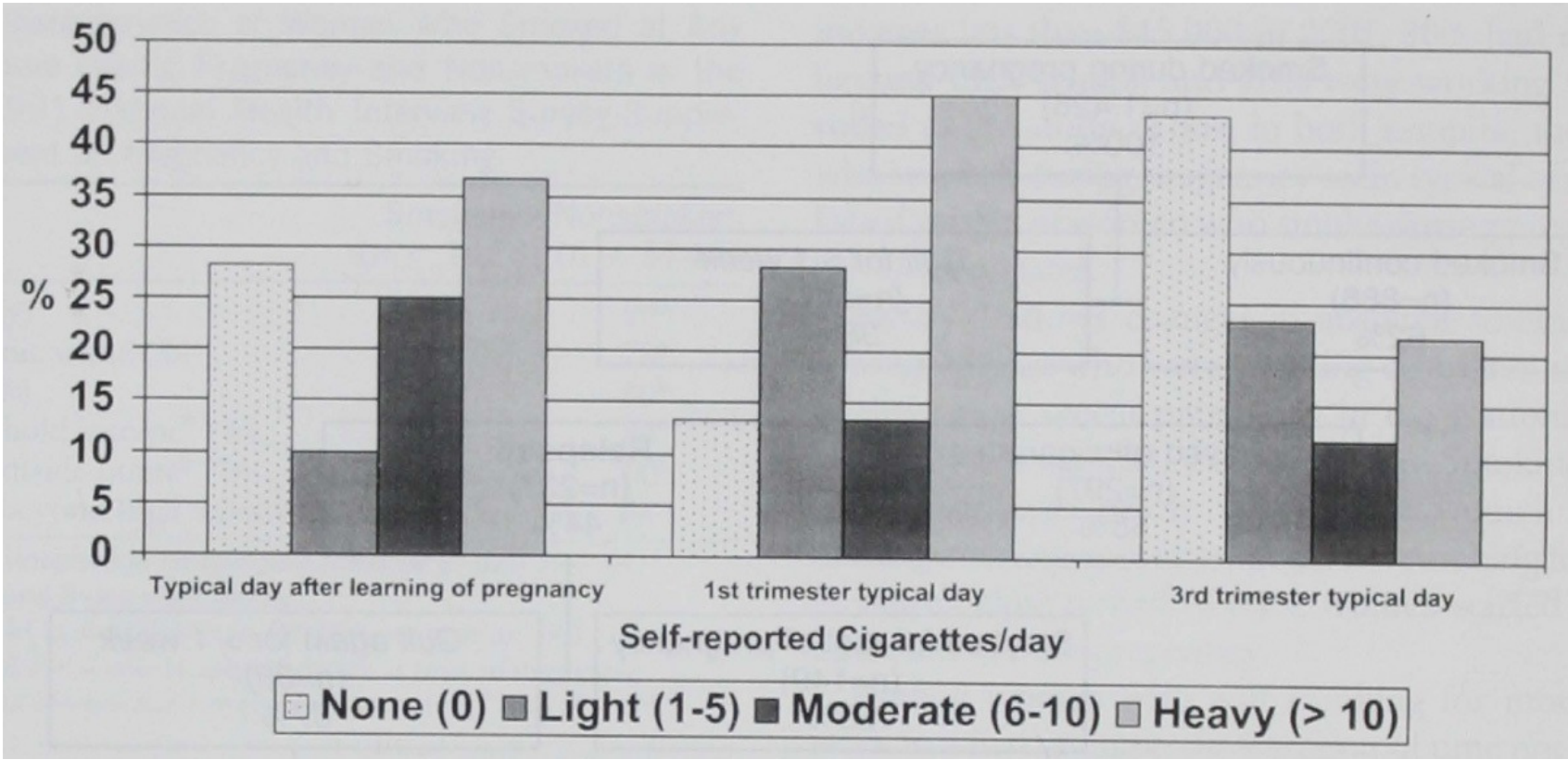
Neonatal Sepsis (OR 2.96)


THE ONLY THING WORSE
THAN A SMOKE-FILLED ROOM
IS A SMOKE-FILLED WOMB

Smoking and Early Placental Pathology:

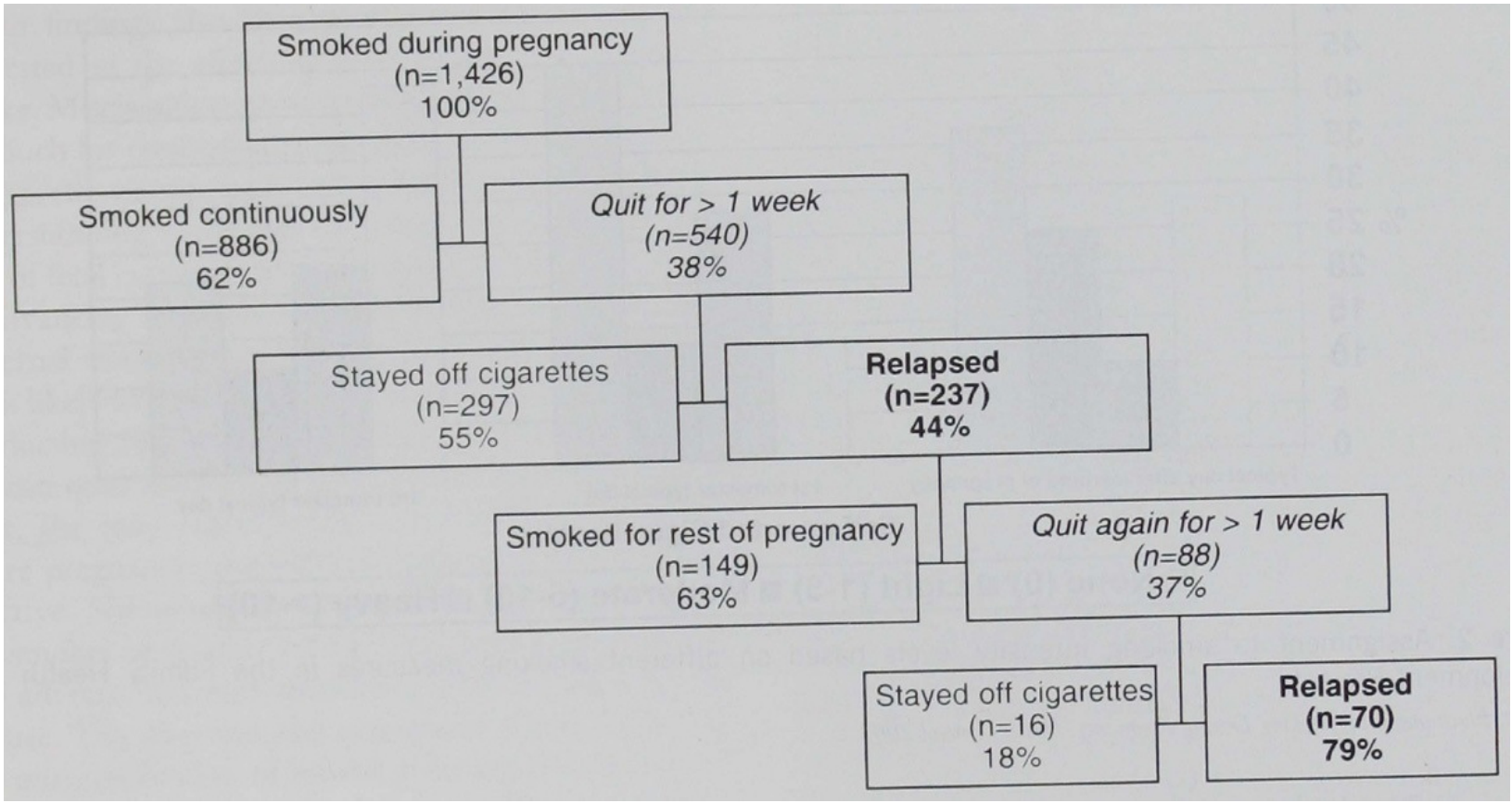
- Examined placentas from 20 heavy smokers and 20 non-smokers undergoing TOP at 9-14 weeks:
- Villous Changes and Morphologic changes in the Trophoblast occur very early in pregnancy
- Tobacco cessation is best before pregnancy occurs or as early as possible.

Smoking Cessation and Pregnancy:



Pickett, Et al; Obstetrics & Gynecology; Jan 2003, 101 (140-147)

Fluctuations in Treating Pregnant



Need repeated interventions to promote smoking cessation

Pickett, Et al; Obstetrics & Gynecology; Jan 2003, 101 (140-147)

Smoking Cessation Techniques:

- Psychosocial Interventions
- Pharmacologic Interventions

Psychosocial Interventions:

- Counseling
- Health Education
- Feedback
- Incentive-Based Interventions
- Social Support
- Other (exercise)

Counseling:

- Motivational Interviewing / Cognitive Behavior Therapy, Psychotherapy, Relaxation, Problem Solving Facilitation, etc.
- Face to Face, Telephone, Interactive Computer Programs, AV equipment

Health Education:

- Women provided information on risks of smoking. May or may not have received additional support (ex. Automated texts, etc.)

Feedback:

- Mother receives information about fetal health – US monitoring, CO or Urinary Cotinine Levels

Incentive Based Interventions:

- Mother receives financial incentive – gift vouchers, etc.

Social Support (Peers and/or Partner)

Psychosocial Techniques for Smoking Cessation		
Technique	Positive Impact	No Change/Negative
Counseling	++	
Health Education	+/-	+/-
Feedback	+	
Incentive Based	+++ (BUT ONLY IF PROVIDED INTENSIVELY)	
Social Support	+ (peer support)	0 (partner Support)

Pharmacologic Interventions:

Nicotine Replacement Therapy

Varenicline

Bupropion

Nicotine Replacement Therapy:

- Cochrane Review (2012)
- "Insufficient evidence to support either the efficacy or safety of NRT used in pregnancy"
- Mixed fetal/infant outcomes
- Increased risk of C/S noted
- No better than placebo

Bupropion:

- Limited studies in Pregnancy
- Most Animal and Human first trimester exposure studies do not demonstrate increase risk of fetal malformations
- 1 Retrospective Study – Increased risk of Left outflow tract Heart Defects if used around conception (OR – 2.6)

Meta-Analysis of Pharmacotherapy for Smoking Cessation in Pregnancy:

- Reviewed 74 articles – Only 7 RCTs
- Only evaluated NRT
- Demonstrated an Increase in Abstinence Rate: 1.8 times higher
- Of the 7; only 3 used a placebo control – this subgroup showed no increased efficacy
- **Conclusion**: Further, larger RCTs needed

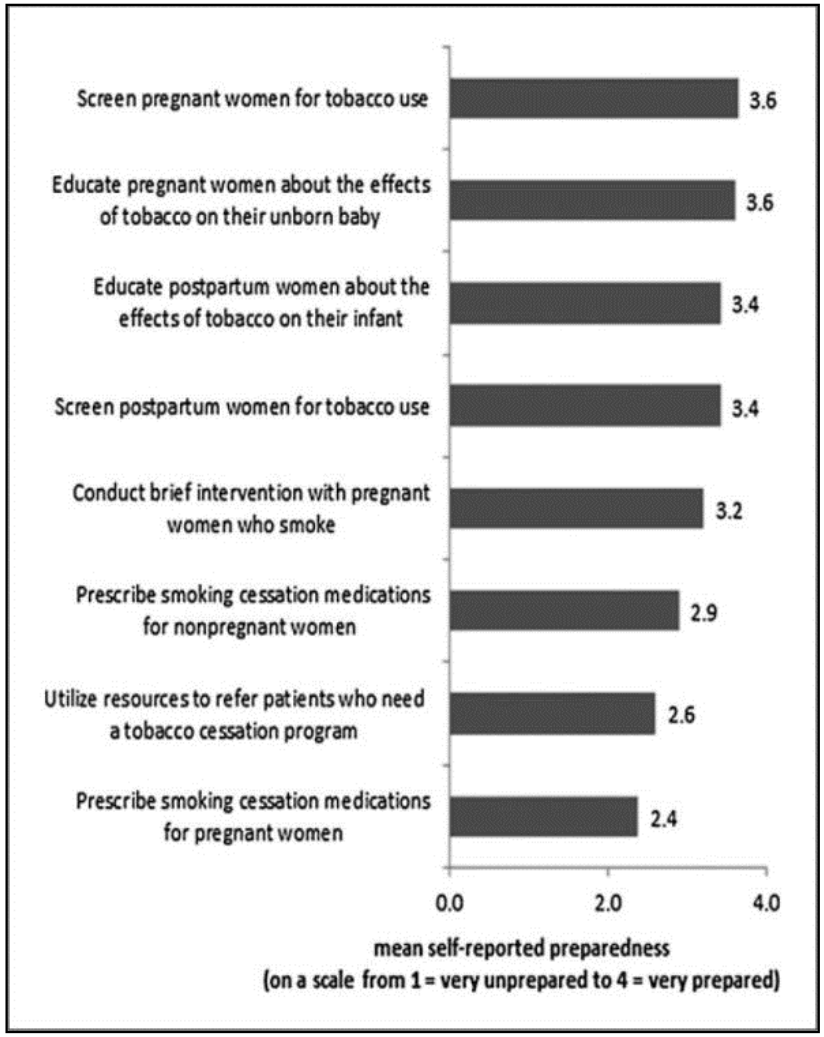
Practice Patterns of Ob/Gyns and Smoking Cessation:

- ACOG Survey – 252 Respondents
- 88.1% screen at initial visit
- Only 59.9% f/u at subsequent visits
- 35% never communicate tobacco use during pregnancy to the Pediatrician
- Most Common Methods Used:
  - Recommend Abstinence
  - Recommend Reduction
  - Review Reasons for Quitting

Barriers to Intervention:

- Time
- Expected Patient Denial or Resistance to Treatment
- Lack of Referral Resources

Resources Requested by Ob/Gyns to Improve Efforts



Coleman, Et al, J Addict Med 2014; 8 (14-24)

Conclusions:

- Multiple Adverse Fetal and Neonatal Outcomes associated with Primary and Secondary Tobacco Exposure
- If Smoking beyond first trimester few quit
- Strategies using Incentives seem to be most effective
- Pharmacotherapy interventions need further research
- Ob/Gyns need further education, training and assistance to be successful

Thank You!