Abortion: Patient-centered Counseling and Evidence-based Care

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Disclosures

• I have no relevant financial disclosures.

Acknowledgements

• Karen Meckstroth and Jen Kerns
What proportion of abortions in the US are in the first trimester (<=14)?

A. 50%
B. 60%
C. 70%
D. 80%
E. 90%
Which age group has the highest rate of abortion in the US?

A. 15-19
B. 20-24
C. 25-29
D. 30-34
Level I evidence (well-designed RCT) supports use of prophylactic antibiotics to decrease infection after surgical abortion.

A. True
B. False
Does your practice offer surgical abortion care?

A. Yes
B. No
Does your practice offer medical abortion care?

A. Yes
B. No
Objectives

• Understand global epidemiology
• Understand abortion techniques
  – Many skills transferable to non-abortion settings
• List the most common complications of uterine aspiration and medical abortion
Outline

• Abortion Epidemiology
  – US and international settings
• 1st-trimester Abortion
  – Manual vacuum aspiration
  – Medical abortion
• 2nd-trimester Abortion
• Abortion Complications
Case: Sara is a 24-year-old woman who had a baby 2 years ago who presents to you complaining of a missed period. Her pregnancy test is positive, and she desires an abortion.
Epidemiology of Abortion in the US
Pregnancies in the United States
(6.7 Million in 2006)

% of pregnancies

<table>
<thead>
<tr>
<th></th>
<th>Intended</th>
<th>Unintended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown</td>
<td>51</td>
<td>49</td>
</tr>
</tbody>
</table>
Outcomes of Unintended Pregnancies
(3.2 Million in 2006)

% of unintended pregnancies (excluding miscarriages)

<table>
<thead>
<tr>
<th></th>
<th>Abortions</th>
<th>Births</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abortion</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Births</td>
<td>57</td>
<td></td>
</tr>
</tbody>
</table>

1.2 million in 2008
Abortions by Gestational Duration

% of abortions

Source: Henshaw adjustments to Strauss et al., 2007 (2004 data)
Who Has Abortions: Age

- 20–24 years, 33%
- 30–34 years, 15%
- 25–29 years, 23%
- 35–39 years, 8%
- 15–19 years, 16%
- <15 years, 1%
- 40–44 years, 3%
- 15–19 years, 16%
- 20–24 years, 33%

Source: Henshaw adjustments to Strauss et al., 2007 (2004 data)
Rate of Abortion by Age

Source: Henshaw adjustments to Strauss et al., 2007 (2004 data)
Who Has Abortions: Economic Status

Source: Jones et al., 2002
Rate of Abortion by Economic Status

% of poverty level

- ≥300%: 10 abortions per 1,000
- 200–299%: 21 abortions per 1,000
- 100–199%: 38 abortions per 1,000
- <100%: 44 abortions per 1,000

Source: Jones et al., 2002
Who Has Abortions: Race/Ethnicity

- White*, 41%
- Hispanic, 20%
- Asian/Pacific Islander*, 6%
- Native American*, 1%
- Black*, 32%

*Non-Hispanic

Source: Jones et al., 2002
Rate of Abortion by Race/Ethnicity

<table>
<thead>
<tr>
<th>Race/ethnicity</th>
<th>Abortions per 1,000 women</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>14</td>
</tr>
<tr>
<td>Black</td>
<td>50</td>
</tr>
<tr>
<td>Hispanic</td>
<td>28</td>
</tr>
</tbody>
</table>

Source: Henshaw adjustments to Strauss et al., 2007 (2004 data)
Who Has Abortions: Religious Identification

- Protestant, 43%
- Catholic, 27%
- Other, 8%
- None, 22%

Source: Jones et al., 2002
Who Has Abortions: Prior Pregnancies

- None, 27%
- Previous abortion, 12%
- Previous abortion and previous birth, 36%
- Previous birth, 25%

Source: Jones et al., 2002
Global Epidemiology of Abortion
Abortion Worldwide

Millions of abortions

<table>
<thead>
<tr>
<th></th>
<th>1995</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>46</td>
<td>42</td>
</tr>
<tr>
<td>Developing</td>
<td>36</td>
<td>35</td>
</tr>
<tr>
<td>Developed</td>
<td>10</td>
<td>7</td>
</tr>
</tbody>
</table>
U.S. Abortion Rate Higher Than in Many Other Industrialized Countries

Abortions per 1,000 women

- United States: 21
- Australia: 20
- Sweden: 20
- Denmark: 15
- Canada: 15
- England & Wales: 17
- Germany: 8
- Netherlands: 9

Source: Sedgh, 2007
Legal Status is Not Correlated with Incidence

- The lowest abortion rates in the world - less than 10 - are in countries in Europe, where abortion is legal and available.

- In Africa and Latin America - where abortion law is most restrictive - the rates are 29 and 31.

Sedgh et al., 2007
20 Million Unsafe Abortions Occur Each Year

Number of abortions (millions)

World:
- Safe: 22
- Unsafe: 20

Developed regions:
- Safe: 6
- Unsafe: 0.5

Developing regions:
- Safe: 16
- Unsafe: 19

Legend:
- Safe
- Unsafe
20 Million Unsafe Abortions Occur Each Year

Annual abortions per 1,000 women 15–44

- **World**: 20 Million Unsafe Abortions
- **Developed countries**: 0 Million
- **Developing countries**: 20 Million

Sedgh, 2007
Complications of Unsafe Abortion

• Five million women are hospitalized each year for treatment of abortion-related complications.
• Complications account for 13% of maternal deaths, or 67,000 per year.
• Approximately 220,000 children worldwide lose their mothers every year because of abortion-related deaths.

Singh, 2006; WHO 2007; Grimes 2006
Deaths from Abortion Declined Immediately After Legalization

Number of abortion-related deaths

1970: Abortion laws liberalized in 15 states*

Roe v. Wade, Jan. 22, 1973
Conclusions: Epidemiology

• Unintended pregnancy is common.
• We should be prepared to counsel women about pregnancy options.
• Abortion should be legal and safe.
Pregnancy Options Counseling

- What do you think/hope the results will be?
- Validate and normalize
- Seek understanding
  - Can you say more about what you are feeling?
- Reframe
  - Use what you have learned from her
  - What I hear you saying is that you are making this decision because you care about your children’s well-being
- If needed find someone to help
- www.faithaloud.org / www.yourbackline.org
Obligations to Patient

- Study of 1200 physicians in 2007
- Would it be ethical to describe why the physician objects to the requested procedure?
  - 63% yes
- Does the physician have obligation to present all options to patient, including information about the requested procedure?
  - 86% yes
- Does the physician have an obligation to refer?
  - 71% yes
Conscientious Refusal

• When clinicians claim a right to refuse to provide certain services, to refer patients, or to inform patients about their existing options.

• Widespread in area of reproductive medicine – pharmacists EC and contraception, IUI, life-threatening medical conditions and abortion

• Claim that to provide services would compromise the moral integrity of a provider or institution
Ethical Responsibilities

• Criteria for assessing conscientious refusal
  – Potential for imposition
    • Patients who do not share their beliefs
  – Effect on patient health
  – Scientific integrity of the claim
    • EC, abortion and breast cancer
  – Potential for discrimination
    • Fertility assistance in same-sex couples
Responsibilities

- Prioritize patient’s well-being
- Provide accurate & unbiased information
- Provide potential patients with accurate and prior notice of their moral commitments, not use their authority to argue their position
- Refer in a timely manner
- Emergency – obligation to provide medically necessary services
Abortion Safety
Abortion Is Safe in the U.S.

- Abortion is one of the safest procedures
- Successful in 98-100% cases
- Complications are rare (0.04% - 0.07%)
- Abortion is even safer if earlier in pregnancy
- Early abortion is very simple to perform
Abortion Methods
# Methods of Induced Abortion

<table>
<thead>
<tr>
<th></th>
<th>1&lt;sup&gt;st&lt;/sup&gt; trimester</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; trimester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surgical</strong></td>
<td>Dilation &amp; Curettage (D&amp;C)</td>
<td>Dilation &amp; Evacuation (D&amp;E)</td>
</tr>
<tr>
<td></td>
<td>– Manual suction</td>
<td>– Standard D&amp;E</td>
</tr>
<tr>
<td></td>
<td>– Electric suction</td>
<td>– Intact D&amp;E</td>
</tr>
<tr>
<td><strong>Medical</strong></td>
<td>Medication</td>
<td>Induction</td>
</tr>
<tr>
<td></td>
<td>– Mifepristone + Misoprostol</td>
<td>– Misoprostol +/− Mife</td>
</tr>
<tr>
<td></td>
<td>– Misoprostol</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Methotrexate + Miso</td>
<td></td>
</tr>
</tbody>
</table>
1st Trimester Abortion

- Vacuum Aspiration Abortion
  - Manual or electric
  - Less than 14 weeks gestation

- Medical Abortion (25%)
  - Less than 9 weeks gestation
1st Trimester Surgical Abortion

- Counseling
  - Pregnancy options
  - Procedural
  - Contraception
- Preoperative Assessment
- Analgesia and Anesthesia
- Cervical Dilation
- Aspiration
- Recovery
Manual Vacuum Aspiration

- About 50% of U.S. abortion providers use MVAs\(^1\)
- Usually without sharp curettage
- Must empty syringe during procedure with gestation > 7 or 8 wks
- Women appreciate less noise\(^2,3,4\)

First-Trimester Aspiration Abortion
Surgical Abortion < 6 weeks

• Studies in 1970’s found increased rates of continuing pregnancy & complications < 6 wks

• Now new technology: sensitive urine pregnancy tests and transvaginal sonography

• May require more careful surveillance for equal success

• % of U.S. providers offering abortion at 4 weeks rose from 7% in 1993 to 40% in 2005

1. Jones 2008
Cervical Block Decreases Pain

- 20 mL 1% buffered lidocaine
- Slow, deep injection at tenac + 4 sites
- Stratified by <8 weeks (early), 8-10 weeks (late)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>BLOCK</th>
<th>NO BLOCK</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>With block</td>
<td>49/58</td>
<td>24/35</td>
<td>=.001</td>
</tr>
<tr>
<td>Dilation</td>
<td>34/51</td>
<td>75/83</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Aspiration</td>
<td>58/67</td>
<td>88/88</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Renner. Ob Gyn May 2012
Cervical & Uterine Nerves

Uterine fundus
Sympathetic nerves via:
• infundibulopelvic pelvic ligament $\rightarrow$ utero-ovarian lig
• inf hypogastric nerve through uterosacral ligaments, T10 - L1

Lower uterus/cervix
Parasympathetic plexus lateral to cervix, S2 - S4

Sensory nerves also found in uterine tissue
Cervical Injections

Paracervical vs. intracervical

Hybrid →

Superficial vs. deep injection

OK, you may feel a little pinch...

Nurse Sharks
Cervical Block for Uterine Aspiration

1. Deep injections better than superficial (but hurt)
2. Larger volume of injection better (20ml vs. less)
3. Slow injection helps block pain
4. Buffering lidocaine - less pain than not or bupiv
5. Routinely waiting more than a couple minutes after administering block unlikely to be helpful
6. Adding vasopressin decreases bleeding and possibly re-aspiration and increases amount of block that can be used

1 Wiebe et al. Am J Ob Gyn, 1992
3. Wiebe et al Int J Gynecol Obstet 1995
5. Phair et al Am J Ob Gyn, 2002
Medical Abortion
1\textsuperscript{st} Trimester Medical Abortion

- Counseling and assessment
- Take mifepristone in office
- Go home with pain medications
- Six hours to three days later:
  - Place misoprostol pills in vagina
  - Over next 4 to 24 hours+ bleeding
- Return to clinic as early as 3 days later
  - New evidence – follow-up regimens
Medical Abortion Worldwide

- Over 60% of outpatient abortions in several European countries
- Over 30 million worldwide
- Abortions occur earlier where MAB widely available

### Medical abortions as a percentage of all abortions

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>86% in 2010</td>
<td>2010[13][20]</td>
</tr>
<tr>
<td>Norway</td>
<td>78% in 2011</td>
<td>2011[13][19]</td>
</tr>
<tr>
<td>Scotland</td>
<td>74% in 2011</td>
<td>2011[17]</td>
</tr>
<tr>
<td>Sweden</td>
<td>74% in 2011</td>
<td>2011[13][18]</td>
</tr>
<tr>
<td>Switzerland</td>
<td>64% in 2011</td>
<td>2011[16]</td>
</tr>
<tr>
<td>Iceland</td>
<td>57% in 2009</td>
<td>2009[13]</td>
</tr>
<tr>
<td>France</td>
<td>52% in 2009</td>
<td>2009[15]</td>
</tr>
<tr>
<td>England and Wales</td>
<td>47% in 2011</td>
<td>2011[14]</td>
</tr>
<tr>
<td>Denmark</td>
<td>38% in 2006</td>
<td>2006[13]</td>
</tr>
<tr>
<td>Germany</td>
<td>18% in 2011</td>
<td>2011[12]</td>
</tr>
<tr>
<td>United States</td>
<td>17% in 2008</td>
<td>2008[7]</td>
</tr>
<tr>
<td>Netherlands</td>
<td>12% in 2008</td>
<td>2008[10]</td>
</tr>
<tr>
<td>Spain</td>
<td>05% in 2010</td>
<td>2010[9]</td>
</tr>
</tbody>
</table>
FDA-Approved vs. Evidenced-Based Regimens for Medical Abortion

**FDA-Approved**
- 600 mg Mifeprex PO given in the clinic
- Miso given orally
- 400 mcg misoprostol
- Miso 2 days later
- Miso given in the clinic
- Follow-up day 14
- Gestational limit 7 wks

**Evidenced-Based**
- 200 mg Mifeprex PO given in the clinic
- Miso vaginally/ buccally
- 800 mcg misoprostol
- Miso 6 hrs-3 days* later
- Pt takes at home
- Follow-up day 3 to 14
- Gestational limit 9 wks

*3 days studied to 8 wks gestation
Medical Abortion Efficacy

- **FDA-approved regimen**
  - 92-96% effective for gestation < 49 days
  - 50% complete abortion within 4 hours
- **Alternative regimen**
  - 96-99% effective for gestation < 63 days
  - 93% complete in less than 4 hours
Evidence-based Regimen

- Success: 97%
- Incomplete abortion: 2%
- Continuing pregnancy: 1%
Medical Abortion Outcome

- Cardiac motion & growth = continued pregnancy
  - Gestational sac, no CM or growth = incomplete
- Thick endometrial stripe consistent with success
Second Trimester Abortion Techniques

Dilation & Evacuation (D&E)  
- Cervical dilation to about 1.5 or 2 cm  
- Removal of fetus with forceps  

Induction Abortion +/- D&C for placenta  

Intact D&E / Dilation & Extraction (D&X)  
- Cervical dilation to 2-4 cm  
- Manual extraction of intact breech fetus  

Hysterotomy  

- 80%  
- 20%  
- <1%  
- <<1%
Reasons for Delay in 2nd-Trimester Patients

Difficulty in getting to our clinic 63%*
Emotional factors 51%
Initially referred to other clinic(s) 47%*
Afraid 35%
Didn’t suspect pregnancy 34%*
Unsure of decision 30%*
In denial about being pregnant 21%*
Difficulty with Medi-Cal, money, insurance 20%*
Difficulty figuring out where to go 20%*
Unsupportive partner 19%

*statistically significant vs. early abortion patients, p<0.05

Drey E et al, Ob Gyn, 2006
Induction Abortion

- **Misoprostol alone:** > 90% of women abort within 48 hrs, mean interval of ~ 15 hrs
- **Mifepristone + misoprostol:** > 90% of women abort within 24 hrs, mean interval of ~ 6 hrs
- **Osmotic dilators can shorten interval**

Dilation & Extraction (D&X)
(also “Intact D&E”)

• “Partial Birth Abortion,” named by anti-abortion groups, usually describes D&X
• Goal to minimize uterine instrumentation and/or deliver an intact fetus
• Cervical dilation usually requires 2 days
• Performed when:
  – Family desires autopsy or to see fetus intact
  – Fetal anomaly: cystic hygroma, hydrocephalus
  – Hemorrhage requires intervention with induction or SAB
Surgical Abortion: Cervical Ripening to Decrease Risk of Cervical Laceration

• SFP 2007
  – Consider priming for all adolescents
  – All women over 12 to 14 weeks

• WHO 2003
  – Younger than 18 years old
  – Nulliparous over 9 weeks
  – All women over 12 weeks

• RCOG 2004
  – Younger than 18 years old
  – All women over 10 weeks
Abortion Complications
An Abortion Is Safer the Earlier in Pregnancy It Is Performed

Deaths per 100,000 abortions

Sources: All births and abortions: CDC.gov; Abortion by gestation: Bartlett et al., 2004 (1988–1997 data)
Causes of Abortion-Related Deaths

% of abortion deaths (on average, 8 per year)

Source: Bartlett et al., 2004 (1988–1997 data)
# First-trimester Complications

<table>
<thead>
<tr>
<th></th>
<th>1st trimester medical</th>
<th>1st trimester surgical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>----------------------</td>
<td>0.07% (major)</td>
</tr>
<tr>
<td>Hemorrhage</td>
<td>0.1 – 0.4% (transfusion)</td>
<td>0.01%</td>
</tr>
<tr>
<td>Infection</td>
<td>0.9%</td>
<td>0.1 – 0.4%</td>
</tr>
<tr>
<td>Perforation</td>
<td>----------------------</td>
<td>0.1%</td>
</tr>
<tr>
<td>Cervical laceration</td>
<td>----------------------</td>
<td></td>
</tr>
<tr>
<td>Retained products</td>
<td>2 – 5% (~8% for 9wks)</td>
<td>0.3 – 2%</td>
</tr>
</tbody>
</table>

Peterson et al. *Obstet Gynecol* 1983
Ben-Ami et al. *AJOG* 2009
Frick et al. *Obstet Gynecol* 2012
Hakim-Elahi et al. *Obstet Gynecol* 1990
Hern et al. *Obstet Gynecol* 1984
Autry et al. *AJOG* 2002
Paul et al. *NAF Textbook* 2009
# Second-trimester Complications

<table>
<thead>
<tr>
<th></th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; trimester medical</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; trimester surgical</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall</strong></td>
<td>---------------</td>
<td>0.6%</td>
</tr>
<tr>
<td><strong>Hemorrhage</strong></td>
<td>&lt;1%</td>
<td>0.8 – 2.1%</td>
</tr>
<tr>
<td><strong>Infection</strong></td>
<td>2 – 3%</td>
<td>0.3 – 0.6%</td>
</tr>
<tr>
<td><strong>Perforation</strong></td>
<td>---------------</td>
<td>0.4%</td>
</tr>
<tr>
<td><strong>Cervical laceration</strong></td>
<td>---------------</td>
<td>0.1 – 0.8% (2.1 – 6.3%)</td>
</tr>
<tr>
<td><strong>Retained products</strong></td>
<td>2.5 – 10%</td>
<td>0.4 – 2.7%</td>
</tr>
</tbody>
</table>

Peterson et al. *Obstet Gynecol* 1983  
Ben-Ami et al. *AJOG* 2009  
Steinauer et al. Unpublished data  
Hakim-Elahi et al. *Obstet Gynecol* 1990  
Hern et al. *Obstet Gynecol* 1984  
Autry et al. *AJOG* 2002  
Paul et al. *NAF Textbook* 2009
Risk Factors for D&E Complications

- Poor cervical dilation
  - Cervical lac
  - Bleeding
  - Mortality
  - Perforation
  - Fever
  - Cervical lac

- Increased gestational age
  - Cervical lac
  - Bleeding
  - Hysterectomy

- Abnormal placentation
  - Cervical lac

- Prior cesarean delivery
  - Perforation

- Level of training

- Black race
  - Mortality

Peterson et al. Obstetrics and Gynecology 1983
Fox and Hayes Contraception 2007
Bartlett et al. Obstetrics and Gynecology 2004
Diedrich and Steinauer Clinical Obstetrics and Gynecology 2009
Hemorrhage Risk

Hemorrhage risk group

**Low risk**
- No prior cesarean sections
- Fewer than two prior cesarean sections and no previa or accreta
- No bleeding disorder
- No history of obstetrical hemorrhage

**Moderate risk**
- ≥2 cesarean sections
- Prior cesarean section and previa
- Bleeding disorder
- History of obstetrical hemorrhage not requiring transfusion
- Increasing maternal age
- Gestational age >20 weeks
- Fibroids
- Obesity

**High risk**
- Accreta diagnosis or concern
- History obstetrical hemorrhage requiring transfusion
- Any of the “moderate risk” categories may be considered “high risk,” per discretion of the clinician
Long-Term Safety of Abortion

• Abortions do not increase risk of:
  – Infertility
  – Ectopic pregnancy
  – Miscarriage
  – Preterm or low-birth-weight delivery

• There is no association between abortion and breast cancer.

• Abortion does not pose a hazard to women’s mental health.

Boonstra, 2006
Steinberg 2009, 2010
Surgical Abortion: STI Screening and Antibiotic Px

• Infection rate <1%
• Screen for STI according to guidelines
• Abx px post-aspiration infection
  – Recommend for all aspiration (EPF too)
  – Meta-analysis: RR 0.58
  – ACOG Practice Bulletin 2006
    • Doxy 100 mg 1 hr prior + 200 mg after or
    • Metronidazole 500 mg PO bid x 5 days
  – 2 Doses Doxy – one before procedure

Sawaya GF. Obstet Gynecol 1996
Medical Abortion: STI Screening and Antibiotic Px

- Overall infection rate 0.1%
- Screen for STI according to guidelines
- Minimal evidence supporting abx px
- Rare deaths from Clostridium
  - 1/100,000 risk of death
  - US – 6 Canada – 1
  - All within 1 week of medical abortion
  - All Mifeprex + 800 mcg miso

Fischer M et al. NEJM, 2005
C. Sordellii Toxic Shock

Symptoms

• Tachycardia, hypotension, edema, profound leukocytosis hemoconcentration, and absence of fever

Diagnosis

• CBC, anerobic cx culture, histopathology/immunohistochemical

Treatment

• Hysterectomy
• Anerobic antimicrobial coverage
  (clinda, PCN, amp, erythromycin, rifampin, tetracycline, cefoxitin, metronidazole)
• Supportive care for pre-formed toxin
Management of Hemorrhage

Assessment
- Cervical laceration: Visual and digital inspection of cervix
- Atony: Bimanual exam, Cannula test
- Hematometra: Ultrasound

Primary treatment
- Repair of cervical laceration
- Uterine massage
- Uterotonics

Secondary treatment
- Resuscitative measures
- Laboratory evaluation
- Re-aspiration
- Balloon tamponade

Tertiary treatment
- Uterine artery embolization
- Laparoscopy
- Laparotomy
- Hysterectomy
What proportion of abortions in the US are in the first trimester (<=14)?

a. 50%
b. 60%
c. 70%
d. 80%
e. 90%
Which age group has the highest rate of abortion in the US?

a. 15-19  
b. 20-24  
c. 25-29  
d. 30-34
Level I evidence (well-designed RCT) supports use of prophylactic antibiotics to decrease infection after surgical abortion.

a. True
b. False
Summary

• Abortions are common, safe, and most are early in the US.
• Abortion is safest and not more common when legal.
• Refer women as soon as possible for care.
• First-trimester uterine aspiration can be safely provided in outpatient setting.
• Antibiotics decrease infection after uterine aspiration.
Resources

- www.papayaworkshop.org
- Society of Family Planning guidelines
- www.yourbackline.org
- www.faithaloud.org