Sexually Related Diseases/Problems in Women: Vaginitis, PID, Unintended Pregnancy

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Vaginitis: Scourge of the Secret Garden
Vaginitis

What is it?

• Clinical syndrome caused by *inflammation/infection* of the vagina
• Characterized by abnormal vaginal discharge
• Sometimes caused by an STD
Vaginitis: Who Cares?

• Vaginal discharge is one of the most common symptoms among women of reproductive age around the world
• Most women experience vaginitis at least once during their lives
• In the US, women spend $260 million annually in OTC anti-fungals, $100 million for douches and $60 million for other cosmetic vaginal preparations
Vaginitis Etiologies

- Bacterial Vaginosis (BV)
- Trichomoniasis
- Vulvovaginal Candidiasis (VVC)

Differential diagnosis:
- MCP from GC or CT
- Atrophic vaginitis
- UTI
- Desquamative vaginitis
- Irritant Dermatitis
- Foreign body
- HSV
Vaginitis Epidemiology

• Most common reason for doctors visit, ~10 million patient visits per year
• Of those:
  – 40 -50% BV
  – 20 -25% VVC
  – 15 -20% *Trichomonas*
• Co-infection common: 20 -30%
Microbiology of the Vagina

• Vaginal epithelium sensitive to estrogen, which induces production of glycogen
• *Lactobacillus* spp. (normal flora) produce H$_2$O$_2$ and metabolize glycogen to lactic and acetic acid to keep pH at 3.8 - 4.2
• Acidic pH and *Lactobacillus* spp. colonization inhibit overgrowth of vaginal pathogens
• If vaginal pH is increased, GNRs, anaerobes, yeast and *Gardnerella* colonize vagina
Normal Vaginal Physiology

- Characteristic discharge
  - 1-4 ml fluid/24 hours
  - White or transparent, thick, odorless
  - Variation with cycle, OCPs, pregnancy
- pH 4-4.5
- Microscopy shows squamous cells with rare PMNs
Factors Adversely Affecting Normal Vaginal Flora

- Douching
- Antibiotic and antifungal therapy
- Hormonal changes: pregnancy, OCs
- Spermicides, lubricant
- Foreign bodies: tampons, IUD, diaphragm
- Intercourse, semen
- Menses
Effects of Estrogen Status on Vaginal Microflora

• Microbial loads are 100x lower in prepubertal and post-menopausal women compared to reproductive aged women.

• Estrogen and resulting glycogen deposition supports growth of both beneficial bacteria (lactobacillus) and pathogens.
Infection as a Cause of Vulvovaginitis Across the Lifespan

Hillier, CID 1997; 25 (Supplement 2):S123-6
Vaginitis: Clinical Presentation

- Abnormal vaginal discharge
- Vulvar itch
- Odor
- Discomfort
- Burning with urination
- Painful intercourse
Clinical Evaluation of Vaginitis

Physical Exam
• Characteristics of vaginal discharge
• Appearance of the vulva
• Appearance of vaginal mucosa
• Appearance of cervix
• Abdominal/bimanual exam
Diagnostic Evaluation of Vaginitis

- Vaginal pH
- Whiff test (amine test)
- Microscopy
  - Saline and KOH wet mounts
- Chlamydia and GC tests
Vaginal pH Measurement

Normal vaginal pH

High vaginal pH (>4.5)
Bacterial Vaginosis

A sexually-associated disease
Bacterial Vaginosis

- Vaginal lactobacilli are replaced by large numbers of
- Anaerobes:
  - *Mobiluncus*
  - *Bacteroides* spp.
  - *Prevotella* spp.
- Aerobic GNRs: *Gardnerella vaginalis*
- Mollicutes: *Mycoplasma hominis*
- Underlying cause not fully understood
Microbial Shifts in BV

G vaginalis
Anaerobes
Mycoplasmas

Lactobacillus

10^11

10^4

100-1000 x increase in pathogenic bacteria
Revised Model of Pathogenesis

More partners/ Frequent intercourse → Douching → Absence of *Lactobacillus*

→ Normal → Bacterial Vaginosis

RF
Smoking
Non-white race

Hillier, The Secret Garden, Principles in STD/HIV Research, Seattle 2003
Clinical Presentation of BV

- Foul, “fishy” odor
- Increased or changes in vaginal discharge
- Vulvar itching and/or irritation
- Symptoms worse after intercourse and during menses
- 50% may be asymptomatic
- Risk factors: multiple sexual partners, douching, lack of lactobacilli

NOT an STD, but may be sexually associated
BV: Diagnostic Criteria

Amsel Criteria (3 of the following 4):

• Homogeneous white noninflammatory discharge that adheres to the vaginal walls
• Vaginal pH > 4.5
• Positive “whiff” test
• > 20% Clue cells on saline wet mount

>90% sensitive
**BV: Treatment**

**Recommended regimens:**
- Metronidazole 500 mg PO BID x 7 d
- Metronidazole gel 0.75% 5 g per vagina QD x 5 d
- Clindamycin cream* 2% 5 g per vagina QHS x 7 d

**Alternative regimens:**
- Metronidazole 2 g PO x 1
- Clindamycin 300 mg PO BID x 7 d
- Clindamycin ovules 100 mg per vagina QHS x 3 d

*oil-based cream, may weaken condoms and diaphragm
BV: Complications

- Post-procedural endometritis
  - Endometrial biopsy
  - Hysteroscopy
  - IUD insertion
  - Surgical abortion
- Post-hysterectomy vaginal cuff cellulitis
- Pathogens associated with PID
- ? Increased susceptibility to HIV
- ? Increased susceptibility to CT/GC
BV: Complications in Pregnancy

• Preterm delivery and low birth weight
• Premature rupture of membranes
• Chorioamnionitis
• Post-partum endometritis
• 1st trimester miscarriage in IVF patients
BV: Screening in Pregnancy

- **2008 USPSTF Recommendations**
  - No screening in asymptomatic women at low risk for PTD
  - Insufficient evidence for screening asymptomatic women at high risk for PTD

- **2006 CDC Guidelines**
  - No firm recommendation
  - “Some specialists recommend” screening and treatment of women with a history of a premature birth.
  - Screen at the first prenatal visit.
BV: Treatment Criteria

• All symptomatic women
• Asymptomatic women if undergoing invasive intra-uterine procedure
• Asymptomatic high risk pregnant women with a history of preterm delivery (+/-)
BV: Recurrent Infection

- Up to 85% will have recurrence within one year
- 25% within 4-6 weeks after treatment
- Occurs equally often after vaginal or oral therapy, and after metronidazole or clindamycin
- No improvement in recurrence rates after treatment of male partners
WHEN they were first married, five years ago, they liked to dance together, go motoring together, play golf together. They still like to do those things together today.

She is still the girl he married.

During the years following her marriage, she has protected her zest for living, her health and youthfulness, and "stayed young with him" by the correct practice of feminine hygiene.

But feminine hygiene, wrongly practiced, does more harm than good. Using the wrong disinfectant may lead to very serious consequences.

Realizing this, the makers of "Lysol" Disinfectant have prepared a booklet called "The Scientific Side of Health and Youth." It gives the facts about this vital subject. Send the coupon now. The booklet will reach you in a plain envelope. It is free.

In the meantime, take no needless, dangerous chances. Buy a bottle of "Lysol" Disinfectant at your druggist's today. Complete, explicit directions come with every bottle.


LEHN & FINK, Inc., Sole Distributors, Bloomfield, N.J.
Department 149

Please send me, free, your booklet,
"The Scientific Side of Health and Youth."

Name
City

Street
State
What’s Wrong with Douching?

- Alters vaginal ecosystem, kills protective lactobacillus
- Increases risk of acquiring BV, CT
- Increases risk of complications: PID, ectopic pregnancy
- NO safe product
- Probably no safe frequency
## Vaginal “Cosmetics”

<table>
<thead>
<tr>
<th>Product</th>
<th>Components</th>
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</thead>
<tbody>
<tr>
<td>Douches</td>
<td>Surfactants, Disinfectants</td>
</tr>
<tr>
<td>Yeast-Guard</td>
<td>Plant extracts, Dead yeast</td>
</tr>
<tr>
<td>Yeast-X</td>
<td>Plant extracts</td>
</tr>
<tr>
<td>Vagisil cream</td>
<td>Benzocaine</td>
</tr>
<tr>
<td>Vagisil powder</td>
<td>Cornstarch</td>
</tr>
<tr>
<td>Vaginex</td>
<td>Antihistamine</td>
</tr>
</tbody>
</table>
Vulvovaginal Candidiasis (VVC)
Vulvovaginal Candidiasis (VVC)

- Caused by various *Candida* spp. (*albicans* 75-90%, *glabrata* 5-10%, *tropicalis* 5-10%)
- *Candida* may colonize 15-40% of women, so only considered pathogen if symptoms present
- In U.S., 13 million cases per year
- Affects 70-75% of women during their lifetime, with 40-50% having at least 1 recurrence
VVC: Risk Factors

- Hormonal changes
- Pregnancy
- Diabetes
- Antibiotic use
- HIV infection
- Steroids
VVC: Clinical Manifestations

- Abnormal discharge
- Vaginal soreness
- Vulvar burning or itching
- Dysuria may be only complaint

*NOT an STD, but may be sexually associated*
Why does a woman “get” yeast vaginitis?

• Many women are colonized by yeast as part of normal flora
• Yeast colonization more frequent among those having vaginal lactobacilli, those who smoke, and women who are sexually active
• Unknown why some women develop symptoms and others remain asymptomatic
• Exposure to irritants may increase sensitization by yeasts
Yeast Colonization Study

• Baseline demographic data obtained
• Follow-up at 4-month intervals (0, 4, 8, 12) for 1 year
• Vaginal swabs collected at 4-month intervals for 1 year
• Questions regarding vaginal symptoms and treatment obtained at all follow-up visits
• Correlated culture data with symptoms and RX—after all data collected

Yeast Colonization Study


% patients reporting antifungal use
Most Common Misdiagnoses among Women Reported to Have Recurrent VVC

- Recurrent BV
- Genital herpes
- Contact dermatitis (mini pad syndrome)
- Lichen sclerosis
- Atrophic vaginitis
Diagnosis of VVC

Accurate diagnosis is crucial to treatment success
  --Signs and Symptoms
    PLUS
  --Positive saline and/or 10% KOH microscopy
    OR
  --Positive culture

Clinical signs and symptoms are not specific in VVC
VVC: Diagnosis

- Mucosa often inflamed and erythematous
- Discharge is white, thick and curd-like, or may be thin and watery
- KOH wet mount with budding yeast or pseudohyphae (50-70% sensitive)
- pH usually normal
- Fungal culture for non-albicans spp.
Uncomplicated VVC: OTC Treatment

Topical Therapies:

• Clotrimazole:
  – 1% cream per vagina x 7-14 d
  – 100 mg vaginal tab x 7 d or 2 tabs x 3 d
  – 500 mg vaginal tab x 1

• Miconazole:
  – 2% cream per vagina x 7 d
  – 200 mg vaginal suppository x 3 d
  – 100 mg vaginal suppository x 7 d

These medications are available without prescription

*Topical therapies are oil-based and may weaken condoms and diaphragm
Uncomplicated VVC: Treatment

Topical Therapies:
- Butoconazole 2% cream per vagina x 3 d (or sustained-release, single dose)
- Tioconazole 6.5% ointment per vagina x 1
- Terconazole:
  - 6.5% ointment per vagina, single dose
  - 0.4% cream per vagina x 7 d
  - 0.8% cream per vagina x 3 d
  - 80 mg vaginal suppository x 3 d

Oral Therapy:
- Fluconazole 150 mg PO x 1

*Topical therapies are oil-based and may weaken condoms and diaphragm. These medications are available by prescription*
Trichomonas Vaginalis

A sexually transmitted infection
Trichomoniasis

• Etiologic agent: *Trichomonas vaginalis*, flagellated anaerobic protozoa
• Estimated annual incidence in U.S: 7 million
• Long-term asymptomatic carriage documented in both men and women
• Increases susceptibility to HIV infection
• Associated with low birthweight and preterm babies
Trichomonas infections, who cares?

• High prevalence among minority populations in US and developing countries
• Infection leads to inflammatory infiltrate and punctate mucosal hemorrhages
• Degrades SLPI (Secretory Leukocyte Protease Inhibitor), an endogenous microbicide known to block HIV cell attachment
# Prevalence of *T. Vaginalis* by Race

<table>
<thead>
<tr>
<th>Location</th>
<th>Overall</th>
<th>Black</th>
<th>Non-black</th>
<th>OR</th>
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<tbody>
<tr>
<td>NY, 1998</td>
<td>47%</td>
<td>51%</td>
<td>35%</td>
<td>1.6</td>
</tr>
<tr>
<td>SF, 1985</td>
<td>11%</td>
<td>28%</td>
<td>9%</td>
<td>3.7</td>
</tr>
<tr>
<td>5 Cities, 1991</td>
<td>13%</td>
<td>23%</td>
<td>6%</td>
<td>4.4</td>
</tr>
<tr>
<td>Phil, 1970</td>
<td>16%</td>
<td>30%</td>
<td>11%</td>
<td>3.6</td>
</tr>
</tbody>
</table>

*Source:* Sorvillo, Emerging Infect Dis 2002, 6:927
Trichomonas: A Pathogen Over Lifetime

- Can be transmitted to prepubertal girls through sexual abuse
- Little evidence to support transmission through shared towels, toilet seats, etc.
- Can be carried asymptomatically for years
- Can “emerge” as a new infection in post-menopausal women following antibiotic therapy or change in estrogen status
- Careful diagnosis and treatment of male partner essential
Trichomoniasis
Clinical Presentation

• May infect ectocervix, vagina, urethra or bladder
• In women, causes malodorous yellow-grey discharge with irritation and vulvar itching
• In men, can cause urethritis
• Often asymptomatic (≥ 50%)
Trichomoniasis: Diagnosis in Women

- Typical vaginal discharge: thin, frothy, grey/yellow
- May see punctate cervical hemorrhages (strawberry cervix) 5-10%
- Motile trichomonads on saline wet mount (sensitivity may be as low as 60%)
- pH > 4.5
- Whiff test may be positive
- Culture available (InPouch TV Test)
- Point of care tests now available
- PCR tests exist but not FDA approved
Trichomoniasis: Diagnosis in Men

• Laboratory diagnosis rarely performed
• Epi treatment of contacts to women with trichomoniasis or presumptive treatment for men with recurrent, persistent urethritis
• Microscopy of spun urine or discharge of symptomatic men
• Culture recommended for men with recurrent urethritis
Trichomonas vaginalis

Seattle STD/HIV Prevention Training Center
Trichomoniasis: Treatment

**Recommended regimen:**
- Metronidazole 2 g PO x 1*
- Tinidazole 2g PO x 1

**Alternative regimen:**
- Metronidazole 500 mg PO BID x 7d

*Metronidazole highly effective: 95% if both partners treated*

*Recommended regimen is the same in pregnancy*
Pelvic Inflammatory Disease
Definition of PID

Upper genital inflammation/infection

- Endometritis
- Salpingitis
- Tubo-ovarian abscess
- Pelvic peritonitis

CDC. MMWR. 1993; 42:75
PID Clinical Presentation

- Fever and chills
- Lower abdominal pain
- Occasional vaginal bleeding
- Local or generalized signs of peritoneal involvement depending on degree of spread of infection
Reproductive Anatomy & Spread of Infections
Pelvic Inflammatory Disease (PID): Magnitude of the Problem From All Causes in the United States

> 1 million cases per year resulting in:
   - 2.5 million outpatient visits per year
   - 275,000 hospitalizations per year

Sequelae (25%)
  - Infertility (12% to 50%)
  - Ectopic Pregnancy (↑ 6 to 10 fold)
  - Chronic Pelvic Pain (18%)
    - 100,000 surgical procedures

Psychological Problems: devastating
Nationwide Costs of PID (1990)

<table>
<thead>
<tr>
<th></th>
<th>Cost ($ billions)</th>
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<tbody>
<tr>
<td>Direct Cost</td>
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<tr>
<td>Indirect Cost</td>
<td>1.5</td>
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<tr>
<td>Total Cost</td>
<td>4.2</td>
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<tr>
<td>Estimated Total in</td>
<td>&gt;9</td>
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<tr>
<td>Year 2000</td>
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Microorganisms that Cause PID

- Chlamydia trachomatis
- Neisseria gonorrhoeae
- Vaginal Bacteria (No pathogen identified)
- Chlamydia trachomatis and Neisseria gonorrhoeae

Recovery of Microorganisms from Upper Genital Tract

N=387/6 studies

Percent of Women

- Chlamydia trachomatis: 31%
- Neisseria gonorrhoeae: 27%
- Anaerobes and Facultative Microorganisms: 61%

References:
CT Screening Prevents PID:
Clinical trial, Seattle HMO, 1990-1992

- Randomized controlled trial
- 1009 high risk women 18-34 assigned to intervention (invitation to get tested) & 1598 to usual care

- Among intervention group, 64% were tested and 7% were positive and treated
- Outcome of PID w/i 1-year:
  - 9 cases in screening group,
  - 33 cases in usual care group
    - (RR=0.44 (0.20-0.90))

Scholes et al., NEJM, 1996; 334:1362-6
PID Diagnostic Considerations

- Diagnosis based on clinical findings
- Wide variation of symptoms and signs
- Many women with PID have subtle or mild symptoms
- Delay in diagnosis and treatment probably contributes to inflammatory sequelae
Clinical Diagnosis

• Imprecise
• Positive predictive value (PPV) for salpingitis of 65%-90% compared with laparoscopy.
• PPV of clinical diagnosis depends on epidemiology of population: higher among sexually active young women, STD clinic patients, or other settings where high rates of chlamydia and gonorrhea

CDC.MMWR. 2006
Clinical Diagnosis (2)

- No single historical, physical, or lab finding is both sensitive and specific for the diagnosis of acute PID
- Combinations of diagnostic findings that improve sensitivity or specificity do so at the expense of the other.
CDC Diagnostic Criteria for PID

Minimal Criteria*

- Uterine tenderness
  or
- Cervical motion tenderness
  or
- Adenexal tenderness

CDC.MMWR. 2006

* Start empiric treatment for PID if sexually active women with pelvic or lower abdominal pain and any criteria are present and if no competing diagnosis is suspected.
Additional Criteria*

Oral temperature > 101°F (>38.3°C)

• Abnormal cervical/vaginal mucopurulent discharge
• WBCs on saline microscopy of vaginal secretions
• ↑ Erythrocyte sed rate
• ↑ C-reactive protein

• + Lab → Neisseria gonorrhoeae or Chlamydia trachomatis

• Used to enhance the specificity of the minimum criteria and support the diagnosis of PID
Elaborate Criteria

- Endometrial biopsy → Endometritis;

- Transvaginal sonogram or MRI showing thickened fluid-filled tubes w/ or w/o free pelvic fluid or tubo-ovarian abscess;

  and

- Laparoscopic evidence
PID Treatment

• Treatment requires broad empiric coverage of likely pathogens.
• All regimens are effective against chlamydia and gonorrhea
• All regimens have anaerobic coverage +/- activity against BV
• Hospital-based and outpatient regimens
Improving Prevention of Unintended Pregnancy with Emergency Contraception
Unintended Pregnancy

• Approximately 4 million unintended pregnancies occur each year in the US.
• Most result from the non-use of contraception or from a noticeable contraceptive failure.
• Estimated that that $\frac{1}{2}$ of the 900,000 pregnancies in California each year are unintended and $\frac{1}{4}$ end in abortion.

(Alan Guttmacher Institute, 2002)
Unintended Pregnancy in LAC

- In LAC, ~46% of pregnancies resulting in live births are unintended.
- Unintended pregnancy rate in LAC likely much higher when pregnancies resulting in abortion and miscarriage are considered.

California Maternal and Infant Health Assessment, 2005
Costs of Unintended Pregnancy

• Associated with negative health consequences for women and newborns
  – Delayed prenatal care
  – Increased risk preterm delivery
• Disproportionately impacts minority women, low income women, and women on Medicaid.

CDC 2006, MIHA 2005
Fiscal Costs of Unintended Pregnancy

• Cost LAC taxpayers $440,000,000/year due to negative health outcomes, lost income and tax revenue, and increased need for public assistance.

• Estimated that every dollar spent on publicly subsidized family planning services saves $4.40 of costs on medical care and social services provided to women who become pregnant.

Emergency Contraception Overview

• Only effective form of birth control that works AFTER sex. Also known as “morning after pill”.
• Safe and effective oral contraceptive that prevents pregnancy if taken soon after intercourse.
• Does not harm an already established pregnancy.
• Plan B, a progestin only OCP, is the only FDA approved dedicated product.

Trussell AJPH 1997, Alan Guttmacher Institute, 2002
Potential Impact of Universal Access to Emergency Contraception (EC)

Reduce unintended pregnancies by half: 1.5 million fewer
Reduce abortions needed by half: 0.7 million fewer
Reduce pregnancies after rape by 88%: 22 thousand fewer

Trussell AJPH 1997
Mechanism of Action

- EC primarily works to delay or inhibit ovulation.
- EC *MAY* keep the sperm from meeting the egg.
- EC *MAY* keep the fertilized egg from implanting.

- Other methods that *MAY* keep the fertilized egg from implanting.
  - OCPs, Norplant, Vaginal ring, Patch & Depo-Provera
  - IUDs (Mirena and Paraguard)
  - Breastfeeding

Source: ACOG 1998
What is Plan B?

• A commercial product that is equivalent to Ovrette (progestin only birth control pills).
  • Levonorgestrel 1.50mg (two .75 mg tablets)
  • First dose within 120 hours after intercourse, and second dose 12 hours later
  • Both doses can be taken at the same time
Plan B
PLAN B

- Less nausea
- Less emesis
- More effective
- Consists of two .75 mg Leveongestrel tablets

OLDER VERSIONS (combined ECP)

- 50% experienced nausea
- 20% experience emesis
- Less effective than progestin only pills
- Variable amount of tablets of estrogen and progestin
### Effectiveness of Plan B

<table>
<thead>
<tr>
<th>Time (Hours)</th>
<th>Effectiveness</th>
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<tbody>
<tr>
<td>24 hours</td>
<td>95% of expected pregnancies</td>
</tr>
<tr>
<td>72 hours</td>
<td>86% of pregnancies</td>
</tr>
<tr>
<td>120 hours</td>
<td>61% of pregnancies</td>
</tr>
</tbody>
</table>
Risks of Providing EC

• **No evidence-based contraindications.**
• Not indicated for a woman with a suspected or confirmed pregnancy—no harm if mistakenly taken.
• Has not been shown to increase sexual risk behavior, STD acquisition, or decrease regular contraception use.
## Common Side Effects Plan B

<table>
<thead>
<tr>
<th>Side Effect</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea</td>
<td>20%</td>
</tr>
<tr>
<td>Emesis</td>
<td>5%</td>
</tr>
<tr>
<td>Headaches</td>
<td>17%</td>
</tr>
<tr>
<td>Fatigue</td>
<td>17%</td>
</tr>
<tr>
<td>Dizziness</td>
<td>10%</td>
</tr>
<tr>
<td>Breast Tenderness</td>
<td>10%</td>
</tr>
</tbody>
</table>
Less Common Side Effects

• abdominal pain
• cramps
• diarrhea
• Irregular bleeding or spotting
• Next period may be either early or late
Access to EC

- 1997 FDA declared oral contraceptive pills safe for use as EC and made EC available by prescription only
- 10 states allowed pharmacists to prescribe (California, October 2001)
- FDA approved over-the-counter access Nov 2006
Access to EC in California

• Part of comprehensive care package covered by FPACT and MediCal.

• Direct pharmacy access of Plan B available since Jan 2002. (SB 1169)
  – Only 1 in 4 LA pharmacists provide this service.
  – Only 9% of women surveyed knew about this option (KFF, 2004)

• Over-the-counter access since Nov 2006
  – Available for individuals 18 years and older with proof of age; cost ~ $40
  – ‘Behind-the-counter’ status – available in drug stores only when pharmacist on site
Barriers to Access in OTC Plan B Era

- **After hours access**: FDA requires Plan B be kept “behind the counter” and dispensed by authorized practitioners.

- **Consumer awareness**: in LAC, >55% of women of reproductive age are unaware that EC may be taken after intercourse to prevent pregnancy. (UCSF CRHP, 2005)

- **Cost**: $40 OTC or with Pharmacy Access

- **Lack of identification**: FDA requires proof of age to receive OTC EC. Undocumented women and those without ID impacted.

- **Adolescents**: highest risk group for unintended pregnancy unable to obtain Plan B without prescription (pharmacy or provider)
EC Dispensing/Prescribing Strategies

- Acute need: provision of EC within 5 days of episode of unprotected sex
- Advance prescription (in-advance of need): provision of medication or prescription in advance
  - AMA, ACOG, AAP, SAM AAFP all support advance prescription.
  - Not associated with increased risk taking or STDs
Solutions to increasing access

• Educate
  – Providers (dispense/prescribe in-advance of need)
  – Consumers

• Extend OTC status to minor
The End

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