



# Webcast Wednesday: Contraception Options for Women Living with HIV

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# Disclosures

- I have no financial disclosures or conflicts of interest.

# Goals

- The purpose of this session is to prepare HIV providers to counsel women living with HIV (WLWH) on their family planning options

# Learning Objectives

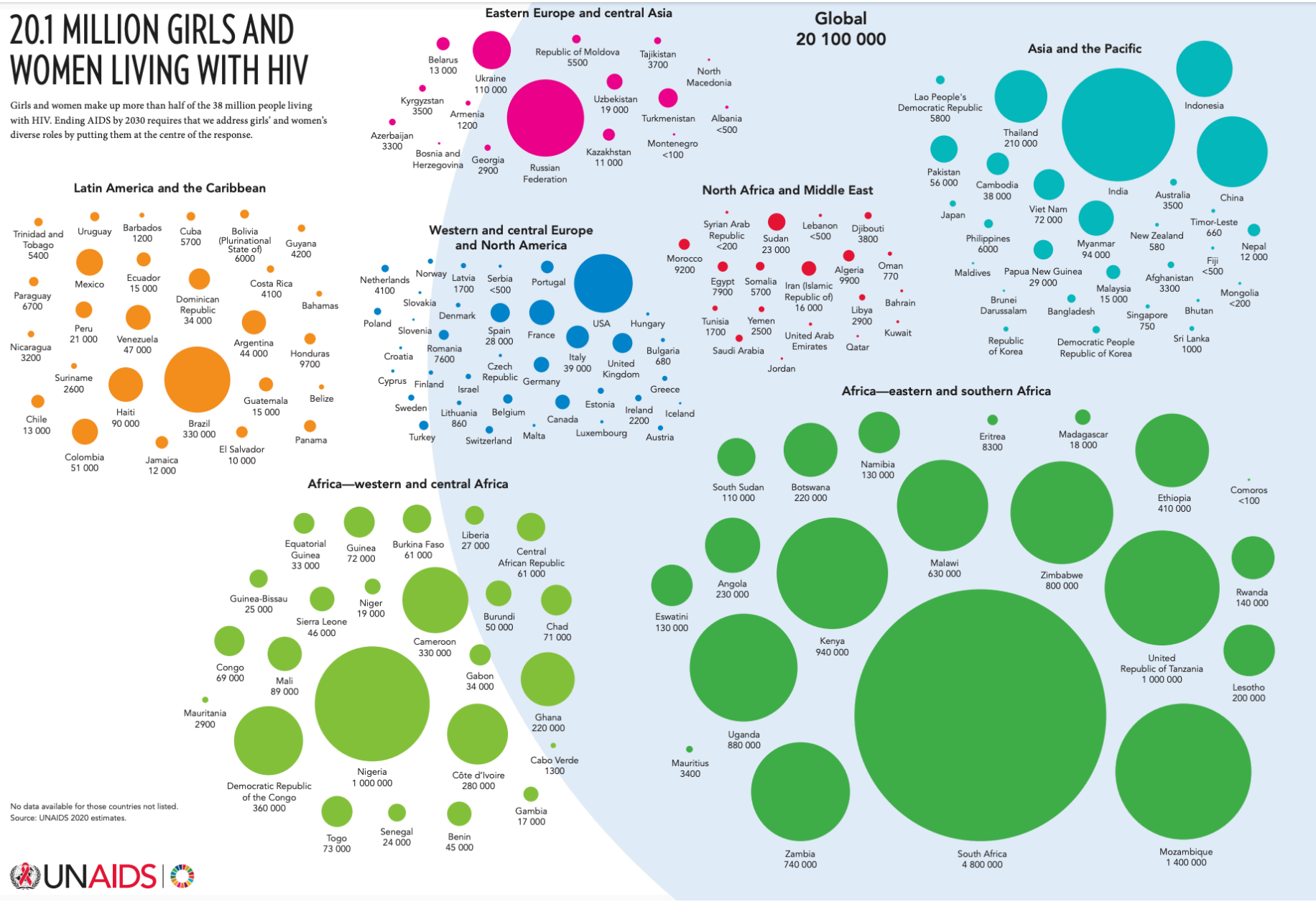
- At the end of this session, participants will be able to:
  - List and utilize contraceptive methods that are appropriate for use in WLWH
  - Identify potential drug drug interactions between antiretroviral therapy and hormonal contraceptives
  - Counsel your patients on their contraceptive options

# Abbreviations

- Hormonal Contraception : HC
- Intrauterine Device : IUD
- Progestin Only Contraception : POC
- Combined Hormonal Contraception : CC
- Levonorgestrel : LNG
- Women Living with HIV : WLWH
- Antiretroviral Therapy : ART

# 20.1 MILLION GIRLS AND WOMEN LIVING WITH HIV

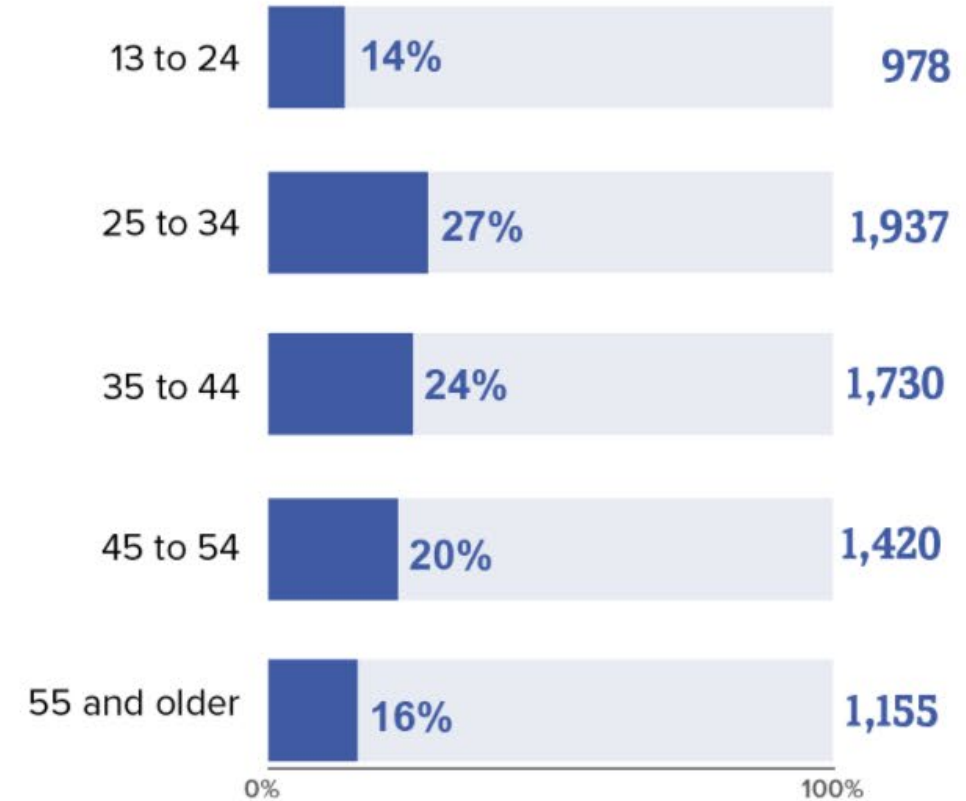
Girls and women make up more than half of the 38 million people living with HIV. Ending AIDS by 2030 requires that we address girls' and women's diverse roles by putting them at the centre of the response.



No data available for those countries not listed. Source: UNAIDS 2020 estimates.

# Epidemiology

## New HIV Diagnoses Among Women by Age in the US and Dependent Areas, 2018



# Family planning





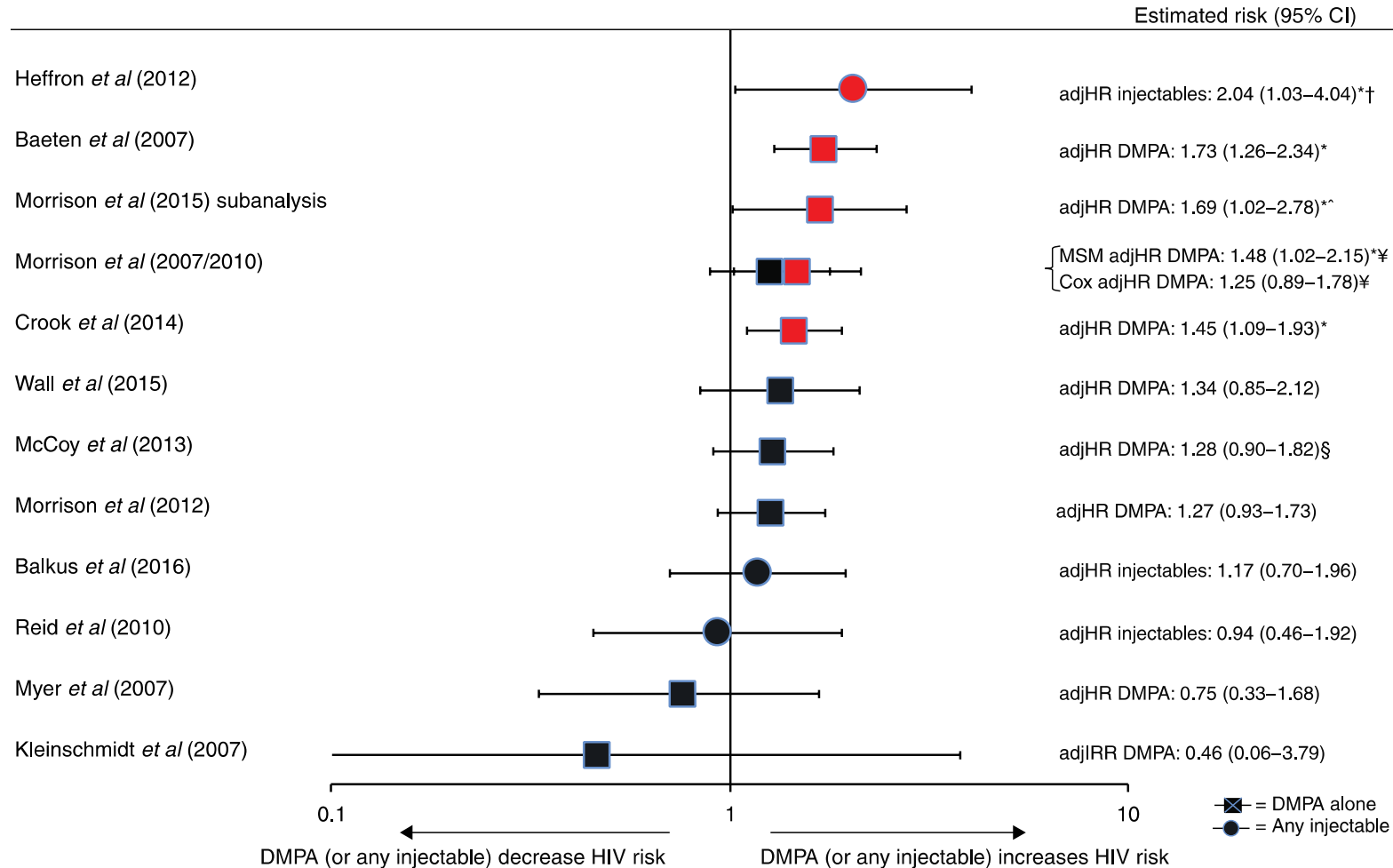
# Family Planning

Programs to prevent perinatal HIV transmission would prevent over 240,000 infant HIV infections in the top 14 countries at an estimated cost of over 131 million.

But 90,000 infant HIV infections would still occur that could have been averted by preventing unintended pregnancies at a cost of 33 million globally.

Family planning is cost-effective for preventing HIV transmission and unintended pregnancies.

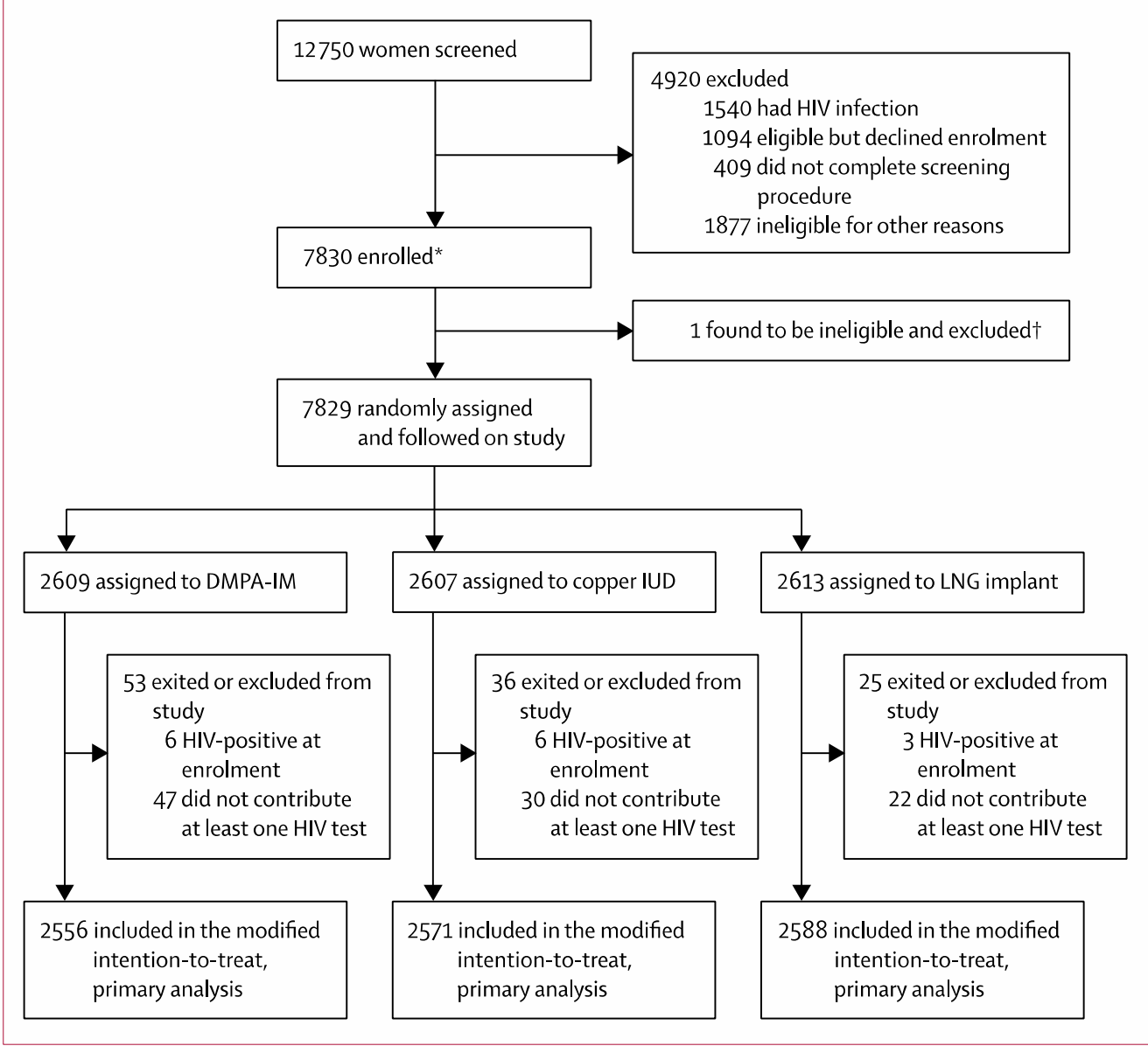
# Concerns regarding HC and HIV Risk



# Evidence for Contraceptive Options and HIV Outcomes (ECHO) Study

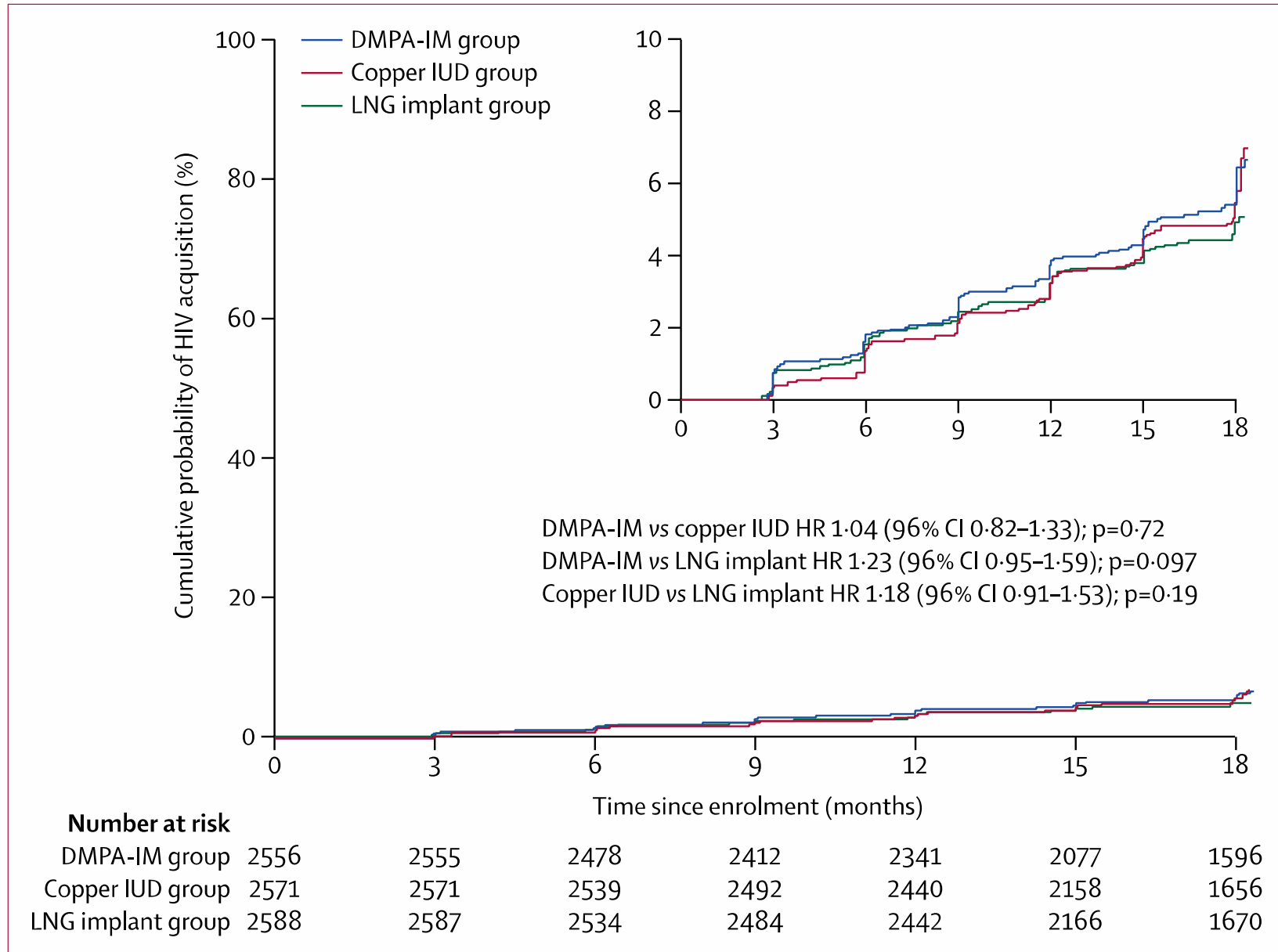
- Multicenter, open-label randomized clinical trial
- Compared HIV incidence in women using one of three contraceptive methods:
  - Intramuscularly delivered depot medroxyprogesterone acetate (DMPA)
  - A copper IUD
  - A levonorgestrel (LNG) implant

# Methods



Evidence for Contraceptive Options and HIV Outcomes (ECHO) Trial Consortium. HIV incidence among women using intramuscular depot medroxyprogesterone acetate, a copper intrauterine device, or a levonorgestrel implant for contraception: a randomised, multicentre, open-label trial. *Lancet*. 2019 Jul 27;394(10195):303-313.

# Results



# Results | HIV Incidence

	<b>DMPA</b>	<b>Copper IUD</b>	<b>LNG Implant</b>
<b># HIV Infections</b>	143	138	116
<b>HIV Incidence, per 100 woman-years (95% CI)</b>	4.19 (3.54-4.94)	3.94 (3.31-4.66)	3.31 (2.74-3.98)

# WHO Recommendations

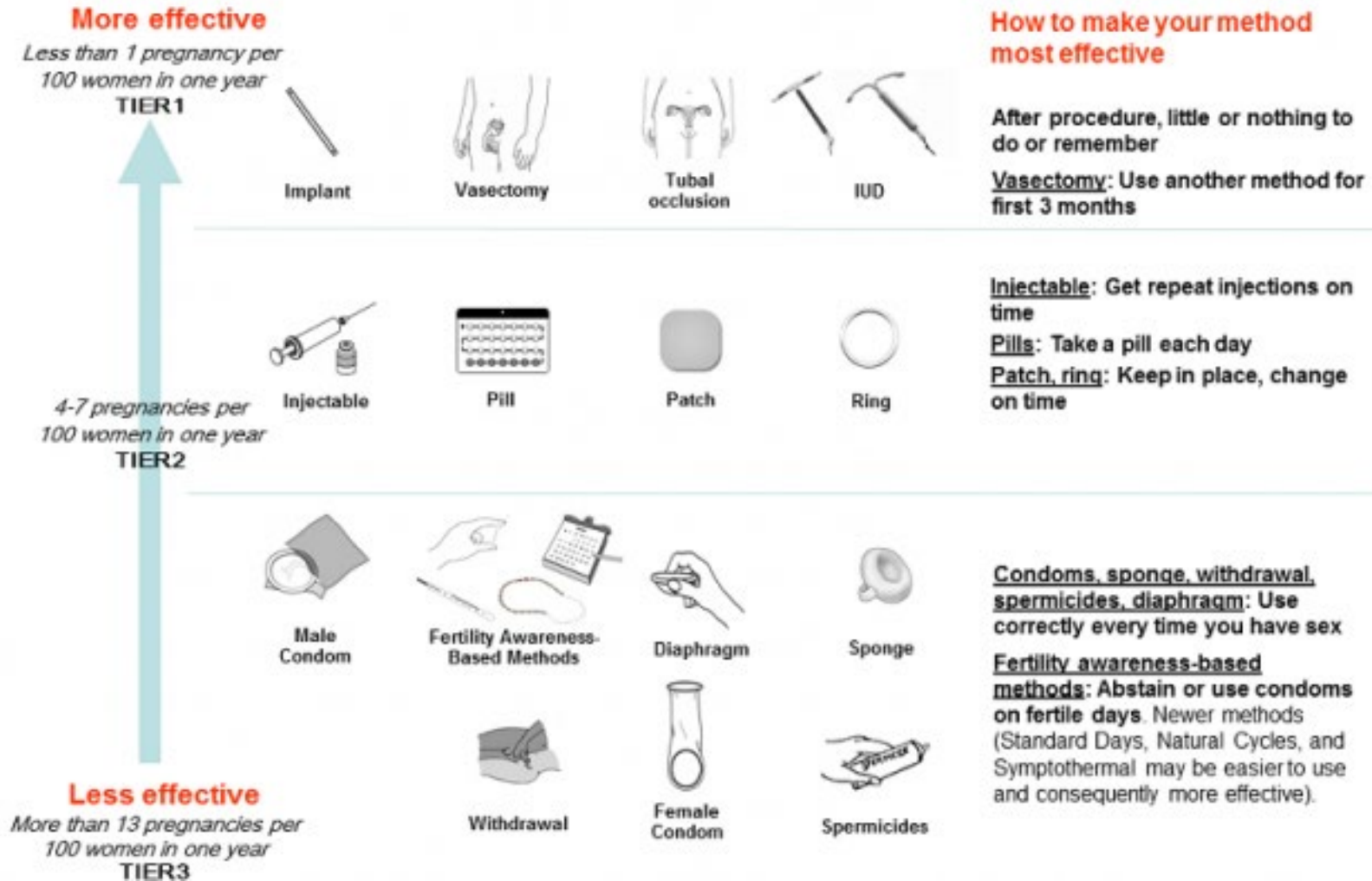
- In 2017, WHO recommended that women at risk for HIV can use progestin-only injectables but should be advised about:
  - Concerns about possible increased risk of HIV
  - Uncertainty about casual relationship
  - How to minimize their risk
- After ECHO, WHO updated their recommendations in 2019 to say that women at high risk of HIV can use all methods of contraception without restriction

# Contraception for WLWH | General Principles

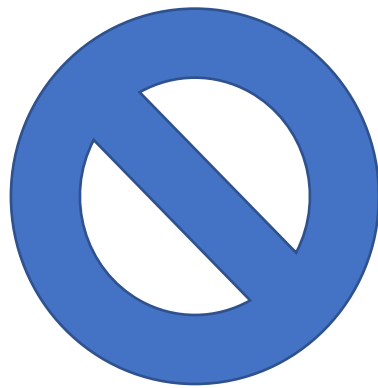
- Choice
  - Reproductive health is a fundamental human right and women and their partners should be able to make the best decision for them and their family planning goals
- Methods
  - Make as many methods available as possible
- Integration
  - Family planning should be included in routine HIV care
  - Ask your patients about their fertility desires or intentions



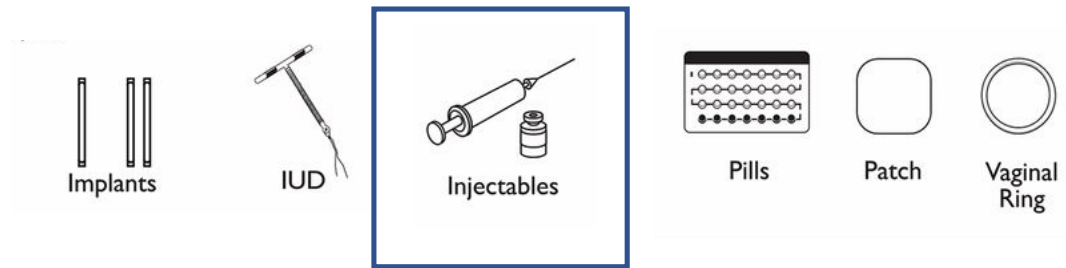
# Contraception



# Contraception Usage in WLWH



25% have never used birth control at all in their lives

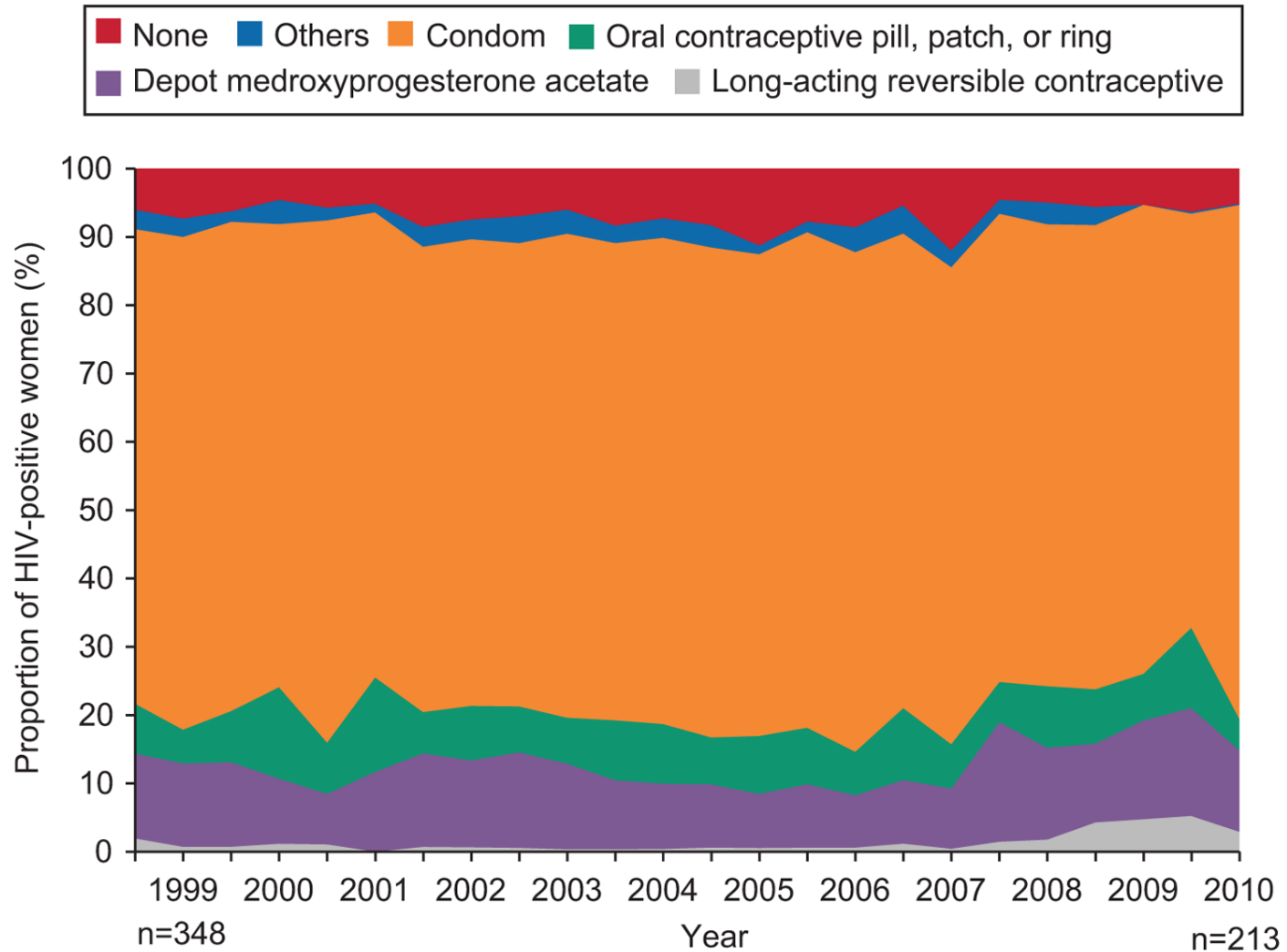


31% reported use of a Tier 1/2 method



69% reported use of a Tier 3 method or no birth control

# Trends in Contraception among WLWH



# Hormonal Contraception and ART

- 5,153 HIV-infected women were followed prospectively for 1 to 3 years
- They compared incident pregnancy rates by contraceptive method and ART use
- 9% used implants, 40% used injectables and 14% used OCPs

ART Use	Hormonal Contraception Use	# Pregnancies	Person-Years	Pregnancy Incidence Rate (per 100 person-years)	aHR* (95% CI), p-value versus no contraception and same ART use
Any ART	None	111	843.5	13.2	ref
	Implant	1	94.1	1.1	0.06 (0.01, 0.45), p=0.005
	Injectable	11	332.8	3.3	0.18 (0.10, 0.35), p<0.001
	Oral Pills	5	81.2	6.2	0.37 (0.15, 0.91), p=0.03

# Drug Drug Interactions for CC

Non-Nucleoside Reverse Transcriptase		
Efavirenz	Increased or Neutral effects on ethinyl estradiol Decreased levels of levonorgestrel	No effect on concentration of efavirenz
Etravirine	No effect on ethinyl estradiol or norgestimate concentration	Increased concentration of etravirine, but safe and well tolerated

Pregnancy rates slightly higher in women taking efavirenz-containing regimens compared to women on nevirapine-containing ART or no ART (15/100 woman years vs. 11/100 woman years).

Patel RC, Onono M, Gandhi M, Blat C, Hagey J, Shade SB, et al. Pregnancy rates in HIV-positive women using contraceptives and efavirenz-based or nevirapine-based antiretroviral therapy in Kenya: a retrospective cohort study. *Lancet HIV* 2015.

Pyra M, Heffron R, Mugo NR, Nanda K, Thomas KK, Celum C, et al. Effectiveness of hormonal contraception in HIV-infected women using antiretroviral therapy. *AIDS* 2015; 29:2353–2359.

CDC - Potential Drug Interactions: Hormonal Contraceptives and Antiretroviral Drugs - USMEC - Reproductive Health. Published August 7, 2019. Accessed January 1, 2022.

<https://www.cdc.gov/reproductivehealth/contraception/mmwr/mec/appendixm.html>

# Drug Drug Interactions for CC

Protease Inhibitors			
Darunavir/ritonavir	Decreased ethinyl estradiol concentration, no effect on progestin	No effect on Darunavir concentration	
Lopinavir/ritonavir	Decreased ethinyl estradiol concentration	No data	No clinically significant effect observed on ovulation
Atazanavir/ritonavir	Increased ethinyl estradiol and norgestimate concentration	No data	

1. Vogler MA, Patterson K, Kamemoto L, Park JG, Watts H, Aweeka F, et al. Contraceptive efficacy of oral and transdermal hormones when co-administered with protease inhibitors in HIV-1-infected women: pharmacokinetic results of ACTG trial A5188. *J Acquir Immune Defic Syndr.* 2010;55(4):473–82.
2. Sekar VJ, Lefebvre E, Guzman SS, Felicione E, De Pauw M, Vangeneugden T, et al. Pharmacokinetic interaction between ethinyl estradiol, norethindrone and darunavir with low-dose ritonavir in healthy women. *Antiviral therapy.* 2008;13(4):563–9.
3. Kancheva Landolt N, Bunupuradah T, Kosalaraksa P, Ubolyam S, Thammajaruk N, Cremers S, et al. High Variability of Hormonal Levels and No Clinically Relevant Interaction Between Ethinyl Estradiol, Desogestrel and Lopinavir/Ritonavir in a Small Sample of HIV-positive Adolescents. *J Acquir Immune Defic Syndr.* 2016;72(5):507–12.

# Drug Drug Interactions for CC

Integrase Inhibitors			
Elvitegravir/Cobicistat	Decreased ethinyl estradiol concentration, progestin concentration increased	No data	Contraceptive effectiveness is unlikely to be effected given the increase in progestin concentration
Dolutegravir	No effect	No effect	
Raltegravir	No effect	No effect	

# Drug Drug Interactions for Other Contraceptives

- Progestin Only Contraceptives
  - Higher levels of progestin when co-administered with protease inhibitors, but beneficial in terms of contraceptive effectiveness
- IM-DMPA
  - No concerns with efavirenz or PI-based ART
- Implants
  - Efavirenz may reduce the effectiveness of etonogestrel implants
  - Efavirenz significantly decreased levonorgestrel concentration
  - No concerns with PI-based ART



# Summary of Drug Drug Interactions

Safe to co-administer  
hormonal  
contraceptives and ART  
especially with newer  
ART regimens

Exercise caution with  
efavirenz based ART  
regimens

# Oral Contraceptives

- Combined hormonal contraceptive pills (CC)
  - Estrogen component and one type of progestin
- Progestin Only Contraceptive Pills (POC)



**Birth control pills**

# Selection of CC Pills

## Monophasic vs. Multiphasic

## Cyclic vs. Extended Use

- Patient dependent

## Dose of Ethinyl Estradiol

- Start at 20 mcg and can increase up to 35 mcg if needed to prevent breakthrough bleeding

## Type of Progestin

- All CC are anti-androgenic
- Do not need to select one type of progestin over the other

# Who Should Not Get CCs?

- Age  $\geq$  35 and smoking  $\geq$  15 cigarettes per day
- Multiple risk factors for cardiovascular disease, known ischemic heart disease, stroke
- Venous Thromboembolism
- Decompensated cirrhosis
- Current breast cancer
- Migraine with aura

# Progestin Only Contraceptive Pills

Norethindrone and drospirenone are the main progestins available

Norethindrone comes in a pack of 28 active pills

- Does not consistently suppress ovulation

Drospirenone comes in a pack of 24 active pills and 4 inert pills

- Does suppress ovulation
- Antimineralocorticoid activity (similar to spironolactone) so recommended to monitor K<sup>+</sup>

# Contraindications to POC

- Breast Cancer
- Undiagnosed abnormal uterine bleeding
- Liver tumor, cirrhosis or liver disease

# Injectables

- Medroxyprogesterone acetate
- 150 mg/1mL every 3 months IM
- Inhibits ovulation, thickens cervical mucous
- Administer within 7 days of onset of menses OR can do “quick start” by ruling out pregnancy at time of administration



# Considerations for DMPA Use

## Candidates:

- Those with a contraindication to estrogen therapy
- Difficulty remembering to take a daily pill or desire a method that does not require daily use
- Can be helpful to reduce pelvic pain in those with endometriosis

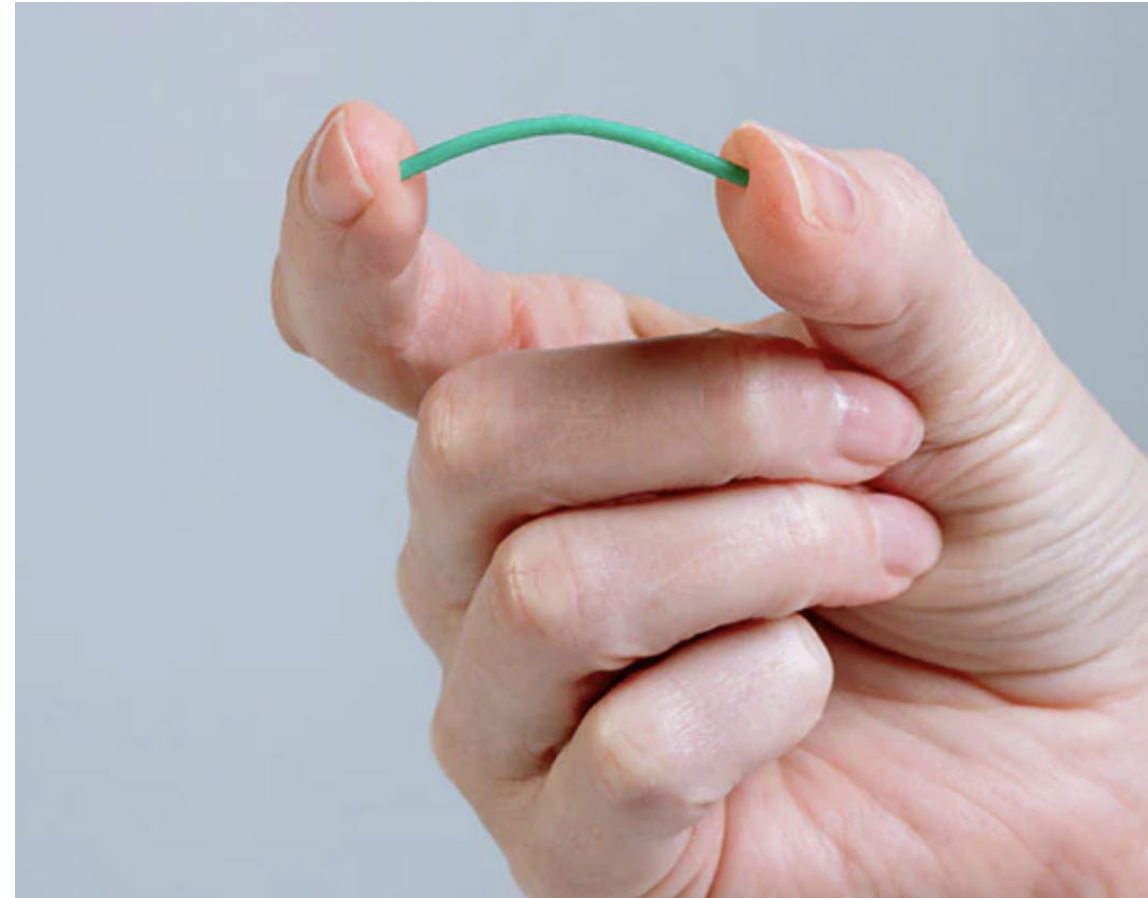
## Contraindications

- Breast cancer
- Severe cirrhosis
- Multiple risk factors for atherosclerotic disease
- Risk factors for nontraumatic fractures
- Desire pregnancy within 12 months due to potential delay of fertility

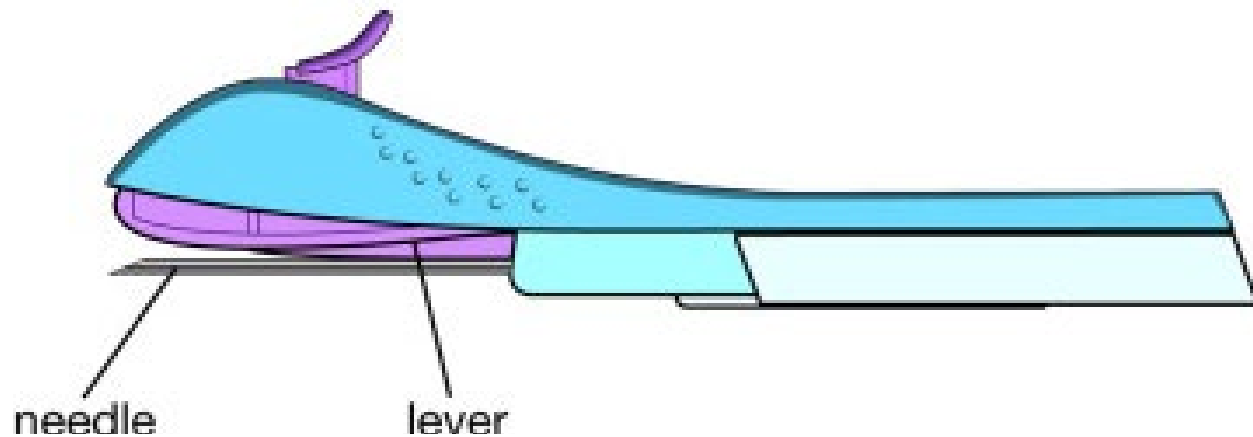
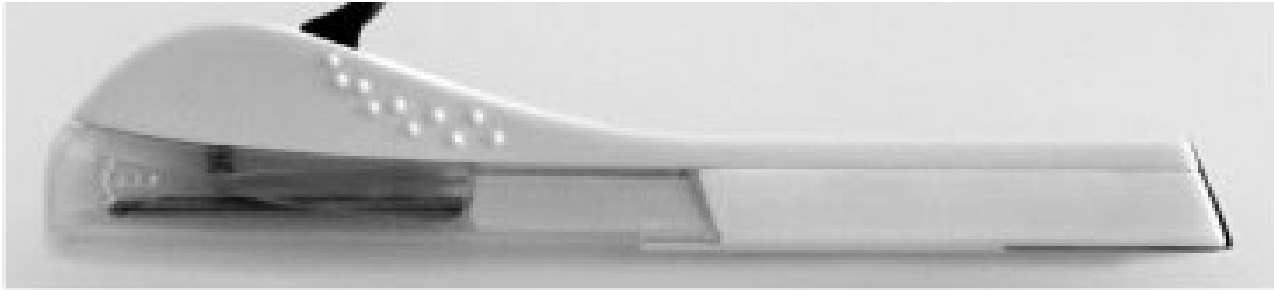


# Implants

- Etonogestrel Implant (40 mm x 2 mm)
- Contains 68 mg
- Placed subdermally in the inner upper arm
- Radio-opaque
- Approved for 3 years of use
- Side Effects
  - Change in bleeding pattern
  - No bone loss



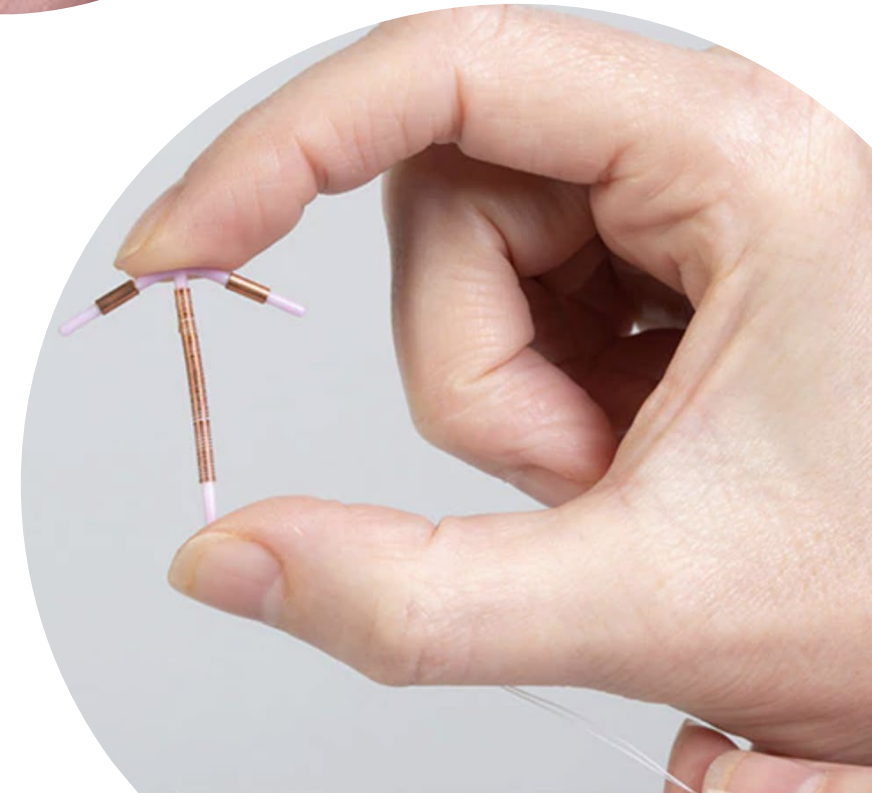
# Get Trained!



- 3 hour training
- [www.nexplanontraining.com](http://www.nexplanontraining.com)

# Intrauterine Devices

- Most commonly used method of reversible contraception worldwide
  - Used by about 23% of women
- Copper IUD
  - Contains 380mm<sup>2</sup> of copper
  - 10 years of use
- Levonorgestrel IUD
  - 4 different types



## Mechanism of Action

Foreign body effect due to sterile inflammatory reaction

LNG IUDs also thicken cervical mucus

Copper IUD has no impact on ovulation

LNG IUDs do impact ovulation rate but most cycles are ovulatory

## Benefits of IUDs

Highly effective

Reversible

Can avoid hormone exposure with Copper IUD

Few side effects

# Copper IUD

Can be used as emergency contraception if inserted within 120 hours

Pregnancy rate is 0.5 to 0.8% in the first year

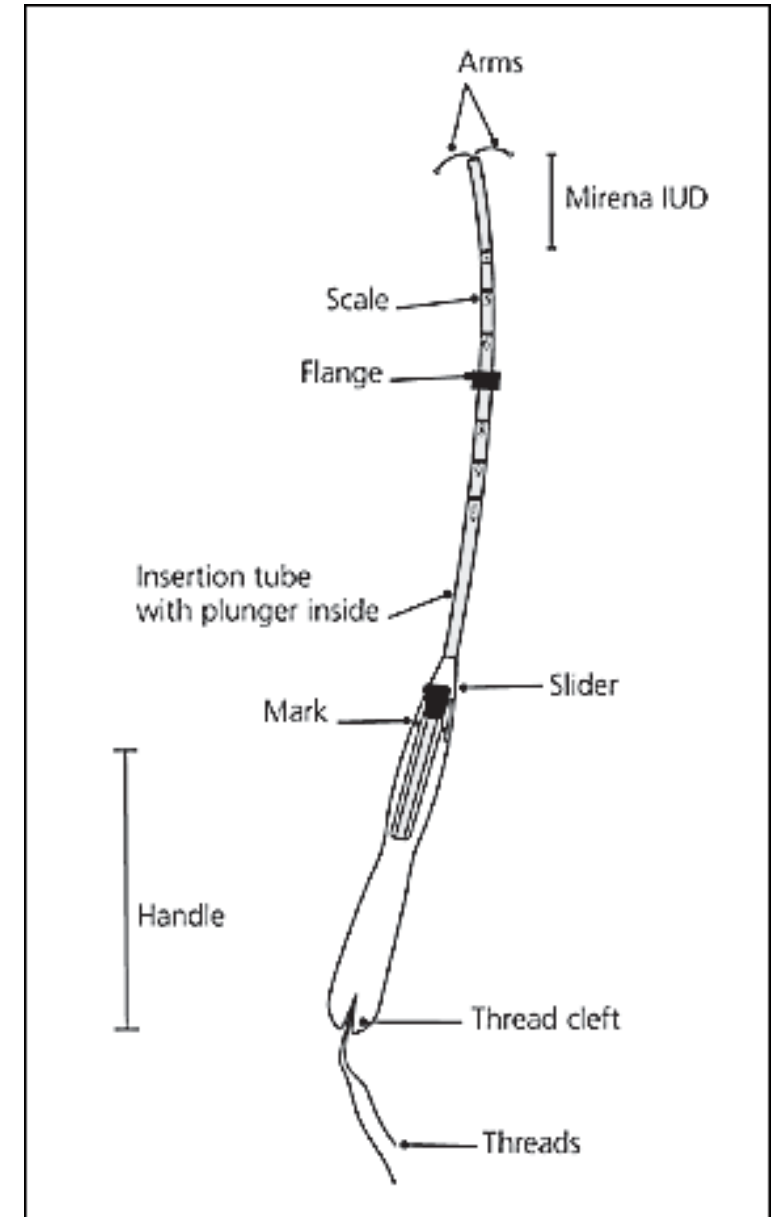
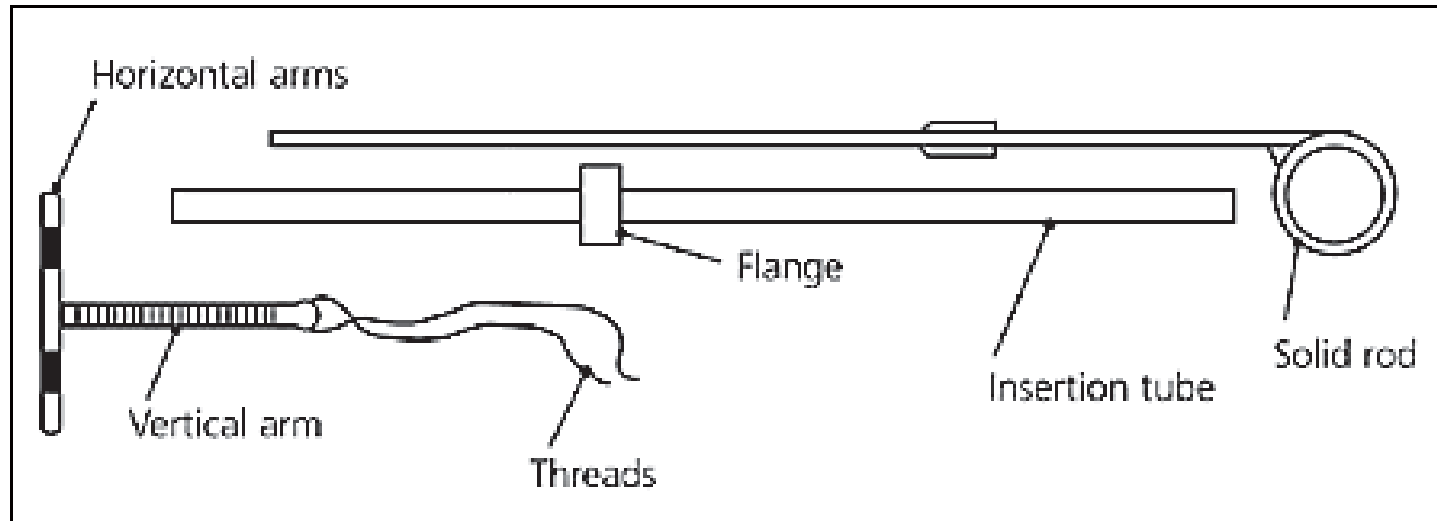
Approved for 10 years of use

Still have a menstrual cycle with the Copper IUD

# LNG IUD

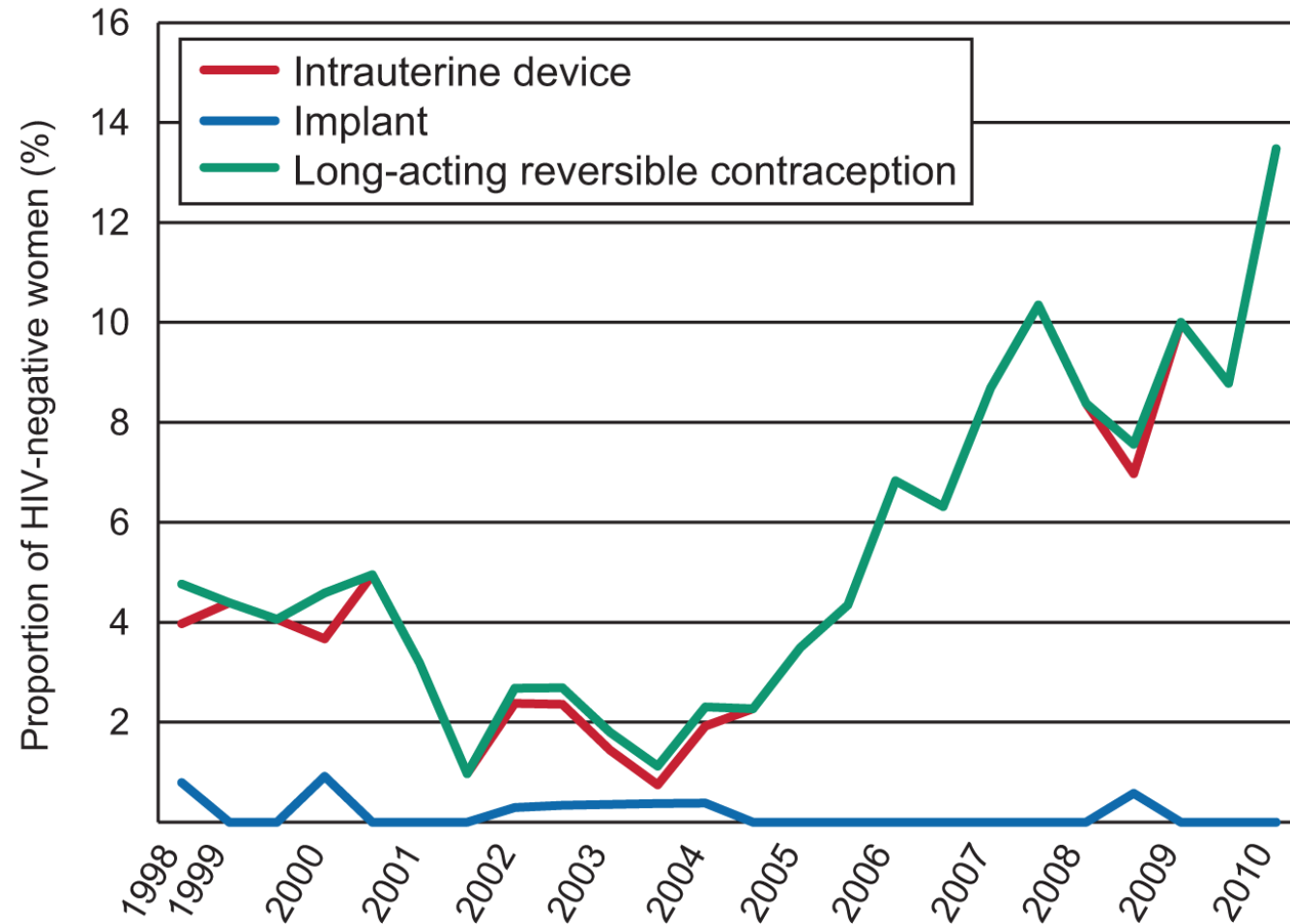
- 52 mg LNG IUD
  - Approved for 6 years (commercial name Liletta)
  - Approved for 7 years (commercial name Mirena)
- 19.5 mg LNG IUD
  - Approved for 5 years (commercial name Kyleena)
- 13.5 mg LNG IUD
  - Approved for 3 years (commercial name Skyla)
- The 13.5 mg and 19.5 mg LNG IUD do have a smaller diameter
- Reduce heavy menstrual bleeding, dysmenorrhea and endometriosis-related pain

# Insertion

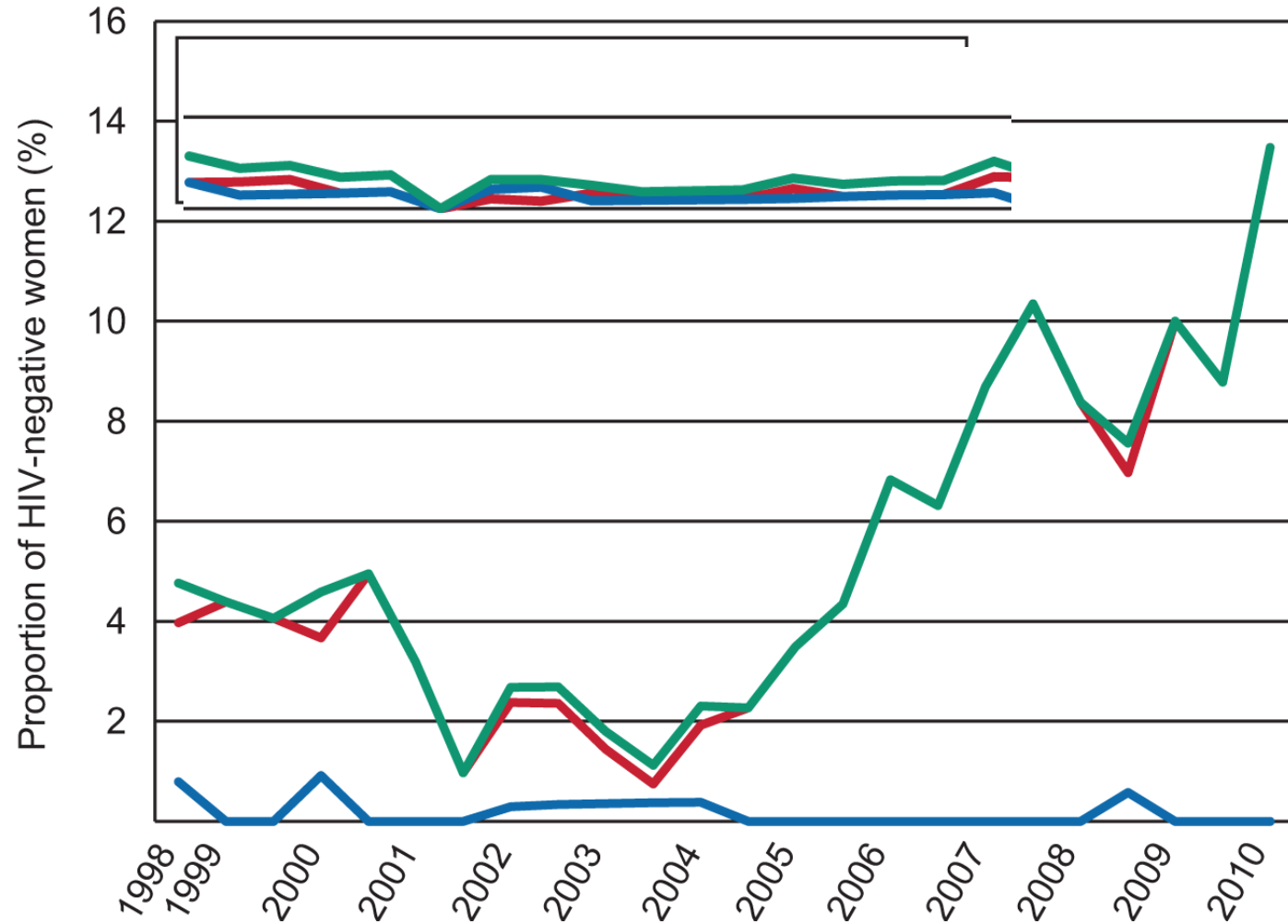




# LARC Use Among Seronegative Women



# LARC Use Among WLWH



# Low Uptake: Provider or Patient?

## Provider

- Many providers have low or limited knowledge regarding IUDs
- Concern regarding IUDs and pelvic inflammatory disease
- Reluctant to provide IUDs to nulliparous women
- In one study from South Africa and Zimbabwe, 95% of providers consider IUDs inappropriate for those at risk of HIV or HIV-positive

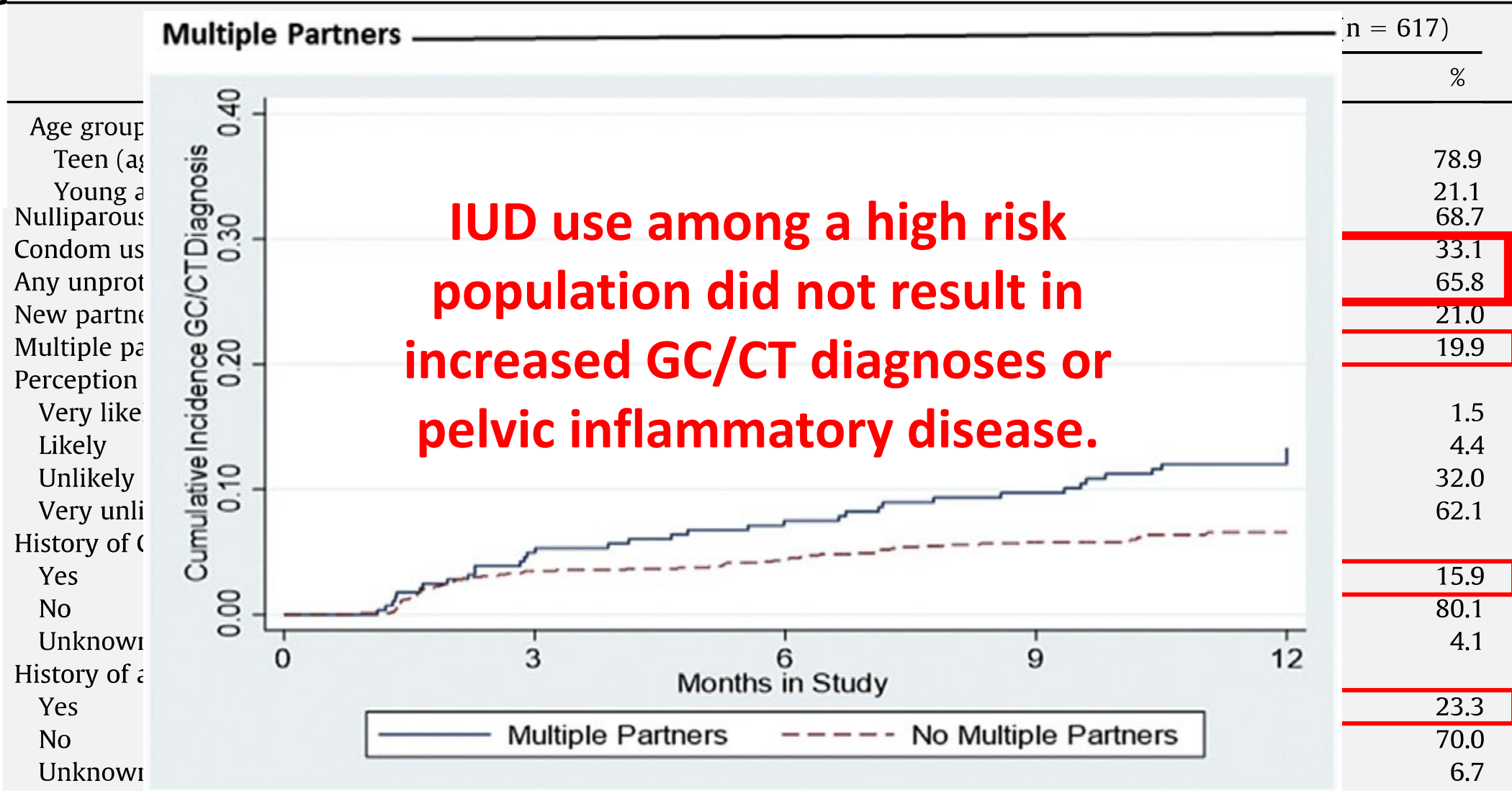
## Patient

- 55% of young family planning clients in the US have not heard of the IUD
- 20% of women attending clinic know that IUDs are more effective than oral contraception
- Concerned re possible health risks or fertility impairment
- Concerned about device positioning

# Reasons for Low Uptake

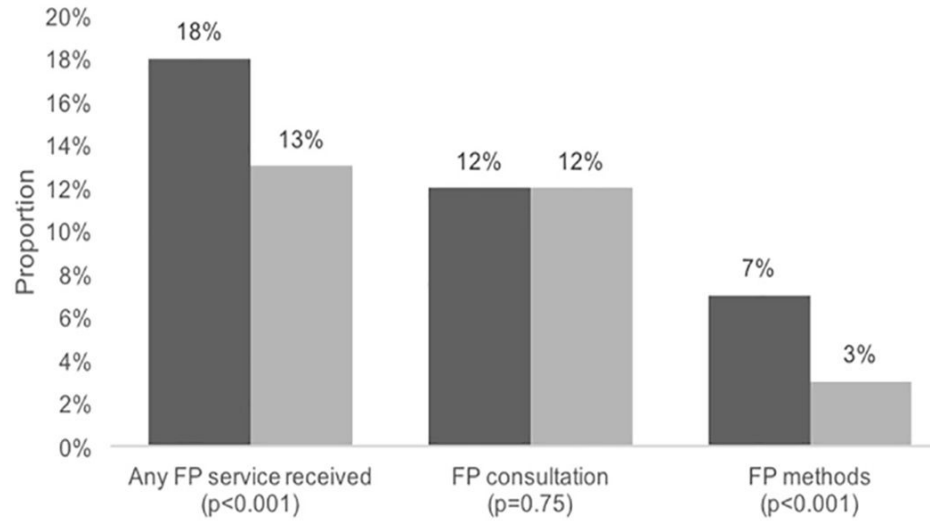
- Nationwide survey of 1,998 family planning providers in the US assessed perceptions of IUD safety for women with HIV
  - 7 in 10 providers considered IUDs safe for WLWH
  - Factors associated with believing IUDs were unsafe included:
    - Working at a clinic without Title X funding
    - Not being trained in IUD insertion
    - Not using the Medical Eligibility Criteria for Contraceptive Use for guidance
    - Concerns re incidence of pelvic inflammatory disease

# Debunking the Myth of PID

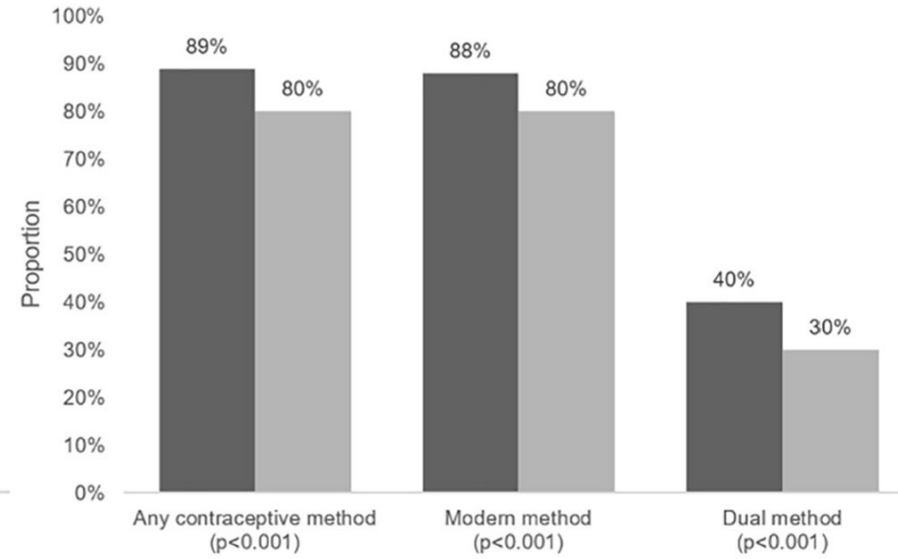


# Family Planning and HIV Services

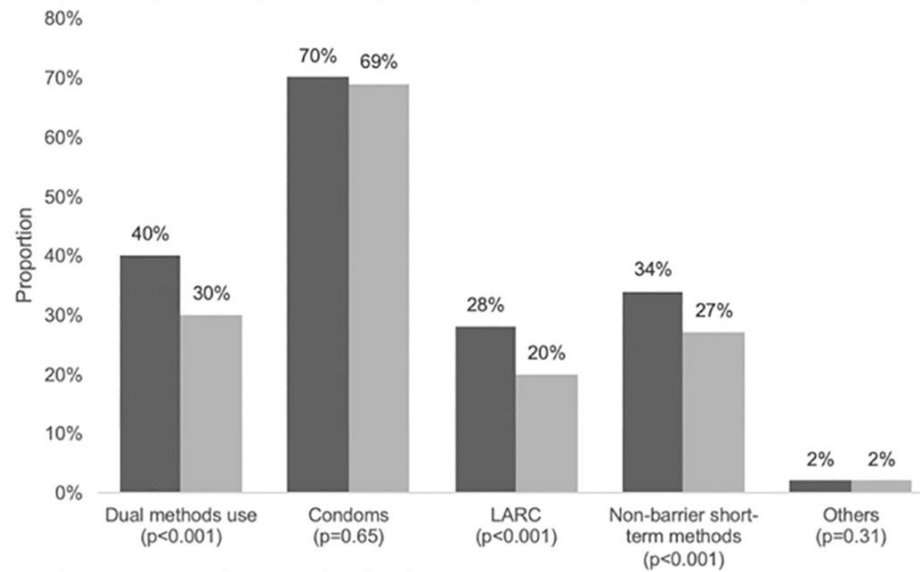
- Integration of family planning into HIV care and treatment settings is associated with increased use of newer contraceptive methods and improved family planning knowledge among WLWH
- In the UK, an integrated center led to a decrease in condom use alone from 30% to 7% and an increase in usage of highly effective contraceptives (Coyne, et al. 2007)
- In Scotland, use of an effective contraceptive method increased from 24.9% to 39.3%. The prevalence of LARC use increased from 16.1% to 29.8% (Wiending, et al. 2015)



a) Receipt of any family planning service at time of survey visit <sup>a</sup>

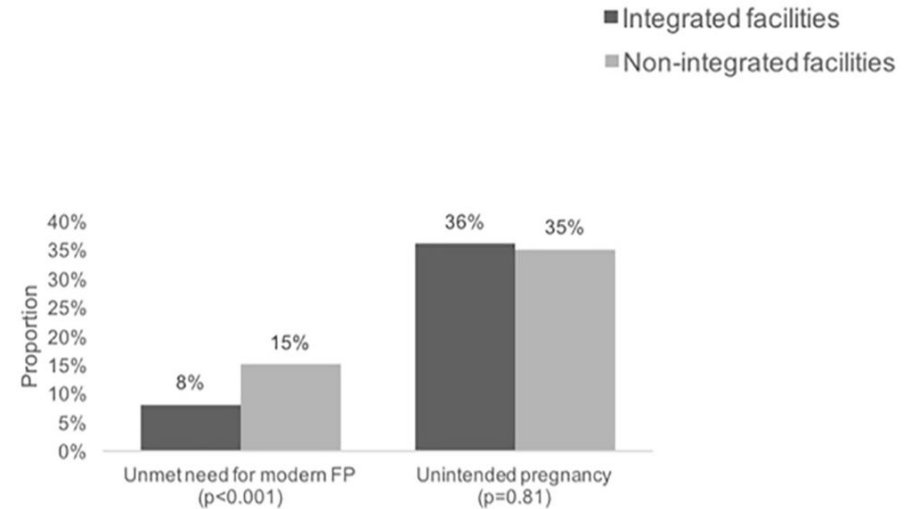


b) Self-reported contraceptive method used in the last month



c) Contraceptive method mix

<sup>a</sup> Categorizations of FP services received are not mutually exclusive.



d) Unmet need and unintended-pregnancy

# Summary

- Family planning is important to prevent unintended pregnancies and vertical transmission
- Oral contraceptives can safely be used with ART
- LARCs uptake among WLWH lags behind that of seronegative women, but it is a very effective contraceptive method
- Integration of family planning services into HIV care is associated with increased utilization of newer contraceptive methods



Questions?