

# Herpes: The update you really need for better practice

Nurse Practitioners of Oregon  
Salishan  
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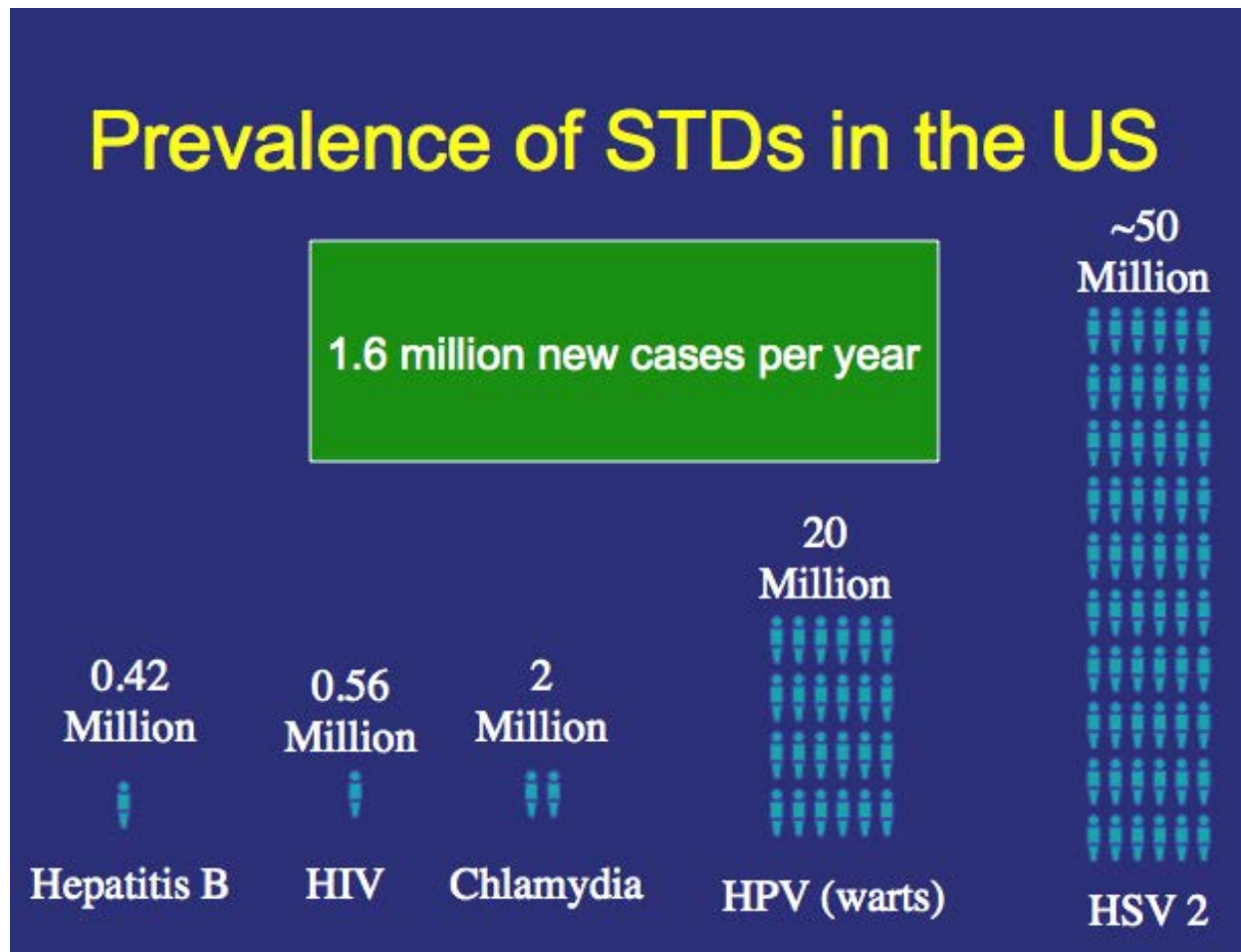
# The Herpesvirus family

- HSV 1 and 2
- Varicella zoster
  - chicken pox and shingles
- Epstein Barr
  - Mono
- Human Herpes Virus 6 and 7
  - rashes in children like roseola and sixth disease, maybe MS
- Cytomegalovirus
  - common infection, trouble in immunosuppressed people
- HHV 8
  - found mostly in AIDS patients, Kaposi sarcoma

# Who has herpes simplex virus?

- 56% of the US population between 14-49 has HSV 1
- 16% of the same population has HSV 2
  - Women are more likely to be infected than men due to the receptive nature of intercourse
  - About 50% of African Americans in this age group have HSV 2, far more than Caucasians with the same number of sex partners

# HSV 2 compared to other STIs



# Symptoms of HSV

- Sores in the genital area that may start out as blisters, then break, form an ulcer, then a crust
- May be atypical, like cracks, fissures, red irritated areas, abrasions, “friction burns”
- If internal, may cause discharge - watery
- May occur anywhere in the boxer shorts area
- Most infections unrecognized, ~80% don't know, don't have symptoms or don't recognize symptoms

# Why do 80% of those infected with HSV 2 not know it?

- Most HSV infections are subtle, not dramatic
- Outbreaks occur in entire “boxer shorts” area
- People attribute symptoms to other things
- Providers are misdiagnosing HSV as shingles
- Existing HSV 1 infection ameliorates HSV 2
- People aren’t being tested

# Why look for herpes by lab test?

- Patients expect it is included in STI screen
- HSV is most prevalent STI in the US
- Identification can reduce transmission
- Clear up misdiagnosis of other things
- May reduce neonatal risk

# What does the CDC say?

“The clinical diagnosis of genital herpes can be difficult, because the painful multiple vesicular or ulcerative lesions typically associated with HSV are absent in many infected persons.

.....Therefore, the clinical diagnosis of genital herpes should confirmed by laboratory testing. Both virologic and type-specific serologic tests for HSV should be available in clinical settings that provide care for patients with STDs or those at risk for STDs.”



# Why do some clinicians not test?

- Don't want to “open the can of worms”
- Don't know how to interpret a positive serology in the asymptomatic person
- Don't believe that the test can accurately sort out HSV 1 from HSV 2
- Expense
- Believe everyone with HSV has symptoms
- Believe there's nothing to do about it
- Believe HSV 2 is often oral
- Believe the CDC does not recommend it

# How do you diagnose herpes in the symptomatic person?

## Swab the affected area and look for virus

- **PCR swab with typing**
  - 4 times more sensitive than culture
  - All major labs now have PCR
  - PCR should NOT be done from blood, only swab
- **Culture swab with typing**
  - 76% false negative rate compared to PCR
  - Costs less but way less effective

# How do you diagnose herpes in the asymptomatic person?

**Draw blood and look for antibody**

## **Common Screening tests**

### **IgG ELISA tests:**

- HerpeSelect, Diosorin, Captia

### **Other tests:**

- Immunoblot – don't recommend

### **Confirmatory tests:**

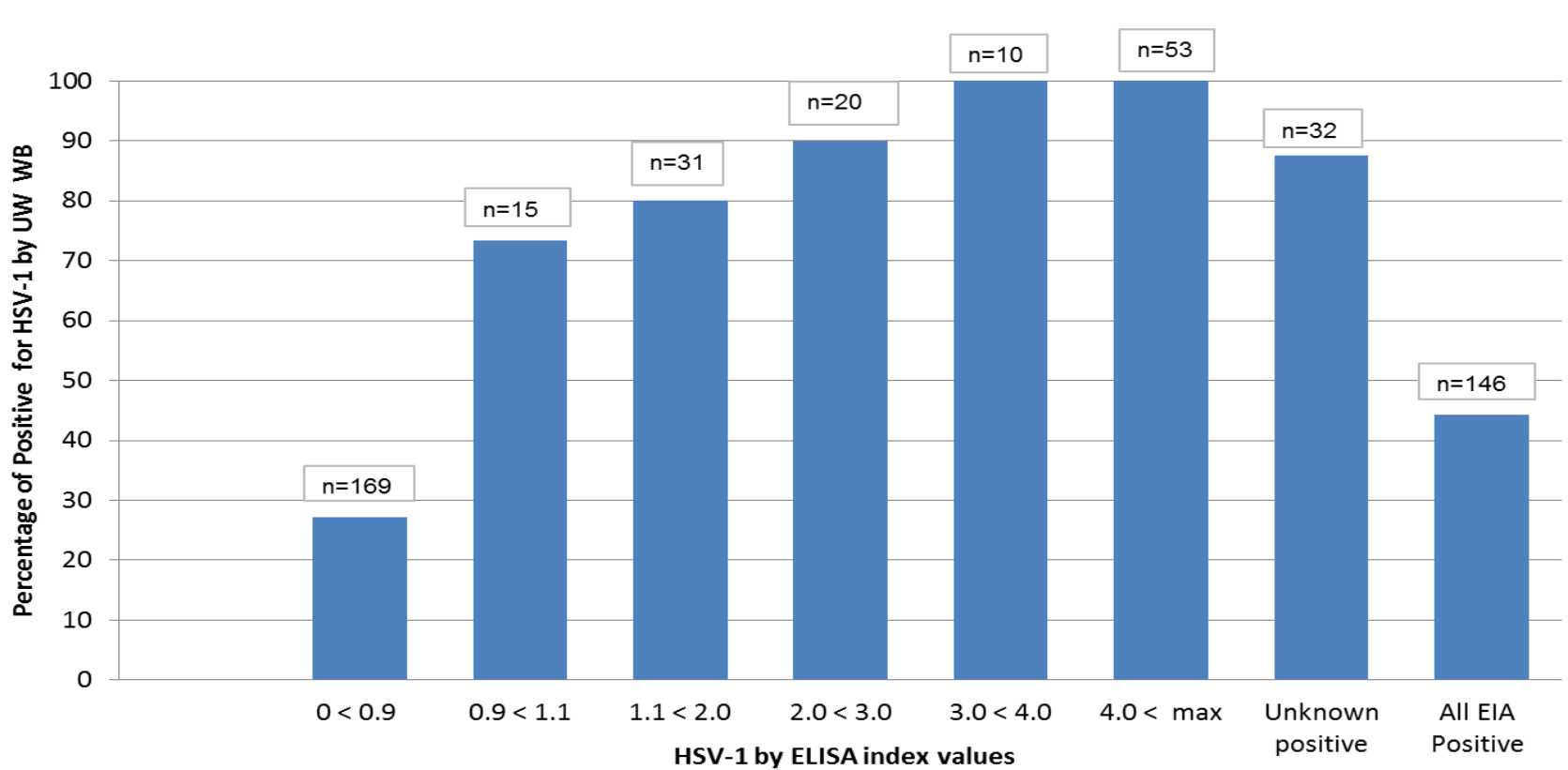
- Western Blot at University of WA (can be sent)
- Biokit

# What does the CDC say?

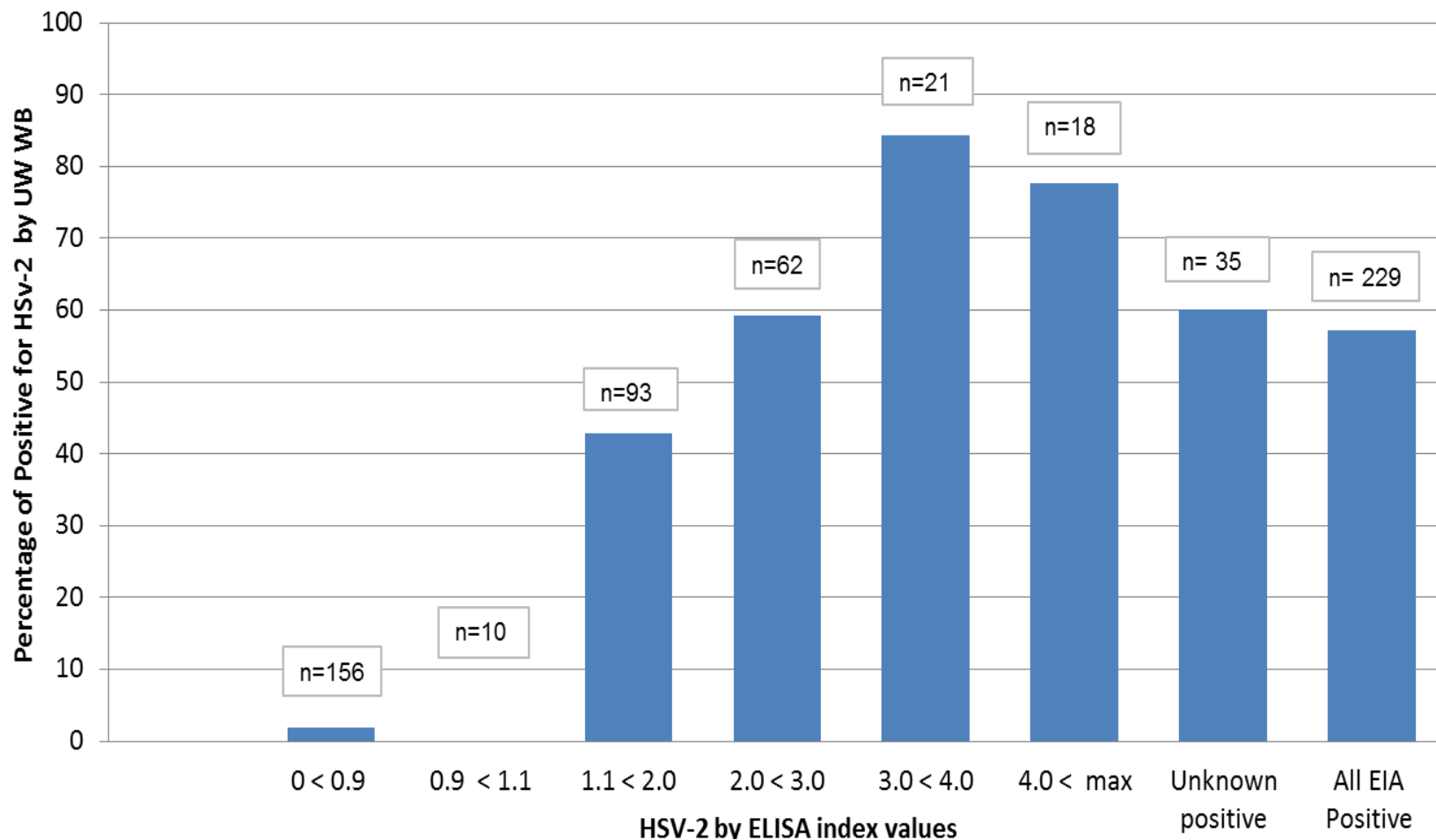
“The most commonly used test, HerpeSelect HSV-2 Elisa might be falsely positive at low index values (1.1–3.5) Such low values should be confirmed with another test, such as Biokit or the Western blot”

# Negative predictive value of HSV 1 IgG screening tests – 70%

Proportion of HSV-1 ELISA positive results confirmed by UW WB, stratified by HSV-1 index value.



# Positive Predictive Value of HSV 2 IgG screening test of low positives – 58%



# IgG Serology timing

Time needed after infection with HSV 2 to  
make antibody:

By 3 weeks 50% seroconvert

By 6 weeks 70% seroconvert

By 12 weeks most everyone seroconverts who is  
going to seroconvert and be detected by IgG

At 12 weeks after infection, IgG about 92%  
sensitive compared to HSV western blot

# What does the CDC say about IgM?

“The HerpeSelect HSV-1 ELISA is insensitive for detection of HSV-1 antibody. IgM testing for HSV 1 or HSV-2 is not useful, because IgM tests are not type-specific and might be positive during recurrent genital or oral episodes of herpes”

Main problem with IgM:

**high rate of false positives!**



# Why do we need to know the virus type?

- **Source is often different**
  - Most genital HSV 1 is likely oral to genital transmission
  - Can happen in a completely monogamous couple
- **Prognosis is different**
  - HSV 1 recurs about 0.7 times per year after the first year
  - HSV 2 recurs on average 3-5 times per year
- **Susceptibility to opposite type is different**
  - HSV 2 largely protects against getting HSV 1
  - HSV 1 does not protect against getting HSV 2 though HSV 1 genital infection may reduce the risk of HSV 2 genital infection
- **Treatment choice may be different**
  - Early suppression for new HSV 2
  - may not be necessary for new HSV 1
- **The person with HSV 1 orally can likely have sex without transmission with the person with HSV 1 genitally. Infection in a new body location is highly unlikely.**

# What does the CDC say about who to test?

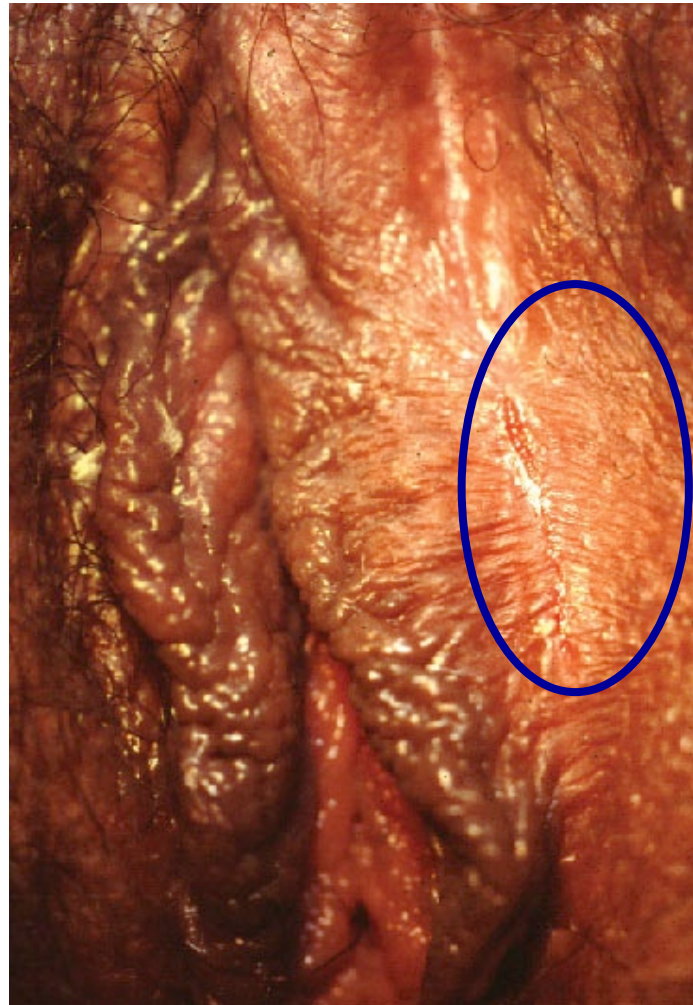
“Type-specific HSV serologic assays might be useful in the following scenarios:

- 1) recurrent genital symptoms
- 2) atypical symptoms with negative HSV PCR or culture
- 3) clinical diagnosis of genital herpes w/o lab confirmation
- 4) a patient whose partner has genital herpes.

# What does the CDC say about herpes screening using antibody tests?

“HSV serologic testing should be considered for persons presenting for an STD evaluation (especially for those persons with multiple sex partners), persons with HIV infection, and MSM at increased risk for HIV acquisition. “

# Subtle Presentation—Excoriation



# Buttocks Recurrent HSV



# Anal Herpes





Thigh herpes



# Urethral Herpes





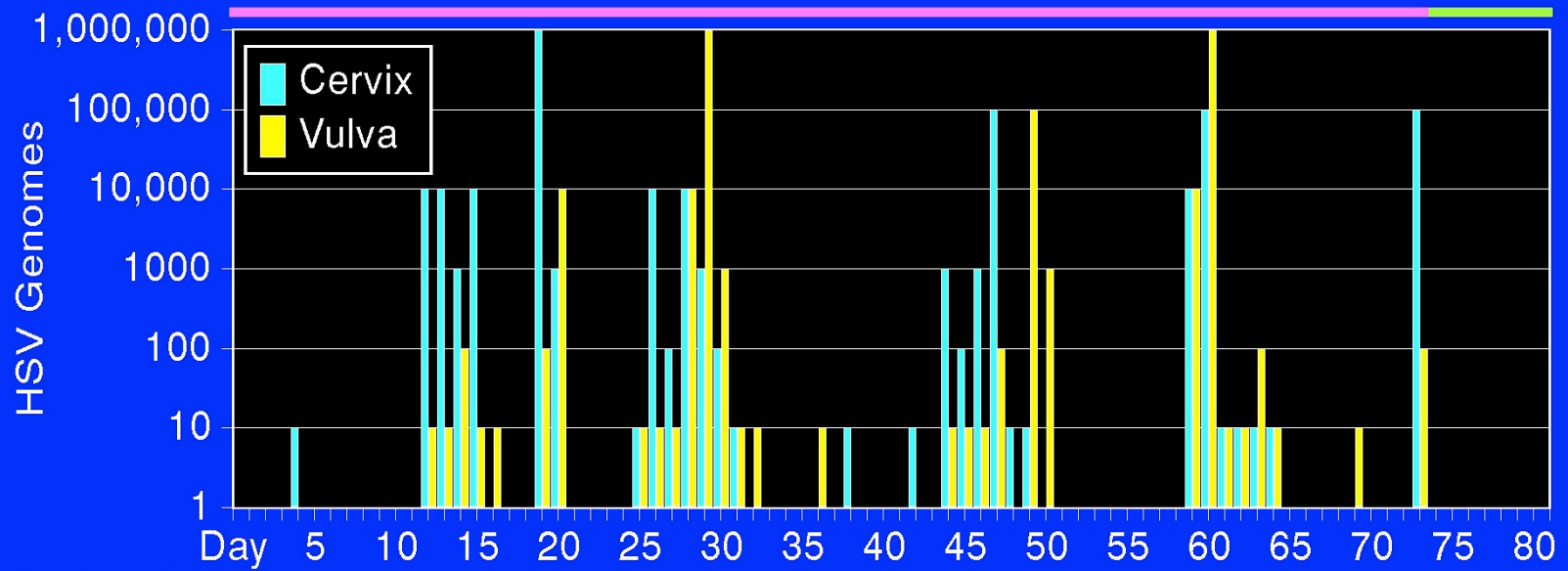
# What is the frequency of viral shedding?

Viral shedding is giving off virus from the body.

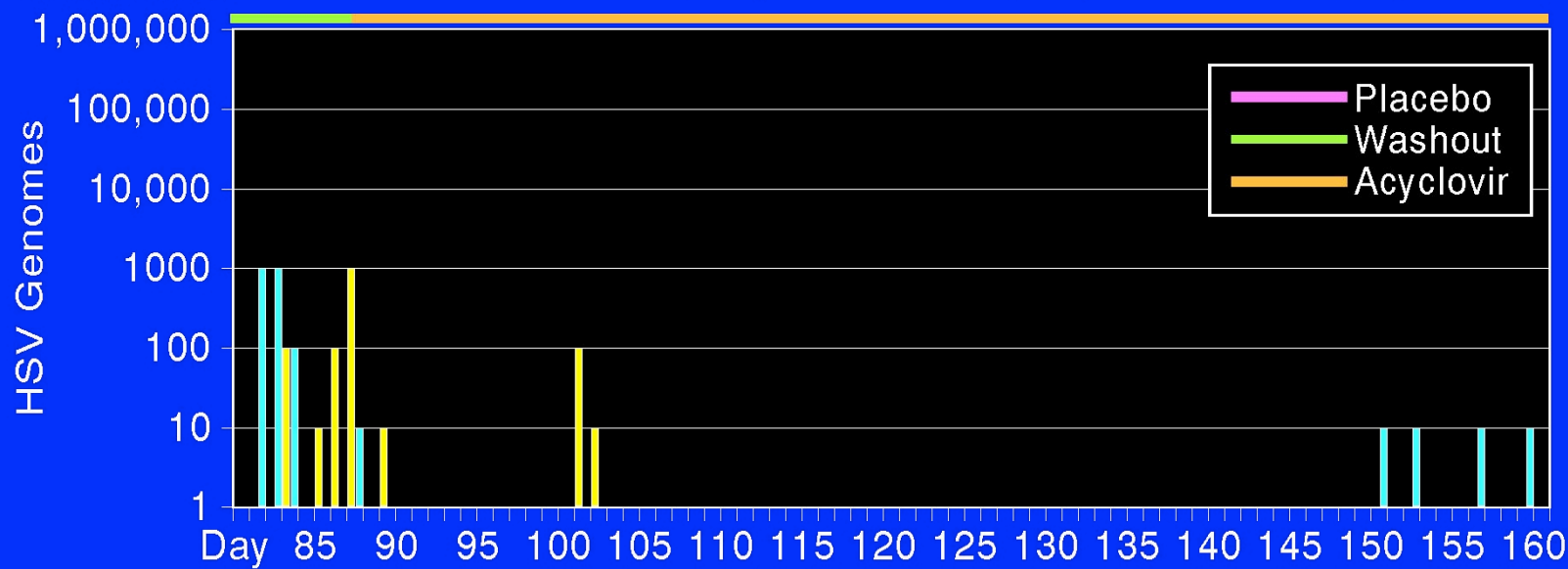
Can happen with or without symptoms.

Only from thin skin or mucous membranes.

- HSV 1 oral – 26% of days
- HSV 2 genital - 14% of days
- HSV 1 genital - 5% of days
- HSV 2 oral - 1% of days



Cervical culture: +, ++, ++, +, +, ++, +  
 Vulvar culture: ++, ++, +  
 Genital Lesion: [horizontal bars indicating lesion duration]



Genital Lesion: ++ [horizontal bars indicating lesion duration]

# What are usual HSV 2 transmission rates?

## Conditions:

The couple is aware that one has HSV

Abstaining from sex with outbreaks

Not using condoms regularly

Not taking antiviral therapy daily

## Rates:

About 10% male to female per year transmit

About 4% female to male per year transmit

Some studies show a little more, a little less

# How does one reduce transmission?

## For HSV 2:

Antiviral therapy reduces transmission by 48%  
(But shedding still can occur on suppression on up to 7% of days)

## Condoms reduce transmission

96% from infected male to uninfected female  
30-50% from infected female to uninfected male

## Disclosure

Reduces both time to new infection and total rate of new infections

# Who benefits from suppression?

- Someone who has an uninfected sexual partner
- Someone who has multiple sexual partners
- Someone who has new HSV 2 genitally (<6 months)
  - Shedding up to 42% of days sampled (JID, Wald)
- Women late in pregnancy with genital herpes
  - Immunocompromised by pregnancy so shedding is increased. The dose is higher in pregnancy
- Someone with higher risk for HIV acquisition risk
- Anyone who wants to have fewer outbreaks. There is no magic number that indicates need for suppression

# Who may not need suppression?

- Someone who has HSV but is not sexually active and isn't bothered by outbreaks
- Someone whose sex partner is infected with same type HSV (i.e. 1 or 2)
- Couples who have made the conscious decision not to worry about sexual transmission

# Patient Counseling Messages

- You are still the same person you were before
- You can still have a children/family
- You can still have sex
- You can transmit virus between outbreaks
- There are effective treatments for herpes
- Give yourself time to feel better
- You can come back to talk to me
- You cannot offer complete protection to a partner

# HSV 2 triples the risk of HIV acquisition

Why?

- 1) HSV breaks in the skin allow HIV in
- 2) T-cells migrate to the site of broken skin to resolve the outbreak, those are the cells that HIV infects



# What's around the bend?

- Therapeutic vaccines
  - Genocea
  - Vical
  - Agenus
- Helicase-Primase inhibitors
- Combinations of the neucleoside analogs and one of the above

# Case Scenario

- 51 year old man who had a casual sexual encounter one week ago presents to my practice with vesicular lesions on his penis. His PCR is HSV 2 positive, his IgG HSV 2 negative. What does this mean?

# Case Scenario

- 35 year old female tests positive by type specific serology for HSV 2 at an index value of >5. She reports never having had any genital symptoms whatsoever and she asks me:

“have I been exposed or am I infected?”

# Case Scenario

- 30 year old man comes to my office, stating that he has tested positive over the Internet for HSV 2 by type specific serology and he wants to know what he should do next. What information do you need from him?

# Case Scenario

- 19 year old college student, female, is diagnosed with HSV 1 infection genitally. She is frantic and feels her life is over. What can you tell her about her infection?

# Case Scenario

- 39 year old woman presents to your practice with multiple genital lesions that have tested positive by PCR for HSV at her doctor's office. She has been married for 10 years and is very angry that her husband has cheated on her. What can I say to her about her infection and what labs can help you sort this out? What questions do I need to ask?

# Case Scenario

- 28 year old female presents to my practice complaining of frequently recurring HSV outbreaks. What information do I need from her and what interventions are appropriate?

Antiviral dosing schedules attached



# Antiviral Therapy - First Episode

First episode - treat for 7-10 days with refill

- acyclovir 400 mg orally TID for 7–10 days or
- famciclovir 250 mg orally TID for 7–10 days or
- valacyclovir 1 g orally BID for 7–10 days

# Antiviral Therapy - Episodic

- Acyclovir 800 mg orally TID for 2 days or
- Famciclovir 1 gram orally BID for 1 day or
- Valacyclovir 2 g orally, then 12 hours later 2 grams again in one day

# Antiviral Therapy - Suppression

- Acyclovir 400 mg orally BID or
- Famciclovir 250 mg orally BID or
- Valacyclovir 500 mg orally QD or
- Valacyclovir 1 g orally QD