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A Sex-Positive Approach to Healthcare, and Truvada as HIV Pre-Exposure Prophylaxis (PrEP)

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Disclosures - none

Title of Program: Family Medicine Grand Rounds

Title of Talk: A Sex-Positive Approach to Healthcare, and Truvada as HIV Pre-Exposure Prophylaxis (PrEP)

Speaker/Moderator: Michael Ohkura, MS-4

Planning Committee Members: John King, MD, MPH, Melisa Gibson, MD, Anne Morris, MD, Whitney Calkins, MD, Joanne Hunt, NP

Date: January 8, 2018

Workshop #: 18-101-16

Learning Objectives

- 1.
- 2.
- 3.

DISCLOSURE:

Is there anything to disclose? Yes ☐ No ☒

Please list the Potential Conflict of Interest (*if applicable*):

All Potential Conflicts of Interest have been resolved prior to the start of this program. Yes ☐ No ☐

(*If no, credit will not be awarded for this activity.*)

All recommendations involving clinical medicine made during this talk were based on evidence that is accepted within the profession of medicine as adequate justification for their indications and contraindications in the care of patients.

Yes ☒ No ☐

COMMERCIAL SUPPORT ORGANIZATIONS (*if applicable*): None

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Note – an update

- This presentation is an updated and expanded version of the 2016 presentation
- This version was created as part of the fourth year scholarly project in medicine, and what was presented at the January 2018 University of Vermont Medical Center Family Medicine Grand Rounds

Why are we talking about Sex-Positivity?

- Medical training so focused on “prevention” and “risk”
 - *This is NOT how people live their lives*
- May be awkward for some – why do we keep using language that makes this worse?
- Research demonstrates patients have tremendous willingness / desire to speak about sexual health / function, but are unlikely to initiate discussions
 - *Docs also don't initiate discussions*
- Med students and clinicians good at taking sexual history when the CC is directly related, but fail to *opportunistically* do so

Ultimately:

- Sexual health related outcomes are not improving (STIs, HIV, unplanned/teenage pregnancy, preventative screening)
- Patients don't feel they are adequately attended to re: sexual health and function
 - *“Pleasure gap” for women*
- For “sexual minorities” (i.e. LGBT), sex positivity is critical to trust and therapeutic relationship
- Our clinicians should be our advocates – more than anyone else – but we aren't having discussions
 - *Discomfort? Lack of familiarity? General sex-shaming culture?*

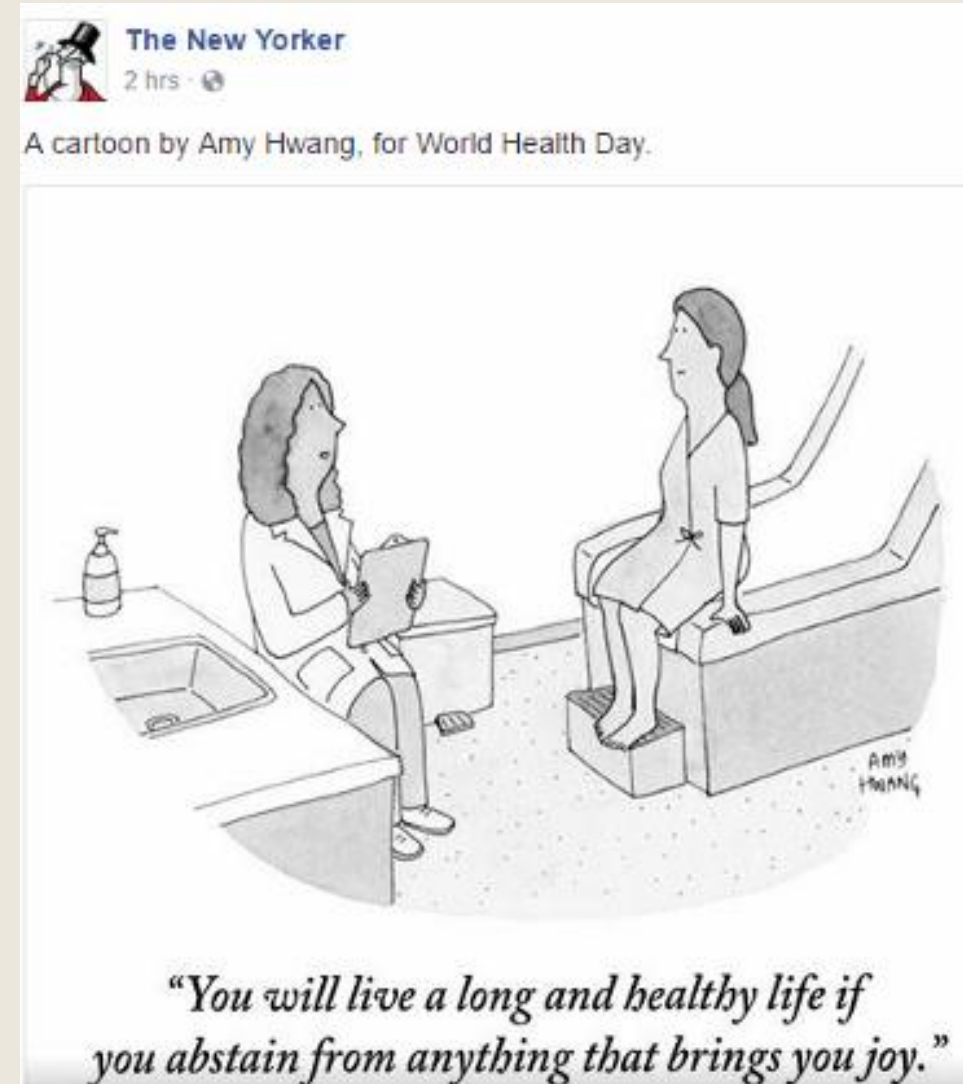
What is “Sex Positivity”

“An attitude towards human sexuality that regards all consensual sexual activities as fundamentally healthy and potentially pleasurable, encouraging sexual pleasure and experimentation.

The movement advocates sex education and safer sex, but generally makes no moral distinctions among types of sexual activities, regarding these choices as matters of personal preference”

“ Too often sex is presented to our youth as something abnormal, immoral, and “other”, and when it finally rears its head, it does so often in unhealthy, irresponsible, and uninformed fashions”

- Do we really think people avoid sex in order to minimize their risk of STIs or pregnancy?
 - So why does our healthcare approach it this way?



How a sex-negative culture impacted me while trying to get on PrEP

- Initial encounter
- Subsequent encounter: clinical trials, CDC guidelines
- Pass the buck → bounce around
- Avoidance of discussion
 - *Discomfort?*
 - *Personal bias re: medicine?*
- Finally referred to Infectious Disease
 - *How this feels*
- No sexual history taken
- No site-specific STI testing
- Feeling uncomfortable with my provider
 - *Would I truly want to disclose more?*
 - *Sense of being judged*

The experiences of others here in VT

- Similar “pass the buck”
- Similar referral to ID
- Docs willing to continue PrEP but not initiate it
- “You’re *sure* you don’t have HIV?”
- Assumption about being married, therefore, monogamous
 - *Burdens patient to feel obligated to disclose more information to get doc on board to test STIs*

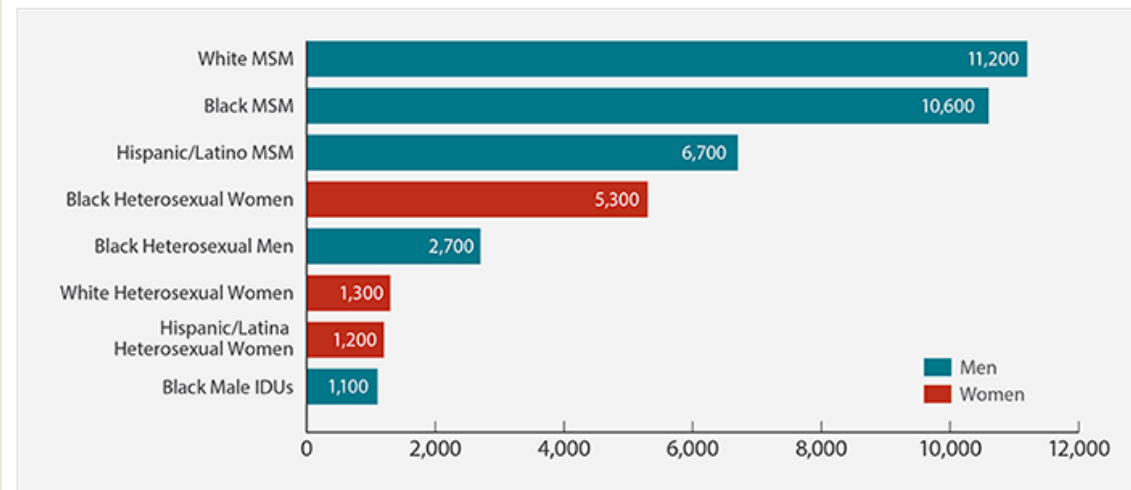
So what's the big deal?

- Sex is incredibly loaded with emotions: intimacy, vulnerability, pleasure, +/- pain, “coming of age”, +/- love and security. At times, negative associations for some.
- Even *more* loaded for the LGBT community ... “sexual orientation” ... it’s our core identity
 - *In particular, the gay community:*
 - HIV/AIDS epidemic and inadequate/inappropriate response by gov’t
 - “the gays deserve to die”
 - Core individual identity related to who you have sex with. Gay culture is a sexual culture
 - Sex linked to illegality, death, torture in many places
 - Previously related to mental disorder in DSM
 - Our lives are *inherently* political – filing taxes, estate protection, healthcare decisions, employment security

What's the problem?

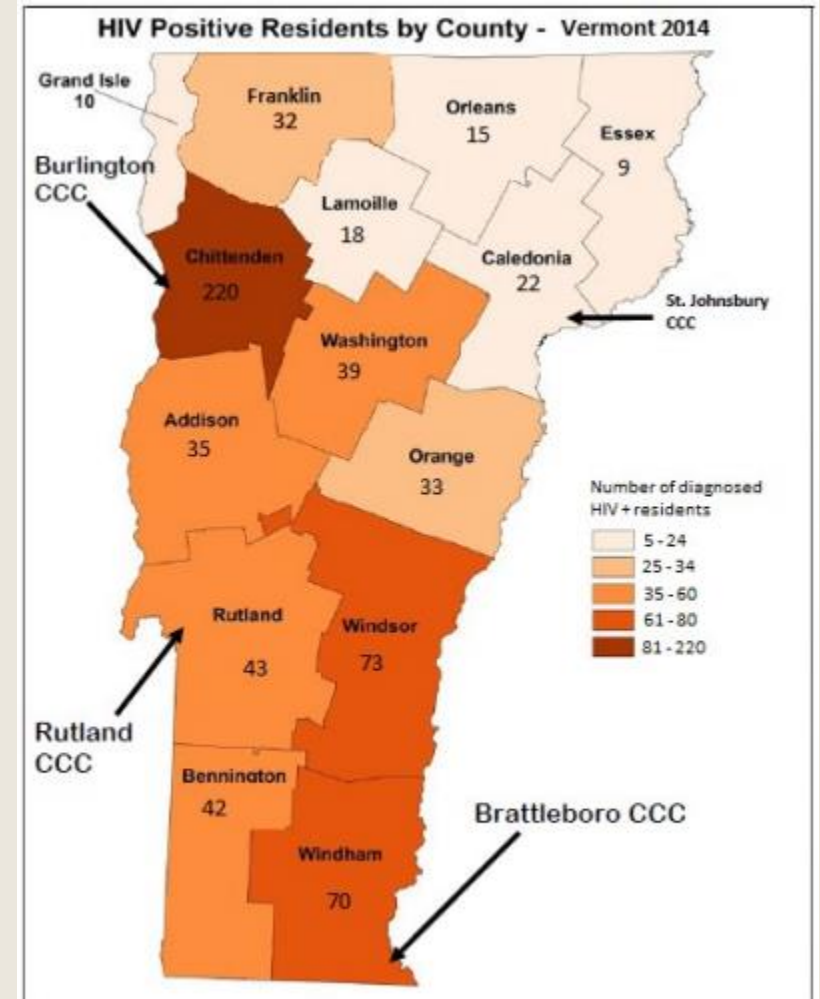
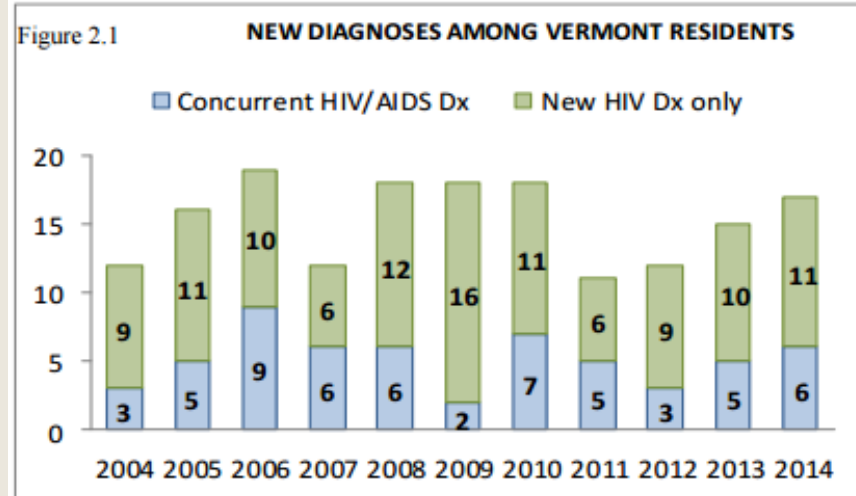
- >1.2 million Americans are living with HIV and nearly 1 in 8 (12.8%) are unaware of their status.
- Nationally, incidence ~ **50,000 new infections per year**
 - (MSM) population carrying the largest burden. **25% of new infections are among youth (13-24yo)**
 - MSM represents about 4% of the total US population but accounted for **78% of new HIV infections among men in 2010.**

Figure 1: Estimated New HIV Infections in the United States, 2010, for the Most Affected Subpopulations



What's the problem like in Vermont?

- Over the past 10 years, **new diagnoses range from 11-19 per year**
- VT Dept. of Health: 670 HIV+ Vermonters
 - **Estimated to be closer to 800 HIV+ individuals** when including those who are likely unaware of their status.
 - 56% fall into the MSM population.
- In 2012, a pre-exposure prophylaxis (PrEP) medication, Truvada, was FDA approved for HIV prevention. Despite this and clear evidence of its prophylactic effect from multiple clinical trials, **community and provider awareness remains limited in Vermont** with a most recent estimate of only 9 providers, not including Planned Parenthood offices or student health, who have actively prescribed PrEP.



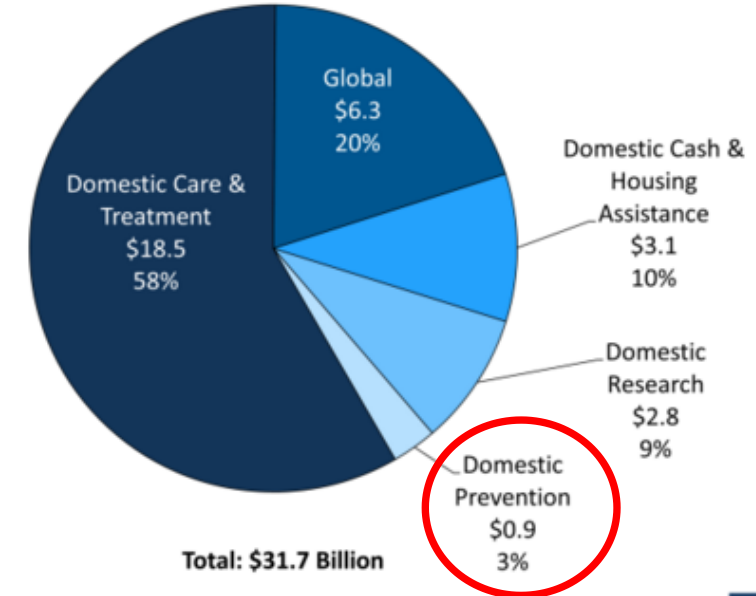
Public Health Costs of HIV/AIDS

- US 2016 federal budget request included **\$31.7 billion dollars** for combined domestic and global HIV efforts, with domestic funding estimated at \$25.3 billion. This represents a 3.1% increase from the 2015 federal budget.
 - **Largest portion is for health care services & treatment** for HIV+ individuals (\$18.5 billion)
 - **Smallest portion is for domestic HIV prevention**, totally \$940 million, which has remained largely unchanged over the past 6 years in the federal budget.
- Estimated lifetime costs for a new, early diagnosis of HIV infection is \$400,000.
- VT Medicaid annual coverage for 300 HIV/AIDS patients in 2011 exceeded \$3.6 million dollars.

Figure 2

U.S. Federal Funding for HIV/AIDS, by Category, FY 2016 Request

US\$ Billions



NOTE: Categories may include funding across multiple agencies/programs; global category includes international HIV research at NIH.
SOURCE: Kaiser Family Foundation, U.S. Federal Funding for HIV/AIDS: The President's FY 2016 Budget Request; February 2015.

Figure 2: U.S. Federal Funding for HIV/AIDS, by Category, FY 2016 Request

What are the possible interventions?

- HIV testing centers and linkage to care
- Antiretroviral therapy
- Prevention programs for HIV+ individuals and partners
- Substance abuse treatment programs
- Access to condoms and sterile syringes
 - Despite many advances in the treatment and prevention of HIV infections, the incidence rate has remained consistently around 50,000 new infections per year.
 - *“Doctors and policy makers need to admit that 30 years of the ABC mantra – abstain, be faithful, and use condoms – has failed. Men generally hate condoms, their lovers usually give in, almost no one abstains, precious few stay faithful” –*
 - Donald G McNeil, Jr is a New York Times science and health reporter who covers diseases of the world's poor, including AIDS.
- Pre-exposure prophylaxis (PrEP)

What are the barriers to PrEP use in VT?

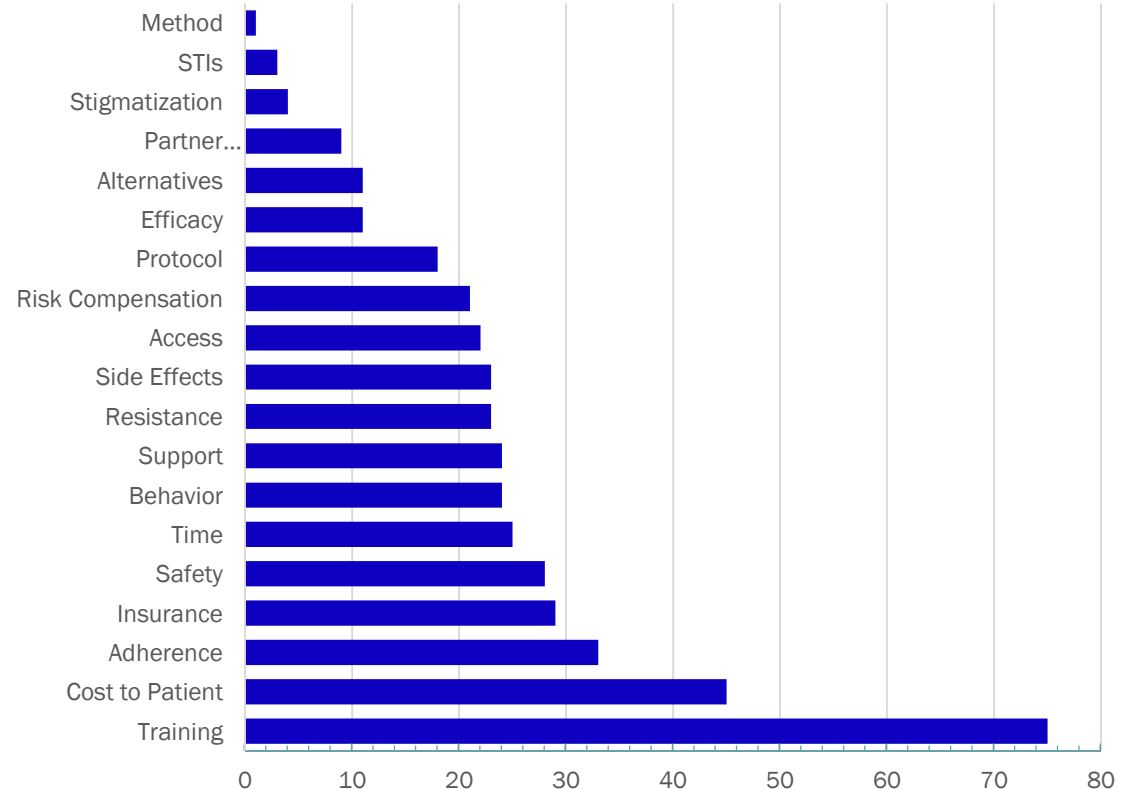
FACILITATORS AND BARRIERS TO PRESCRIBING PRE EXPOSURE PROPHYLAXIS (PrEP) FOR THE PREVENTION OF HIV

TB. Flanagan¹, MM. Graham¹, TT. Huynh¹, DL. Luzim¹, AK. Miller¹, DM. Nguyen¹, Y. Shen¹, P. Jacobson², JG Larrabee¹ MD

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- Lack of training about PrEP
- Concerns about costs and insurance coverage
- Development of a treatment resistant HIV
- Will this lead to riskier sexual behaviors?
- Concerns about increasing rates of other STI's (gonorrhea, syphilis)
- Open and honest sexual behavior conversations
- Stigma – “slut shaming” by physicians; “Truvada whores” in the communities
- Nearly half of providers consider themselves “not confident at all” about having an informed discussion with patients regarding PrEP



What is PrEP?

- Pre-exposure prophylaxis – differs from PEP (post-exposure prophylaxis)
- FDA approved in 2012 for HIV prevention in HIV-negative individuals
- **Truvada** (combination of two medications)
 - **Emtricitabine** (Emtriva) **and tenofovir** (Viread)
 - Nucleoside reverse transcriptase inhibitors
 - Preventing HIV viral enzyme from making more copies of itself



Does PrEP actually work?

- The studies to date are rock solid (iPrEx study)
 - 2,500 HIV-seronegative men & transgender women who have sex with men.
 - *NEJM; Pre-exposure prophylaxis for HIV prevention in MSM, Jan. 2011*
- Participants who took Truvada **daily**, estimated protection was **99%**
- Participants who took it **4 days** per week, estimated protection was **96%**
- Participants who took it **2 days** per week, estimated protection was **76%**

Detectable blood levels strongly correlated with the prophylactic effect

The big picture:

- **Estimated 1/4 of all sexually active MSM have indication for PrEP**
 - *(2014 US Public Health Service; PrEP Clinical Practice Guideline)*
- Estimated 1/5 of IV Drug Users have indication for PrEP
- Estimated 1/200 heterosexual sexually-active adults have an indication for PrEP

What about other at risk populations?

- Heterosexual men and women in serodiscordant relationships
- Partners PrEP Study
 - Truvada vs. tenofovir vs. placebo in 4,500 participants in Kenya & Uganda
 - Reduction of new infections by 73% (of those assigned to take Truvada)
 - When the researchers measured blood levels of the medication, the reduction rate was **90% fewer new infection**
 - What does this mean?

Adherence to taking this medication daily matters!

Who else would benefit from PrEP?

■ Bangkok Tenofovir Study

- Truvada vs. placebo in 2,400 participants who reported intravenous drug use during the previous year
- Overall, Truvada demonstrated reduction in risk of HIV infection by **49%**
- But, again, when researchers looked at the participants who were directly observed taking Truvada daily, they found that protection increased to **74%**

Further studies evaluation Truvada's effect on truly *parenteral* HIV acquisition

Follow-up Research

- Kaiser Permanente SF Medical Center Study (September 2015)
 - N=657 individuals started PrEP, 99% MSM population
 - **No new HIV diagnoses**
- 74% reported no change in number of sexual partners
 - 15% decreased the number of partners; 11% increased
- 41% reported decreased condom use; 56% unchanged (**people already do what they want**)
- 30% diagnosed with an STI in first 6-months, 50% in 12-months
 - Chlamydia (33%), gonorrhea (28%), syphilis (5.5%)
- **Limitations:** no control group, study population in SF has baseline higher rates HIV / viral undetectability

At Risk Populations

- The studies to date have demonstrated Truvada's potential in helping reduce the rate of HIV infection in the following at risk populations
 - *Men who have sex with men (MSM)*
 - *Heterosexual serodiscordant (magnetic) couples*
 - *Intravenous drug users (IVDU)**

Important take away...

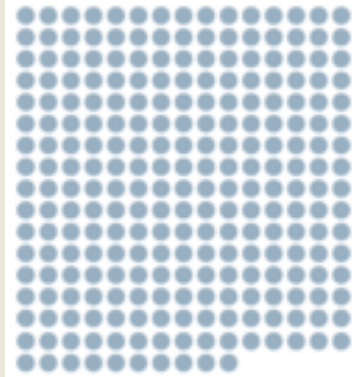
Compliance with this medication is crucial to its prophylactic effect!

How to get the word out about PrEP?

- PCP and community awareness & education
- The ID community is well aware of PrEP
 - 2013 national survey of ID physicians demonstrated that 74% supported the use of PrEP, yet only 9% had actually prescribed it.
 - UVM practice so far has been “refer to ID” ... let’s stop this
- HIV-negative, or assumed to be, MSM have NO REASON to see an ID specialist. If they’re seeing anyone for healthcare, it’s their PCP.
 - Within marginalized communities, word spreads quickly about which providers are open and “safe” to talk to.

To Save a Life

Scientists have compared the effectiveness of two preventive drug regimens: a daily dose of Truvada, against H.I.V.; and statins to prevent heart attacks. By that measurement (called “number needed to treat”), the Truvada regimen is far more likely to save lives.



250

Number of people taking statins for one year to prevent one heart attack.



61

Average number of people given Truvada for one year to prevent one H.I.V. infection.

Source: David V. Glidden,
University of California at San Francisco

Section 1 Patient/Provider Checklist

Organization/Clinic Name

CHECKLIST FOR INITIATING PREEXPOSURE PROPHYLAXIS (PrEP)

Print name of provider

Print name of patient

Today's date (month/day/year)

Provider Section

I have provided this patient with the following: (check all as completed):

- ☐ Assessment for possible acute HIV infection
- ☐ Indicated laboratory screening to determine indications for these medications
- ☐ An HIV risk assessment to determine whether PrEP is indicated for this patient
- ☐ A medication fact sheet listing dosing instructions and side effects
- ☐ Counseling or a referral for counseling on condom use and any other HIV risk-reduction methods this patient may need
- ☐ Advice on methods to help the patient to take medication daily as prescribed
- ☐ Information about PrEP use during conception and pregnancy (when indicated)
- ☐ A prescription for Truvada (300 mg tenofovir disoproxil fumarate, 200 mg emtricitabine)
- ☐ A follow-up appointment date

As the provider, I will:

- Limit refill periods to recommended intervals for repeat HIV testing (at least every 3 months)
- Conduct follow-up visits at least every 3 months that include the following:
 - Assessment of HIV status (including signs or symptoms of acute HIV infection)
 - Assessment of side effects and advice on how to manage them
 - Assessment of medication adherence and counseling to support adherence
 - Assessment of STI symptoms, HIV risk behavior and counseling support for risk-reduction practices
- Inform the patient of any new information about PrEP and respond to questions

MSM Risk Index ²⁵		
1	How old are you today?	If <18 years, score 0 If 18-28 years, score 8 If 29-40 years, score 5 If 41-48 years, score 2 If 49 years or more, score 0 _____
2	In the last 6 months, how many men have you had sex with?	If >10 male partners, score 7 If 6-10 male partners, score 4 If 0-5 male partners, score 0 _____
3	In the last 6 months, how many times did you have receptive anal sex (you were the bottom) with a man without a condom?	If 1 or more times, score 10 If 0 times, score 0 _____
4	In the last 6 months, how many of your male sex partners were HIV-positive?	If >1 positive partner, score 8 If 1 positive partner, score 4 If <1 positive partner, score 0 _____
5	In the last 6 months, how many times did you have insertive anal sex (you were the top) without a condom with a man who was HIV-positive?	If 5 or more times, score 6 If 0 times, score 0 _____
6	In the last 6 months, have you used methamphetamines such as crystal or speed?	If yes, score 6 If no, score 0 _____
		Add down entries in right column to calculate total score _____ TOTAL SCORE*

* If score is 10 or greater, evaluate for intensive HIV prevention services including PrEP.

If score is below 10, provide indicated standard HIV prevention services.

What are the side effects of PrEP?

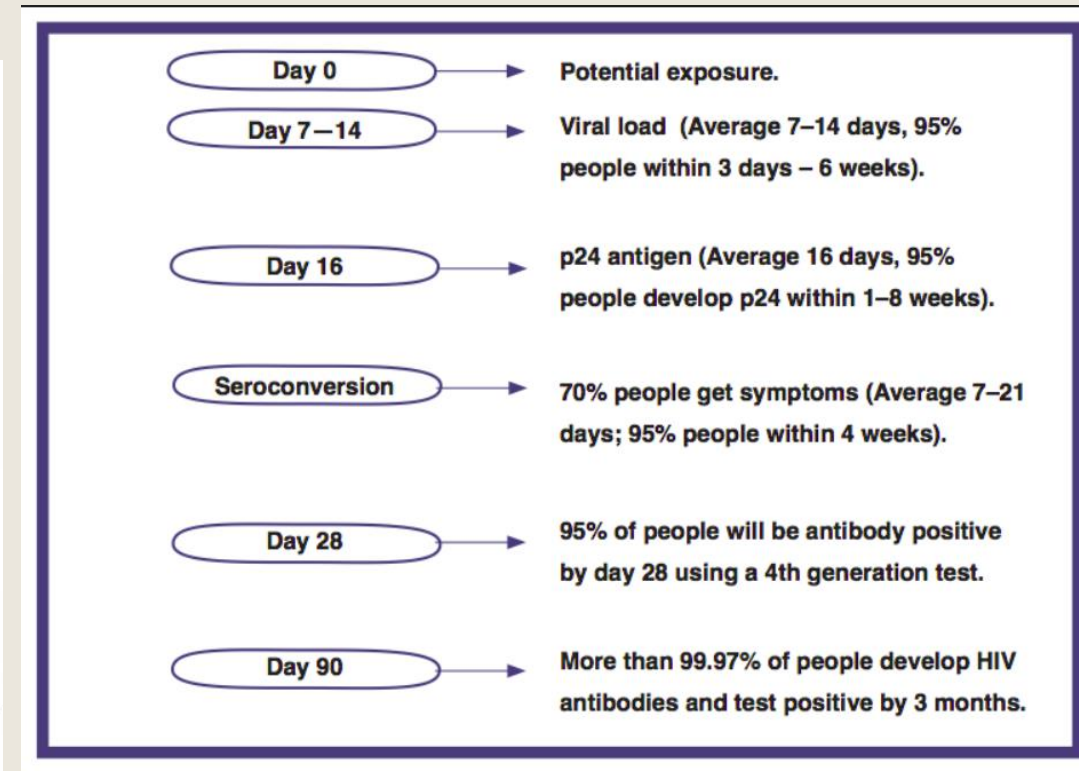
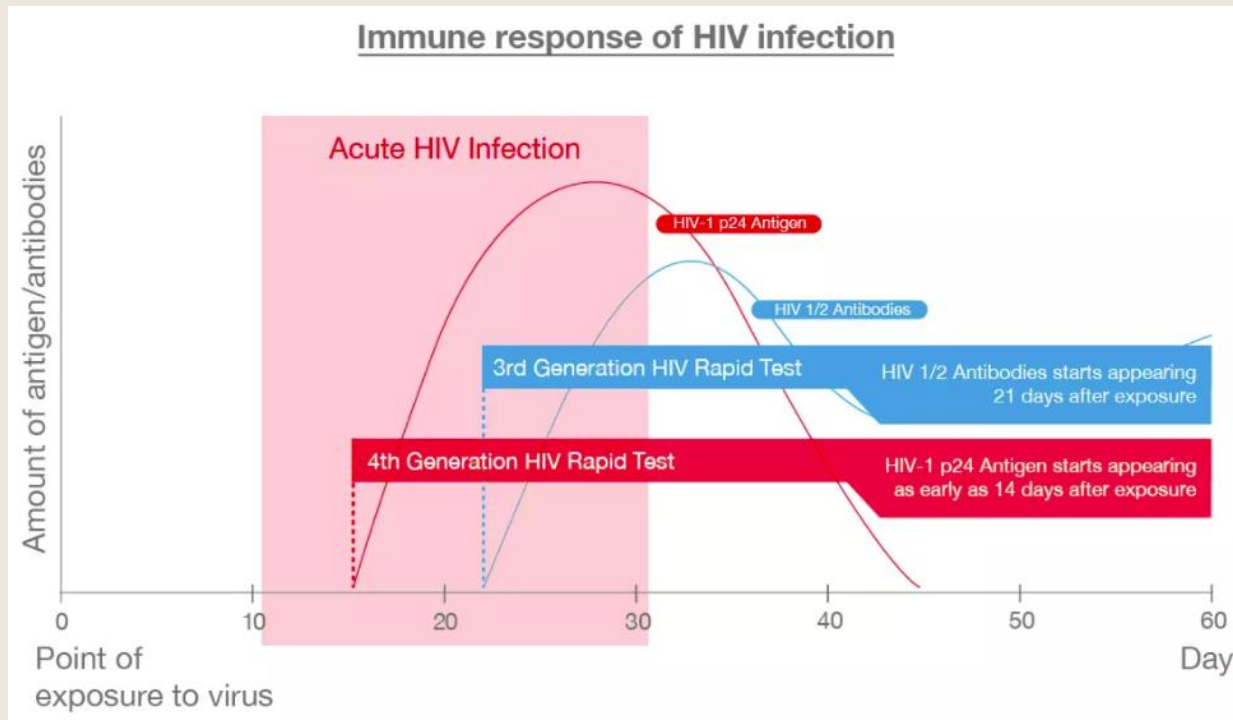
- **Most people** taking Truvada report **no side effects**.
- Those that are reported are generally mild...
 - Nausea (9%), headaches (5%), weight loss (2%) and increased serum creatinine (0.3%)
- As with many medications, there is a risk of serious side effects:
 - Lactic acidosis, hepatic/renal dysfunction, worsening of hepatitis B infection if stopped
- Recommended labs every 3 months to monitor for:
 - HIV status, other STI's, LFT's, and serum BUN/Cr

Lab Tests and Evaluation

- 1) HIV antibody test
 - *Confirm HIV (-) status before initiating, and every 3 months (ideally within the week before refilling Rx)*
 - *Accomplish via serum HIV ELISA or rapid POC FDA approved fingerstick blood test*
 - Do NOT use oral rapid tests in PrEP monitoring due to less sensitivity
 - Do NOT accept self-reported results or documented anonymous results
 - *If positive HIV antibody: follow normal procedure for confirmatory testing*
 - *If acute infection suspected, must defer to HIV RNA test for acute exposure*

Reminder: Which HIV test?

- General Screening: Fourth generation immunoassay (detects antibodies)
 - *If positive, reflex to HIV 1 / HIV 2 Differentiation*
 - Confirms the fourth generation test, also gives info on type of virus if present
 - *If within “window period” and concern for acute HIV infection/exposure, order tests for **direct viral detection***
 - P25 antigen, HIV RNA



Lab Tests and Evaluation

- 2) Renal Function
 - Obtain serum Cr and eCrCl
 - Minimum eCrCl of 60ml/min
 - Among HIV+ persons prescribed Truvada-containing regimens, decreases in renal function (eCrCl) have been documented. Occasional cases of acute renal failure in HIV+ individuals
 - In HIV negative individuals, eCrCl may decrease initially, eventually returning to baseline
- 3) test for active HVB/HCV infection
 - MSM and IVDU at increased risk
 - Tenofovir has activity against HBV, thus if pt stops med, reactivation of HBV → hepatic damage
- 4) Consider bone density evaluation if pt may be at risk
- 5) Serum and Site-specific STI testing
 - Oropharyngeal and anal swabs for GC / Chlamydia
 - Urine GC/Chlamydia
 - Syphilis RPR serology

Please see handout for “schedule” of labs for PrEP

- Essentially, no harm in running all of these routinely q3months for simplicity's sake. It's all the same blood draw

Initial PrEP Visit:

- Confirm Negative HIV antibody test results; negative HIV RNA if unprotected sex was in the past six weeks.
- Screen and treat for STIs- Chlamydia, Gonorrhea (throat & anal swab, urine), Syphilis
- Screen for Hep B/C and Hep A antibodies/infection
- Obtain baseline phosphorus, ALT, AST and Creatinine
- Document CrCl >60L/min
- Assess behavioral risk to determine if the patient is at ongoing risk for HIV acquisition
- Provide risk-reduction counseling
- Provide adherence counseling

30 days after initiation of PrEP

- HIV antibody testing
- ALT, AST, Creatinine lab draws
- Monitor for signs/symptoms of hepatic inflammation
- Symptom/adherence check
- Assess behavioral risk to determine if the patient is at ongoing risk for HIV acquisition
- Provide risk-reduction and adherence counseling
- Test for STIs/treat accordingly

3 months after initiation

- HIV antibody test
- Repeat Creatinine, ALT, AST
- Document calculated CrCl >60mL/min
- Monitor for signs/symptoms of hepatic inflammation
- Screen for STIs/treat accordingly
- Assess behavioral risk to determine if the patient is ongoing risk for HIV acquisition
- Assess adherence

6 months after initiation

- HIV antibody test
- Repeat Creatinine, ALT, AST, Phosphorus
- Monitor for signs/symptoms of hepatic inflammation
- Screen for STIs/treat accordingly
- Assess behavioral risk to determine if the patient is ongoing risk for HIV acquisition
- Assess adherence

Continue every three months: HIV test, site-specific STI testing, AST/ALT, phosphorous, creatinine.

Refills: Lab work must be completed at 30 days of initiation and then every 3 months after initiation. Patient must be seen every 3 months for refill. Patient must have an appointment scheduled to be seen. If patient is calling for refill and it does not fall in the q 3 months please fill accordingly.

Importance of the Sexual History and site-specific STD testing

- Q3month visits provide regular opportunities with obtaining a sexual history
- Importance of site-specific testing (2010 CDC STD guidelines for MSM screening)
 - *Urethral G/C if insertive intercourse in past year*
 - Usually urine sample will suffice for this
 - *Rectal G/C if receptive anal sex in past year*
 - *Pharyngeal G/C if receptive oral sex in past year*
- Anal Paps?
 - NY State Dept. of Health recommends for HIV+ patients
 - CDC/USPSTF/ACS do not recommend
 - Recommendations? HIV- patients = baseline, q2-3 years (however still being studied)

Having The Talk: Approach to Clinical Assessment of the Patient – Sexual HIV Acquisition Risk

- For all sexually active pts:
 - *Consider dx of bacterial STIs in past 6 months as evidence of potential HIV-exposure sexual activity, therefore, risk*
- Alcohol use / abuse screening (especially before sexual activity)
- Screening for use of non-injection drugs
 - *Amyl nitrite (“poppers”) – assoc’d w/ sexual encounter enhancement*
 - Smooth muscle (sphincter) relaxation, vasodilation and reflexive tachycardia (sensation of “excitement”)
 - *Stimulants*

Having The Talk: Approach to Clinical Assessment of the Patient – Sexual HIV Acquisition Risk

Sexual history taking:

- 76% of MSM surveyed in 2008 in 21 US cities reported a health care visit in the past year
 - However, many providers don't ask about (and pts don't disclose) same-sex behaviors
- **Language unique to MSM: “bottoming” vs. “topping”, “bareback”/”raw”**

BOX A2: RISK BEHAVIOR ASSESSMENT FOR HETEROSEXUAL MEN AND WOMEN

In the past 6 months:

- Have you had sex with men, women, or both?
- *(if opposite sex or both sexes)* How many men/women have you had sex with?
- How many times did you have vaginal or anal sex when neither you nor your partner wore a condom?
- How many of your sex partners were HIV-positive?
- *(if any positive)* With these HIV-positive partners, how many times did you have vaginal or anal sex without a condom?

BOX A1: RISK BEHAVIOR ASSESSMENT FOR MSM³⁶

In the past 6 months:

- Have you had sex with men, women, or both?
- *(if men or both sexes)* How many men have you had sex with?
- How many times did you have receptive anal sex (you were the bottom) with a man who was not wearing a condom?
- How many of your male sex partners were HIV-positive?
- *(if any positive)* With these HIV-positive male partners, how many times did you have insertive anal sex (you were the top) without you wearing a condom?
- Have you used methamphetamines (such as crystal or speed)?

*** “Are you and your partner exclusive or open?” ***

- San Francisco State Univ “Gay Couples Study”: found **47% of gay relationships are open**, 45% monogamous, and 8% disagreed about their categorization
 - Married / partnered does not mean monogamous! Many seeking PrEP are married/partnered

Cost Concerns

- Truvada is covered by nearly all major insurance in VT:
 - *VT Medicaid*
 - *VT Blue Cross – Blue Shield*
 - *Other private insurances*
- Gilead “Advancing Access” Copay Card
 - *<https://www.gileadadvancingaccess.com/copay-coupon-card>*
 - *Covers drug copay cost*
 - U.S. residents
 - Available for each valid prescription, no other purchase necessary
 - Pt cannot be currently receiving other free drug assistance through Gilead patient assistance programs
- Gilead Financial Assistance Card

It is rare for an individual to pay full out-of-pocket cost for PrEP -- especially in Vermont

HIV risk is not static throughout lifetime – “seasonality” of risk

Identification of high-risk people might be less helpful than identification of high-risk moments and the situations that cause them, for example:

- Leaving home
- Becoming an adult
- Coming out as a MSM
- Immigrating to a new city
- Ending a relationship

**** Family Medicine again is perfectly poised to intervene ****

PROUD study reported that **unexpectedly high HIV incidence (9 infections per 100 person-years) in men who asked for PrEP and who were asked to defer**

- HIV incidence was 3x expected based on epidemiologic trends
- People at higher risk of HIV infection were more likely to seek PrEP services, stay in care, and be adherent = the motivation is already there

iPrEx study: Evidence that PrEP is a strong attractor for those entering into a “season of high exposure to HIV”

- Temporal variation in risk behavior

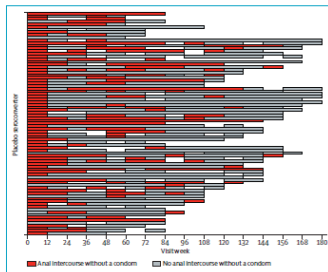
Correspondence

HIV moments and pre-exposure prophylaxis

The PROUD study (Jan 2, p 53)¹ recently reported confirmatory evidence that oral tenofovir disoproxil fumarate-empiricidine pre-exposure prophylaxis (PrEP) protects men who have sex with men against HIV acquisition. The study showed unexpectedly high HIV incidence (9.0 infections per 100 person-years) in men who asked for PrEP and who were asked to defer. The HIV incidence in this group was three times what was expected on the basis of epidemic trends. This finding is consistent with our observations that people at higher risk for HIV infection were more likely to seek PrEP services, stay in care, and be adherent.²

There is other evidence that PrEP might be a strong attractor for people who are entering into a season of high exposure to HIV. The prevalence of acute HIV infection in the iPrEx trial³ defined as detection of nucleic acids before seroconversion, was 0.001 during follow-up of the placebo group that had an annual HIV seroconversion of 3.9 per 100 person-years;⁴ this finding is consistent with the known duration of the viraemic seronegative window period. At enrollment, the prevalence of acute infection was 3.8 times greater, suggesting that the incidence might have been 14.8 per 100 person-years at the time PrEP was being sought. Such high-risk moments could explain the high prevalence of acute infection at baseline in iPrEx and the high incidence of HIV in participants asked to defer PrEP in PROUD.

Extreme temporal variation in HIV risk is also consistent with patterns of sexual behaviour over time. For example, of 83 iPrEx participants in the placebo group who subsequently became HIV infected, 72 (87%) reported receptive anal intercourse without a condom when they first sought PrEP, whereas such behaviour was reported in only 28 (34%) of



See Editorial page 1484

Figure: Temporal variation in sexual practices involving HIV risk
Each row represents one person who seroconverted in the placebo group of the iPrEx trial of pre-exposure prophylaxis in men who have sex with men and transgender women. Non-conditional receptive anal intercourse was reported most frequently at enrollment, and sporadically thereafter.

609 visits thereafter (figure). 5–15% reported no sex at all during any given quarter. The people reporting no sex or safer sex changed over time: only six (7%) of 83 seroconversions occurred in people reporting receptive anal intercourse without a condom every quarter. Identification of high-risk people might be less helpful than identification of high-risk moments and the situations that cause them, such as leaving home, becoming an adult, coming out as a man who has sex with men, immigrating to a new city, ending a relationship, and others.

People who are passing through HIV risk moments seem to be inclined to seek PrEP. As consumer demand for PrEP rises from the front lines of the epidemic,⁵ people will come forward at times of recent or frequent HIV exposure, thereby presenting powerful opportunities for PrEP post-exposure prophylaxis, and early treatment. Any request for these services should prompt an urgent and thorough response.

GlaxoSmithKline donated study medication to the US National Institutes of Health who sponsored the

iPrEx trial. BMC reports non-financial support from GlaxoSmithKline and grants from the National Institutes of Health, during the conduct of the study. BMC is on a monitoring board for iPrEx, which makes a confidential product for pre-exposure prophylaxis.

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GlaxoSmithKline, San Francisco, CA, USA (BMC); University of California, San Francisco, CA, USA (BMC, DN); and San Francisco AIDS Foundation, San Francisco, CA, USA (BMC).

1. McCormack S, Dunn DT, Osaile M, et al. Pre-exposure prophylaxis to prevent the acquisition of HIV-1 infection (PROUD): effectiveness results from the pilot phase of a pragmatic, open-label randomised trial. *Lancet* 2015; 387: 53–60.

2. Grant RM, Anderson PL, McMahon L, et al. Update of pre-exposure prophylaxis, sexual practices, and HIV incidence in men and transgender women who have sex with men: a cohort study. *Lancet Infect Dis* 2014; 14: 525–32.

3. Grant RM, Lama JR, Anderson PL, et al. Pre-exposure chemoprophylaxis for HIV prevention in men who have sex with men. *N Engl J Med* 2010; 363: 2587–95.

4. Maan JJ, Glidden DV, Mayer RM, et al. No evidence of sexual risk compensation in the iPrEx trial of daily oral HIV pre-exposure prophylaxis. *PLoS One* 2012; 7: e41027.

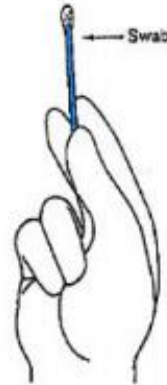
5. Grant R, Hecht J, Raymond H, et al. Scale-up of pre-exposure prophylaxis in San Francisco to impact HIV incidence. *CDC*, Seattle, WA, Feb 23–25, 2015, 25.

Submissions should be made via our electronic submission system at <http://www.editorial.com/submit>

The Condom Conundrum

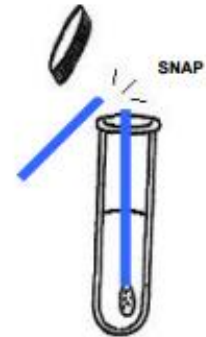
- Many people do not like sex with condoms
 - Diminished sensation – acknowledge impact on intimacy and privacy
 - Increased anxiety and ED? Caused by condoms? ED treatments
 - Poor fit and the “I only use Magnum” issue
 - Tissue irritation – know your lube options
- Many people who do want to use condoms and need help
 - Encourage open conversation. Ask, if yes, ask again. If no, ask why not.
 - Strategies to respond when partner protests condom use
 - www.condomania.com and www.luckybloke.com
 - Alternatives to latex

Rectal Self-Swab Collection Instructions



Step 1.

Open kit and remove tube and package with green writing. Remove the swab with the **BLUE** shaft. **USE BLUE SHAFT SWAB ONLY.**



Step 3.

Remove cap from test tube. Place swab in test tube. Do not puncture the foil cap.

Break swab shaft at the score mark.



Step 2.

Insert swab 1 inch into the anus and turn for 5 – 10 seconds.

If needed, before inserting swab, wet swab with water or saline solution.



Step 4.

Put cap back tightly on test tube to prevent any leaking. Try not to splash the liquid out the tube.

Step 5.

Discard wrapper and unused swab. **Wash your hands.** Return the tube to the health worker.

<http://www.sfcityclinic.org/providers>

<http://fenwayhealth.org/>

Road to Zero



- Campaign whose goal is to achieve zero new HIV infections in Vermont by 2020
 - Average of 11-19 new diagnoses per year (over the past 5 years)
 - **“Vermont is in striking distance of becoming the first state ever to achieve this goal”** – VT Cares
- **PrEP is front and center**
- Major limitation?
 - Currently only 9 providers actively prescribing PrEP
 - *“Insufficient to fully demonstrate the public health impact PrEP can have”*
 - Peter Jacobsen, Executive Director of VT Cares

What can be done to overcome these barriers?

- **Provider education** about PrEP
 - Indications (at risk populations)
 - Provider role in monitoring patients on PrEP
 - *** HAVE THE CONVERSATION ***
 - Truvada is covered by Vermont Medicaid and Blue Cross-Blue Shield
- **Patient awareness, education, and counseling**
 - VT Cares: counseling services currently, plans to expand

PrEP Updates: The Regimen

- **Preferred regimen remains TDF-FTC** (tenofovir DISOPROXIL fumarate – emtricitabine) = **Truvada**
 - *Counsel to still use condoms 1 week after initiating (anal sex), 21 days (vaginal)*
- New TAF (“Descovy” - tenofovir ALAFENAMIDE) form
 - *Decreased renal/bone toxicity; already used in treating HIV*
 - *However, NOT indicated for prophylaxis (PrEP) due to conflicting reports about having lower anal mucosal levels vs TDF*
 - *Large multinational trial is underway*

PrEP Updates: The Dosing Schedule

- Preferred / approved dosing schedule remains **daily** (protection depends on total drug levels in mucosa)
- Alternative dosing regimens have been studied and show promise:
 - *IPIRGAY Study: “Event-Driven” / “On-Demand” therapy*
 - **relative reduction of 86%** in the risk of HIV-1 infection.
 - Loading dose 2 tabs, 24 hours before unprotected sex
 - 1 tab daily while sexually active, continued 2 days after sexual activity ends
 - *Discrete period of sex (i.e. going on a trip) = start daily PrEP 1 wk prior, continue until 1 month after*
 - Supported by pharmacokinetic data for predicting protective levels of intracellular Tenofovir
 - Not completely evaluated in trials
- NOTE: alternate dosing regimens not yet approved by FDA
 - *Also not evaluated in heterosexual men/women and sub-daily dosing not recommended for women having vaginal sex due to longer time needed to achieve adequate vaginal mucosa*

What does the future hold for PrEP?

- Current research for new pharmaceutical options for PrEP:
 - **Maraviroc** – daily pill
 - **Rilpivirine** – monthly injection
 - **Dapivirine** – vaginal ring, changed monthly
 - **Tenofovir** (alone) – rectal/vaginal gel
- Discussions about a **Truvada injection, every 3 months**.
 - *NYU survey demonstrated that 79% of young gay men would prefer this option over a daily pill*
 - *Cornell University currently recruiting for clinical trial*

The Take-Home

- Truvada is SO much more than just a medication
- HIV for the MSM community is SO much more than just a chronic disease
 - *Remember the historical context*
 - *Remember how it's in the back of all of our minds*
- Individuals coming to you asking for PrEP have already self-identified as higher-risk individuals
- Prescribing PrEP is incredibly simple – literally just a 5-item checklist. Requires no nuanced clinical judgment
 - *No more excuse for “not being comfortable”*
- We need advocates, not judges
 - *Approach healthcare from a sex-positive, non-judgmental mindset*
 - *“The Ethical Slut” by Dossie Easton and Janet Hardy*
 - *Dan Savage: “Savage Lovecast”*
- Zero new HIV infections is ACHIEVABLE in Vermont

Clinician Resources

- San Francisco AIDS Foundation video “Demystifying PrEP”:
<http://yourekascience.org/portfolio/demystifying-hiv-pre-exposure-prophylaxis/>
- CDC PrEP Line: 1-855-HIV-PREP (1-855-448-7737)
11:00 a.m. - 6:00 p.m. ET Monday through Friday
- Laura Catoe, NP – UVMHC Infectious Disease outpatient clinic
- UpToDate articles:
 - *“Patient evaluation and selection for HIV pre-exposure prophylaxis”*
 - *“Administration of pre-exposure prophylaxis against HIV infection”*

PLEASE TAKE A HANDOUT!

Questions? (sorry I have to run to ACLS training)

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References

- Baeten et al. *New England Journal of Medicine, Antiretroviral prophylaxis for HIV prevention in heterosexual men and women*, 2012; 367: 399-410. Aug 2 2012.
- Centers for Disease Control and Prevention – HIV homepage. Centers for Disease Control and Prevention, 11 Oct. 2016. Web. 30 Oct. 2016. <<http://www.cdc.gov/hiv/>>. Choopanya et al. *The Lancet, Antiretroviral prophylaxis for HIV infection in injecting drug users in Bangkok, Thailand (the Bangkok Tenofovir study): a randomized, double-blind, placebo-controlled phase 3 trial*. Online pub, June 13 2013. <[http://dx.doi.org/10.1016/S0140-6736\(13\)61127-7](http://dx.doi.org/10.1016/S0140-6736(13)61127-7)>
- Flanagan, Theresa B.; Graham, Margaret M.; Huynh, Tihn T.; Luzim, Derek L.; Miller, Alexandra K.; Nguyen, David M.; Shen, Yueyue; Jacobsen, Peter; and Larrabee, Jerry, "Facilitators and Barriers to Prescribing PreExposure Prophylaxis (PrEP) for the Prevention of HIV" (2016). *Public Health Projects, 2008-present*. Book 229. <http://scholarworks.uvm.edu/comphp_gallery/229> Golden, Matthew. "Anal Cancer: Should Screening Be Routine?" (n.d.): n. pag. Northwest AIDS Education and Training Center, University of Washington. Web. <http://depts.washington.edu/nwaetc/presentations/uploads/54/anal_cancer_should_screening_be_routine.pdf>.
- Grant et al. *New England Journal of Medicine, Preexposure chemoprophylaxis for HIV prevention in MSM*, 2010; 363: 2587-2599. Dec 30 2010.
- Grant, Robert M., and David V. Glidden. "HIV Moments and Pre-exposure Prophylaxis." *The Lancet* 387.10027 (2016): 1507-508. *The Lancet*, 9 Apr. 2016. Web. 30 Oct. 2016. <[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(16\)30125-8/fulltext?rss%3Dyes](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)30125-8/fulltext?rss%3Dyes)>.
- "High-Impact HIV Prevention: CDC's Approach to Reducing HIV Infections in the United States." *Effective Interventions - HIV Prevention That Works*. Centers for Disease Control and Prevention, 1 Aug. 2011. Web. 30 Sept. 2016. <https://effectiveinterventions.cdc.gov/docs/default-source/general-docs/12-0209_HIP_CDCs_Approach_red_booklet.pdf?sfvrsn=0>.
- HIV/AIDS Fact Sheets. Centers for Disease Control and Prevention, 29 Feb. 2016. Web. 30 Oct. 2016. <<https://www.cdc.gov/msmhealth/resources/fact-sheets.htm>>.

References cont'd

- "HIV Risk and Prevention: Pre-Exposure Prophylaxis (PrEP)." *Centers for Disease Control and Prevention*. Centers for Disease Control and Prevention, 19 Sept. 2016. Web. 30 Oct. 2016. <<http://www.cdc.gov/hiv/risk/prep/index.html>>.CDC: Clinical practice guidelines, 2014.
- Mcneil, Donald G. "Advocating Pill, U.S. Signals Shift to Prevent AIDS." *The New York Times*. The New York Times, 14 May 2014. Web. 30 Oct. 2016. <http://www.nytimes.com/2014/05/15/health/advocating-pill-us-signals-shift-to-prevent-aids.html?_r=0>
- "Medicaid Enrollment and Spending On HIV/AIDS." *Medicaid Enrollment and Spending on HIV/AIDS*. Kaiser Family Foundation, 2016. Web. 30 Oct. 2016. <<http://kff.org/hivaids/state-indicator/enrollment-spending-on-hiv/?currentTimeframe=0&sortModel=%7B%22colId%22%3A%22Location%22%2C%22sort%22%3A%22asc%22%7D%22>>.
- "Preexposure Prophylaxis for the Prevention of HIV Infection in the United States - A Clinical Practice Guideline." (2014): n. pag. Centers for Disease Control and Prevention, 2014. Web. 30 Oct. 2016. <<http://www.cdc.gov/hiv/pdf/PrEPguidelines2014.pdf>>.
- "PrEP Fact Sheet." *Pre-exposure Prophylaxis (PrEP) for HIV Prevention*. Centers for Disease Control and Prevention, 1 May 2014. Web. 30 Oct. 2016. <<https://www.cdc.gov/nchhstp/newsroom/docs/factsheets/prep-factsheet-508.pdf>>.
- "PrEP - Love May Have Another Protector." *PrEP*. San Francisco AIDS Foundation, 1 Jan. 2015. Web. 30 Oct. 2016. <<http://prepfacts.org/>>.
- "U.S. Federal Funding for HIV/AIDS: Trends Over Time." *U.S. Federal Funding for HIV/AIDS: Trends Over Time*. Kaiser Family Foundation, 10 June 2016. Web. 30 Oct. 2016. <<http://kff.org/global-health-policy/fact-sheet/u-s-federal-funding-for-hivaids-trends-over-time/>>.
- Velk et al. *No New HIV Infection With Increasing Use of HIV Preexposure Prophylaxis in a Clinical Practice Setting*, *Clinical Infectious Disease*, 2015: 61(10): 1601-3
- *Your Guide to PrEP Pre Exposure Prophylaxis Comments*. Vermont CARES, 2015. Web. 30 Oct. 2016. <<http://vtcares.org/prevention/your-guide-to-prep-pre-exposure-prophylaxis/>>.