

# The Pathway to Optimized PrEP

Sheryl Zwierski, MSN  
September 19, 2014



# Overview

Basic Principles

Where are we now?

Where might we be going?

Caution: Potential problems ahead!

Refining the Map

The Way Forward: Big Picture



# Basic Principles

A variety of types of products and approaches are needed to reach key populations and make a real impact on the HIV epidemic.

Product specific PK/PD relationships are key. Products must reach the site of infection in sufficient quantities to prevent infection.



# Where are we now?

- Coital topicals
  - TDF vaginal gel (results expected soon)
- Rectal Microbicides
  - Rectal specific TDF gel (in phase II testing)
- Long acting topicals
  - In efficacy testing (results likely early 2016)
    - Dapivirine ring



# Where are we now?

- Other daily oral PrEP options
  - MVC (in phase II clinical testing – results expected in 2015)
- Long acting injectables (in phase II clinical testing – results expected late 2016)
  - TMC 278 LA
  - GSK 744 LA



# Where might we be going?

- Vaginal films?
  - Easy to use and offers a shorter acting option than monthly or bimonthly
- Pod IVRs?
  - Ability to include varied products without as much concern about drug compatibility due to separation in ring
- Implants?
  - Already used in contraception, convenient for long term use and relatively easily removed



# Where might we be going?

- Transdermal?
  - Thought be to be prohibitive due to inability to load enough drug for a reasonable sized patch - now being considered...
- Long acting tablets?
  - Long thought to be nearly impossible, but are they?



# Where might we be going?

- Meeting varied needs by Multipurpose Prevention Technologies (MPTs)
  - HIV and contraception
  - May be able to include other STI prevention
  - Multiple options for delivery
    - IVRs
    - IUDs
    - Implants
    - Injectables



# Where might we be going?

- Could Monoclonal Antibodies hold a place in the prevention repertoire?
  - Concept needs to be proven in an efficient and timely way
    - Issues currently include
      - Costs
      - Need for monthly IV infusion or large volume subcutaneous injections
  - Improvements being sought now
    - Subcutaneous injection with smaller volumes
    - Longer acting preparations



# Caution: Potential Problems Ahead!

- Are there potential differences in drug levels between compartments?
  - Need good PK information in plasma and tissue
- Acceptability
  - What does that really mean?
  - How to more accurately assess?



# Caution: Potential Problems Ahead!

- ADHERENCE

- What decision making process occurs initially and can it be positively influenced?
- What support is needed and feasible for long term adherence?



# Refining the Map

- PK/PD
  - Set ideal properties for each type of PrEP delivery and include adequate PK information to be collected early in the development process.
- Reconsider what questions we ask in trials and what the information that we get really means?
  - What do we really need to know to understand context and product use?



# Refining the Map

- Expand the multidisciplinary teams to optimize clinical trials
  - Demographers to help illuminate population dynamics such as migration patterns
  - Behavioral economists to help us understand the decision making process
  - Anthropologists to increase understanding of cultural influences and actual lived experiences of key populations
  - Community discussions to assist researchers in understanding their lives/needs/desires



# The Way Forward: Big Picture

## Be bold, yet discerning in our prioritization of products and strategies

- Push boundaries and think creatively
- Question the status quo
- Use objective criteria to select and down select products
- Keep in mind there are always opportunity costs



# The Way Forward: Big Picture

## Make Prevention Cool!

Include marketers and media experts in the expanded multidisciplinary team to influence desire for prevention products.

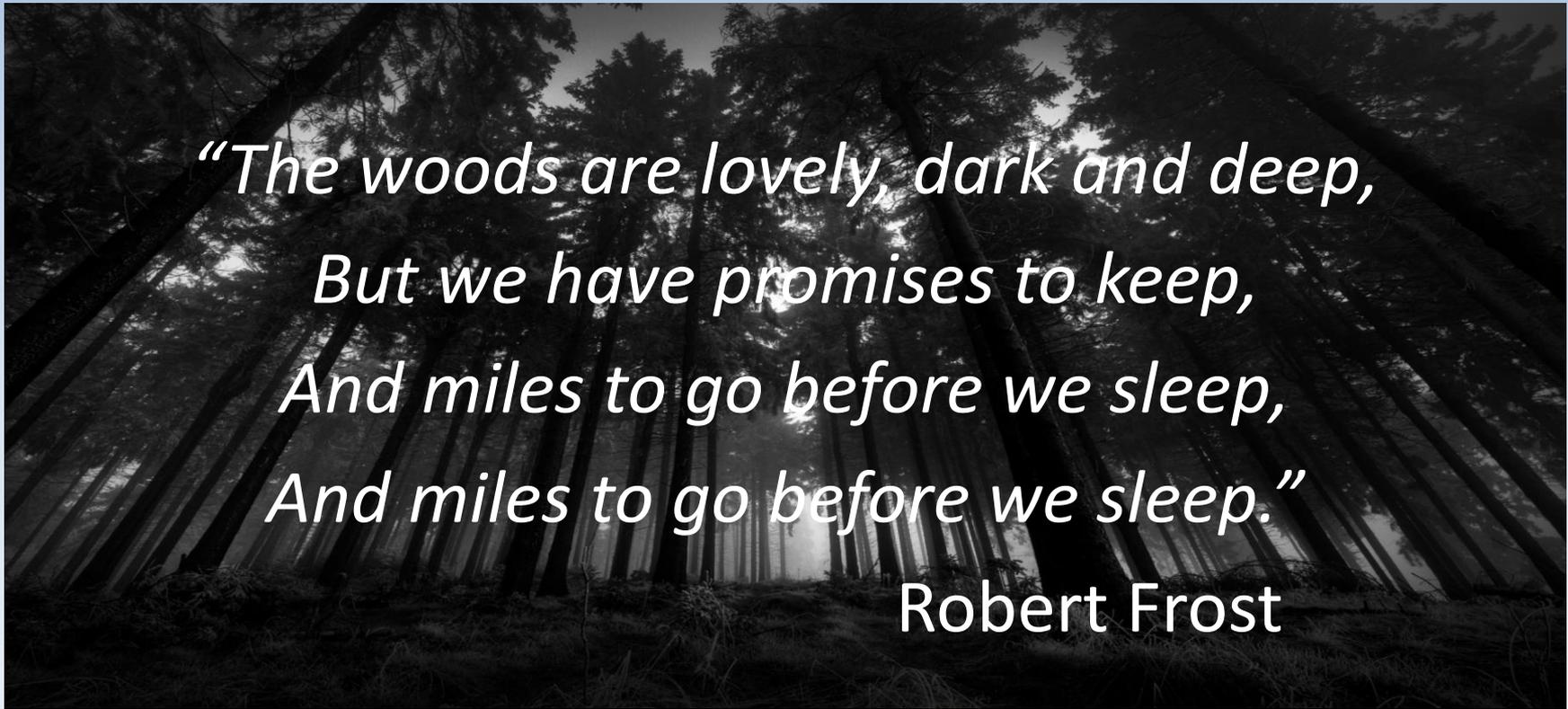


# Thank you PSP Members:

	Lester Freeman	Jenna Piper
David Burns	Michael Gilbreath	Kristen Porter
Roberta Black	Devasena Gnanashanmugam	AJ Reece
Renee Browning	Patrick Jean-Philippe	Usha Sharma
Grace Chow	Alain Kouda	Hans Spiegel
Wairimu Chege	Anabel Lowry	Lydia Soto-Torres
Naana Cleland	Cherlynn Mathias	Jim Turpin
James Cummins	Leslie Marshall	Fulvia Veronese
Ellen DeCarlo	Judi Miller	John Wroblewski
Vanessa Elharrar	Millicent Moye	Sheryl Zwierski
Elizabeth Flanagan	Ellen Townley	



# We have come a long way, but...



*“The woods are lovely, dark and deep,  
But we have promises to keep,  
And miles to go before we sleep,  
And miles to go before we sleep.”*

Robert Frost



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
National Institutes of Health



National Institute of  
Allergy and  
Infectious Diseases

Thank you.

Questions?

