Treatment as Prevention
The Key to Eliminate HIV, AIDS & HCV

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Toronto, Nov 12-14, 2014
USA - Trends in Annual Rates of Death
Ages 25 to 44
Vancouver 1996: “One World One Hope”

Impact of HAART in BC

Death Rate per 1000

Life Expectancy at age 20

Introduced HAART
The case for expanding access to highly active antiretroviral therapy to curb the growth of the HIV epidemic

HAART stops HIV replication

↓

HIV load falls to undetectable levels in plasma as well as in sexual fluids

↓

Sharp reduction in HIV transmission
Increasing HAART Coverage within Evolving Guidelines in BC

Montaner et al, Lancet, 2010
New AIDS Cases Diagnosed by Year
British Columbia - 1983 to 2013

Montaner et al, 2014
BC: All Cause Mortality (#)

Overall > 90% Decrease in All Cause Mortality among HIV Infected Individuals in BC since 1996

Note the further reduction in All Cause Mortality after the implementation of TasP

Montaner et al, PLOS One, Feb 12th 2014
AIDS ward closing merits celebration

Vancouver Sun, May 31st 2014

THE NEWSPAPER'S VIEW

Vancouver closes the doors of its last AIDS Ward—opening new opportunities
28 May 2014
Vertical Transmission in the TasP Era

HIV+ Birth

Annual Report 2012
HIV new Diagnoses

Modified from Montaner et al, PLOS One, Feb 12th 2014
HR = 96.3% reduction in transmission
No difference whether index pt was M or F

Savings from averted HIV cases

* Assuming each HIV case costs $396,000

R Hogg et al, BC-CfE, in progress, March 2014
Treatment 2.0: A new prevention-treatment paradigm in the global response to HIV/AIDS

Michel Sidibé
Executive Director
UNAIDS

The role of antiretroviral treatment in stopping new infections and how it can be effectively used as part of combination HIV prevention approaches must be further explored, as shown by Dr Julio Montaner, President of the International AIDS Society.
Few could have imagined that we’d be talking about the real possibility of an AIDS-free generation. But that’s what we’re talking about…make no mistake, we are going to win this fight.

President Obama, December 1, 2011

PS: By the end of 2013, PEPFAR will directly support more than 6 M people on HAART, Which amounts to 2M more than previously targeted.
"To cut new infections in half, we'll have to heed Julio Montaner's years of pleas to implement Treatment as Prevention and implement combination prevention programs. We can save a lot of lives if all this is done..."

President Clinton, Washington AIDS Conference, 2012
By 2020...

90% of all people living with HIV will know their HIV status

90% of all people diagnosed with HIV will receive sustained, high quality antiretroviral therapy

90% of all people receiving antiretroviral therapy will have durable viral suppression
The Result

73% of all people living with HIV will be virally suppressed

= a three-fold increase over current 2014 estimates
The objective

“Maximize the effectiveness of existing tools by 2020 to virtually eliminate* progression to AIDS, premature death and HIV transmission, and thereby transform the HIV/AIDS pandemic into a low level sporadic endemic by 2030.”

* ≥ 90% below 2010 levels
AMBITIOUS TREATMENT TARGETS
THE FINAL CHAPTER OF THE AIDS EPIDEMIC

90% diagnosed
90% on treatment
90% virally suppressed

UNAIDS
TasP in BC

Exporting TasP to HCV
HCV Burden in BC, Canada
Schematic Representation

PREVALENCE

Baby Boomers
IDUs

Lima et al, CROI - 2013
HCV Burden in BC, Canada
Schematic Representation

Lima et al, CROI - 2013
**HCV TasP - effects of future therapy**

Martin, N et al. Hepatology
epub March 2013.
Projected model results using as main parameters: $\tau = 5\%$ to $50\%$ for testing coverage (increased using an exponential growth), $\sigma = 3\%$ to $40\%$ for treatment coverage (increased using an exponential growth), $\rho = 70\%$ for the proportion achieving SVR for genotype 1 (using a duration of treatment of 24 weeks), $\kappa = 0\%$ (Status Quo) to $100\%$ for the proportion of individuals moving and staying into the recovered and engaged into care compartment after achieving SVR, $\gamma = 10\%$ for the loss of individuals from the recovered and engaged into care compartment at a rate of 10 per 100 population per year; $\zeta = 0$ per 100 population for the rate per year of individuals who will move from the on treatment compartment to the chronic aware not eligible for treatment compartment; and $\varepsilon = 50\%$ for the reduction in the probability of being re-infected.
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HIV/AIDS: We are well on our way to fully embrace TasP globally

HCV: TasP (+HR) offers a unique opportunity to dramatically change the course of the HCV epidemic. Scientific leadership is urgently needed to capitalize on this opportunity. Pharma & Political support will be essential.