Antiretroviral Therapy 2017

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Current HIV Test Sequence

4th Generation Ag/Ab Combo > Differentiation Assay

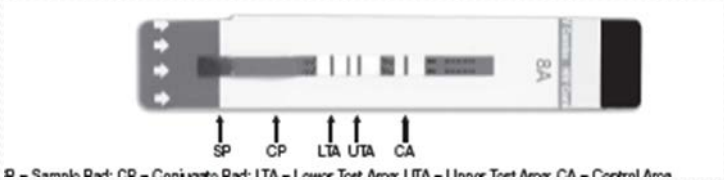
Abbott Architect

ARCHITECT Instrument

- Fully-automated, random-access (no Control brackets)
- Stat capability
- HIV Combo assay:
  - 29 minute time to first result
  - >150 tests per hour on i2000SR
  - >50 tests per hour on i1000SR

ARCHITECT HIV Ag/Ab Package Insert and ARCHITECT Operations Manual

Alere Determine



Geenius Differentiation Immunoassay

4th Generation HIV 1&2 Ag/Ab Combo Immunoassay:
HIV-1 p24 antigen & HIV 1&2 IgM and IgG

Differentiation Immunoassay: HIV-1 antibody
HIV-2 antibody

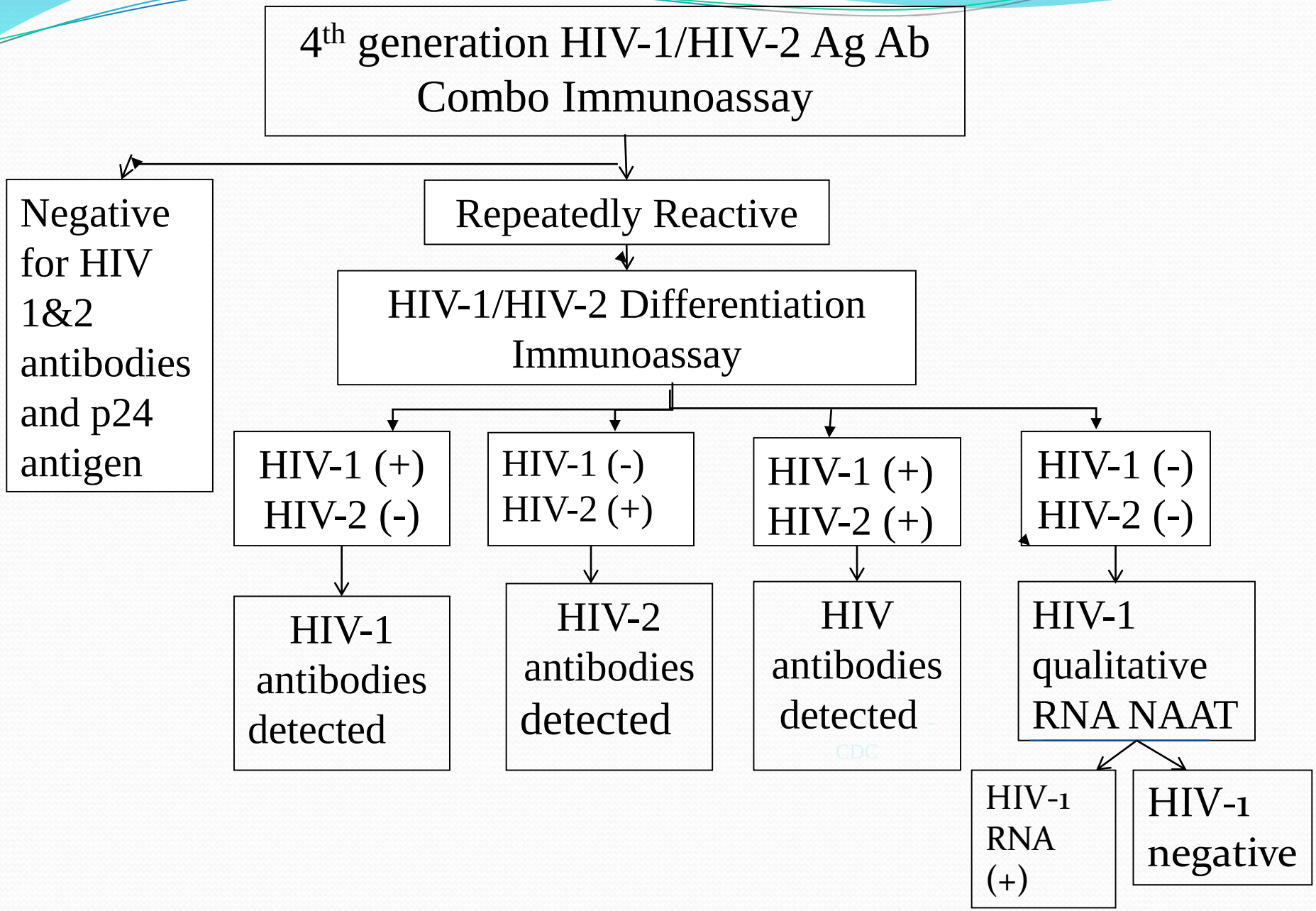
Estimated time after the first HIV RNA is detectable until an antibody test turns positive

HIV antibody test by class	Median Days (95% confidence interval)
4th generation Ag/IgM&IgG lab test	6.8 (3.7, 9.7)
3rd generation IgM/IgG lab test	11.4 (9.7, 13.4)
2nd generation IgG lab or rapid test	18.5 (16.0, 21.6)
Western Blot laboratory test	24.3 (18.8, 31.0)

Estimate 10 days from acquisition of HIV to first positive HIV RNA test

From CDC on line
http://www.cdc.gov/hiv/pdf/testing_Advantages&Disadvantages.pdf

Current HIV Test Sequence



Antiretrovirals for Treatment

- The extraordinary reduction in HIV related mortality is a result of effective antiretroviral treatment
- Currently most deaths among HIV infected persons are due to co-morbidities rather than HIV itself
  - Liver disease such as Hepatitis C
  - Cardiovascular disease
  - Non-AIDS related malignancies
- For these conditions, chronic immune activation by HIV is either proven or thought to increase the rate of progression or decrease the age of onset of these ‘non-HIV’ conditions

HIV Pathogenesis

Original Concept

- HIV replicates in and kills CD4+ lymphocytes
- The HIV RNA level correlates with the rate of CD4 decline and the timing of onset of immune deficiency
- ART stops HIV replication, stops the destruction of CD4 cells, and the body may gradually rebuild the cell mediated immune system

Emerging Concept

- HIV infected patients are in a state of constant immune activation, shown by elevated levels of cytokines.
- Immune activation may accelerate immune senescence and diseases of aging
- Elite controllers also have increased immune activation
- HIV suppression with ART reduces but does not normalize immune activation

When to Start Antiretroviral Therapy

- *ART recommended for all HIV infected individuals (A1)*
  - Data from adults is extrapolated to adolescents
  - Data are limited regarding acute HIV infection
  - Data are limited regarding 'elite controllers'

- *Prevention of HIV transmission (AI)*
  - RCT level data for perinatal transmission
  - RCT level data for heterosexual transmission
  - Observational data for men having sex with men
  - Extrapolated to drug injection

- Patients must be educated and supported to maintain excellent adherence with medications. Rarely treatment may be postponed while barriers to adherence are addressed.

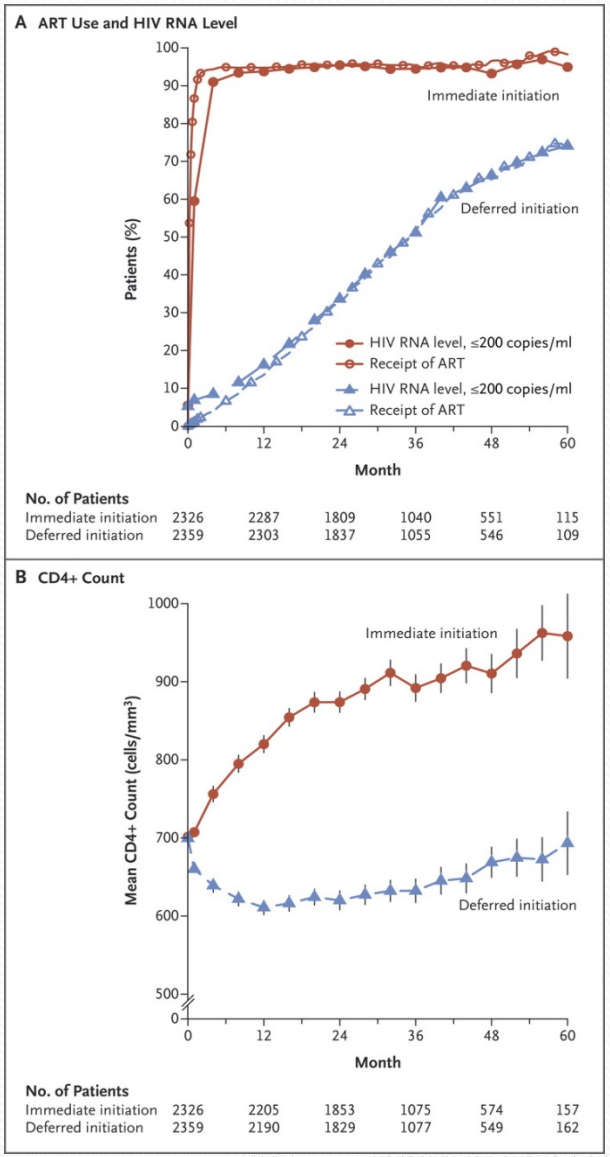
DHHS Guidelines for Antiretroviral Drugs in Adults Update July 14 2016

START Study Results: Antiretroviral Therapy, HIV RNA Suppression, and CD4+ Count.

START Study randomized persons with CD4 counts >500 to immediate ART initiation or ART deferred until the CD4 was <=350.

4685 patients in 35 countries were randomized and followed for a mean of 3.0 years

Patients achieved viral suppression of <200 copies/mL shortly after starting ART in either group, but viral suppression occurred much earlier in the immediate group.
CD4 counts increased earlier in the immediate group.



The INSIGHT START Study Group. N Engl J Med 2015. DOI: 10.1056/NEJMoa1506816

START Study Results: Primary and Secondary End Points.

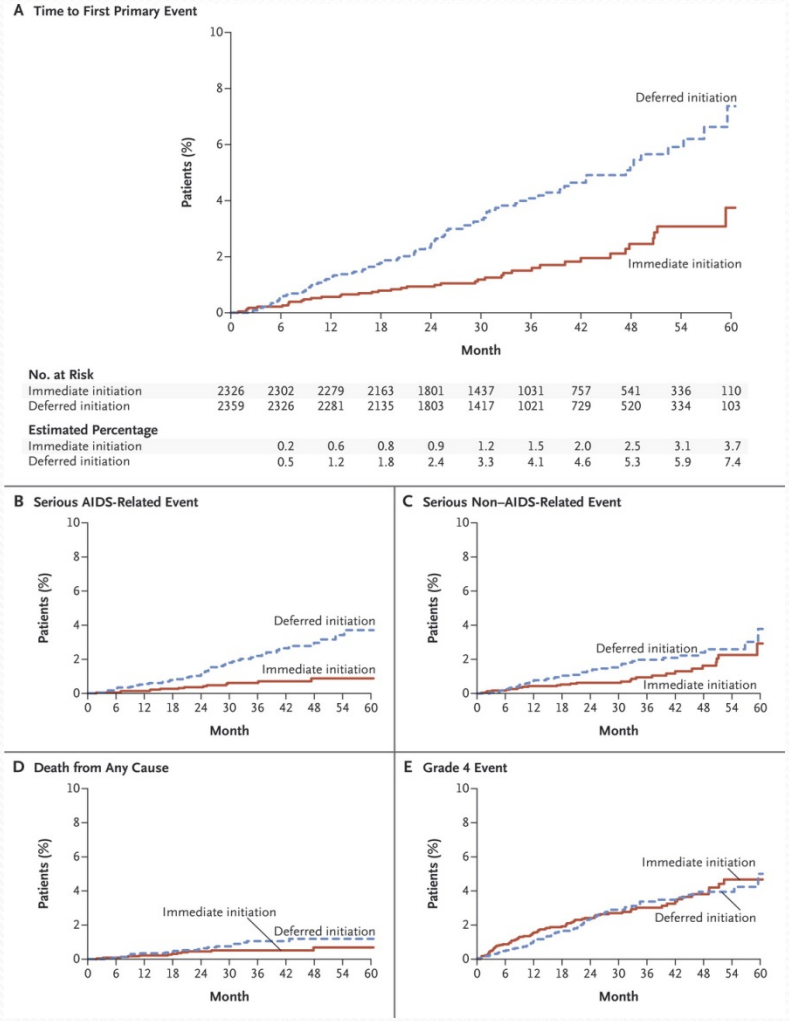
Panel A: Composite primary end point(serious AIDS related or serious non-AIDS related event or death. Hazard ratio 0.43 (95% confidence interval, 0.30 to 0.62; P<0.001).

Panel B: AIDS-related events

Panel C: non-AIDS related events

Panel D: Death from any cause

Panel E: Grade 4 toxicity-potentially life threatening symptomatic events not attributed to AIDS



The INSIGHT START Study Group. N Engl J Med 2015. DOI: 10.1056/NEJMoa1506816

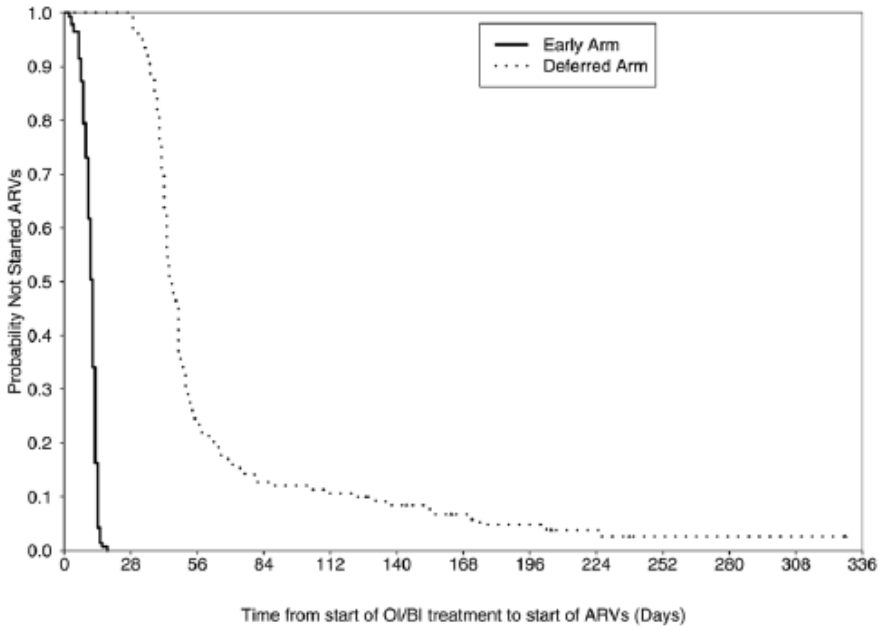
Starting ART in setting of acute opportunistic infection

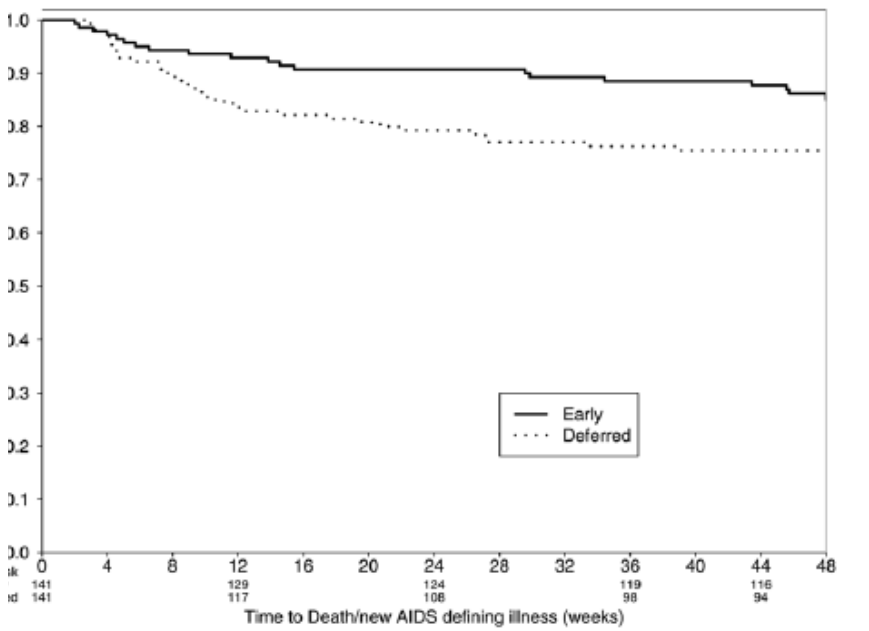
- Randomized controlled data show 50% improved survival if cART started within a few weeks of the newly diagnosed and treated OI
- Cryptococcal meningitis
  - RCT indicate survival is improved if cART is started 5 weeks after the start of amphotericin based combination anti-cryptococcal therapy. Guidelines recommend starting cART 2-10 weeks after staring crypto meningitis treatment (AI).
- Starting cART and TB treatment is CD4 dependent
  - Start TB treatment first
  - CD4 < 50 start cART within 2 weeks (AI)
  - CD4 >= 50 start cART within 8 weeks (AIII)
- TB meningitis: Caution with early ART (AI)

DHHS ART Guidelines Jul 14, 2016

DHHS Adult and Adolescent OI Prevention and Treatment Guidelines May 3 2016

Survival by Early vs Deferred cART



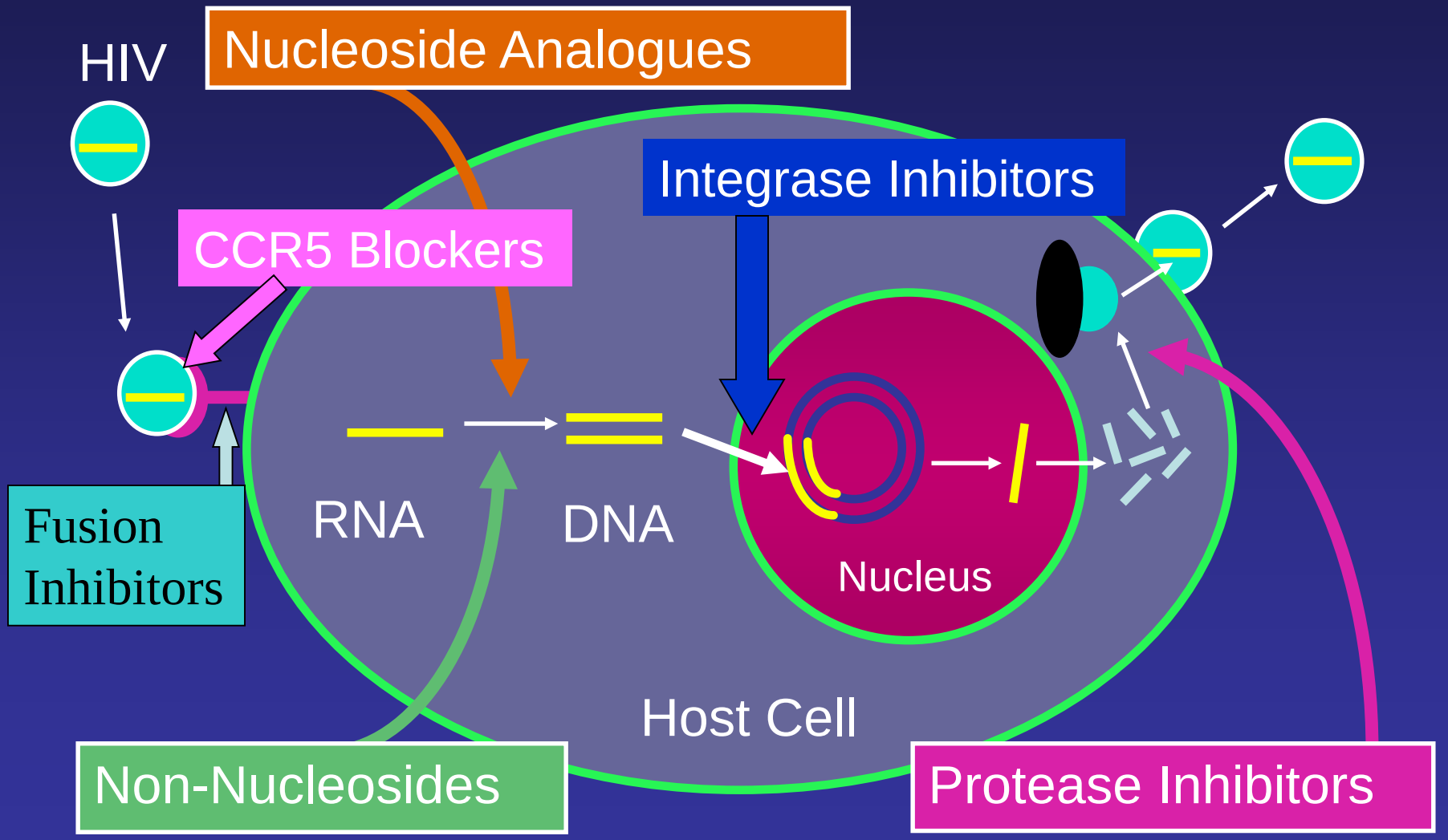


Days from start of OI rx to start of ARVs
Median 12 days vs 45 days

Weeks to death or new ADI
OR 0.51 (95%CI 0.27-0.94)

Zolopa et al, PLOS One, May 2009; 4 (5); e5575

HIV: Antiretroviral Therapy



FrAdapted from: Walker B. IDSA 1998

26 Current Antiretroviral Agents in 6 Classes

NRTI/NtRTI (8)

- Abacavir (Ziagen) ABC
- Didanosine (Videx) ddI
- Emtricitabine (Emtriva) FTC
- Lamivudine (Epivir) 3TC
- Stavudine (Zerit) d4T
- Tenofovir DF (Viread) TDF
- Tenofovir AF (Vemlidy) TAF
- Zidovudine (Retrovir) AZT, ZDV

NNRTI (4)

- Efavirenz (Sustiva) EFV
- Etravirine (Intelence) ETR
- Nevirapine (Viramune) NVP
- Rilpivirine (Edurant) RPV

Integrase strand transfer inhibitor (3)

- Elvitegravir (Vitekta) EVG
- Raltegravir (Isentress) RAL
- Dolutegravir (Tivicay) DTG

Protease Inhibitors (9)

- Atazanavir (Reyataz) ATV
- Darunavir (Prezista) DRV
- Fos-amprenavir (Lexiva)fAPV
- Indinavir (Crixivan) IDV
- Lopinavir/r (Kaletra) LPV/r
- Nelfinavir (Viracept) NFV
- Saquinavir (Invirase) SQV
- Tipranavir (Aptivus) TPV
- Ritonavir (Norvir) RTV

Fusion Inhibitor (1)

- Enfuvirtide (Fuzeon) T-20

CCR5 Receptor Blocker (1)

- Maraviroc (Selzentry) MVC

Pharmacologic Boosters (2)

- Cobicistat (Tybost) COBI
- Ritonavir (Norvir) RTV

Medications in green are components of the DHHS recommended initial regimens

Current ARV Therapy

- HAART (Highly Active Antiretroviral Therapy)
- cART (Combination Antiretroviral Therapy)
- Usually 3 or more drugs combined
  - Two nucleoside analogue RT inhibitors as backbone
  - One 'strong drug'
    - Integrase Strand Transfer Inhibitor (INSTI)
      - INSTI may be boosted with another drug
    - Protease Inhibitor (PI)
      - PI usually 'boosted' with another drug
    - Rarely a non-nucleoside reverse transcriptase inhibitor (NNRTI)

Pharmacologic boosting through CYP 3A4 inhibition

- Improve antiretroviral potency with higher levels, reduces risk of drug resistance, improves dosing requirements
  - Increase ½ life, trough concentration, sometimes peak concentration
  - Many complex drug interactions with Art and other meds
  - Must look up interactions which differ between boosters
- Ritonavir used to boost other PIs
  - Originally 600 mg bid as an antiviral PI
  - Now used 100 qd up to 200 bid for boosting another PI
  - GI side effects and possible hepatotoxicity
- Cobicistat used to boost one INSTI and PIs
  - Non antiretroviral drug that boosts PIs and INSTI
  - Effect on renal tubular creatinine flux
  - Avoid with creatinine clearance < 30 ml/min

Recommended (AI/AII*) 1st line cART

Name	1st NRTI	2nd NRTI	Integrase	Protease	Booster
Triumeq (STR)	abacavir	lamivudine	dolutegravir		
Tivicay/ Truvada	tenofovir DF	emtracitabine	dolutegravir		
Tivicay/ Descovy *	tenofovir AF	emtracitabine	dolutegravir		
Stribild (STR)	tenofovir DF	emtracitabine	elvitegravir		cobicistat
Genvoya (STR)	tenofovir AF	emtracitabine	elvitegravir		cobicistat
Isentress/ Truvada	tenofovir DF	emtracitabine	raltegravir (BID)		
Isentress/ Descovy*	tenofovir AF	emtracitabine	raltegravir (BID)		
Prezista/ Norvir/Truvada	tenofovir DF	emtracitabine		darunavir	ritonavir
Prezista/ Norvir/Descovy*	tenofovir AF	emtracitabine		darunavir	ritonavir

STR: Single Tablet Regimen

DHHS ART Guidelines July 14 2016

NRTI backbone: Truvada (TDF/FTC)

Tenofovir disoproxil fumarate (TDF)

- Nausea, vomiting, diarrhea, flatulence, headache, asthenia
- Nephrotoxicity
  - Not recommended if GFR <60
- Fanconi's syndrome (proximal tubule disorder)
- Bone demineralization
- K65R mutation causes resistance to most NRTIs
- Potent and licensed for Hepatitis B infection
- Potential exacerbation of HBV if suddenly discontinued
- Drug interactions with HCV meds via P-glycoprotein

Emtracitabine (FTC)

- Skin or nail pigmentation
- M184V mutation causes high level resistance to FTC and 3TC
- May select for less replication competent virus despite M184V and may reduce viremia 0.5 log
- Active against HBV but not licensed
- Potential exacerbation of HBV if suddenly discontinued
- Dose adjustments for GFR <30

NRTI backbone: Descovy (TAF/FTC)

Tenofovir alefenamide fumarate (TAF)

- Nausea, vomiting, diarrhea, flatulence, headache, asthenia
- Reduced Nephrotoxicity
  - Not recommended if GFR <30
- Reduced Fanconi's syndrome (proximal tubule disorder)
- Reduced bone demineralization
- K65R mutation causes resistance to most NRTIs
- Potent and licensed for Hepatitis B infection
- Potential exacerbation of HBV if suddenly discontinued
- No drug interactions with HCV meds

Emtracitabine (FTC)

- Skin or nail pigmentation
- M184V mutation causes high level resistance to FTC and 3TC
- May select for less replication competent virus despite M184V and may reduce viremia 0.5 log
- Active against HBV but not licensed
- Potential exacerbation of HBV if suddenly discontinued
- Dose adjustments for GFR <30

NRTI backbone: Epzicom (ABC/3TC)

Abacavir (ABC)

- Hypersensitivity syndrome can be fatal on rechallenge
- HLA B5701 screening can avoid most hypersensitivity
- No nephrotoxicity or renal dosing
- Avoid with severe liver failure
- Concern re possible small but increased risk of myocardial infarction
  - Not seen in RCTs
  - Seen consistently on large observational studies
  - Risk ends within 6 months of abacavir discontinuation

Lamivudine (3TC)

- Well tolerated in adults
- M184V mutation causes high level resistance to FTC and 3TC
- May select for less replication competent virus despite M184V and may reduce viremia 0.5 log
- Active and licensed for HBV but resistance emerges 25%/yr among HIV co-infected
- Potential exacerbation of HBV if suddenly discontinued
- Dose reduced for GFR <50

Integrase Strand Transfer Inhibitors: First Generation

- Raltegravir (Isentress)
  - Twice daily
  - Dose adjustment with rifampin
  - Cross resistance with elvitegravir
  - Resistance mutations decrease activity of dolutegavir
- Elvitegravir (Stribild, Genvoya)
  - Nausea, diarrhea
  - Always boosted to achieve once daily dosing
    - 150 mg once daily with 150 mg cobicistat
    - 150 mg once daily with twice daily ritonavir boosted darunavir, fos-amprenavir or tipranavir
      - Can add darunavir to Genvoya (not Stribild) using cobicstat boosting
  - Cross resistance with raltegravir
  - Resistance mutations decrease activity of dolutegavir

Integrase Strand Transfer Inhibitors: Second Generation

- Dolutegravir (Tivicay, Triumeq)
  - Reported hypersensitivity, insomnia, headache
  - Multiple mutations usually required for drug resistance
  - So far, low rate of drug resistance emerging during treatment among patients with no baseline INSTI resistance
  - Once daily dosing if no INSTI mutations exist
  - Twice daily dosing for reduced susceptibility
  - Few but some drug interactions
    - Twice daily dosing with rifampin

Protease Inhibitors

Atazanavir (Reyataz, Evotaz)

- Inhibits glucuronyl transferase and raises unconjugated bilirubin
- High bilirubin may be cardioprotective
- Minor lipid effects
- Preferred with high CVD risk
- Renal stones, GB stones, nephrotoxicity; PR prolongation
- Insulin resistance, lipodystrophy, hepatotoxicity
- Single mutation can cause resistance
- Always once daily
- Unboosted 200 mg tab x 2 = 400 mg daily
- Boosted 300 mg daily
- In pregnancy or with TDF/TAF & concurrent PPI: 400 mg daily with ritonavir

Darunavir (Prezista, Prezcobix)

- Best tolerated PI
- Skin rash
- GI toxicity
- Lipid effects
- Insulin resistance, lipodystrophy, hepatotoxicity
- Possible increased CVD risk
- Multiple mutations required for resistance
- Low rates of emergent resistance to darunavir and nuc backbone
- Always boosted
- 800 mg once daily plus booster in non pregnant persons without darunavir resistance mutations
- 600 mg bid with ritonavir bid during pregnancy or with reduced susceptibility

Recommended (AI/AII*) 1st line cART

Name	1st NRTI	2nd NRTI	Integrase	Protease	Booster
Triumeq (STR)	abacavir	lamivudine	dolutegravir		
Tivicay/ Truvada	tenofovir DF	emtracitabine	dolutegravir		
Tivicay/ Descovy *	tenofovir AF	emtracitabine	dolutegravir		
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STR: Single Tablet Regimen

DHHS ART Guidelines July 14 2016

Recommended ART in Pregnancy

Dual Nucleoside Backbone

- Truvada
  - Tenofovir DF/emtracitabine
- Epzicom
  - Abacavir/lamivudine
    - HLA B5701 negative only

Boosted Protease Inhibitor

- Atazanavir/ritonavir
  - Once daily
  - ATV 400 mg!
- Darunavir/ritonavir
  - Twice daily

Integrase Inhibitor

- Raltegravir
  - Twice daily

Alternative nucleoside backbone
Combivir: zidovudine/lamivudine
Alternative NNRTI:
Efavirenz: (neural tube concerns)

OR can continue an effective and well-tolerated regimen started before pregnancy

No Data: cobicistat, TAF, dolutegravir

DHHS Perinantal ARV Guidelines 26 Oct 2016

Single Tablet Regimens

- Triumeq
  - dolutegravir+abacavir+ lamivudine
- Genvoya
  - elvitegravir+cobicistat+ tenofovir AF +emtracitabine
- Stribild
  - elvitegravir+cobicistat+ tenofovir DF +emtracitabine
- Odefsey
  - rilpivirine+tenofovir AF +emtracitabine
- Complera
  - rilpivirine+ tenofovir DF +emtracitabine
- Atripla
  - efavarenz + tenofovir DF +emtracitabine

Be Aware of Drug and Food Interactions

- Statins
  - May be dangerously increased by CYP 3A4 inhibitors
- Hormonal contraceptives
  - Increased or decreased by many antiretrovirals
- Rifamycins
  - Drastically decrease most PIs, NNRTIs, INSTIs
- Acid reducing therapies
  - Reduce absorption of atazanavir & rilpivirine
- Calcium, magnesium, aluminum, iron, zinc
  - Prevent absorption of INSTIs
- Food needed for most ARVs except raltegravir & dolutegravir; avoid food with efavirenz
- *ALWAYS CHECK ALL INTERACTIONS!*

Monthly AWP cost of some ARVs

Single Tablet Regimens

Triumeq: $2889
Genvoya: $3093
Stribild: $3225
Odefsey: $2815
Complera: $2815
Atripla: $2870

Dual N(t)RTI backbones

Epzicom: $1550
Descovy: $1760
Truvada: $1760

Generics

ZDV & 3TC & NVP $1507
Not a recommended regimen!!

Other Recommended Regimens

Tivicay (dolutegravir) plus Truvada/Descovy: $3467
Isentress (raltegravir) plus Truvada/Descovy: $3305
Prezista&Norvir plus Truvada/Descovy: $3698
Reyataz&Norvir plus Truvada/Descovy: $3710

DHHS Guidelines for ART in Adults July 14 2016

Minimum baseline data for ART

- Confirmed positive HIV diagnostic test
- HIV RNA viral load
- CD_4 count
- HIV genotype [RT/Pr]+/- HIV integrase genotype
- HBV Surface antigen
- CBC, creatinine, aminotransferases, bilirubin
- +/- HLA B5701
- Pregnancy status
- Desirable baseline data: Hepatitis serologies, Syphilis EIA, GC/Ct NAAT, TB test, Toxoplasma IgG , lipid profile, FBG/A1C, urine analysis, urine microalbumin/creatinine ratio

DHHS Guidelines for Antiretroviral Drugs in Adults July 14 2016; WSU AHAP Standards

Needed for successful treatment

- Patient commitment to lifelong treatment without interruption
- Patient commitment to work with treatment team to achieve success
- Payment mechanism for medications, laboratory monitoring, medical appointments
- Addressing mental health & substance use disorders
- Support system for patient
  - Partner
  - Family
  - Friends
  - Treatment team

Laboratory monitoring

HIV RNA

- At baseline
- Pre-treatment
- On treatment, every 1-2 months until viremia is below the lower limit of detection [LLOD] (<20 to <75 depending on assay)
- If not detectable, every 3-4 months for 2 years
- Every 6 months if undetectable for the prior 2 years
- If detectable, at least every 3 months

CD4 lymphocyte count

- At baseline
- 3-6 months if treatment is deferred
- 3 months after starting treatment
- Every 3-6 months on treatment
- After 2 years with HIV RNA below LLOD and CD4 >300
  - If CD4 300-500: q 12 months
  - CD4 > 500: optional

DHHS Guidelines for Antiretroviral Drugs in July 14 2016

Virologic and Immunologic Failure

- Other than maintaining viral suppression, no intervention improves CD_4 cell counts or treats immunologic failure
- Virologic suppression: HIV RNA below lower limit of detection of assay (<20 to <75)
- Virologic failure: HIV RNA repeatedly >200
- Assess and address:
  - Access to meds (pharmacy coverage, prescriptions)
  - Behavioral issues in medication adherence
  - Comorbidities affecting adherence (mental health, substance use
  - Medications: food and drug interactions, side effects, pill burden, multiple daily doses
  - Drug resistance

Genotype Resistance Testing

- Recommended
  - At HIV diagnosis
  - Prior to cART initiation if initial test was years ago
  - With virologic failure (HIV RNA >500 to >1000)
    - Especially in pregnancy or on regimen with low barrier to resistance
    - Assay may not work with HIV RNA <1000
- Usually not recommended
  - Off cART for more than one month
    - Viral strains with specific resistance mutations may become infrequent in the absence of drug selective pressure. Mutations present in less than 20% of circulating virus are not detected by the currently available clinical laboratory resistance tests.
- Integrase resistance testing is a separate test
  - Recommended for virologic failure on an integrase regimen
  - Some of us run this also on newly *infected* patients

Addressing Drug Resistance

- Be aware of extensive cross-resistance within classes
- Review entire ARV treatment history
- Review all prior resistance test results
- Select a regimen with at least 2, preferably 3, fully active drugs
  - Include a potent drug (often from a new class)
  - Check all drug interactions
  - Minimize toxicity where possible
  - Maximize convenience where possible
- Enhance adherence support for the patient
- Monitor virologic response and toxicity in 4 weeks and then q4-8 weeks till virologically suppressed

Three ways to use antiretroviral meds to prevent HIV transmission

TasP for HIV+

Treatment as Prevention

A person with HIV takes antiretroviral treatment to lower their viral load and reduce their chance of transmitting HIV to another person

PrEP for HIV-

Pre-Exposure Prophylaxis

A person takes antiretroviral meds *before and after exposure* to reduce their chance of becoming HIV infected

PEP for HIV-

Post-Exposure Prophylaxis

A person takes antiretroviral meds *after exposure* to reduce their chance of becoming HIV infected

Prevention of Perinatal Transmission
TasP and PrEP and PEP!

TasP: What is the evidence?

- HTPN 052 randomized trial & observational follow up[1,2]
  - 1763 discordant couples (97% heterosexual) randomized to immediate ART or ART deferred till CD4 <=350
  - Preliminary analysis of RCT: 96% reduction in HIV transmission with early versus delayed ART
  - All index patients then provided ART
  - Total of 8509 years of follow up of partners over 5 years: 93% reduction with early versus delayed ART
  - 8 linked transmissions occurred when virus not suppressed; no transmisions with suppressed virus
- Partner Study observational data[3]
  - 888 discordant heterosexual and MSM couples with HIV RNA <200 in treated infected partner
  - Condomless sex acts: 36000 heterosexual; 22,000 MSM
  - Zero linked transmissions. Upper 95% confidence limit-
  - 0.30/100 hetero couple yrs; 0.71/100 MSM couple yrs

[1]Cohen M NEJM 2011;365:493-505. [2]Cohen M NEJM 2016;375:830.
[3]Rodger A. JAMA 2016;316::171-181.

PrEP: Pre-Exposure Prophylaxis

Truvada is Licensed for PrEP

- Truvada (TDF/FTC) was licensed by the FDA in July 2012 for daily use in HIV uninfected high risk persons to prevent HIV acquisition
  - Daily use of Truvada was proven to reduce HIV acquisition by 44% among HIV negative MSM in one RCT
  - Daily use proven to reduce HIV acquisition among heterosexual men and women in 2 RCTs (75% and 66%)
    - Provided no protection to women in one RCT
  - Daily use of tenofovir DF alone reduced acquisition among IDU
- Adherence is key: ~90% protection among persons with detectable drug levels

RCT: Randomized Controlled Trial

PrEP Works, Adherence is Critical

Study	Efficacy Overall, %	Blood Samples With TFV Detected, %	Efficacy By Blood Detection of TFV, %
iPrEx[1]	44	51	92
iPrEx OLE[2]	49	71	NR
Partners PrEP[3]	67 (TDF) 75 (TDF/FTC)	81	86 (TDF) 90 (TDF/FTC)
TDF2[4]	62	80	85
Thai IDU[5]	49	67	74
Fem-PrEP[6]	No efficacy	< 30	NR
VOICE[7]	No efficacy	< 30	NR

1. Grant RM, et al. N Engl J Med. 2010;363:2587-2599. 2. Grant RM, et al. Lancet Infect Dis. 2014; 14:820-829. 3. Baeten JM, et al. N Engl J Med. 2012;367:399-410. 4. Thigpen MC, et al. N Engl J Med. 2012;367:423-434. 5. Choopanya K, et al. Lancet. 2013;381:2083-2090. 6. Van Damme L, et al. N Engl J Med. 2012;367:411-422. 7. Marrazzo J, et al. CROI 2013. Abstract 26LB.

Implementing PrEP

- Baseline testing: 4th generation Ag/Ab Combo test, Hepatitis B testing, serum creatinine, STD screen
- Mechanism to pay for Truvada prescriptions
- Monitoring visit at 1 month, then every 3 months
  - Prescription refills until next visit only
  - 4th generation HIV Combo testing for new infection at each visit
    - 3 month and q 6 month creatinine
    - If HBV infected:
      - Monitor HBV viral load and LFTs
      - Avoid interruption
    - If HBV uninfected and non-immune, vaccinate
- Adherence assessment and support
- Risk behavior assessment and support
  - Screen/test for bacterial STIs every 3-6 months
- Annual reassessment of PrEP
- PrEP Tool Kit for Michigan Clinicians: MDHHS HIV/STD

Post Exposure Prophylaxis (PEP)

- PEP is used after:
  - Occupational exposure
  - Sexual assault or lifestyle exposure
    - nPEP (Non-occupational Post Exposure Prophylaxis)
- Original observational study:
  - 80% reduction in HCW HIV acquisition with up to 4 weeks of oral zidovudine alone
- Current PEP is a 3 drug combination
  - Truvada (TDF/FTC) qd plus
    - Isentress (raltegravir) 400 mg bid or
    - Tivicay (dolutegravir) 50 mg once daily
  - Start as soon as possible, preferably within hours of exposure
    - Probably ineffective after 72 hour delay
  - 4 week treatment course
  - MDHHS nPEP Guidelines : Starter Pack
    - 5 day supply dispensed in ED or other acute care setting to allow time to get prescriptions filled for insured and uninsured clients

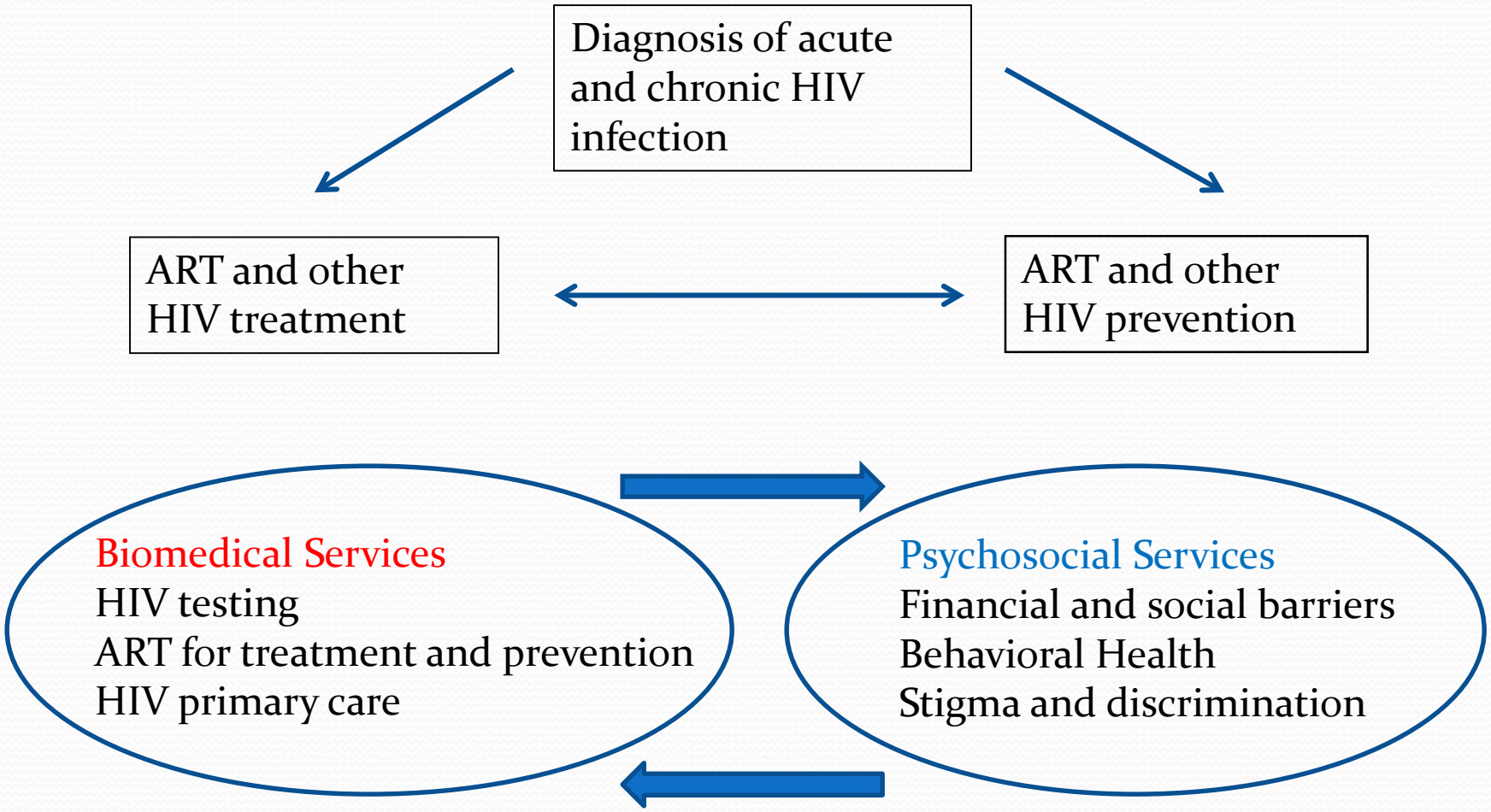
http://www.michigan.gov/documents/mdch/MDHHS_nPEP_Guidance_6.12.15_-_Final_491813_7.pdf

Antiretrovirals in Pregnancy

- Initiate combination ART treatment for mother as soon as possible: pre-conception or during pregnancy
  - TasP: treatment of mother patient to reduce in utero exposure
- Continue maternal oral regimen during labor
  - IV zidovudine (Retrovir) if HIV uncontrolled or for vomiting
  - Trans-placental PrEP infant during labor and delivery
- Oral zidovudine to infant for 4-6 weeks
  - Nevirapine 3 doses during fist week if mother had no ART in pregnancy or if maternal HIV RNA >1000
  - Post Exposure Prophylaxis to infant
- Scheduled Cesarean delivery at 38 weeks if HIV RNA >1000 near delivery
  - IV zidovudine 3 hours prior to surgery if HIV RNA >1000 or no prior maternal ART

DHHS Perinantal ARV Guidelines 26 Oct 2016

Integrated HIV Care and Prevention

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