Involvement in the HIV epidemic in the Primary Care Setting

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Dr. Raffanti has no financial disclosures to make.
Objectives

- After this presentation the attendee should be able to:
  - Describe current epidemiological trends in the HIV epidemic;
  - Describe key points in HIV pathogenesis;
  - Describe current treatment standards;
  - Describe various ways that clinics can manage HIV related healthcare.
The U.S. HIV Care Continuum

- 100% HIV-Infected
- 87% HIV-Diagnosed
- 75% Linked to HIV Care
- 57% Retained in HIV Care
- 55% Undetectable Viral Load

40,000 new infections per year
Testing, linkage to care, effective treatment and effective PrEP could stop the epidemic today.
Percentages of Diagnoses of HIV Infection among Adults and Adolescents, by Region and Population of Area of Residence, 2015—United States

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. Data for the year 2015 are preliminary and based on 6 months reporting delay. Data exclude persons whose county of residence is unknown.
Percentages of Diagnoses of HIV Infection among Adults and Adolescents, by Population of Area of Residence and Age at Diagnosis, 2015—United States

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. Data for the year 2015 are preliminary and based on 6 months reporting delay. Data exclude persons whose county of residence is unknown.
Diagnoses of HIV Infection among Men Who Have Sex with Men, by Age Group, 2010–2014—United States and 6 Dependent Areas

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays and missing transmission category, but not for incomplete reporting. Data on men who have sex with men do not include men with HIV infection attributed to male-to-male sexual contact and injection drug use.
United States and 6 Dependent Areas

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays and missing transmission category, but not for incomplete reporting. Data on men who have sex with men do not include men with HIV infection attributed to male-to-male sexual contact and injection drug use.

a Hispanics/Latinos can be of any race.
Diagnoses of HIV Infection among Men Who Have Sex with Men Aged 13–24 Years, by Race/Ethnicity, 2010–2014 United States and 6 Dependent Areas

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays and missing transmission category, but not for incomplete reporting. Data on men who have sex with men do not include men with HIV infection attributed to male-to-male sexual contact and injection drug use.

Hispanics/Latinos can be of any race.

There is a new epidemic among young MSM college students who have been aware of HIV all their lives.
HIV Pathogenesis
Opportunistic Infections in HIV Disease

This graph is idealized. Specific OIs can occur earlier/later and at higher/lower CD4 cell counts.
Acute HIV
Acute HIV infection occurs in most patients in the first 6 weeks and resembles an acute illness with fever, rash, malaise, headache.
Chronic infection lasts for years if untreated. Course is dependent on viral set point, genetic traits of host and treatment. A chronic inflammatory state is established.
HIV Pathogenesis

- HIV infection disseminates quickly in the host and causes disease in almost all patients, if left untreated.
- Although thought of as an “Immune Deficiency “ disease, other critical factors are involved in generating poor outcomes for patients.
- Effective treatment of HIV ameliorates much of the damage done by the virus.
Treatment
Three Decades of Treatment Issues

- **1980’s**: AIDS described, PCP kills 90% of pts., clinicians develop skills in diagnosing, treating and preventing complications.
- **1990’s**: First effective treatments, patients respond, death rates drop.
- **2000’s**: New toxicities arise, resistance is critical, adherence issues emerge, limitations of therapy become apparent.
- **2007**: Second round of effective antiretroviral agents-integrase and CCR5 inhibitors
- **2013**: Serious talk of cure.
- **2015**: PREP
Targets for HIV Inhibition

**Reverse Transcriptase Inhibitors**
- ZDV, d4T, ddI, 3TC, FTC, ABC, TDF, EFV, NVP, DLV, RLPV, ETRV, DOR

**Protease Inhibitors**
- NFV, SQV, IDV, APV, r/LPV, ATV, DAR

**Entry Inhibitors**
- T-20, ibalizumab-uiyk

22 current drugs, More in development
Current Available Medications

- **NRTI’s**: zidovudine, didanosine, stavudine, lamivudine, abacavir, emtricitabine, tenofovir, TAF
- **NNRTI’s**: efavirenz, nevirapine, delavirdine; etravirine, rilpivirine, doravirine
- **PI’s**: indinavir, ritonavir, saquinavir, nelfinavir, fosamprenavir, lopinavir, tipranavir, darunavir
- **Fusion I’s**: enturvidine
- **CD4 binding**: ibalizumab-uiyk
- **CCR5 I’s**: maraviroc
- **Integrase I’s**: raltegravir, elvitegravir, dolutegravir, bictegravir
Benefits of Treatment

- Treating people with AIDS greatly improves survival and quality of life.
- Treating people with advanced HIV (200-350 CD4 count) may delay disease progression and improve quality of life.
- Treating people with early HIV (>350 CD4 count) may delay progression of disease and preserve immune function.
- Treating HIV may have important benefits independent of immune function preservation.
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Why Treat all patients?

1) Medications are much less toxic.
2) Treating HIV slows the inflammatory process.
3) Treating HIV decreases the risk of transmission.
Comprehensive Care Center

- Established in 1994 as an independent non-profit;
- Close collaboration with Vanderbilt;
- Staff of 45; 1400 visits per month;
- Located at One Hundred Oaks since October, 2010;
- Now the Vanderbilt Comprehensive Care Clinic (VCCC)
- Over 9,000 patients enrolled at 4 sites (3200 active);
  - Age range 16-81 years;
  - 24% female;
  - 38% African American;
  - 50% substance abuse;
  - 40% mental health;
VCCC Services

- Clinical and Laboratory Evaluation (Primary Care, Colposcopy, Obstetrics and HIV)
- Psychiatric Care and Mental Health Services
- Clinical Pharmacy Services and Patient Assistance Program
- Nutrition Services
- Case Management
- New Patient Navigation
- Transitions of Care Case Management
- Coordination of Home Care, Hospice, Infusion Transfusion Services
- Clinical Trials Access
- Inpatient Care Direction
- On-call Services
VCCC Operations and Staff

- Over 9,000 patients enrolled
- Over 3,200 active patients
- Over 1,400 visits per month
- Approximately 300 new patients per year
- Approximately 30-40 pregnant women per year

**Staff**: 4 ID attendings; 1 psychiatrist; 5 Nurse Practitioners; 6 RN’s; 5 LPN’s; 7 social services staff; 1 pharmacist, 1 mental health therapist; 3 PSR’s; 1 dietitian and 6 administrative staff
VCCC Programs

- ART conference
- OC3: Maternal-Fetal Program
- Clinical Pharmacy Services Team (PSCPS Collab.)
- HRA clinic
- Pathways Clinic
- Education Program
  - On-site training (1,958 hours); state-wide programs (4,811 trainees); annual symposium, monthly webinar, monthly nurses training, patient orientation meeting. VPIL, CCEX; now regional AETC for 8 State region.
- Research initiatives
  - Clinical trials (ACTG), epi-outcomes, repository, Vanderbilt BioVU
VCCC Outcomes

- 88% of patients seen at the VCCC in 2018 achieved undetectable virus
- >500 Uninfected babies born to HIV infected mothers since 1999
- Percent of 2014 patients with medical office visits who were screened for:
  - Drug and alcohol: 100%
  - Mental illness: 100%
  - HIV risk reduction: 100%
- Percent of 2014 Ryan White patients who received:
  - Cervical Pap smears if indicated: 90%
  - PCP prophylaxis: 98%
  - HBV and HCV screening: 100%
  - TB screening: 93%
- 549 patients referred to the clinical trials group in 2014
- Joint Commission certified Primary Care Medical Home
- What is the role of primary care in the management of the HIV epidemic?

- Different levels of HIV related services may be appropriate for different clinical settings.
HIV care: Level 1

- Minimal (community standard of care):
  - Effectively screen, test and refer for HIV and STI’s including referral for PrEP:
    - Knowledge of screening techniques and sexual history taking;
    - Knowledge of available resources in your community and effective linkage;
    - Non-judgmental and welcoming environment for patients who may be interested in these services.
HIV care: Level 1

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Champions are incredibly important. Issues like stigma and cultural humility are handled based on the leading example of champions.
HIV care: Level 2

- Expand services to include PrEP, clear risk assessment for all patients, continue with effective linkage to care for patients testing positive for HIV.
HIV care: Level 2

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PreP protocols will need to be developed and CQI review should be started.
HIV care: Level 3

- Provide HIV care for uncomplicated patients, recognize need for referral to HIV specialists when care becomes more complicated.
HIV care: Level 3

- Provide HIV care for uncomplicated patients. Recognize need for referral to HIV specialists when care becomes more complicated.

  Protocols for uncomplicated patients may be limited to newly diagnosed, wild type strain. Knowledge of recommended initial regimens and possible drug interactions will be required.
HIV care: Level 4

- Provide HIV specialty care to more complicated patients, develop retention in care strategies, follow outcomes closely.
HIV care: Level 4

- Provide HIV specialty care to more complicated patients, develop retention in care strategies, follow outcomes closely.

More complicated patients may be on 2nd or 3rd regimens, have new drug interactions or complicated co-morbidities. Close monitoring and virological suppression rates become very important.
HIV care: Level 5

- Complex care provision for complicated HIV infected patients with significant co-morbidities, especially psychiatric and substance use disorders.
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  Multidisciplinary team which handles challenging patients either through on-site resources or close coordinated collaborations.
HIV care: Level 6

- Establishment of a comprehensive HIV treatment center with wrap around services, specialty and primary care.
HIV care: Level 6

- Establishment of a comprehensive HIV treatment center with wrap around services, specialty and primary care.

One option is to pursue certification as a Patient Centered Medical Home (or Primary Care Medical Home).
Summary

- The HIV epidemic is still a significant health problem and is involving an increasing number of young adults.
- Treatment is effective and relatively easy to manage in most patients.
- The epidemic can end with coordinated screening, testing, linkage to care, viral suppression and PrEP for those at risk.
- Each clinical setting can approach involvement in HIV management at different levels.
- Leaders (champions) at the clinic are essential for developing the “buy in” of the entire staff.
AIDS 1985 - One Patient's Experience

- 322 IV insertions
- 14 hospital admissions
- 11 months of hospital stay
- 60 phlebotomies
- 32 chest x-rays
- 5 CT scans of head
- 3 abdominal ct scans
- 6 bronchoscopies
- 8 intubations
- 4 lumbar punctures
- 3 bone marrows
- 5 cycles of chemo
- 2 lymph node bx
If Pablo were to present with his HIV infection today, he would have labs drawn, be started on a pill to treat HIV and his wife would be started on PrEP. He would raise his kids and live out his life.
Useful HIV Websites

www.seaetc.com
www.vanderbilthealth.com/vccc
www.aidsinfonet.org
www.aidsetc.org
www.hivatis.org (DHHS, USPHS/IDSA Guidelines)
www.cdc.gov/nchstp/hiv_aids.htm
www.hiv-web.lanl.gov (Resistance mutations)
www.niaid.nih.gov
www.AIDS.medscape.com
www.hopkins-aids.edu
www.iapac.org
www.igm.gov
www.ucsf.edu/medical
www.virology.net
Questions?