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Screening for comorbid conditions among people with HIV in medical care

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BACKGROUND

- A significant proportion of morbidity and mortality among people living with HIV (PLWH) is attributable to non-HIV comorbid conditions
- Screening rates for comorbidities are often suboptimal and may not correspond with risk factor status

Objectives:
Determine screening frequencies for potential HIV comorbid conditions, including tuberculosis (TB), hepatitis B (HBV) and C (HCV), type 2 diabetes (T2D), and sexually transmitted infections (STI)

Assess demographic and clinical factors associated with screening for these conditions

METHODS

Screening recommendations for PLWH[1,2]
- TB - at the time of HIV diagnosis and annually for those at high risk
- HBV - at initiation of HIV care
- HCV - at initiation of HIV care and annually for those at risk (e.g., people who inject drugs)
- Chlamydia, Gonorrhea, and Syphilis - at least annually for those sexually active; every 3-6 months for those with multiple partners, having sex without a condom, or having sex while using illicit drugs
- T2D – prior to and within 3 months of initiating antiretroviral therapy

Study design and sample
- 2012 cycle New York City Medical Monitoring Project (MMP), a cross-sectional supplemental surveillance project for PLWH receiving HIV medical care
- Adults ages 18 and older with an HIV care visit between January 1, 2012 and April 30, 2012
- Medical record abstraction (MRA) and interview data
- MRA screening histories refer to12-month period prior to interview date

Eligibility for screening analyses
- Participants with medical record documentation of a history of TB, chronic HCV, and/or T2D were ineligible for TB, HCV, and T2D screening analyses, respectively
- Participants with medical record documentation of chronic HBV or HBV vaccination were ineligible for HBV screening analyses

Covariates
- Sex, age, race/ethnicity, and sexual risk behaviors obtained from participant interviews (self-report)
- Comorbidity screening, number of medical visits, CD4 count, and viral load obtained from MRA

Statistical analysis
- Frequency of screening for each condition among eligible participants
- Logistic regression to generate adjusted odds ratios for factors associated with screening
- All analyses performed using SAS SURVEY procedures to account for MMP study design

RESULTS

Figure 1: Participant characteristics, MMP 2012 (N = 439)

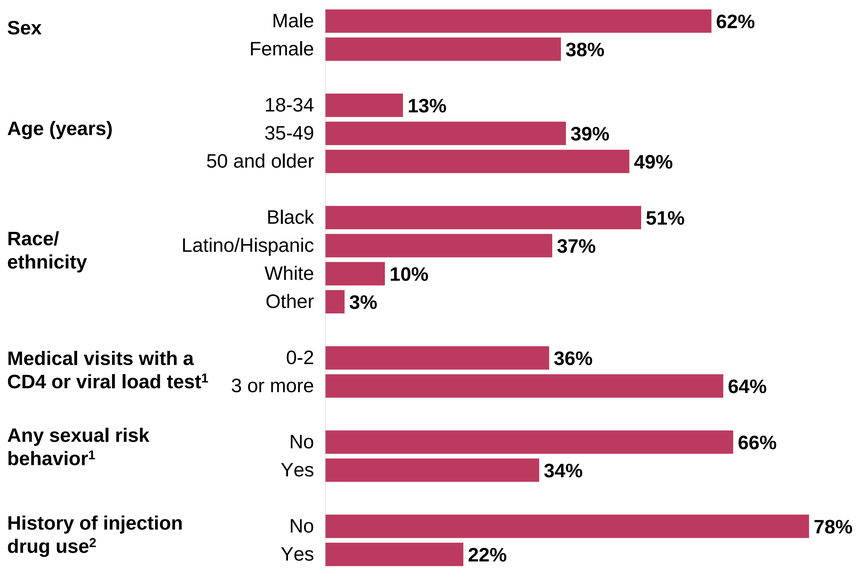
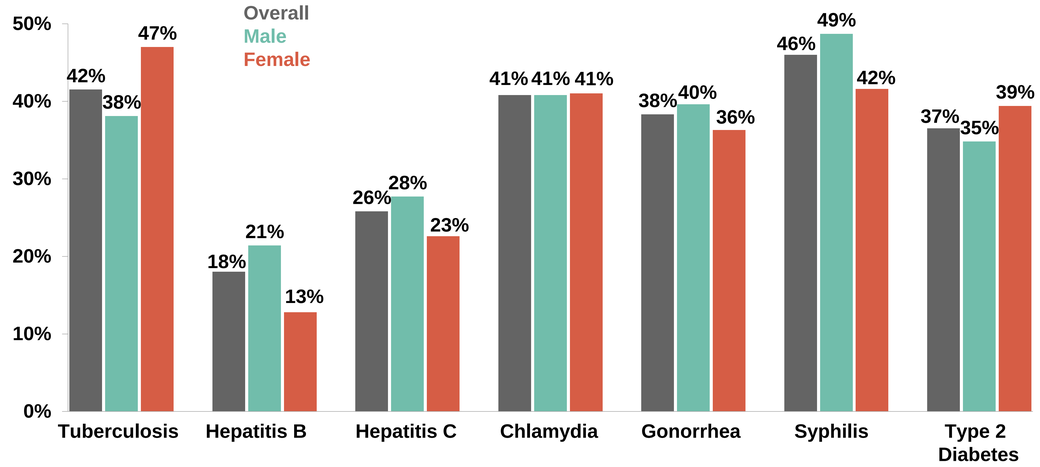


Table 1: Factors associated with screening for comorbid diseases among PLWH in medical care, MMP 2012

	Tuberculosis (N = 385)	Hepatitis C (N = 347)	Sexually transmitted infections (N = 439)	Type 2 diabetes (N = 397)
	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)
Sex				
Male	(ref)	(ref)	(ref)	(ref)
Female	1.25 (0.77, 2.02)	0.90 (0.56, 1.47)	0.93 (0.61, 1.42)	1.05 (0.56, 1.99)
Age (years)				
18-34	(ref)	(ref)	(ref)	(ref)
35-49	1.37 (0.67, 2.79)	0.91 (0.45, 1.83)	1.11 (0.56, 2.21)	1.59 (0.86, 2.96)
50 and older	1.08 (0.54, 2.17)	0.36 (0.17, 0.73)	0.67 (0.28, 1.60)	1.59 (0.87, 2.90)
Race/ethnicity				
Black	(ref)	(ref)	(ref)	(ref)
Latino/Hispanic	1.28 (0.91, 1.80)	**1.72 (1.05, 2.81)**	1.34 (0.79, 2.26)	1.09 (0.54, 2.20)
White	0.72 (0.28, 1.85)	2.77 (0.90, 8.57)	0.87 (0.25, 3.07)	**0.30 (0.10, 0.88)**
Other	0.90 (0.22, 3.71)	2.74 (0.77, 9.76)	0.55 (0.15, 1.99)	0.35 (0.04, 3.15)
Number of medical visits with a CD4 or viral load test[1]				
0-2	(ref)	(ref)	(ref)	(ref)
3 or more	1.38 (0.66, 2.90)	**3.54 (1.80, 6.96)**	**3.84 (1.94, 7.57)**	1.61 (0.77, 3.36)
Any sexual risk behavior[1]				
No	N/A	N/A	(ref)	N/A
Yes	N/A	N/A	0.89 (0.59, 1.33)	N/A
History of injection drug use[2]				
No	N/A	(ref)	N/A	N/A
Yes	N/A	1.03 (0.39, 2.69)	N/A	N/A

[1]In the past 12 months; [2]Ever; CDC-defined sexual risk behaviors include any of the following: two or more sex partners; any condomless sex; or any illicit drug use before or during sex
Sexually transmitted infections model includes screening for any one of chlamydia, gonorrhea, or syphilis. All models adjusted for covariates shown as well as year of HIV diagnosis, type of medical facility, most recent CD4 cell count, and most recent viral load. Tuberculosis model was also adjusted for country of birth (US vs other). Covariates marked "N/A" were not included for that particular model.

Figure 2: Screening frequencies in past 12 months for comorbid conditions among PLWH in medical care, overall and by sex, MMP 2012



- Fewer than half of MMP participants were screened for any one of the comorbid conditions
- Those with at least 3 medical visits were more likely to have been screened for HCV (aOR=3.54) or an STI (aOR=3.84)
- Hispanic participants were more likely to be screened for HCV (aOR=1.72), compared with Black participants
- White participants were less likely to be screened for T2D (aOR=0.30), compared with Black participants

CONCLUSIONS

Strengths
- Representative sample of PLWH in care with complete information on screening for comorbid conditions and demographic, medical, and behavioral factors
- Availability of medical histories enabled removal of those ineligible for a condition from analyses (e.g., those previously diagnosed with chronic HCV were not included in HCV screening analyses)

Limitations
- Screening data limited to those performed at the MMP facility, therefore screening frequencies presented may be underestimates
- MMP MRA captures a specific list of laboratory tests and does not cover all potential screening tests for these conditions
- Cannot assess temporality between behavioral factors and comorbid condition screening
- Results reflect PLWH in care and should not be applied to those out of HIV care, among whom comorbid condition screening frequencies are likely lower

Conclusions
- Variable screening frequencies may point to a need for improved integration of HIV care with other clinical services and/or improved communication between patients and providers regarding risk
- More frequent HIV care was associated with higher screening for STI and HCV, possibly due to increased opportunity for testing or care related to the screened-for condition
- Risk factors for comorbidities should be regularly assessed at HIV care visits

REFERENCES

[1]Panel on Opportunistic Infections in HIV-Infected Adults and Adolescents. Guidelines for the prevention and treatment of opportunistic infections in HIV-infected adults and adolescents:recommendations from the Centers for Disease Control and Prevention, the National Institutes of Health, and the HIV Medicine Association of the Infectious Diseases Society of America. Available at http://aidsinfo.nih.gov/contentfiles/lvguidelines/adult_oi.pdf. Accessed on 12/1/2015.
[2]Aberg JA, Gallant JE, Ghanem KG, et al. Primary care guidelines for the management of persons infected with HIV: 2013 update by the HIV Medicine Association of the Infectious Diseases Society of America. *Clinical Infectious Diseases* 2014; 58(1): 1-10.

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