Evaluation of Vaccination Rates and Factors associated with Vaccine Uptake among People Living with HIV in Detroit, MI

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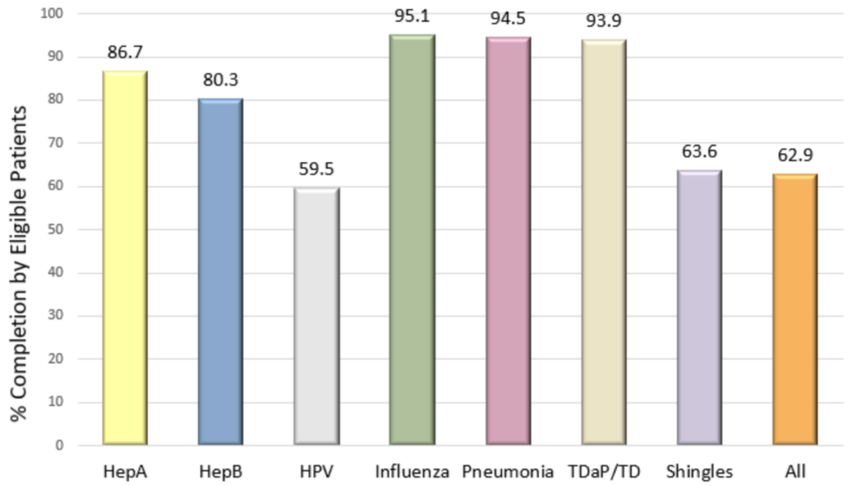
Background

- Vaccination opportunities are often overlooked in persons living with HIV (PLWH)
- Why?
  - –Access to care
  - –Vaccine hesitancy
  - –Education
  - –Burden of other health issues
- Study Aim
  - –Evaluate vaccination adherence to eligible vaccinations
  - –Assess factors associated with adherence

Methods

- Retrospective observational study of PLWH at HFH ID Clinic from 2015- 2021
- Inclusion criteria:
  - –PLWH
  - –Receive care at Henry Ford Hospital (HFH) Infectious Diseases (ID) Clinic
  - – >18 years of age
- HFH ID clinic is a hospital-based clinic in Downtown Detroit, located in Southeast Michigan
  - –Multi-disciplinary
  - –EHR system homepage reflecting
    - •Vaccines completed and vaccinations due at each visit
    - •Automatic standing order for influenza during season and future series of vaccinations
  - –On site vaccinations available

Results



All patients (n = 653) were eligible for vaccination with Influenza, Pneumonia, and Tetanus, Diphtheria, with/without acellular pertussis (TDaP/TD) vaccines. The number eligible for others based on age or serology is as follows: Hepatitis A (HepA): 264; Hepatitis B (HepB): 304; Human Papillomavirus (HPV): 84; Herpes Zoster (Shingles): 341. Column "All" indicates adherence with all qualifying vaccinations for which the patient was eligible.

Figure 1. Vaccination Rates Among Eligible Patients

- Patients were considered eligible for Hepatitis A and Hepatitis B vaccines if they had a negative serology
- Patients were considered eligible for Shingles vaccination if they were over 50 years during time of study
- Patients were considered eligible for HPV vaccination if they were under 45 during time of study
- COVID-19 rates of vaccination were 42.1%

Primary endpoint: Overall adherence to all vaccines
Secondary endpoint: Adherence to individual vaccines and factors associated with increased uptake

Adherence defined as uptake of at least 1 dose of each vaccine

Table 1. Population Demographics between Vaccine Adherent and Non-Adherent Groups

Variable	Total n=653	Adherent N=411	Non-Adherent N=242	p-value
Age, years, mean ± SD	50 (13)	49 (13)	50 (13)	0.243
Male sex, n (%)	513 (78.6)	335 (81.5)	178 (73.6)	0.017
Race/Ethnicity, n(%)				
Black	485 (74.3)	304	181	0.815
White	106 (16.2)	70	36	0.471
Other or unknown	62 (9.5)	37	25	0.576
Education				
Did not graduate high school	0.1671	0.1687	0.1644	0.630
High school or some college	0.6532	0.6506	0.6578	0.466
College	0.1796	0.1807	0.1778	0.802
Household income, thousand USD median (IQR)	34.3 (26.0-47.6)	34.3 (27.2-48.8)	33.6 (25.1-45.2)	0.216
Detroit city resident, n(%)	376 (57.6)	232 (56.4)	144 (59.5)	0.257
Home distance from clinic, miles, median (IQR)	6.8 (3.8-10.6)	6.9 (4.0 – 10.6)	6.9 (3.7 – 10.6)	0.761
Primary Care in System, n(%)	569 (87.1)	375 (91.2)	194 (80.1)	<0.001
MSM	302 (46.2)	213 (51.8)	89 (36.8)	<0.001
Person who injects drugs	14 (2.1)	8 (1.9)	6 (2.5)	0.781
Age at Diagnosis, years, mean ± SD	35 (12)	34 (12)	36 (13)	0.032
Clinic visits in last 1 year, median (IQR)	1 (0 – 2)	2 (1 – 2)	1 (0 – 2)	<0.001
CD4 on entry into care, median (IQR)	410 (240-638)	425 (271-652)	376 (161-601)	0.011
CD4>200 at entry into care, n(%)	505 (77.3)	337 (82.0)	168 (69.4)	<0.001
Viral load <20 at entry into care, n(%)	265 (40.6)	176 (42.8)	89 (36.8)	0.129

Table 2. Logistic Regression of Factors Associated with Vaccine Adherence

Variable	Odds Ratio	95% CI	P value
Age	-0.37	[-0.02 to 0.01]	0.71
Sex	-.1.16	[-0.83 to - 0.21]	0.247
MSM	1.39	[-0.14 to 0.82]	0.17
CD4>200 at entry into care	2.72	[0.18 to 1.11]	0.01
HFH PCP	2.89	[0.27 to 1.39]	0.004
Appointments in 2021	5.85	[0.36 to 0.72]	<0.001

Abbreviations: MSM (men who have sex with men), HFH (Henry Ford Health), PCP (primary care physician)

Conclusions

- Higher number of recent clinic visits was associated with a higher likelihood of vaccination adherence
  - –Retention in care is important to promoting vaccination adherence
- Age-based vaccines (Shingrix, HPV) vaccines and newer vaccinations (COVID-19) had lower adherence rates
  - –More emphasis should be placed for providers and patients for these vaccines
- We demonstrate a high, comprehensive vaccine adherence in a vaccine hesitant population
- Programs that integrate vaccines and promote adherence to clinic care into the routine care of PLWH results in high rates of vaccine uptake