Improvement in Administration of HIV Post Exposure Prophylaxis in the Emergency Department Following Sexual Assault

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Introduction

Nonoccupational post exposure prophylaxis (nPEP) following sexual assault can prevent HIV transmission. Medical evaluation of post-sexual assault frequently occurs within emergency departments (ED), however studies have shown poor rates of prescribing nPEP and poor rates of nPEP appropriateness when prescribed. Additionally, rates of testing and treatment for other sexually transmitted infections have been widely inconsistent. This study set out to measure the effects of the implementation of an nPEP program with a standardized order-set for patients presenting to the ED for medical evaluation after sexual assault.

Goals of intervention

- Increase rate of patients correctly offered nPEP
- Increase rate of patients given an appropriate nPEP prescription
- Increase rates of STI screening and treatment
- Increase rates of outpatient follow-up

Methods

An observational study was performed using medical records of patients presenting to the ED for sexual assault care before and after implementation of the nPEP program. Data was collected from a 1-year (07/2016-06/2017) pre-intervention period and a 1-year (07/2018-08/2019) post-intervention period following a 1-year washout period. Sexual assault records were reviewed and deemed appropriate for nPEP if sexual encounter occurred ≤ 72 hours and if exposure carried considerable risk for HIV acquisition.

Components of nPEP Program

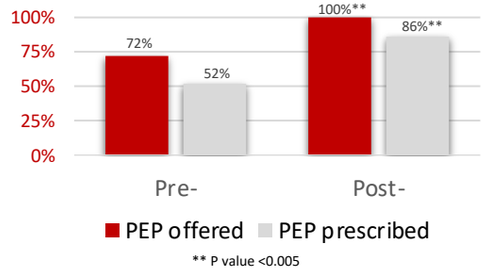
- nPEP order-set embedded in EMR consistent with CDC guidelines[1]
- HIV Pharmacist and ID physician notified in real-time of nPEP case
- On site specialty pharmacy to fill nPEP Rx. (3d Rx filled from ED on weekends)
- Phone visit with HIV pharmacist on day 7
- Medication financial assistance (free drug assistance, prior authorization processing, manufacturer co-pay assistance)
- Face to face or over the phone nPEP counseling per pharmacist
- Scheduled to see on site ID provider on day 28

Data collection

- Basic patient demographics
- Patient labs and studies obtained during post-assault evaluation
- Medication Rx (nPEP and STI treatment) including nPEP regimen and duration
- Patient referral for follow up and completion of follow up visit

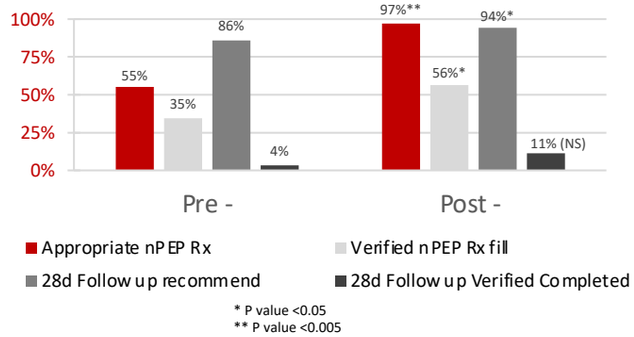
Results

nPEP Prescriptions Offered and Prescribed for nPEP Candidates



** P value <0.005

nPEP Prescription and Follow up Details for Patients Prescribed nPEP



* P value <0.05
** P value <0.005

Demographics and Baseline Characteristics of Post-Sexual Assault Encounters

	Total (N=147)	Pre (N=59)	Post (N=88)
Age, y, median (IQR)	26 (21-36)	25 (21-39)	26 (22-35)
Female, n (%)	133 (90.4)	54 (91.5)	79 (89.8)
Race, n (%)			
African American	68 (46.6)	28 (47.5)	40 (46.0)
Caucasian	68 (46.6)	29 (49.2)	39 (44.8)
Presentation post assault, h, med (IQR)	12.6 (5.3-34.3)	18.1 (8.5-40.5)	11.3 (4.9-27.2)
Candidate for nPEP, n (%)	133 (90.5)	54 (91.5)	79 (89.8)

Rate of Patients Receiving Recommended Work-up and Prophylaxis

	Pre (N=59)	Post (N=88)	P Value
Labs obtained, n(%)			
HIV screen obtained	17 (28.8)	84 (95.5)	**<0.005**
Pregnancy test obtained	23 (39.0)	70 (79.6)	**<0.005**
Serum Creatinine obtained	22 (37.3)	78 (88.6)	**<0.005**
AST and ALT obtained	17 (28.8)	82 (93.2)	**<0.005**
All HBV screen obtained	9 (15.3)	84 (95.5)	**<0.005**
HCV screen obtained	16 (27.1)	83 (94.3)	**<0.005**
Syphilis screen obtained	2 (3.4)	79 (89.8)	**<0.005**
Prophylaxis Provided, n (%)			
Chlamydia Prophylaxis Prescribed	45 (76.3)	69 (78.4)	0.761
Gonorrhea Prophylaxis Prescribed	46 (78.0)	78 (88.6)	0.081
Trichomonas Prophylaxis Prescribed	42 (71.2)	65 (73.9)	0.721
HBV Vaccination Administered	5 (8.5)	20 (22.7)	**0.024**

Discussion

Implementation of a comprehensive nPEP program resulted in increased nPEP administration, appropriateness of nPEP prescription, and improved laboratory and STI work-up consistent with CDC guidelines. While scheduling follow up care was more frequent, the rate of confirmed in person follow-up remained low. This program improved provider compliance with published guidelines, though investigation regarding patient adherence to medication regimen and follow up are warranted to better address gaps in post-sexual assault care.

Reference: 1. Dominguez, K.L.; Smith, D.K.; Vasavi Thomas; Crepaz, N.; Lang, K.; Heneine, W.; McNicholl, J.M.; Reid, L.; Freelon, B.; Nesheim, S.R.; et al. Updated guidelines for antiretroviral postexposure prophylaxis after sexual, injection drug use, or other nonoccupational exposure to HIV—United States, 2016.