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293 Development and Validation of a Model to Predict Post-Discharge Opioid Use after Cesarean Birth



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OBJECTIVE: Methods to reduce unused opioids and match prescribing to actual use are needed. We aimed to develop and validate a prediction model for post-discharge opioid use in patients undergoing cesarean.

STUDY DESIGN: We conducted a prospective cohort study of patients undergoing uncomplicated cesarean. Patients were enrolled post-operatively, were prescribed 30 tablets of hydrocodone 5 mg-acetaminophen 325 mg at discharge, and completed pain and opioid use questionnaires at 14 days. The primary outcome was total morphine milligram equivalents used. We constructed three proportional odds predictive models: full model with 34 predictors available prior to hospital discharge, electronic health record (EHR). model that excluded questionnaire data, and a reduced model. The reduced model used forward selection to sequentially add a prior ranked predictors until 90% of the full model performance was achieved. Predictive accuracy was estimated using discrimination (Concordance Index). Secondary analyses were conducted to evaluate the model in patients who received nonstandard prescriptions.

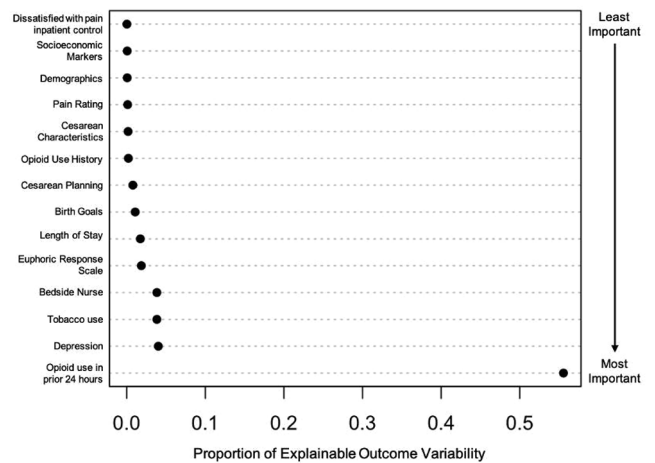
RESULTS: Between 11/15/2019 and 1/15/2021, 459 participants enrolled and 279 filled the standardized study prescription. Of the 398 with outcome measurements, participants used a median of 8 tablets (IQR 1-18) after discharge; 24% used no opioids, 53% used some opioids, and 23% used all opioids. Each of the models demonstrated high accuracy predicting post discharge opioid use (Concordance Index range 0.74-0.76 for all models). We selected the Reduced model as our final model given its similar model performance with the fewest number of predictors, all obtained from the EHR (inpatient opioid use, tobacco use, and depression/anxiety). Model predictive accuracy was similar among the 108 participants who did not receive standardized prescriptions (Table, Figure).

CONCLUSION: A model with three predictors readily found in the EHR – inpatient opioid use, tobacco use, and depression/anxiety – accurately estimated post discharge opioid use. This represents an opportunity for individualizing opioid prescriptions after cesarean.

Table: Model Performance

Model	N	Predictors (DF)	LR χ^2	AIC	C-index	Somers' Dxy	Bootstrap Dxy
Full	287	34 (17)	164	1535	0.76	0.51	0.47
EHR	287	17 (10)	154	1530	0.75	0.50	0.47
Reduced	287	3 (5)	152	1523	0.75	0.46	0.48
Non-study prescriptions	103	3 (5)	65	502	0.76	0.52	0.51

DF=degrees of freedom, LR χ^2 =Likelihood Ratio χ^2 , AIC=Akaike Information Criterion, C-index=Concordance Index.



294 Uptake of Recommended Vaccines in Pregnancy among People Living with HIV in the United States



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OBJECTIVE: Little is known about uptake of routinely-recommended vaccines - influenza and tetanus, diphtheria, and pertussis (TDaP) – among pregnant people living with HIV (PLHIV). The coronavirus pandemic presents an urgent need to understand factors driving vaccination uptake, particularly in vulnerable populations. We sought to estimate prevalence and identify factors associated with vaccination uptake among pregnant PLHIV.

STUDY DESIGN: The Surveillance Monitoring for ART Toxicities Study of the Pediatric HIV/AIDS Cohort Study, which has been enrolling pregnant PLHIV at 22 US sites since 2007, included individuals who participated in a supplemental study of maternal health among individuals enrolled between 2015-2019. Data on vaccination in pregnancy were collected on eligible individuals. Vaccination uptake during pregnancy was defined as TDaP vaccination prior to 36 weeks and influenza vaccination at any gestational age, based on current guidelines. Logistic regression models with generalized estimating equations to account for correlation between repeat pregnancies were fit for each vaccine outcome (TDaP, influenza, and both) to identify factors associated with vaccination uptake.

RESULTS: A total of 266 PLHIV with 296 pregnancies were eligible. A minority of pregnant PLHIV received one or both recommended vaccinations (30.0% influenza, 31.8% TDaP, 22.3% both). Vaccine uptake was less frequent among individuals who were younger, multiparous, had low income, or had perinatally-acquired HIV (Figure). The multivariable model for uptake of both vaccines included all demographic and clinical covariates and demonstrated reduced odds of vaccine uptake for pregnant people with perinatally-acquired HIV (both vaccines: aOR 0.25, 95% CI 0.07-0.85) (Table).

CONCLUSION: Pregnant PLHIV had low uptake of recommended vaccinations, and perinatal HIV acquisition may represent a marker of other risk factors associated with suboptimal vaccine uptake.

Identifying and addressing barriers to uptake, raising awareness about vaccination safety, and improving access to vaccination is urgently needed for pregnant PLHIV.

Prevalence of vaccine uptake in pregnancy among persons living with HIV in SMARTT, by selected maternal characteristics (2015-2019)

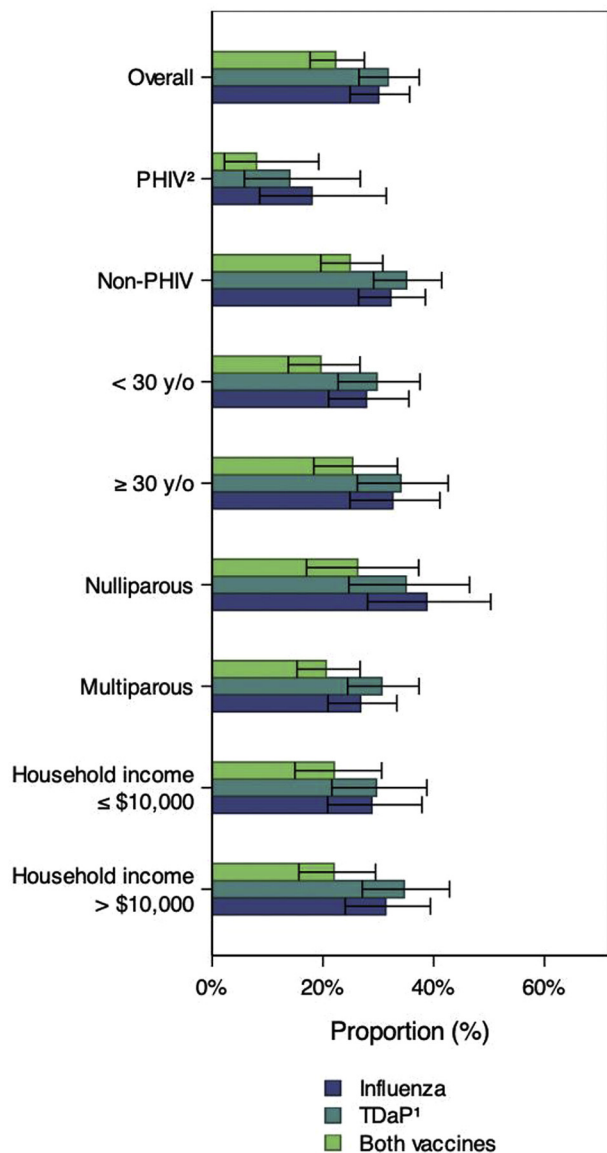


Table. Clinical and demographic factors associated with uptake of influenza and Tdap vaccination during pregnancy among pregnant people living with HIV (n=296) in the SMARTT cohort (2015-2019)

Characteristic	Received both influenza and Tdap vaccines			
	Unadjusted Models		Adjusted Models	
	OR	95% CI	aOR ¹	95% CI
Age, years				
<24	Ref	Ref	Ref	Ref
24-29	2.52	1.06-5.95	2.64	0.87-7.98
30-35	2.69	1.09-6.65	3.81	1.19-12.24
>36	2.33	0.87-6.19	3.25	0.90-11.72
Year of conception				
2014-2015	Ref	Ref	Ref	Ref
2016-2017	2.05	0.94-4.49	2.52	0.99-6.42
2018-2019	2.20	1.02-4.75	1.97	0.78-4.99
Black race (vs. non-Black) ²	0.78	0.75-2.92	0.55	0.21-1.43
Hispanic (vs. Non-Hispanic) ²	1.47	0.74-2.92	0.69	0.25-1.85
Education level				
< High school	Ref	Ref	Ref	Ref
High school/GED	0.65	0.31-1.34	0.90	0.35-2.33
> High school	0.80	0.38-1.66	0.79	0.29-2.17
Annual household income				
≤\$10,000	Ref	Ref	Ref	Ref
\$10,001-\$20,000	1.14	0.55-2.37	1.27	0.54-3.02
\$20,001-\$30,000	0.76	0.32-1.83	0.68	0.22-2.08
≥\$30,000	0.96	0.41-2.25	1.01	0.35-2.91
PHIV (vs. non-PHIV)	0.28	0.09-0.81	0.24	0.07-0.85
Multiparous (vs. nulliparous)	0.77	0.42-1.40	0.46	0.20-1.06
1 st trimester prenatal care	0.88	0.57-1.66	0.71	0.33-1.52
Maternal comorbidities ³	0.98	0.52-1.83	0.60	0.29-1.25
Substance use in pregnancy	1.02	0.55-1.90	0.80	0.34-1.88

Tdap: tetanus, diphtheria, and pertussis; OR, odds ratio; CI, confidence interval; aOR, adjusted odds ratio; GED, general educational development; PHIV, perinatally-acquired HIV

1. Adjusted model accounts for all factors shown here
2. Race and ethnicity are self-identified
3. Maternal comorbidities: asthma, diabetes, or chronic hypertension

295 Resuscitative endovascular balloon occlusion of the aorta (REBOA) in cesarean hysterectomies for placenta accreta spectrum



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OBJECTIVE: To describe the outcomes associated with REBOA use in cesarean hysterectomy (CH) cases for placenta accreta spectrum (PAS) at a single institution.

STUDY DESIGN: We conducted a retrospective review of CH cases performed for PAS at our institution from 1/1/2020 to 6/30/2021. Bivariate analysis was performed to compare demographic and delivery characteristics and maternal and neonatal outcomes between patients with REBOA use and those with 5-French femoral arterial catheter placement alone during CH. Primary outcomes included estimated blood loss (EBL), transfusion, postoperative length of stay, and postoperative complications.