

# Longitudinal Patterns of Conventional Cigarette, Electronic Cigarette, and Dual Use During Pregnancy and Postpartum



Table 1. Nicotine Use Patterns over 4 Study Visits during Pregnancy and Postpartum

C = Conventional-Only E = E-Cig Only		D = Dual Use N = No Nicotine Use	
Pattern Example: CCCD Conventional-Only use at Visits 1, 2, 3 and Dual Use at Visit 4			
N = 152			
Pattern	n (%)	Pattern	n (%)
CCCC	58 (38.1)	DCDD	1 (0.7)
CCCD	5 (3.3)	DDCC	5 (3.3)
CCCN	1 (0.7)	DDNC	1 (0.7)
CCDC	2 (1.3)	DDND	2 (1.3)
CCEC	1 (0.7)	DCCD	1 (0.7)
CDCC	6 (3.9)	DEED	1 (0.7)
CNCC	1 (0.7)	DCCC	6 (3.9)
CNND	1 (0.7)	DCCN	1 (0.7)
CCNN	2 (1.3)	DCCE	1 (0.7)
CCNC	1 (0.7)	DEEE	1 (0.7)
CCEC	1 (0.7)	EEEE	2 (1.3)
CDDC	4 (2.6)	EEED	2 (1.3)
CNNN	4 (2.6)	EENN	1 (0.7)
CDDD	3 (2.0)	EENC	1 (0.7)
CNNC	1 (0.7)	EDDC	1 (0.7)
CEED	1 (0.7)	EDDD	1 (0.7)
DDDD	21 (13.8)	ENNN	2 (1.3)
DDDC	4 (2.6)	EDEE	1 (0.7)
DDDE	1 (0.7)	ECDD	1 (0.7)
DDCD	2 (1.3)		
71/152 (47%) had switching behaviors			
81/152 (53%) had NO switching behaviors			
6/152 (4%) sustained quit after enrollment			
19/152 (13%) reported No Nicotine Use (i.e. "quit") at least at 1 visit; most (63%) were conv-only users prior to the "quit". 16% were dual users and 21% were e-cig only users prior to quitting.			



## Cigarette, e-cigarette, and dual use behaviors change frequently over the course of pregnancy and postpartum.

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### BACKGROUND

Various studies have been published on the prevalence of conventional cigarette, electronic cigarette (e-cig), and dual (conventional + e-cig use) use during pregnancy, but few have longitudinally assessed patterns of single and dual product use across multiple time points in pregnancy and postpartum.

### PURPOSE

The purpose of this study was to describe patterns of conventional cigarette, e-cig, and dual use among pregnant and postpartum women.

### METHODS

- Preliminary analysis was conducted in a multi-site, prospective study using quota sampling.
- Inclusion criteria included pregnant women between 8-14 weeks gestation, aged 18-44, with current use of conventional cigarettes, e-cigs, or both (dual use) self-reported and validated by biochemical analysis.
- Data was collected at 4 study visits: 1) 8-14 weeks gestation (enrollment), 2) 20-27 weeks gestation, 3) 30-37 weeks gestation, and 4) 2-8 weeks postpartum.
- At each study visit, nicotine use type (conventional cigarettes, e-cigs, dual use) was collected via electronic survey.

### RESULTS (Table 1)

- One hundred and fifty-two women completed all 4 study visits.
- Nearly half (47%) changed their nicotine use behavior over the course of the visits, with 39 different patterns observed.
- Over half (56%) of dual users, compared to 37% of conventional-only users and 8% of e-cig only users (classified by type at enrollment), changed their nicotine use behavior at a subsequent visit.
- Few participants denied any nicotine use (i.e. "quit") at any visit after enrollment: 6% denied any nicotine use at Visit 2, 10% at visit 3, and 7% at visit 4; only 4% of participants maintained their "no nicotine" status from Visit 2 through the end of the study.
- Of those that reportedly "quit" at any visit (13%), the majority were conventional-only users (63%), as compared to dual (16%) and e-cig only (21%) users, in the visit directly preceding the quit.

### IMPLICATIONS

- Due to the propensity for switching, evaluation of nicotine product use should occur frequently over the course of pregnancy and postpartum, not just at one time point.
- Future research should examine why these behaviors change and how they effect prenatal outcomes.