Incentivizing Pregnant Women to Quit Smoking in the Real World
A Community-Based Pilot Intervention

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BACKGROUND

Smoking during pregnancy is a leading preventable cause of poor pregnancy outcomes. Vermont's smoking rate during pregnancy (13.2%) is more than twice the national rate (5.9%).[1,2] Smoking rates among pregnant women in Rutland County (18.3%) are higher than state averages.[1] Rutland County is located outside the University of Vermont's (UVM) catchment area for smoking cessation studies. Research-based contingency management strategies yield quit rates of ~30% during pregnancy, compared to 4% with traditional smoking cessation programs.[3]

PURPOSE

To assess the feasibility of translating an efficacious UVM research-based intervention into a community setting delivered by the Vermont Department of Health and partners.

METHODS

Community partners received tobacco treatment training (5A's). From 2018-2020, pregnant women who smoked were recruited from the Women Infants and Children (WIC) program and Rutland Women's Healthcare (RWH). Women were provided in-person counseling based on the 5A's during scheduled meetings (up to 36) and received gift cards throughout pregnancy and 3 months postpartum contingent upon biochemically-verified smoking abstinence (salivary cotinine <30ng/ml). Abstinence monitoring began with high frequency (3 visits/week), tapering to biweekly through postpartum. Gift card values began at $15, increasing by $5 for consecutive negative samples, to $40 maximum. Participants completed surveys at enrollment, 4-6 weeks postpartum, and 6-12 months postpartum assessing smoking habits and barriers/facilitators of treatment engagement and success.

RESULTS

- 20 participants (13 WIC, 7 RWH) enrolled out of ~256 births to women who smoked.
- 6 (30%) reported quitting tobacco.
- 8 were lost to follow up (2 pregnancy losses).
- 11 final postpartum surveys were returned.

Subject characteristics at enrollment (n=20)

	n (%)	Mean	Range
Age		28	19-44
Age of smoking initiation		15.5	12-21
Number of cigarettes/day			
Pre-pregnant		15.4	1-20
Current use		8.8	0-20
Prescription Medication/Drug Use*	5 (25%)		
Education			
Some high school	2 (10%)		
12th grade/GED	7 (35%)		
Associate/Certificate degree	2 (10%)		
1-3 years college	9 (45%)		

*buprenorphine, methadone, suboxone, dilaudid, heroin, cocaine
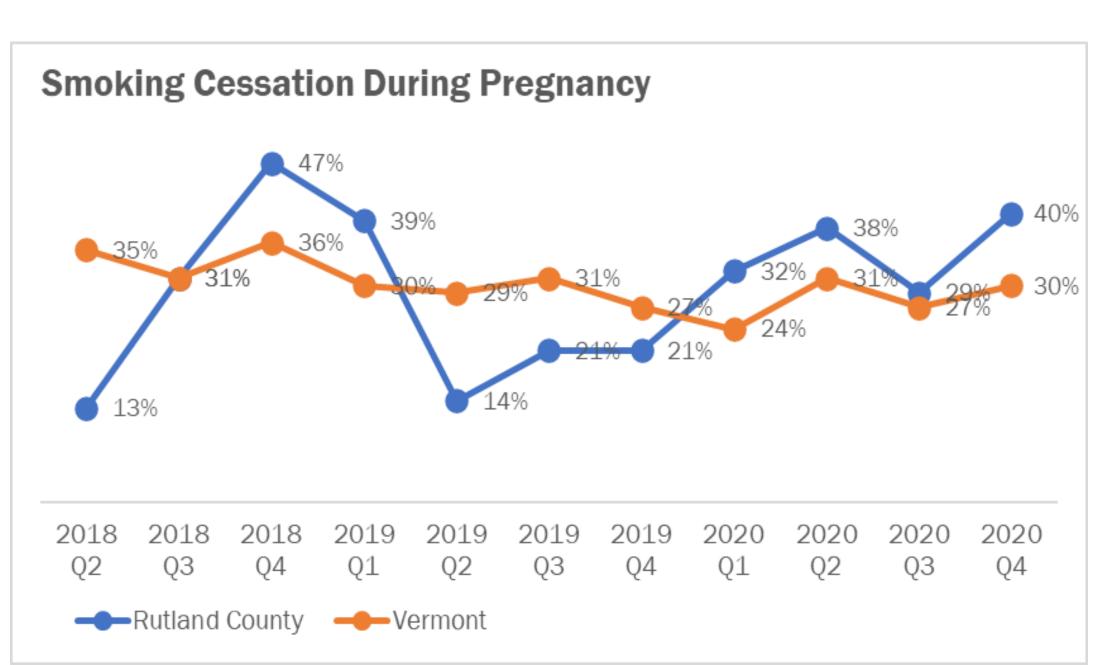
- Motivations to quit smoking: personal & baby's health and financial goals/saving money.
- Barriers: transportation to and time for appointments, and feeling overwhelmed/stressed postpartum.
- Facilitators of treatment engagement and success: ongoing support from staff, accountability of regular testing, and gift cards for baby supplies.

"It honestly helped me realize that there are better ways to handle stress than just smoking a cig."
"Helped open my eyes & informed me about risks during pregnancy. I don't think I would have quit without it."
"Extra support from a team that genuinely cares about you, your family & future to be healthy was essential in my success. The gift cards to purchase groceries or items is substantial."

DISCUSSION

Challenges incorporating recruitment into clinical workflows limited enrollment. Initiating meaningful conversations around tobacco use with clients/patients was harder than we expected for community partners. However, our results, alongside data from quarterly birth reports, suggest it is feasible and effective to translate a research-based smoking cessation program into community settings. Consistent local champions in the clinic and community may help achieve greater enrollment and retention, leading to higher quit rates.

Smoking Cessation During Pregnancy

Rutland County: 2018 Q2 13%, 2018 Q3 35%/31%, 2018 Q4 47%, 2019 Q1 36%, 2019 Q2 14%, 2019 Q3 21%, 2019 Q4 21%, 2020 Q1 32%, 2020 Q2 38%, 2020 Q3 27%, 2020 Q4 40%
Vermont: 35%, 31%, 36%, 30%, 29%, 31%, 27%, 24%, 31%, 29%, 30%

Source: Vermont Department of Health Quarterly Birth Report Data

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