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# Breaking the Bank: Cost of Cigarettes in Vermont

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# Breaking the Bank: Cost of Cigarettes in Vermont

Ryan Landvater

Mentor: Kris Jensen, MD

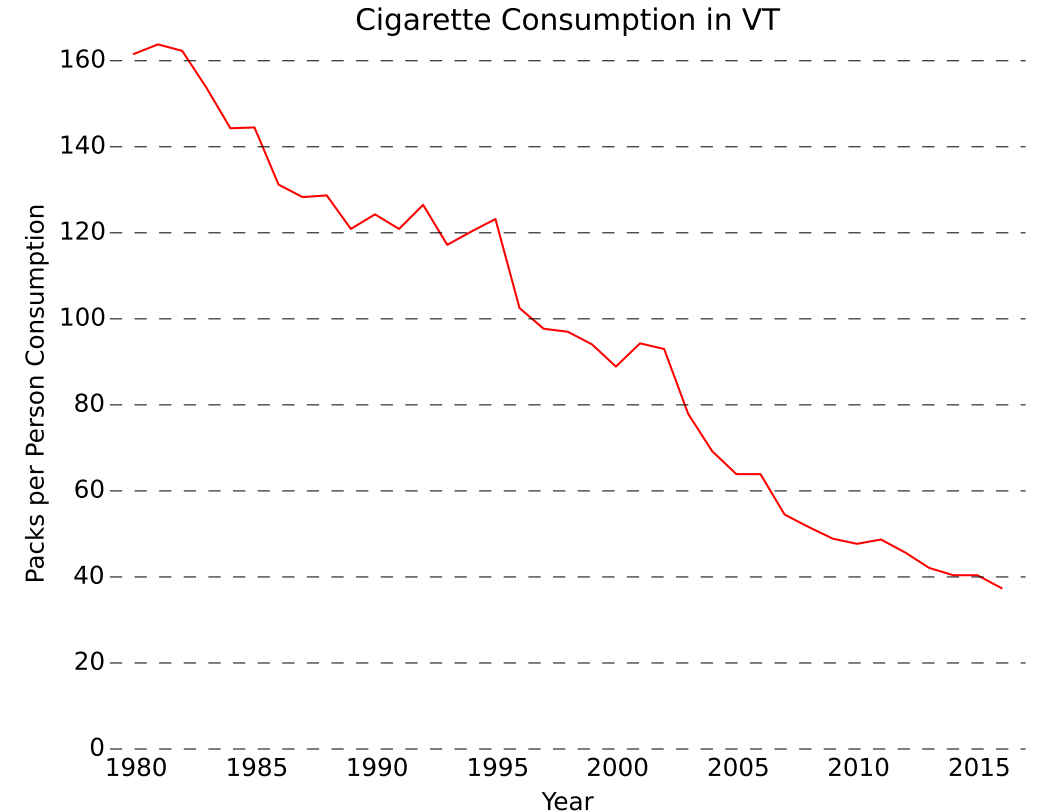
Family Medicine Clerkship 11/27/17 – 1/19/18



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# Problem Identification and Description

- Smoking is still the leading preventable cause of death in the USA (~438,000 deaths / year in 2009)<sup>1</sup>
- ~75% express a desire to quit with only a 2-3% success rate<sup>2</sup>
- Financial incentive for smoking cessation significantly increases the rates of smoking cessation over other interventions.<sup>3</sup>



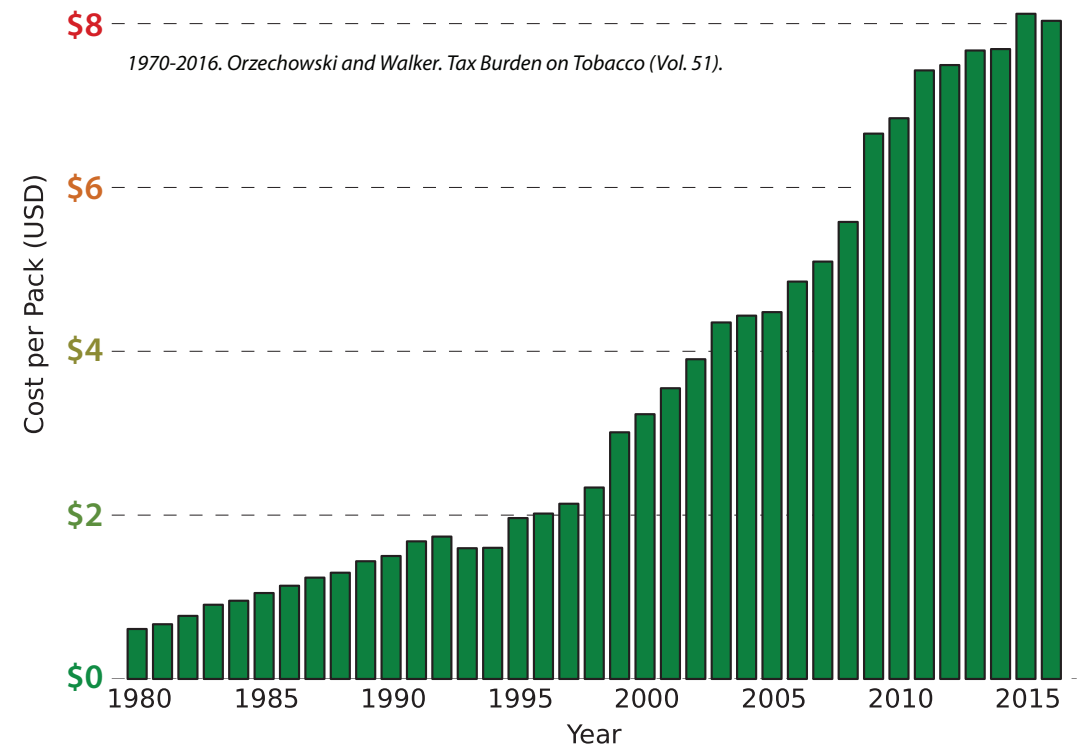
*Vermont has seen a decrease in smoking rates over the past decade to under 40 packs per capita in 2016*



# Public Health and Community Costs

- In Vermont, at an average cost of \$8.03 per pack and with a per capita consumption of 37.4 packs<sup>4</sup> with a population of 624,598 (U.S. Census; 2016), **the community pays calculated a rate of \$187,580,520 annually for cigarettes** in 2016.
- According to the CDC's Morbidity and Mortality report July 1<sup>st</sup>, 2005, estimates for average annual smoking-attributable productivity losses were approximately \$61.9 billion for men and \$30.5 billion for women during this period of time.<sup>6</sup>

Cost of Cigarettes in VT



# Community Perspective

## Rhonda Williams (802 Quits):

- As far as smoking is concerned, “[cost] is among the most effective evidence based strategies [to reduce smoking].”
- “We find there is quite a bit of substance abuse and mental health that makes it just that much more difficult to quit. [Cost] sometimes gets overlooked. It can be up to 40% of discretionary income [...] and research to back up tax increase has helped to create behavioral change.”
- “In the data we see that "saving \$" is identified as among the top reasons people want to quit”

## Dale Stafford, MD:

- “Do you think they realize how much it is effecting their financial situation [...] I think that people tend to down-play it [...] Its like paying their cable bill or gas mileage. It doesn't seem to rise to the level of I'm going to make this a financial.”
- “It can't NOT be affecting them financially and [thus] psychologically but there is this psychological barrier called denial.





# Intervention and Methodology

- A double-sided hand-out evaluating the financial incentives, rather than health benefits, of smoking cessation was developed. It was independently reviewed by 802Quits with appropriate alterations made per their advice.
- The goal of the handout was to **translate financial losses** and nicotine replacement therapy (NRT) economics **in terms of average consumer terms** (*buying power / monthly or yearly cost*)

**Breaking the Bank:**  
What is Smoking Costing You?

**Smoking is Expensive!**  
In 2016, the average cost of a pack in Vermont was **\$8.03**, according to the CDC\*.

*How much are you actually spending?*

	In just 1 month you spend...		And in 1 year...	
 1/2 Pack per Day	\$125	\$1,465.50		
 1 Pack per Day	\$250	\$2,930.00		
 2 Packs Per Day	\$500	\$5,861.90		

**Did you know?!**  
At 1 PPD you are spending the same as **buying a \$14,000 car** (60 month, 3.11% APR)



**Cost of Cigarettes in VT**  
1970-2016, Orzechowski and Walker, Tax Burden on Tobacco (Vol. 51).






\* The Tax Burden on Tobacco Survey (Vol. 51) Orzechowski and Walker accessed from the CDC Data Archive: <https://data.cdc.gov/Policy/The-Tax-Burden-on-Tobacco-Volume-51-1970-2016/7mwe-3aj9>

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**Breaking the Bank:**  
What is Smoking Costing You?

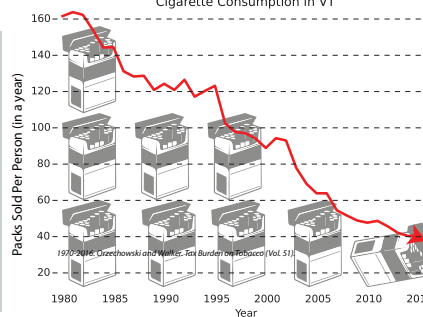
**Alternatives are made Cheaper!**  
Cigarettes are the **Most Expensive\*\*** option for Nicotine.  
*You can have nicotine, improve your health and save money*

**How much Nicotine can \$10 get you?**

	\$10 in Nicotine	Savings	Monthly Savings ...at 1 PPD
 Cigarettes**	30 mg	1x	\$0
 Nicorette Gum	45 mg	1.5x	\$83
 Kirkland Quit2 Lozenge	90 mg	3x	\$167

**802 QUILTS**  
To save money, Quitting is the best option of all, and...  
**802Quits can help:**  
**802Quits.org**  
**1(800)-Quit-Now**

**Cigarette Consumption in VT**



\*\*Benowitz, N. L., & III, P. J. (1984). Daily intake of nicotine during cigarette smoking. Clinical Pharmacology and Therapeutics, 35(4), 499-504. doi:10.1038/clpt.1984.67

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# Results

The handout was evaluated by both providers at the UVMHC Berlin Family medicine clinic and by Rhonda Williams at 802Quits, both of whom believed it would be a new angle to encourage smoking cessation in the clinic.

- “I love it [...] It would be great to have a hand out like this because I have been looking for a way to make [cost] accessible” – Dale Stafford, MD
- “I really like how you use economic and consumption data [...] we might be able to take your template and design per our 802Quit brand standards.” – Rhonda Williams, 802Quits

Providers at the clinic expressed interest in using the poster daily with patients that are chronic smokers and asked for ways in which they could incorporate it into post-visit summary handouts.

Patients interviewed with the poster were shocked by the cumulative costs and were more interested in quitting, knowing how much money was being spent.

# Evaluation of Effectiveness and Limitations

## **Effectiveness:**

It has been recommended that effectiveness be gathered through feedback by a small sample of smokers at the hospital or outpatient clinics to see if they have any recommendations. This can be done in a couple weeks or months.

If found to be efficacious, 802Quits may be interested in using the template after 802Quits rebranding as a tool in the future.

## **Limitations:**

The economics of smoking can be difficult for some patients to appreciate especially on such a small medium (2 pages). It is also static: this gives raw figures that do not incorporate each individual patient's history and ask them to calculate.

A dynamic platform like a website / server application would provide a more personalized figure.



## Recommendations for Future Interventions

I would highly recommend a calculator in Epic that automatically integrates the cost of cigarettes over the years a patient has been smoking to provide the most accurate depiction of cost-to-date (CTD) from smoking.

This tool could be programmed using the dataset referenced in this report (ref. 4), which is conveniently provided in the form of comma-separated values (CSV).

# References

1. Mokdad, A. H. (2004). Actual Causes of Death in the United States, 2000. *JAMA*, *291*(10), 1238. doi:10.1001/jama.291.10.1238
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3. Volpp, K. G., Troxel, A. B., Pauly, M. V., Glick, H. A., Puig, A., Asch, D. A., ... Audrain-McGovern, J. (2009). A Randomized, Controlled Trial of Financial Incentives for Smoking Cessation. *New England Journal of Medicine*, *360*(7), 699–709. doi:10.1056/NEJMsa0806819
4. Orzechowski, & Walker. (2016). *The Tax Burden on Tobacco, Volume 51*. Retrieved from <https://chronicdata.cdc.gov/Policy/The-Tax-Burden-on-Tobacco-Volume-51-1970-2016/7nwe-3aj9>
5. Centers for Disease Control and Prevention (CDC). (2005). Annual smoking-attributable mortality, years of potential life lost, and productivity losses--United States, 1997-2001. *MMWR. Morbidity and Mortality Weekly Report*, *54*(25), 625–8. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/15988406>
6. CDC. (2005). Annual Smoking-Attributable Mortality, Years of Potential Life Lost, and Productivity Losses --- United States, 1997--2001. *Morbidity and Mortality Weekly Report (MMWR)*, *54*(25);625-628.



# Informed Consent

**Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library Scholar Works website. Your name will be attached to your interview and you may be cited directly or indirectly in subsequent unpublished or published work. The interviewer affirms that he/she has explained the nature and purpose of this project. The interviewee affirms that he/she has consented to this interview.**

**Yes  / No**

