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Genitourinary Effects of Smoking in Men: An Alternative Approach to Smoking Cessation Through Patient Education

Michael J. Lawrence

University of Vermont Larner College of Medicine

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A close-up photograph of a man's face, focusing on his nose and mouth. He is exhaling a thick plume of white smoke that fills the right side of the frame. The background is a blurred green. The man has a mustache and is wearing a dark shirt.

Genitourinary Effects of Smoking in Men:

An alternative approach to smoking
cessation through patient
education

Michael J. Lawrence

UVMHC Family Medicine Clerkship, October 2020

In collaboration with Berlin Family Medicine, Berlin, VT

2A The Problem: Vermonters are still smoking.

- According to the **2019 Vermont Tobacco Pages** update:¹
 - **17% of Vermont adults** are smokers (vs. 14% of adults nationwide)
 - **20th**: Vermont state rank in adult smoking prevalence nationwide²
 - **8/14** counties have **≥20% prevalence** of adult smoking
 - Areas served by **Newport** and **Springfield** hospitals have the greatest prevalence in the state (24% and 27%, respectively).
- These data suggest **opportunity for further intervention**, both statewide and locally, and within healthcare institutions as well.

1. 2017 Vermont Tobacco Pages, Vermont Department of Health.

2. Campaign for Tobacco-Free Kids, "The Toll of Tobacco in the US," (2019), available at <https://www.tobaccofreekids.org/problem/toll-us>

2B The Problem, part 2: low awareness of genitourinary effects of smoking

- Smoking is the #1 risk factor in developing **urothelial carcinoma of the bladder**. Quitting reduces that risk:^{3,4}
 - Current smokers: Hazard ratio 3.89 in men, 4.65 in women
 - Former smokers: Hazard ratio 2.07 in men, 2.89 in women
- Heavier smoking also correlates with **more aggressive bladder cancer**.⁵
- **Erectile dysfunction** and CVD share many risk factors, including smoking.
 - Cessation produced significant improvement in ED within a month in one prospective cohort study.⁶
- Smoking concurrence with **prostate cancer** has been linked with greater risk of **mortality, metastasis, and recurrence**.^{7,8}
- Even among urology patients, there is generally low awareness of smoking-related genitourinary disease⁹ - an **opportunity to educate and incentivize patients to quit**.

3. Freedman et al., "Association between smoking and risk of bladder cancer among men and women." *JAMA* 306, no. 7 (2011): 737-745.

4. Cumberbatch et al., "The role of tobacco smoke in bladder and kidney carcinogenesis: a comparison of exposures and meta-analysis of incidence and mortality risks." *European urology* 70, no. 3 (2016): 458-466.

5. Pietzak et al., "Heavy cigarette smoking and aggressive bladder cancer at initial presentation." *Urology* 86, no. 5 (2015): 968-973.

6. Guay et al., "Cessation of smoking rapidly decreases erectile dysfunction." *Endocrine Practice* 4, no. 1 (1998): 23-26.

7. Islami et al., "A systematic review and meta-analysis of tobacco use and prostate cancer mortality and incidence in prospective cohort studies." *European urology* 66, no. 6 (2014): 1054-1064.

8. Foerster et al., "Association of smoking status with recurrence, metastasis, and mortality among patients with localized prostate cancer undergoing prostatectomy or radiotherapy: a systematic review and meta-analysis." *JAMA oncology* 4, no. 7 (2018): 953-961.

9. Bjurlin et al., "Ethnicity and smoking status are associated with awareness of smoking related genitourinary diseases." *The Journal of urology* 188, no. 3 (2012): 724-728.

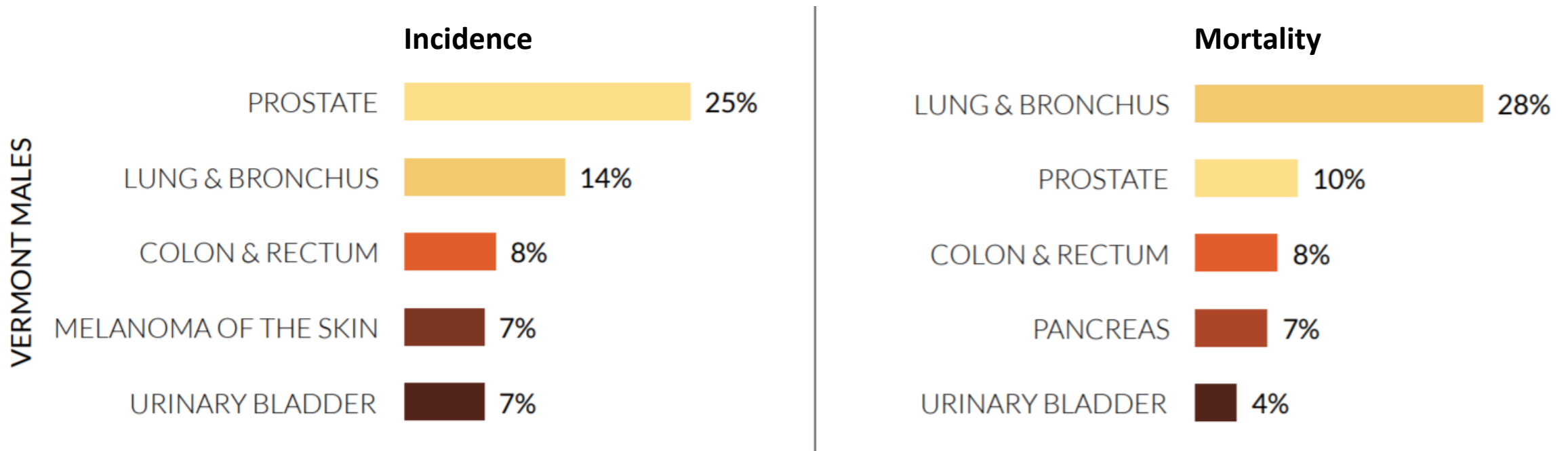
3A Public Health Costs of Tobacco Use

- According to the **Vermont Tobacco Control State Plan, 2015-2020:**¹⁰
 - **\$348 million per year:** amount Vermonters spend on tobacco-related healthcare
 - **1000:** tobacco-related deaths per year

******Unfortunately, no public data on the cost of genitourinary disease to Vermonters could be found, and calls placed to the Vermont Department of Health were not returned.

3B. Public Health Burden of Genitourinary Disease

Prostate and bladder cancer are **among the top 5 cancers** in incidence and mortality affecting Vermont men:¹¹



11. Vermont Department of Health, 2016-2020 Vermont Cancer Plan: A Framework for Action: 5

4A Community Perspective on Smoking and Resources for Quitting¹²

- **Viki Delmas, Vermont Quit Partner (CVMC):**
 - COVID-19 has simultaneously created greater incentive to quit and greater levels of stress leading to more relapses.
 - With more people at home, there's more flexibility with getting them resources they need.
- **Nancy Wagner, RDN, CDC, CHC, TTS (CVMC):**
 - Resources:
 - **802Quits** provides 8 weeks of free nicotine replacement per year
 - **The Blueprint Grant** allowed for unlimited group and one-on-one counseling sessions that would normally be limited by insurance coverage -> this grant is disappearing soon.
 - **Access to resources is NOT the issue in lowering smoking rates in VT.** It's patient motivation. 90% is the habit; 10% is the nicotine addiction.
 - Anything to drive that motivation would be beneficial, including education about genitourinary effects.

4B Community Perspective on Smoking-Related Genitourinary Disease Incentivization to Quit¹³

- **Brian Rodriguez, MD (CVMC Family Medicine):**
 - Using prostate and bladder cancer to incentivize quitting smoking is a good idea. Lots of patients don't realize the connection between the two.
 - The same is true for ED. It's a blood flow issue, and smoking makes it worse. I often use that to try to get male patients to quit.

5. Intervention & Methodology

- **Intervention:** patient education materials
- **Medium:** poster
- **Content:** information regarding genitourinary effects of smoking in men, with an entertaining, traditionally male-centric theme
 - **Rationale:** an eye-catching poster with a theme catering towards one sex may be more effective than a gender-neutral poster aimed at both sexes
- **Location:** to be displayed in patient bathrooms in healthcare practices
 - **Rationale:** discreet location for relaying information about intimate/private body system; patient bathrooms tend to be minimally adorned with decorations/other materials, allowing for maximum impact and minimum distraction
- **Duration:** to be displayed at the discretion of practice manager and medical director

6 Results & Response

- **Informal pilot survey:** prior to the creation of the final draft of the poster and its display, a small number of actively smoking male patients (n=4) were offered brief counseling on genitourinary effects of smoking.
- All were receptive to the information; two expressed no prior knowledge of these effects.

7 Effectiveness & Limitations

■ **Effectiveness:**

- Patients and providers appeared to be receptive and appreciative of the poster's design
- One patient expressed appreciation that the poster had “personality” which is “rare in this kind of [educational] stuff”
- The poster immediately attracts attention in the bathroom, especially in the absence of other distracting materials or decorations

■ **Limitations:**

- Information only reaches patients who use the bathroom
- Passive form of education; direct communication from physician would likely have more impact
- Still requires **significant action on the part of the patient** (e.g. “Ask your doctor...”)
- No mechanism in place for evaluating efficacy

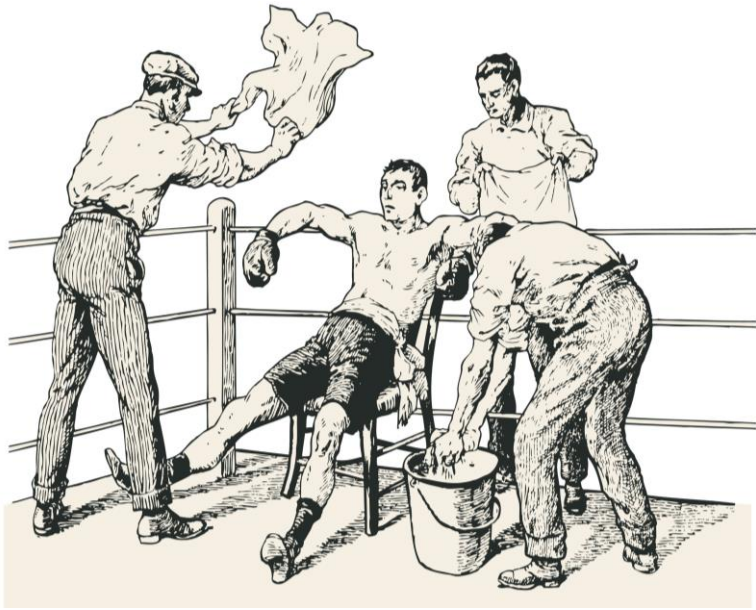
8 Recommendations for Future Projects

- In general, continue to make materials **targeted for specific populations**, with themes that appeal/speak to those groups
- Design formal survey that **evaluates current patient knowledge of genitourinary effects of smoking**. Repeat survey in 12 months to evaluate penetrative power of educational poster
 - **If significant improvement in patient knowledge:** identify another demographic for targeted smoking cessation education/therapy and repeat process
 - **If no significant improvement:** re-evaluate poster design, location, and content

9 References

- Bjurlin et al., "Ethnicity and smoking status are associated with awareness of smoking related genitourinary diseases." *The Journal of urology* 188, no. 3 (2012): 724-728.
- Campaign for Tobacco-Free Kids: "The Toll of Tobacco in the US" (2019): available at <https://www.tobaccofreekids.org/problem/toll-us>. Accessed 11/18/2020.
- Cumberbatch et al., "The role of tobacco smoke in bladder and kidney carcinogenesis: a comparison of exposures and meta-analysis of incidence and mortality risks." *European urology* 70, no. 3 (2016): 458-466.
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- Vermont Department of Health, *Vermont Tobacco Control State Plan, 2015-2020: Collaborating to Reduce Tobacco Use for a Healthier Vermont* (updated February 2018). Available at https://www.healthvermont.gov/sites/default/files/documents/pdf/hpdp_TobaccoStatePlan2015-2020.pdf. Accessed 11/15/2020.
- Vermont Department of Health, *2016-2020 Vermont Cancer Plan: A Framework for Action*. Available at: https://www.healthvermont.gov/sites/default/files/documents/2016/12/2016-2020_VermontCancerPlan.pdf. Accessed 11/10/2020.
- Vermont Department of Health, *2017 Vermont Tobacco Pages* (updated June 2019). Available at https://www.healthvermont.gov/sites/default/files/documents/pdf/HSVR_2019_Tobacco_Data_Pages.pdf. Accessed 11/15/2020.

DOWN FOR THE COUNT, CHAMP?



HAVE YOU TAKEN A
HIT
BELOW
the
BELT?

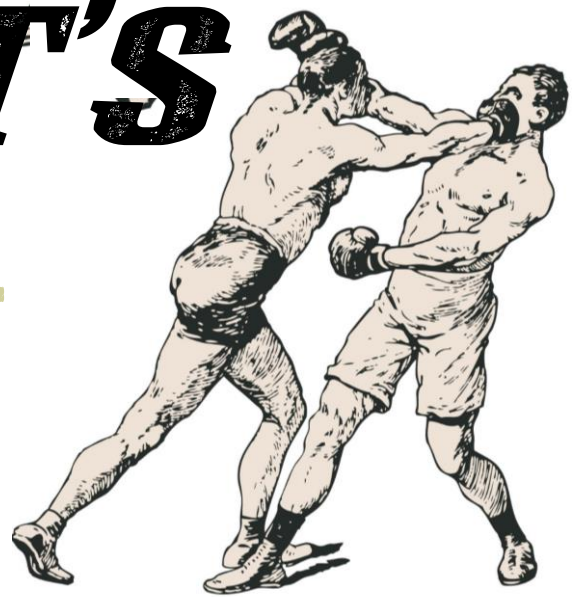
SMOKING MAY BE THE CULPRIT!

**DID YOU
KNOW:**

Smoking puts you at higher risk of
**BLADDER & ERECTILE
CANCER¹ & DYSFUNCTION²**
~~~~~as well as~~~~~  
HIGHER MORTALITY, RECURRENCE, & SPREAD OF  
**PROSTATE CANCER.<sup>3</sup>**  
**THE MORE YOU SMOKE,  
THE HIGHER YOUR RISK OF ALL THESE.**

**QUITTING CAN REDUCE YOUR RISK!**

**NOW THAT'S  
A KNOCK-  
OUT!**



**READY TO IMPROVE YOUR PHYSICAL & SEXUAL HEALTH?**

**ASK YOUR DOCTOR  
ABOUT QUITTING TODAY, OR CALL 1-800-QUIT-NOW  
AND GET BACK IN THE RING.**



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1. Freedman et al., "Association between smoking and risk of bladder cancer among men and women." *JAMA* (2011)  
2. Fung et al., "Heart disease risk factors predict erectile dysfunction 25 years later: the Rancho Bernardo Study." *J Am Coll Cardiol* (2004)  
3. Islami et al., "A systematic review and meta-analysis of tobacco use and prostate cancer mortality and incidence in prospective cohort studies." *Euro Urol* (2014)  
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