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Supporting Patient Education on Bladder Cancer and Risk Factors Specific to Vermont

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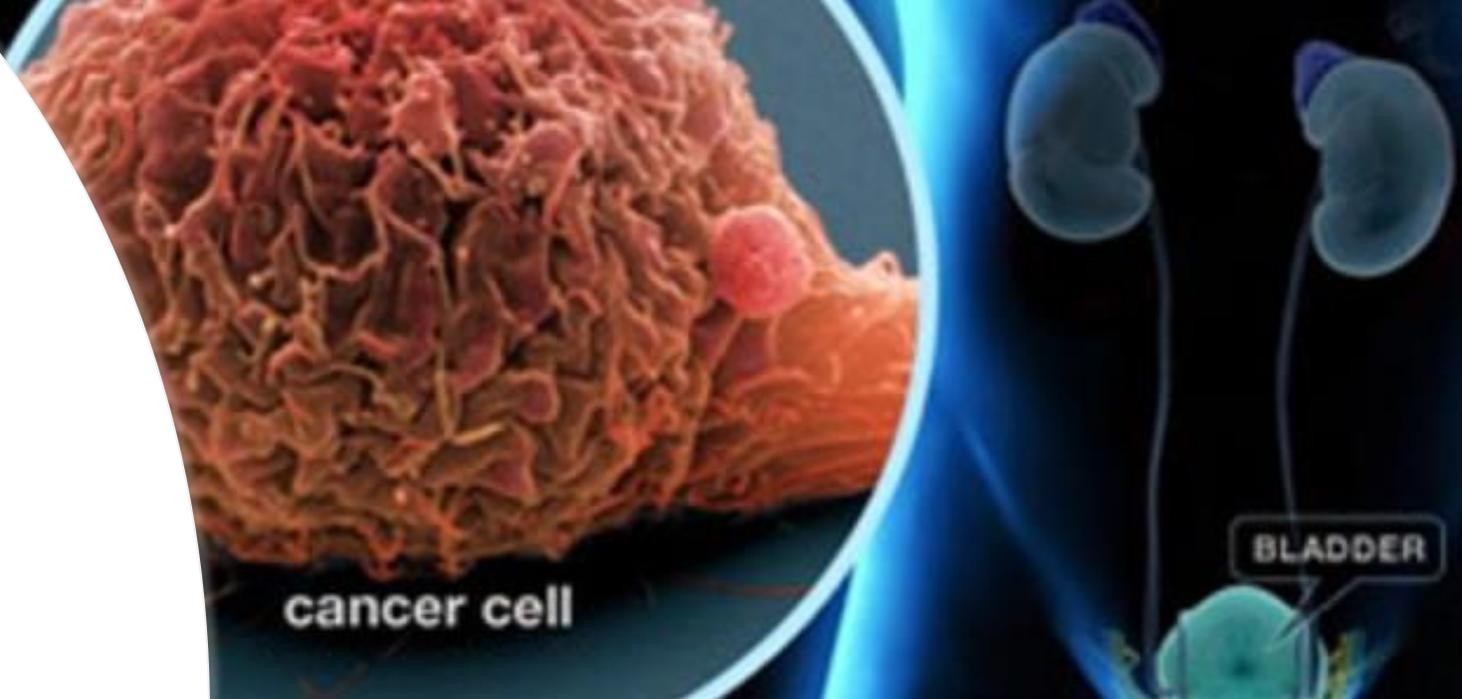
Supporting Patient Education on Bladder Cancer and Risk Factors Specific to Vermont

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Location: UVMHN CVMC: Family Medicine Main Campus

November 2021

Project Mentor: Katina Cummings



Problem: the absence of recommended screening for bladder cancer reduces patient education

“The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for bladder cancer in asymptomatic adults.”¹

Effects:

- Primary Care Physicians are not prompted to discuss bladder cancer risks, signs & symptoms with their patients
- Primary Care Physicians are not prompted to educate patients on risks of bladder cancer specific to their patient populations
- Patients may not understand the importance of reporting hematuria and other signs concerning for bladder cancer

Bladder Cancer in Vermont

Incidence of bladder cancer in Vermont is higher than the national average²

80,000 new cases annually in the US,
17,000 deaths

Annual incidence, per 100,000 people:

	US	VT	Total VT
Cases			
Men	34.6	36.9	136
Women	8.5	10.4	146

Community Perspective

Interview #1: Primary Care Physician at the White River Junction VA Medical Center

- Recently had a patient present with neuropathy and found that arsenic in well water was a relevant environmental risk factor for neuropathy and bladder cancer.
- Does not routinely educate patients on painless hematuria, will perform a diagnostic workup if hematuria reported or found on urinalysis.
- Would integrate patient education on environmental risks from well water if templates were available and if patients were known to use well water in counties known to have elevated arsenic levels in ground water.

Interview # 2: Environmental Health Engineer at the Vermont Department of Health

- 30-55% of Vermonters use private wells for home water.
- The VT Department of Health recommends that Vermonters using private wells for residential water test their water annually for bacteria, and once every five years for inorganic chemicals and alpha radiation.
- It would be helpful if primary care physicians in Vermont asked their patients about well water usage and communicated the VT Department of Health's recommendations for well water testing.

Intervention: encourage Vermont primary care doctors to educate patients on (1) the risks and concerning symptoms for bladder cancer; and (2) well water testing.

Methods: Present this slide deck to primary care physicians, provide a one page patient education tool on bladder cancer, and create a smartphrase in EPIC to add instructions for well water testing to the after visit summary

Bladder Cancer Risks

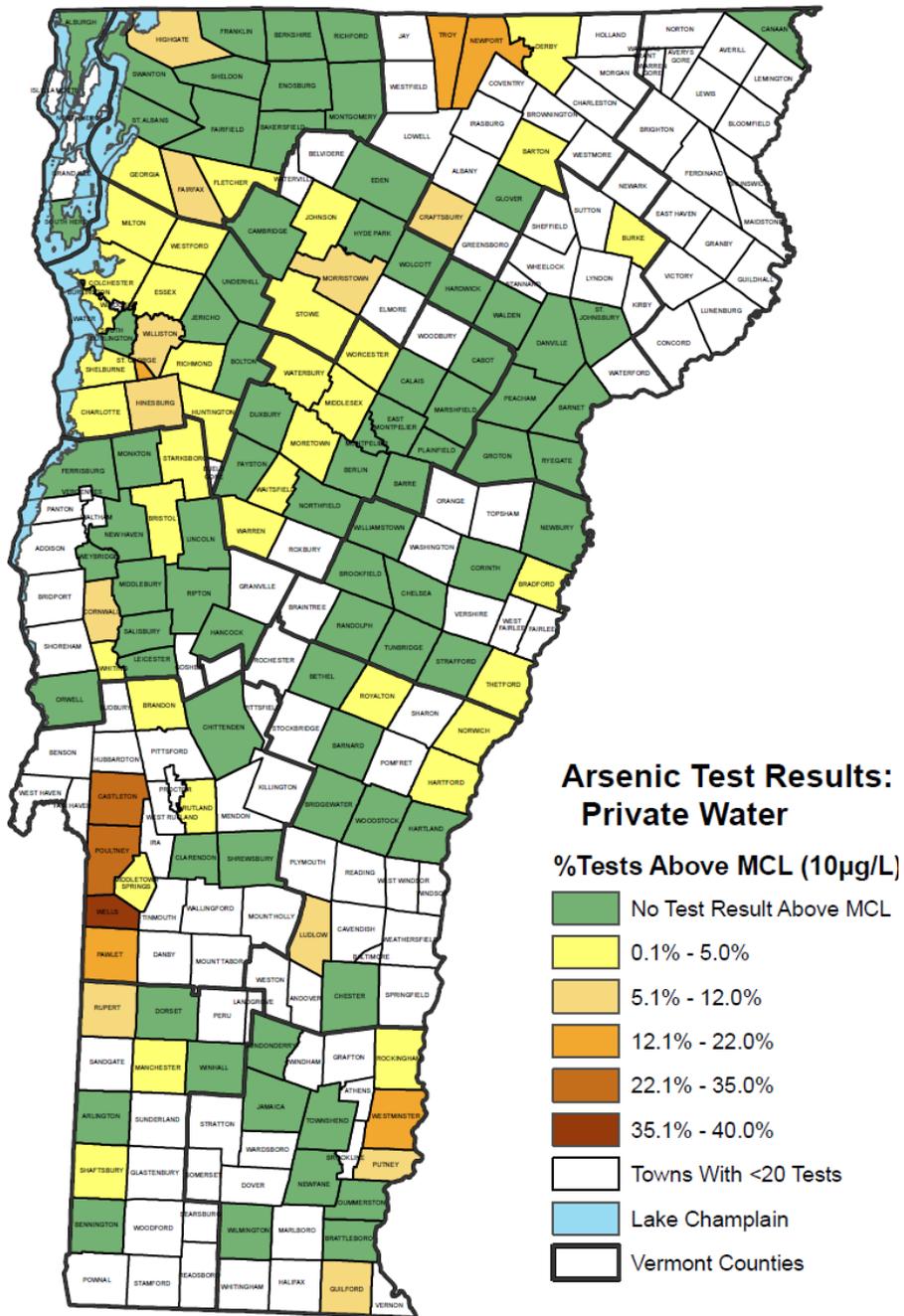
- **Current smokers:** hazard ratio 3.89 for men, 4.65 for women³
- **Arsenic:** relative risk of bladder cancer by arsenic concentration in drinking water⁴
 - 10.1 – 50mcg/L : 1.9
 - 50.1 – 100mcg/L: 8.2
 - >100mcg/L: 15.3
- **Family history + Smoking:** 5.31-fold increased risk amongst individuals with smoking history and family history of bladder cancer⁵

Bladder Cancer Signs

- Painless hematuria
 - 12% incidence of bladder cancer observed in study of 1930 patients with hematuria, including 5% of patients of microscopic hematuria⁶
- Irritative Voiding (especially triad of dysuria, frequency, and urgency)

Bladder Cancer Diagnostic Work Up

- i. Patient reports hematuria or urine dipstick positive for hematuria
- ii. Microscopic urinalysis, history, and physical exam do not evidence other cause for hematuria
- iii. Refer to urology for cystoscopy and possible upper urinary tract CT imaging



Well Water Testing in Vermont

- The VT Department of Health Recommends Testing Well Water Periodically.
- The three test kits are called the **Vermont Homeowner Testing Package**:
 - **Bacteria (Kit A)** \$14 – test every year
 - **Inorganic chemicals (Kit C)** \$100 – test every five years
 - **Gross alpha radiation (Kit RA)** \$45 – test every five years
- If you divide this cost over the course of 5 years, it would equal \$3.60 per month.
- Provide patients helpful instruction for well water testing in the after visit summary using the smartphrase `.WELLWATERTESTING`

RESPONSE

- Physicians have been open to integrating discussion of hematuria into their patient education, especially for patients with risk factors for bladder cancer.
- Physicians are interested in better helping their patients to obtain well water testing recommended by the VT Department of Health.
- Environmental Health Engineers at the Vermont Department of Health have discussed this project at their weekly department meeting and are eager to further collaborate with medical students and primary care physicians to improve usage of recommended well water testing.

Limitations

- To support utilization of appropriate well water testing, outreach to primary care offices throughout the state of Vermont will be necessary.

Strengths

- The recommended adaptations to clinical practice are simple and easy to implement.
- This slide deck can be effectively presented to physicians via teleconference in a short amount of time.
- Can collaborate with the Vermont Department of Health to measure any change in the utilization of well water testing kits after full implementation of this project

Recommendations for Future Projects

- Utilize this slide deck, or an adaptation thereof, to communicate these concepts to primary care offices throughout Vermont.
- Leverage the interest of the VT Department of Health to support physician education on well water testing recommendations.
- Measure the utilization of well water testing kits before and after state-wide physician education to determine if physician intervention is increasing appropriate well water testing.

References

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