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# Hematuria Awareness for Patients

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# Hematuria Awareness for Patients

David Arsanious, MS-3  
Family Medicine Clerkship, July-August 2016  
Community Health Centers of Burlington (CHCB)

With thanks to:

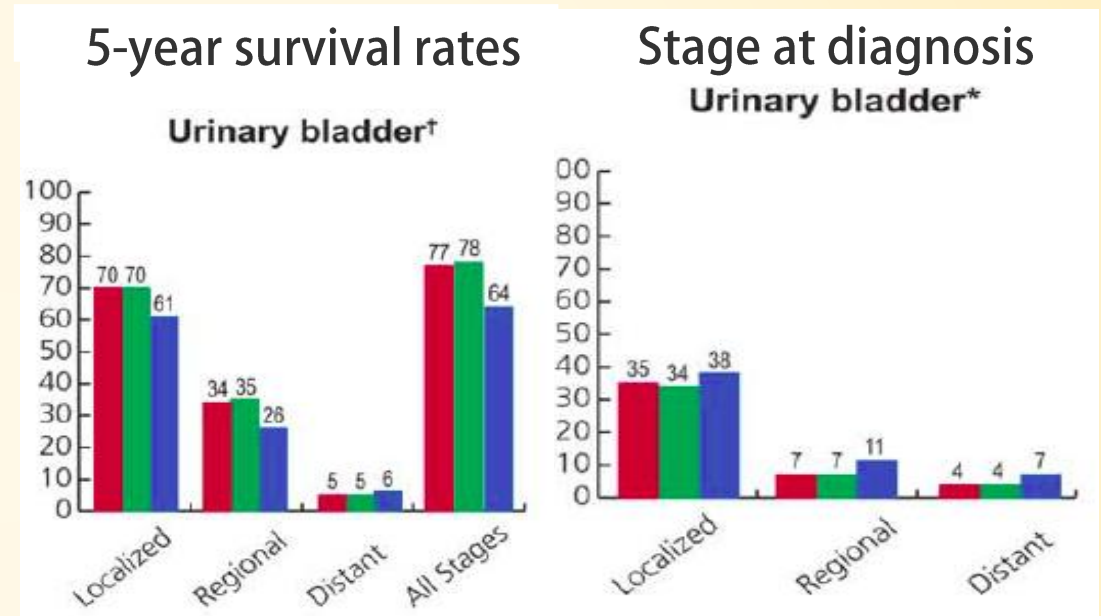
Heather Stein, MD – Family Physician & Clerkship Mentor, CHCB  
Scott Perrapato, DO – Urology, UVM Medical Center  
Kim Anderson – Associate Director, Community Relations & Development, CHCB

# 1) Problem Identification and Description of Need

- In the United States, cancer of the urinary bladder is the most common malignancy of the urinary system, representing an estimated incidence of 76,960 out of 142,190 (54.1%) new cases of urinary system malignancies and 16,390 out of 31,540 (60.0%) of deaths from urinary system malignancies in 2016 [1].
- Accordingly, urinary bladder cancer is estimated to comprise 76,960 out of the 1,685,210 (4.57%) new cancer cases diagnosed in the US in 2016 and 16,390 out of the 595,690 (2.75%) deaths from cancer in the US in 2016 [1].
- In Vermont, the prevalence of bladder cancer exceeds that of the nation: 220 new cases of urinary bladder cancer out of 4,050 new cancer cases in 2016 (5.43%) [1].

## 2a) Problem Identification and Description of Need cont'd.

- The importance of presenting to medical attention as early as possible in the course of bladder cancer can not be understated.
- The marked discrepancy between the five year survival for carcinoma in situ (96%), localized cancer (70%), regionally metastatic (34%), and distant metastatic (5%) represents an exceptional opportunity for improving cure rates by way of strengthening patients' motivation to present to their PCP for evaluation.



\*The proportion of cases of carcinoma in situ of the urinary bladder is 51% in **all races** combined, 52% in **whites**, and 40% in **blacks**.

†The survival rate for carcinoma in situ of the urinary bladder is 96% in **all races** combined, 96% in **whites**, and 90% in **blacks**.

Adapted from: Siegel, R. L., Miller, K. D., & Jemal, A. (2016). Cancer statistics, 2016. *CA Cancer J Clin*, 66(1), 7-30. doi:10.3322/caac.21332

## 2b) Problem Identification and Description of Need cont'd.

- The differential for gross hematuria is vast, often necessitating an extensive work-up despite meticulous history-taking.
- Several prospective studies of individuals evaluated for gross hematuria have found the prevalence of bladder cancer to range from 10 to 20 percent [2-4].
- The spectrum of bladder cancer includes non-muscle-invasive (superficial), muscle-invasive, and metastatic disease, each with its own clinical behavior, biology, prognosis, and treatment [5].
- Although in most cases of reported gross hematuria the etiology is found to be non-malignant (ex. nephritis, admixture of menstrual blood, urethritis, myoglobinuria, etc.) or no cause can be identified, any delay in diagnosing urothelial or squamous cell carcinoma of the bladder represents an immense risk for further progression, invasion, and/or metastasis of what may initially be a readily curable in situ carcinoma.
- For these reasons, the participants in this project believe that the health of individuals in the greater Burlington community stands to benefit significantly from any intervention that would promote the earliest possible reporting of gross hematuria that may be a sentinel event in the progression of bladder cancer.


## 3a) Public Health Cost



- Several internet companies now operate sites that let consumers around the United States search for estimates of typical costs in their area.
- healthcarebluebook.com is one such service, started in 2007, offers an estimate of a “fair price” that consumers can expect to pay in their area.
- From healthcarebluebook.com: “What is the fair price?”
  - “The Fair Price is the reasonable amount you should pay for a medical service. It’s calculated from a nationwide database of medical payment data and customized to your geographic area.” [6]
- While this service offers little explanation in the way of which databases it uses or any significant explanation of its methodology, it is a suitable starting point for comparing medical expenses in a given area.
- For this project, it can be used to compare treatments for bladder cancer depending on the progression of the disease, which as mentioned before is highly dependent on the time between the onset of symptoms and presentation for evaluation.

# 3b) Public Health Cost cont'd.

Search for a procedure, test or service

 Burlington, VT 05401



## Cystoscopy

Total Fair Price: **\$391**

### Fair Price Fee Details

#### Physician Services

**Fee Details:** **Fee:**  
Physician fee for this procedure which is typically performed in the doctor's office. Endoscopy of the urethra and bladder. **\$391**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

## Cystoscopy (with biopsy)

Total Fair Price: **\$2,172**

### Fair Price Fee Details

#### Facility Services

**Fee Details:** **Fee:**  
Price is for an outpatient procedure. Overnight stay is not included. **\$1,446**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

#### Physician Services

**Fee Details:** **Fee:**  
Physician fee. Endoscopy of the urethra and bladder. **\$272**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

#### Anesthesia

**Fee Details:** **Fee:**  
Price is for an average surgery time of 1 hour. Prices may go up or down based upon the actual surgical time required. **\$454**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

## Cystoscopy (destruction of tumors)

Total Fair Price: **\$3,355**

### Fair Price Fee Details

#### Facility Services

**Fee Details:** **Fee:**  
Price is for an outpatient procedure. Overnight stay is not included. **\$2,153**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

#### Physician Services

**Fee Details:** **Fee:**  
Physician fee for this procedure which is typically performed in the doctor's office. Endoscopy of the urethra and bladder, including biopsy and minor treatment. **\$554**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

#### Anesthesia

**Fee Details:** **Fee:**  
Price is for an average surgery time of 1 hour and 15 minutes. Prices may go up or down based upon the actual surgical time required. **\$648**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

# 3c) Public Health Cost cont'd.

Search for a procedure, test or service

 Burlington, VT 05401



## Bladder Removal

Total Fair Price: **\$27,175**

### Fair Price Fee Details

#### Hospital Services

**Fee Details:** **Fee:**  
Price is for a 5 day admission. More days charged at \$1,800 per day. Fewer days will reduce price by \$1,800 per day. **\$20,657**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

#### Physician Services

**Fee Details:** **Fee:**  
Physician fee for procedure and routine postoperative care. Surgical removal of the bladder. **\$4,188**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

#### Anesthesia

**Fee Details:** **Fee:**  
Price is for an average surgery time of 7 hours. Prices may go up or down based upon the actual surgical time required. **\$2,330**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

## Lymph Node Removal (pelvic)

Total Fair Price: **\$2,281**

### Fair Price Fee Details

#### Physician Services

**Fee Details:** **Fee:**  
Physician fee for procedure and routine postoperative care. Laparoscopic removal of pelvic lymph nodes. **\$1,277**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

#### Anesthesia

**Fee Details:** **Fee:**  
Price is for an average surgery time of 2 hours and 15 minutes. Prices may go up or down based upon the actual surgical time required. **\$1,004**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

## Lymph Node Removal (abdominal)

Total Fair Price: **\$15,785**

### Fair Price Fee Details

#### Hospital Services

**Fee Details:** **Fee:**  
Price is for a 1 day admission. More days charged at \$1,800 per day. Fewer days will reduce price by \$1,800 per day. **\$12,325**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

#### Physician Services

**Fee Details:** **Fee:**  
Physician fee for procedure and routine postoperative care. Surgical abdominal lymph node removal. **\$1,952**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)

#### Anesthesia

**Fee Details:** **Fee:**  
Price is for an average surgery time of 4 hours and 15 minutes. Prices may go up or down based upon the actual surgical time required. **\$1,508**

**Pricing Agreement:**  
[Printable Detailed Pricing Agreement](#)



# 4) Community Perspective and Project Support

Scott Perrapato, DO (July 28, 2016)

Director, Genitourinary Oncology Trans-Disciplinary Team -  
University of Vermont Medical Center

Associate Professor, Urology - University of Vermont College of  
Medicine

- Delay in reporting symptoms is plays a major role in unchecked progression of not only bladder cancer, but most genitourinary malignancies
- The most common rationalization for ignoring hematuria is that because it is sporadic at its onset it can be ignored
- Many patients ignore this sign until gross hematuria is present at each voiding or other symptoms (pain, voiding symptoms, constitutional symptoms) accompany it
- Progression of hematuria from sporadic to persistent almost invariably represents further invasion of the disease
- Increasing awareness in patients who have undiagnosed bladder cancers that gross hematuria should never be ignored will prompt them to report this symptom earlier and allow them to begin treatment at a less advanced stage in their disease

Kim Anderson (August 4, 2016)

Associate Director, Community Relations & Development -  
Community Health Centers of Burlington

- CHCB maintains robust advertising efforts throughout Chittenden and Grand Isle counties and on the internet.
  - Examples: outside of CCTA buses, local newspapers (Burlington Free Press, North Ave news), several blogs
- Anecdotal evidence that finding a primary care provider in the Burlington area is notoriously difficult and that CHCB is one of a small number of centers accepting new patients.
  - The aim of this project to inform the public that hematuria is a symptom that should not be ignored would also have the additional effect of letting the public know that CHCB is accepting new patients
- The proposed awareness project could be easily adapted to a variety of print, electronic, and public space media forms.
- This project's combination of a simple message, bright colors, and representative creative photography is unlikely to be ignored.

## 5) Intervention and Methodology

- The goal of the intervention was to develop a simple advertisement for all members of the public that could be easily adapted to presentation in many spaces and media forms.
- Bright colors and poignant, short phrases are expected to attract the greatest attention.
- So as to avoid any stigma, cultural or otherwise, toward a public discussion of urine, including colorful candies as the backdrop of as serious of a topic as this has been thought to have a destigmatizing and calming effect.
- The m&m candies were purchased at Party City in South Burlington, VT. The photography was completed by DA using a Nikon d5200 dSLR camera. Image editing was done in Adobe Photoshop Lightroom 5.7.1 and Adobe Photoshop CC. Translation was completed with Google Translate.
- The merits of including the CHCB logo and contact info were discussed with Kim Anderson and it was agreed that this decision is appropriate and impactful (see “Community Perspective and Project Support”)
- Furthermore, as CHCB is well-tailored to providing services to non-English speaking members of the community two additional considerations were included
  - During the 5-weeks I spent at CHCB, I met with Nepali-speaking patients daily, Somali-speaking patients at least weekly, and French and Arabic speaking patients on multiple occasions
  - Translating the messages included in the advertisement would allow this advertisement to be impactful if displayed in the cultural/religious centers and publications of these communities

## 6a) Results



**RED** in your urine?

SEE YOUR DOCTOR

  
community  
health centers  
OF BURLINGTON

617 Riverside Ave., Burlington  
802-864-6309 • [www.chcb.org](http://www.chcb.org)

## 6b) Results cont'd.



هل رأيت أحمر في البول؟  
تكلم مع طبيبك

  
community health centers  
OF BURLINGTON  
617 Riverside Ave., Burlington  
802-864-6309 • www.chcb.org



Rojos en la orina?  
CONSULTE A SU MÉDICO

  
community health centers  
OF BURLINGTON  
617 Riverside Ave., Burlington  
802-864-6309 • www.chcb.org



Rouge dans votre urine?  
CONSULTEZ VOTRE MÉDECIN

  
community health centers  
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## 7) Evaluation of Effectiveness and Limitations

- As this study represents an intervention that is yet to be implemented, it is necessary to consider a strategy for follow-up on its effectiveness.
- One such model that could be applied would examine retrospective data on patients presenting with gross hematuria prior to 2016 and prospective data on patients presenting with gross hematuria after 2016. Significant outcomes to examine:
  - number of patients who presented with this symptom during equivalent spans of time at CHCB and/or other area primary care practices
  - differences in urinalysis findings from these patients
  - number of referrals for cystoscopy
  - Most importantly: changes in frequency at which bladder cancers of different stages are discovered.
- Limitations:
  - While hematuria is the most common initial symptom of this disease, it is not the only initial symptom and as such this intervention does not address patients whose initial sign may be pain or voiding symptoms or symptoms as a result of metastatic progression
  - Patients who are unable to read any of the languages into which the advertisement was translated will be unable to benefit from it unless informed by another person
  - Some patients may continue to rationalize or minimize the need for evaluation despite this intervention

## 8) Future Directions

- Follow-up on changes in trends of presentation for gross hematuria, urinalysis results, urology/cystoscopy referrals, staging of bladder cancer in the greater Burlington area, as described in “Evaluation of Effectiveness and Limitations.”
- In the event that a significant improvement in bladder cancer outcomes is observed, while controlling for advances in therapy and access to care, this model of health awareness through creative photography and poignant advertisement placement may be adapted for symptoms of or screening tests for other cancers.
  - Initial considerations for a similar campaign:
    - 1) colorectal cancer screening or symptoms
    - 2) lung cancer screening or symptoms

## 9) References

- [1] Siegel, R. L., Miller, K. D., & Jemal, A. (2016). Cancer statistics, 2016. *CA Cancer J Clin*, 66(1), 7-30. doi:10.3322/caac.21332
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