The ImPOURtance of Voiding Prior to Discharge

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Objectives

• Define postoperative urinary retention (POUR).

• Identify risk factors for developing POUR.

• Utilize a voiding algorithm to standardize management of POUR in phase II patients.
University of Colorado Hospital


• Inpatient Pavilion
  - 611 Licensed Beds

• In 2015
  - Over 13,900 OR cases
  - Over 4,000 outpatients
Let’s start from the beginning...

• Risk management case in 2013
  - Patient discharged home after a gynecologic procedure.
  - Later, patient went to emergency department (ED) due to pain and an inability to void.
  - Catheter placed in ED yielding over 3 liters of urine.

• PACU nurse documentation
  - Patient voided, but amount not measured.
  - Nurse communicated exclusively with the anesthesiologist.
Problem

• Nursing and physician practices for managing POUR were inconsistent and needed standardization.
Literature Review


What is POUR?

Postoperative bladder volume
> 400 ml

and unable to void
> 150 ml

Uh...oh...
Urine trouble!
Why is it ImPOURtant?

• Patient safety issue
• Increased lengths of stay
• Increased readmissions and ED visits
• Decreased patient satisfaction
Signs & Symptoms

- Restlessness
- Confusion
- Anxiety
- Hypertension
- Tachypnea
- Tachycardia, Bradycardia, or other Arrhythmias
- Or Asymptomatic
Causes of Urinary Retention

- Obstruction
- Inability to sense bladder fullness
- Bladder hypotonia
Risk Factors for POUR

- Type of Anesthesia
  - Spinal Blocks

- Type of Surgery
  - Urologic Procedures
  - Inguinal Hernia Repair
  - Rectal Procedures
  - Gynecologic Procedures
  - Emergent Surgery

- Medications
  - Opioids
  - Anticholinergics
  - Sympathomimetics
  - Beta Blockers

- Male
- > 65 years-old
- Length of Procedure > 60 min
- Intraoperative Fluid Volume > 1000 ml
Pre-Data Collection

• Informal survey of physicians
  - 21 out of 39 (54%) physicians assumed that patients voided prior to discharge.

• Informal survey of RNs to identify barriers to measuring urine output and bladder scanning.

• All 37 PACU nurses completed a ten question multiple choice test on POUR concepts to assess baseline knowledge.
  - Test average was 33%
  - Knowledge Gap!
The Plan

- Write an addendum to the PACU discharge order set, where “voiding prior to discharge instructions” automatically populates.
- Create an algorithm for PACU nurses to serve as a guideline for managing POUR.
- Educate RNs on POUR concepts.
- Eliminate physical barriers to measuring urine output and post void residuals.
New Physician Order

• Patient must void prior to discharge due to:
  - Spinal
  - Hernia Repair
  - Rectal Procedure
  - Urologic Procedure
  - Gynecologic/Laparoscopic Procedure
  - Past Medical History
  - Other (Specify): _______

• If unable to void within ___ hours post procedure, bladder scan and notify surgeon.
The Plan

- Write an addendum to the PACU discharge order set, where “voiding prior to discharge instructions” automatically populates.

- Create an algorithm for PACU nurses to serve as a guideline for managing POUR.

- Educate RNs on POUR concepts.

- Eliminate physical barriers to measuring urine output and post-void residuals.
Voiding Algorithm

**Risk Factors**
- Spinal Anesthesia
- Type of Surgery
- Length of Procedure
- > 65 years-old
- Male
- Meds: Opioids, Anticholinergics, Sympathomimetics, Beta Blockers
- Intraoperative Fluid Volume > 1000 ml
The Plan

- Write an addendum to the PACU discharge order set, where “voiding prior to discharge instructions” automatically populates.

- Create an algorithm for PACU nurses to serve as a guideline for managing POUR.

- Educate PACU nurses on POUR concepts.

- Eliminate physical barriers to measuring urine output and post void residuals.
POUR Education

• PACU nurses educated on POUR concepts via a PowerPoint presentation.
  - Nurses instructed on implementing the voiding algorithm in Phase II patients with a high-risk for POUR.
  - Introduced to the new order for “voiding prior to discharge instructions.”
POUR Remediation

- Nurses reviewed pre-implementation test results and POUR concepts.
POUR Remediation

• To verify knowledge, nurses answered 2 questions regarding voiding requirements.

POUR Remediation Questions

1. What bladder volume is considered POUR?
   a. > 200 ml
   b. > 250 ml
   c. > 300 ml
   d. > 400 ml

2. What is the minimum volume a patient at risk for POUR should void prior to discharge?
   a. 100 ml
   b. 150 ml
   c. 200 ml
   d. 250 ml

• Post-education test results increased to 100%.
The Plan

- Write an addendum to the PACU discharge order set, where “voiding prior to discharge instructions” automatically populates.
- Create an algorithm for PACU nurses to serve as a guideline for preventing POUR.
- Educate RNs on POUR concepts.
- Eliminate physical barriers to measuring urine output and post void residuals.
Why can’t you hear a pterodactyl going to the bathroom?

Because the “p” is silent.
Outcomes

Chart Audits 2014 data

N = 243

- Documentation of amount voided:
  - Yes: 100%
  - No: 0%

- Bladder scanned if voided less than 150 ml:
  - Yes: 90%
  - No: 10%
Outcomes

Chart Audits 2014 data
N = 243

Physician order to void prior to discharge

- Yes: 45%
- No: 55%
Time to Reevaluate

• Phase II patient returned to Emergency Department with POUR in summer of 2014.
  - No physician order for “voiding prior to discharge instructions.”
  - The Phase I and Phase II PACU nurses assumed that since an order was not written, the patient was not required to void before going home.
Revised Voiding Algorithm

Is patient at risk for POUR?

Outpatient with low risk for POUR

Discharge

Outpatient with high risk for POUR. Advocate for "voiding prior to discharge" order if not already written.

Unable to void

Assess volume by bladder scan

Bladder volume ≤ 400 ml

Notify surgeon of scanned volume. MD must clear patient for discharge.

Bladder volume > 400 ml

Call surgeon for catheterization order

≥ 150 ml

Void

< 150 ml

Discharge

Additional Risk Factors
- Medications: Opioids, Beta Blockers, Anticholinergics, Sympathomimetics
- Length of Procedure > 60 min
- Intraoperative fluid > 1000 ml
- History of Benign Prostatic Hyperplasia (BPH)
- Age > 65 years old

High Risk Procedures
- Spinal Blocks
- Urologic Procedures
- Inguinal Hernia Repair
- Rectal Procedures
- Gynecologic Procedures
- Emergent Surgery
Outcomes

Chart Audits

2015 data (post revised algorithm)

Physician order to void prior to discharge

- Yes: 56%
- Clinician Communication: 30%
- No: 14%
Outcomes

Chart Audits

- 2014  N=243 (original algorithm)
- 2015  N=169 (post revised algorithm)

Documentation of amount voided

- Yes: 2014 (90%), 2015 (95%)
- No: 2014 (10%), 2015 (5%)

Bladder scanned if voided less than 150 ml

- Yes: 2014 (80%), 2015 (85%)
- No: 2014 (20%), 2015 (15%)
Outcomes

Since the 2015 revised voiding algorithm:

• There have been NO recorded readmissions from POUR
• PACU nurses consistently measure urine output and bladder scan appropriate patients.
• Patient care and safety improved in PACU by managing POUR.
Nursing Practice Implications

• You are your patient’s advocate.

• Recognize risk factors for POUR and if patient needs to void prior to discharge.

• Use the voiding algorithm.

• Measure and bladder scan.
Hey, baby. There's a party in my pants.

And urine!

...vited.
References


