

Multidisciplinary Urological Management Program for Geriatric Orthopaedic Trauma Patients with Urinary Retention – reduce urinary catheter time and catheter related urinary tract infection

HC TO, Bonnie SZE, Veronica KAM, YS WOO,
Lydia CHEUNG, CH HO, SY YEUNG,
CF KAN, LY HO, SWH CHAN, WH AU

Queen Elizabeth Hospital, Kowloon Central Cluster



Geriatric Orthopaedic Trauma Patients with Urinary Retention

Impact of a urinary catheter on mobility



I hope I can walk freely without a urine catheter and bag

Worries for patient, family members and healthcare professionals



Catheter-associated UTI (CAUTI)

- UTI is the most common nosocomial infection
- UTI: ~ 40% of all hospital-acquired infections
- 80% related to use of indwelling urinary catheters
- Indwelling urinary catheters
 - ~ 60x more bacteraemia over a 1-year period than patients without catheters
 - 10-40% CAUTI if catheter in situ < 7 days
 - ~100% CAUTI if catheter in situ > 30 days

Rudman D, Hontanosas A, Cohen Z, et al. Clinical correlates of bacteremia in a Veterans Administration extended care facility. *J Am Geriatr Soc* 1988;36:726–32.

Saint (2000). Clinical and economic consequences of nosocomial catheter-related bacteriuria. *Am J Infect Control*.

Top Five Healthcare Acquired Infections by Hospital Group

(HA Prevalence Survey of Infections 2010)

Group 1 hospital	general acute hospitals with 24 hours A&E service
Group 2 hospital	mixed acute & non-acute hospitals
Group 3 hospital	non-acute or infirmary hospitals
Group 4 hospital	psychiatric hospitals
Group 5 hospital	hospitals of special nature

Hospital Group	Infection Type	n (%) ¹
Group 1 (N [*] =447)	Pneumonia	125 (28.0%)
	Surgical site infection	86 (19.2%)
	Urinary tract infection	64 (14.3%)
	Bloodstream infection	57 (12.8%)
	Skin & soft tissue infection	42 (9.4%)
Group 2 (N [*] =73)	Pneumonia	26 (35.6%)
	Urinary tract infection	22 (30.1%)
	Skin & soft tissue infection	11 (15.1%)
	Bloodstream infection	5 (6.8%)
	Lower respiratory tract infection, other than pneumonia	4 (5.5%)
Group 3 (N [*] =15)	Urinary tract infection	5 (33.3%)
	Eye, ear, nose, throat, or mouth infection	3 (20.0%)
	Pneumonia	3 (20.0%)
	Bloodstream infection	2 (13.3%)
Group 4 (N [*] =5)	Skin & soft tissue infection	3 (60.0%)
	Eye, ear, nose, throat, or mouth infection	1 (20.0%)
	Urinary tract infection	1 (20.0%)
Group 5 (N [*] =15)	Pneumonia	5 (33.3%)
	Urinary tract infection	5 (33.3%)
	Bloodstream infection	2 (13.3%)
	Gastrointestinal system infection	1 (6.7%)
	Skin & soft tissue infection	1 (6.7%)
	Surgical site infection	1 (6.7%)

Old practice

Management of urinary retention

- In-patient consultation to urologist for urinary retention
- TWOC 1-2 times with or without alpha blocker
- Book Urology SOPC FU ~ 59 weeks waiting time
- Resulting in delay
- Unnecessary prolonged urethral catheterization and associated complications

Let's have a look at the

Problems

1. High complex team
2. No unified protocol
3. Resources not fully utilized
4. Multiple consultation
5. Unnecessary doctor travel
6. Concerned patients and family



Collaboration between different departments



Eligible Criteria

- Age \geq 65 (both male and female)
- Traumatic case (e.g. #hip, #LL, #pelvis with conservative Mx)
- AROU: post-void residual urine volume \geq 300ml

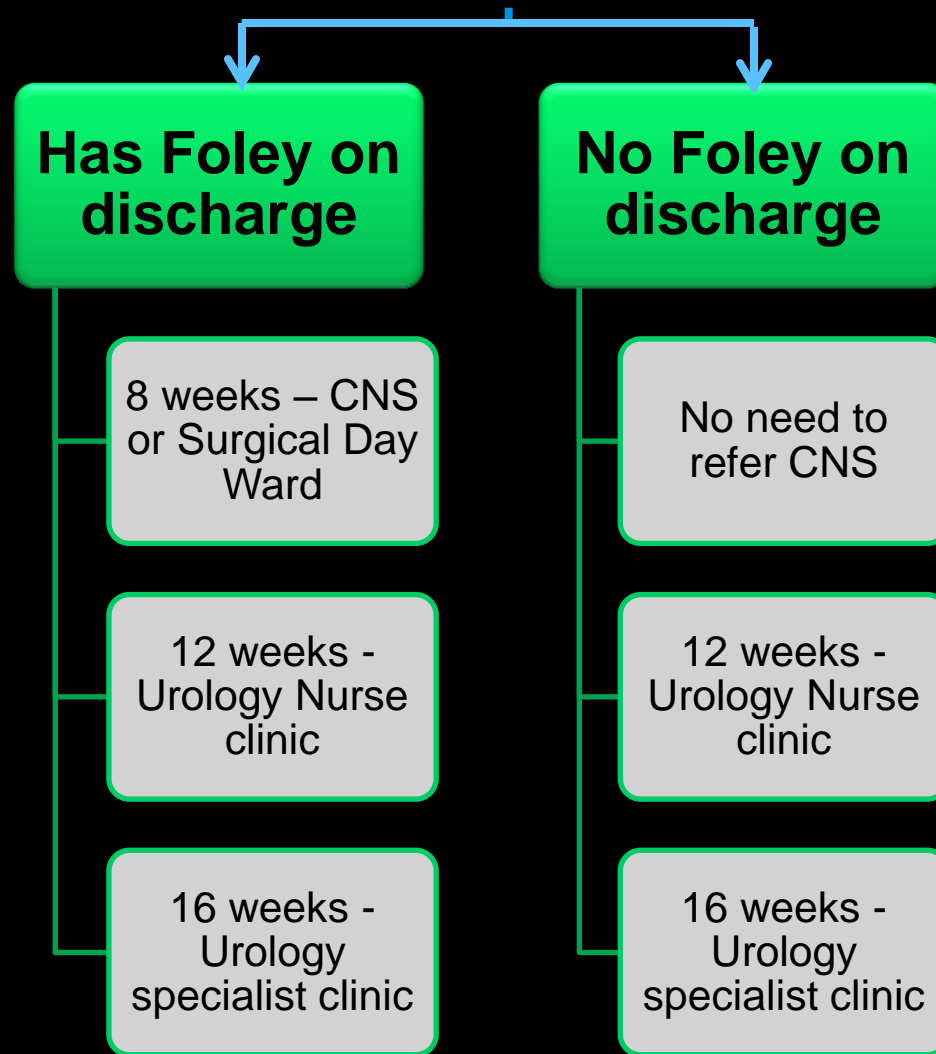
Exclusion criteria:

- Active UTI
- Obstructive uropathy
- Urolithiasis

Pre-requisition:

- Pain control
- Constipation resolved
- Adequate hydration

TWOC program (try wean off Foley catheter every 2 weeks when Foley catheter is due change)



Weeks counted from date of orthopaedic intervention for fractures

We serve patients from QEH to KH, and from hospital to community

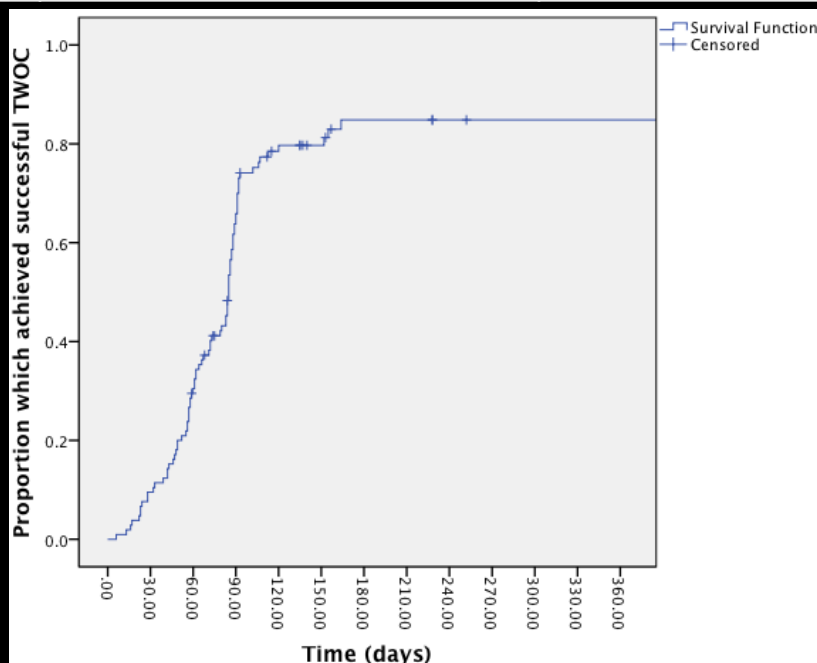


- Review period: date of admission to O&T wards: 28-7-2011 to 19-10-2012.
- One hundred and three patients (n=103) had data available for analysis.
- The mean age was 85.81 (SD 7.2, range 66-100) years.
- There were 43 male patients (41.7%) and 60 female patients (58.3%).

Successful Trial Without Catheter (TWOC)

Total 88 (83.8%) patients had eventually successful TWOC

	No. of success	Percentage	Cumulative percentage
TWOC 30days	10	10.0%	10.0%
TWOC 90days	57	57.0%	67.0%
TWOC 365days	16	16.0%	83.8%



Sub-total TWOC

	No. of success	Percentage
TWOC in ward	18	20.4%
TWOC by CNS	33	37.5%
TWOC in nurse clinic	36	40.9%
TWOC after surgery	1	1.1%

Relationship between UTI and successful TWOC

TWOC (n=103)		UTI		
		Yes	No	Total
< 90 days	Have Foley	25	5	30
	No Foley	14	59	73
Total		39	64	103

- For patients joined TWOC program for 90 days, unsuccessful TWOC patients are in 37.196 times more having UTI in outcome than successful TWOC patients and it is statistically significant with p-value < 0.001

Relationship between successful TWOC and age

- Independent-sample t-test was adopted.
- Age is not a predictor for the outcome of successful TWOC. ($p = 0.443$)
- Advanced age does not exclude the successful of TWOC.

Relationship between successful TWOC and total length of hospitalization (acute length + rehab length)

- Total length of stay (i.e. acute + rehab. LOS) was positively correlated with the time to achieve successful TWOC.
- It is statistically significant with p value = 0.011 with correlation coefficient 0.049.

Relationship between unsuccessful TWOC and others predictors

The relationship between time to achieve successful TWOC and

- CVA $p = 0.056$
- Dementia $p = 0.387$
- BPH $p = 0.852$
- DM $p = 0.628$
- Parkinsonism $p = 0.761$
- Psychiatric illness $p = 0.525$

Encouraging outcomes

1. Shortened urinary catheter time from > 52 weeks to 90 days on average.
2. Reduced catheter-associated UTI and the manpower wastage in catheter management.
3. Dependent factor for length of hospitalization.
4. Speed up urology specialist clinic 1st appointment time from 59 weeks to 16 weeks.

Thank you

