



The Transitional Care of Hospitalized Nursing Home Residents Diagnosed with Urinary Tract Infection: A Retrospective Chart Review

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Background/Literature Review

- Nursing home (NH) residents receiving inappropriate antibiotic treatments for urinary tract infection (UTI) is well documented however, little evidence exists about the accuracy of hospital UTI diagnosis and treatment of NH residents.^{1,2,3}
- UTI are diagnosed differently in NH residents than community dwelling adults due to the presence of asymptomatic bacteriuria (ASB).²
- The Infectious Disease Society of America strongly advises against treatment of ASB.³
- Misdiagnosis of UTIs in hospitalized elderly patients is as high as 40%.⁴
- Inappropriate antibiotic prescribing in emergency departments (ED) can be as high as 75%.⁵
- UTI is a leading nosocomial diagnosis for hospitalized NH residents.⁶
- Lack of documented information about diagnoses and treatments impacts resident outcomes and the quality of care when they return to the NH.
- The documentation shared from hospitals to NHs varies widely.
- Most NH and hospital electronic medical records (EMR) do not communicate which reduces information transfer.

Objectives

The objectives of this study were to determine whether hospital clinicians appropriately diagnosed and treated UTI and to determine the adequacy of EMRs to determine appropriate diagnosis and treatment.

Methods

- IRB approved retrospective cohort study of 3 NHs and 4 hospitals
- Hospital EMR documents shared with NHs upon discharge were reviewed
- Data collection: 3 years using an investigator developed instrument
- Included: Residents at NH 30+ days and transferred to the hospital
- UTI Criteria including signs/symptoms (S/S) per the Cooper Tool¹
- Variables: Age, gender, length of stay, UTI rate and appropriateness, catheter use, S/S, antibiotics used, & hospital shared documents
- Descriptive statistics with mean and SD using both Excel and SPSS

Data Collection Instrument

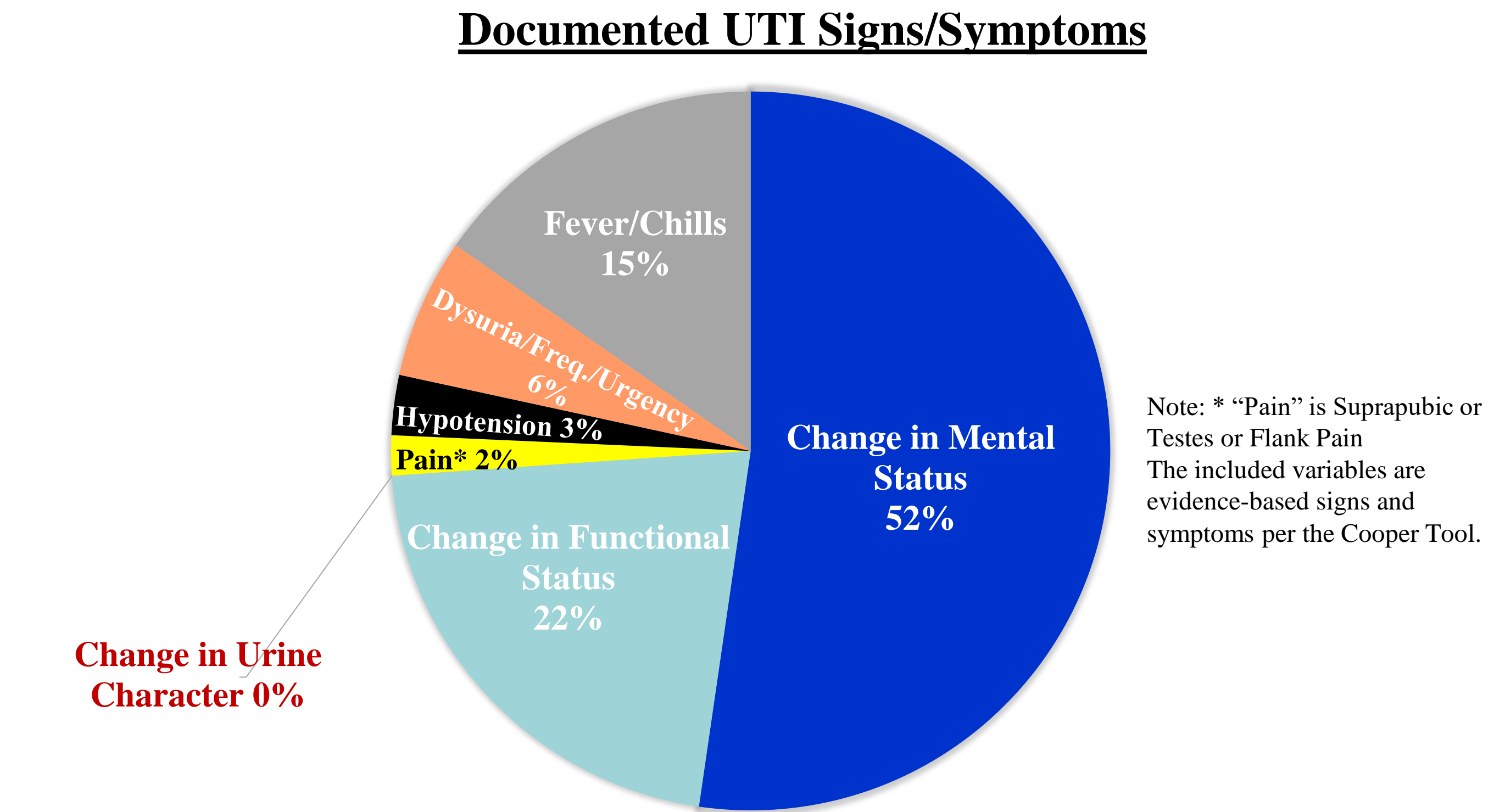
Study ID (Facility + number) _____ (W=x facility, K=xx facility, R=xxx facility)
Today's Date: _____ Age _____ Gender: ☐ M ☐ F Unit: _____
Resident at NH 30 + days? ☐ Yes ☐ No (if no EXCLUDED)
Transferred from NH to hospital and back to NH? ☐ Yes ☐ No (if no EXCLUDED)
Which facility was the resident transferred to? _____
Length of stay: _____
PMH: _____
Documented Diagnosis (all listed in order) for transfer: _____
Documented Signs/Symptoms (All diagnosis except UTI): _____
Documented Signs/Symptoms (UTI Diagnosis only): _____
Non-catheterized resident S/S (check boxes)= Must meet 3 Signs/symptoms
☐ Fever (>2°F above baseline OR >100o or documented "fever")
☐ Dysuria/frequency/urgency
☐ Change in character of urine
☐ New flank or suprapubic or testicular pain or tenderness
☐ Change in mental status
☐ Change in functional status
Catheterized resident S/S (check boxes)= Must meet 2 Signs/symptoms
☐ Fever (>2 degrees F above baseline OR >100 o OR Chills or New onset Hypotension
☐ New flank or suprapubic or testicular pain or tenderness
☐ Change in urine character OR Purulent D/C at insertion site
☐ Change in mental status
☐ Change in functional status
Any other signs/symptoms of UTI not listed above _____
Met S/S for UTI Criteria? ☐ Yes ☐ No
Antibiotic Treatment ☐ Yes ☐ No Date: _____ Antibiotic(s) Used: _____
Was Antibiotic Used Susceptible or Intermediate per UA or CS? ☐ Yes ☐ No
If not, was it Resistant? ☐ Yes ☐ No Other _____
Urine Dipstick done? ☐ Yes ☐ No Date: _____
Urine Dipstick Positive? ☐ Yes ☐ No (Note: Positive=leukocytes or nitrates present)
Urinalysis (UA) Done? ☐ Yes ☐ No Date: _____
UA Positive? ☐ Yes ☐ No Date: _____
(Positive=bacterial levels ≥105 CFU/ml (100,000) in both catheterized/non-catheterized OR bacterial levels ≥102 CFU/ml (20,000) if straight catheterized)
Urine culture and sensitivity? ☐ Yes ☐ No Results included from the facility? ☐ Yes ☐ No
Results of urine C&S : _____
Organism(s) Found: _____
UTI Treatment was (circle) Appropriate OR Inappropriate
(Note: Appropriate UTI= S/S criteria MET + UA positive + appropriate ABX treatment)
Resource: The Cooper Tool©
Was the resident readmitted within the next 2 months of this visit? ☐ Yes ☐ No
Days in between readmit: _____
Reason for readmit: _____

Results

- 621 residents transitioned back to NHs after hospitalization with 79 eligible as having a diagnosis and treatment of UTI
- Average age 78.9 years ± 10.5 years
- 18/79 (22.8%) were appropriately treated, SD=0.42
- 94.9% had discharge summaries & 82.3% had medication lists
- 54.4% had admitting history & physicals with only 11.4% having labs
- 111 of 185 total documented symptoms were UTI symptoms

Study Characteristics			
Variable	N=79	Percentage	SD
Female	57	72.2	0.45
Male	22	27.8	0.45
Total UTI Cases*	79	12.7	0.33
Total Appropriate** All residents	18	22.8	0.42
Appropriate** w/ Indwelling Catheter	10	56	0.33
Appropriate**w/o Indwelling Catheter	8	13	0.30

SD=Standard Deviation; *Total transferred was 621; **Appropriate diagnosis and treatment of UTI per Cooper Tool



Discussion & Conclusion

- EMR review showed a high percent of inappropriately treated UTIs
- Several of the diagnosed and treated UTIs were missing UTI-specific S/S with only non-UTI S/S documented in the patient EMR.
- Change in mental status was often the only documented UTI symptom, but confusion alone is not a supported sign of UTI.⁷
- A limitation was the inconsistent documentation transfer making it difficult for researchers to discern definitively (in some cases) appropriate hospital UTI diagnosis and treatment.
- Improved documentation and a consistent transitional care process to transfer documentation between hospital and NHs to support diagnosis and treatment is needed.

References

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