**Table S**. Independent variables for UTI related hospitalization or ER visits with p ≤0.2 in bivariate analysis

|  |  |  |
| --- | --- | --- |
| **Category** | **Title** | **Operationalization** |
| **Demographics** |
| Age | Age (mean) | Age continuous |
| Age squared (mean) | Age squared |
| Age cubed (mean) | Age cubed |
| Sex | Sex | Binary: Male/Female |
| **Previous history and diagnosis** |
| Inpatient Stay 14 Days Prior to home care admission  | Discharged from skilled nursing facility, long-term nursing facility or long-term care hospital | Binary: Yes/No |
| Patient was not discharged from an inpatient facility | Binary: Yes/No |
| Prior Conditions | Disruptive or socially inappropriate behavior | Binary: Yes/No |
| Indwelling/suprapubic catheter | Binary: Yes/No |
| Impaired decision-making | Binary: Yes/No |
| Intractable pain | Binary: Yes/No |
| Memory loss | Binary: Yes/No |
| No inpatient facility discharge and no change in medical or treatment regimen in past 14 days | Binary: Yes/No |
| Urinary incontinence | Binary: Yes/No |
| Diagnosis | Arthritis | Binary: Yes/No |
| Cardiac dysrhythmias | Binary: Yes/No |
| Cerebral degeneration | Binary: Yes/No |
| Dementia | Binary: Yes/No |
| Diabetes | Binary: Yes/No |
| Heart failure | Binary: Yes/No |
| Hypertension | Binary: Yes/No |
| Neurological disorder | Binary: Yes/No |
| Peripheral artery disease | Binary: Yes/No |
| Skin ulcer | Binary: Yes/No |
| Stroke | Binary: Yes/No |
| Current Condition  | Therapies: Enteral nutrition | Binary: Yes/No |
| Therapies: Intravenous or infusion therapy | Binary: Yes/No |
| Therapies: Parenteral nutrition (TPN or lipids) | Binary: Yes/No |
| **Risk for hospitalization** |
| Risk for Hospitalization | Taking five or more medications | Binary: Yes/No |
| History of falls | Binary: Yes/No |
| Recent decline in mental, emotional, or behavioral status | Binary: Yes/No |
| Multiple hospitalizations | Binary: Yes/No |
| Overall Status: Which description best fits the patient’s overall status? | 4 categories * Stable
* Temporarily facing high health risk(s) but is likely to return to being stable
* Remaining in fragile health and have ongoing high risk
* Serious or unknown
 |
| Risk Factors | Smoking | Binary: Yes/No |
| Living Condition | Lives alone | Binary: Yes/No |
| Lives with others | Binary: Yes/No |
| Sensory Status | Vision impairment | Binary: Yes/No |
| Hearing impairment | Binary: Yes/No |
| Understanding verbal content | 3 categories* Understands
* Usually
* Sometimes/Rarely/Never or Unable to assess
 |
| Speech expression | 3 categories* No impairment
* Minimal
* Moderate/Severe/Unable or Nonresponsive
 |
| Frequency of pain | 3 categories* None
* No interference activity or less than daily
* Daily not constant or all the time
 |
| **Integumentary Status** |
|  | Risk of Developing Pressure Ulcer? | Binary: Yes/No |
|  | Having at least one Unhealed Pressure Ulcer at Stage II or Higher | Binary: Yes/No |
|  | Stage of most problematic unhealed (observable) pressure ulcer | 6 categories * None
* Stage 1
* Stage 2
* Stage 3
* Stage 4
* Unstageable
 |
| Having Surgical wound | Binary: Yes/No |
|  | Status of most problematic unhealed (observable) surgical wound | 4 categories * None
* Newly epithelialized
* Fully or Early/Partial granulation
* Not healing
 |
|  | Skin Lesion or Open Wound | Binary: Yes/No |
| **Respiratory Status** |
| Shortness of breath | 5 categories* Never
* When walking 20feets or stairs
* Moderate exertion
* Minimal exertion
* At rest
 |
|  | Respiratory Treatments at Home (Any) | Binary: Yes/No |
| **Elimination Status** |
|  | UTI Treatment in Past 14 Days | Binary: Yes/No |
|  | Urinary Catheter Presence | Binary: Yes/No |
|  | Urinary incontinent | Binary: Yes/No |
|  | When Urinary Incontinence Occurred | 4 categories* None/Timed voiding/Occasional stress incontinence
* Night or day only
* Day and night
* Urinary catheter
 |
|  | Bowel Incontinence Frequency | 6 categories* Never, rarely or unknown
* Less than once or one to three times weekly
* Four to six times weekly
* Daily
* More often than once daily
* Bowel ostomy
 |
| Ostomy for Bowel Elimination  | 2 categories* None
* Has ostomy but not related or related to an inpatient stay
 |
| **Neuro/Emotional/Behavioral Status** |
|  | Cognitive Functioning | 5 categories* Alert/oriented
* Requires prompting
* Requires assistance
* Requires considerable assistance,
* Totally dependent
 |
|  | When Confused | 4 categories* Never
* In new or complex situations or On awakening or at night only
* During the day and evening but not constantly
* Constantly or nonresponsive
 |
|  | When Anxious | 4 categories* None
* Less than Daily
* Daily but not Constant
* All of the Time or nonresponsive
 |
|  | Little interest or pleasure in doing things | 4 categories * Not at all
* Several days
* More than half or nearly every
* Other Assessment-Further Eval or No Further Eval needed
 |
|  | Feeling down, depressed, or hopeless? | 4 categories * Not at all
* Several days
* More than half or nearly every
* Other Assessment-Further Eval or No Further Eval needed
 |
|  | Patient has physical aggression, delusional or verbal disruption | Binary (yes or no) |
|  | Patient has impaired decision making | Binary (yes or no) |
| Patient has a memory deficit | Binary (yes or no) |
| Frequency of Disruptive Behavior Symptoms | 3 categories* Never
* Less than once a month, once a month, or several times each month
* Several times a week or at least daily
 |
| **ADL/IADLs** |
|  | Grooming | 4 categories* Independent
* Grooming utensils must be placed
* Someone must assist
* Dependent
 |
|  | Dress Upper Body | 4 categories* Independent
* Able if clothing is laid out
* Someone must assist
* Dependent
 |
|  | Dress Lower Body  | 4 categories* Independent
* Able if clothing is laid out
* Someone must assist
* Dependent
 |
|  | Bathing  | 6 categories* Independent or Use of Device
* Intermittent Assistance
* Requires Presence
* Bedside/Sink
* Bedside/Sink with Assistance
* Dependent
 |
|  | Toilet Transferring | 5 categories* Independent
* Assistance
* Bedside
* Bedpan
* Dependent
 |
|  | Toileting Hygiene  | 4 categories* Independent,
* Able if supplies/implements are laid out
* Someone must assist
* Dependent
 |
|  | Transferring | 6 categories* Independent
* Minimum Assistance
* Bear Weight and Pivot
* No Pivot with Assistance
* Bedfast but able to turn
* Bedfast
 |
|  | Ambulation/Locomotion | 7 categories* Independent
* Need One-Handed Device
* Need Two-handed Device
* Need Assistance
* Chairfast, Able to Wheel Self
* Chairfast, Unable to Wheel Self
* Bedrest
 |
|  | Feeding or Eating | 4 categories* Independent
* Intermittent assistance
* Someone must assist
* Tube feeding or gastrostomy
 |
|  | Prepare Light Meals  | 3 categories* Independent
* Not Regular Basis
* Dependent
 |
|  | Ability to Use Telephone | 6 categories* Independent/No phone
* Specially adapted telephone
* Difficulty with placing calls
* Answer the telephone only some of the time
* Unable to answer but can listen if assisted
* Dependent
 |
|  | Prior Functioning – Ambulation | 3 categories* Independent
* Some Help
* Dependent
 |
|  | Prior Functioning – Household tasks | 3 categories* Independent
* Some Help
* Dependent
 |
|  | Prior Functioning – Self-Care | 3 categories* Independent
* Some Help
* Dependent
 |
|  | Prior Functioning – Transfer | 3 categories* Independent
* Some Help
* Dependent
 |
|  | Fall Risk | 3 categories* No Assessment
* No Risk
* Risk
 |
| **Medication & Medication Management** |
|  | Drug Regimen Review: Did a complete drug regimen review identify potential clinically significant medication issues? | Binary: Yes/No |
|  | Management of Injectable Medications | 4 categories* No injectable meds or Independent
* Preparation needed
* Reminders needed
* Dependent
 |
|  | Management of Oral Medications | 4 categories* No oral meds or independent
* Preparation needed
* Reminders needed
* Dependent
 |
|  | Prior Medication Management– Injectable Medications | 3 categories* No injectable meds or Independent
* Some Help
* Dependent
 |
|  | Prior Medication Management – Oral Medications | 3 categories* No oral meds or independent
* Some Help
* Dependent
 |
| **Care Management** |
|  | ADL assistance | 4 categories * No assistance needed
* Non-agency caregiver(s) currently provides assistance
* Non-agency caregiver(s) needs training
* Non-agency caregiver(s) are not likely to provide assistance, unclear or no caregiver
 |
|  | IADL assistance | 4 categories* No assistance needed
* Non-agency caregiver(s) currently provides assistance
* Non-agency caregiver(s) needs training
* Non-agency caregiver(s) are not likely to provide assistance, unclear or no caregiver
 |
|  | Medication administration | 4 categories* No assistance needed
* Non-agency caregiver(s) currently provides assistance
* Non-agency caregiver(s) needs training
* Non-agency caregiver(s) are not likely to provide assistance, unclear or no caregiver
 |
|  | Assist - Procedures/treatments | 4 categories* No assistance needed
* Non-agency caregiver(s) currently provides assistance
* Non-agency caregiver(s) needs training
* Non-agency caregiver(s) are not likely to provide assistance, unclear or no caregiver
 |
|  | Equipment management | 4 categories* No assistance needed
* Non-agency caregiver(s) currently provides assistance
* Non-agency caregiver(s) needs training
* Non-agency caregiver(s) are not likely to provide assistance, unclear or no caregiver
 |
|  | Safety assistance | 4 categories* No assistance needed
* Non-agency caregiver(s) currently provides assistance
* Non-agency caregiver(s) needs training
* Non-agency caregiver(s) are not likely to provide assistance, unclear or no caregiver
 |
|  | Advocacy assistance | 4 categories* No assistance needed
* Non-agency caregiver(s) currently provides assistance
* Non-agency caregiver(s) needs training
* Non-agency caregiver(s) are not likely to provide assistance, unclear or no caregiver
 |
|  | ADL/IADL assistance | 5 categories* No assistance received or unknown
* Received, but less often than weekly
* One to two times per week
* Three or more times per week
* At least daily
 |
|  | Therapy Need | Continuous (Replaced outliers > 60 with mean) |
| **Medication Regime** |
|  | Analgesics, narcotic | Binary: Yes/No |
|  | Aldosterone antagonists | Binary: Yes/No |
| Antiarthritics | Binary: Yes/No |
|  | Antibacterials and antiseptics, general | Binary: Yes/No |
| Antibacterials, urinary | Binary: Yes/No |
|  | Antibiotics, other | Binary: Yes/No |
|  | Anticoagulants | Binary: Yes/No |
|  | Anticonvulsants | Binary: Yes/No |
|  | Anti-diarrheals | Binary: Yes/No |
| Antimalarials | Binary: Yes/No |
| Antinauseants | Binary: Yes/No |
| Antiparasitics | Binary: Yes/No |
| Antiparkinson agents | Binary: Yes/No |
| Antispasmodics, Anticholinergics | Binary: Yes/No |
| Anti-ulcer and other GI drugs | Binary: Yes/No |
|  | Cardiovascular preparations, other | Binary: Yes/No |
|  | Cholesterol reducers | Binary: Yes/No |
|  | Diabetic therapy | Binary: Yes/No |
|  | Diuretics | Binary: Yes/No |
|  | Emollients protectives | Binary: Yes/No |
|  | Folic acid preparations | Binary: Yes/No |
| Fungicide | Binary: Yes/No |
| Glucocorticoids | Binary: Yes/No |
| Hematinic | Binary: Yes/No |
| Laxatives | Binary: Yes/No |
| Mineralocorticoids | Binary: Yes/No |
|  | Multivitamins | Binary: Yes/No |
|  | Muscle relaxants | Binary: Yes/No |
|  | Other hormones | Binary: Yes/No |
|  | Other hypotensives | Binary: Yes/No |
| Parasympathetic agents | Binary: Yes/No |
|  | Psychostimulants/Antidepressants | Binary: Yes/No |
|  | Psychotropics | Binary: Yes/No |
|  | Streptomycins | Binary: Yes/No |
|  | Sulfonamides | Binary: Yes/No |
|  | Tetracyclins | Binary: Yes/No |
|  | Thyroid preparations | Binary: Yes/No |
|  | Trimethoprim | Binary: Yes/No |
|  | Unclassified drug products | Binary: Yes/No |
|  | Vasodilators: Coronary | Binary: Yes/No |
|  | Vitamin K Preparations | Binary: Yes/No |
|  | Vitamins, Water soluble | Binary: Yes/No |
| **Vital Signs** |
|  | Pulse | Continuous |
|  | Body temperature | High temperature (oral > 38.2°C (100.8 °F), axillary (the armpit) > 37.0°C (98.6 °F)) vs. all others (normal + low) |