

Web Table 1 All patient- and facility-level covariates

Covariate	Data Source		
	Medicare/Medicaid Claims	MDS	OSCAR
PATIENT-LEVEL			
Calendar year	X		
Gender	X		
Age	X		
Education		X	
BMI		X	
Race		X	
State	X		X
Time from nursing home admission to index date	X		
Cardiovascular morbidity			
Myocardial infarction	X		
Cardiac arrhythmia	X		
Other cardiac dysrhythmias	X		
Other cardiac conduction disturbances	X		
Ischemic heart disease	X		
Hypertension	X		
Congestive heart failure	X		
Other cardiovascular disease	X		
Hospitalization for circulatory system disorder	X		
Coronary artery disease	X		
Cerebrovascular disease			
	X		
Psychiatric morbidity			
Dementia	X	X	
Alzheimer's disease		X	
Psychotic disorder	X		
Depressive disorder	X	X	
Anxiety disorder	X	X	
Alcohol abuse or dependence	X		
Drug abuse or dependence	X		
Delirium	X	X	
Delusions		X	
Mental retardation	X		
Sleep disorder	X		
Personality disorder	X		
Other mental disorder	X		
Cognitive function		X	
Verbally/physically abusive behavior		X	
Non-aggressive behavioral problems		X	
Other conditions			
Obesity	X		
Diabetes	X		
Seizures/epilepsy	X		
Parkinson's disease	X		
Multiple sclerosis	X		
Electrolyte abnormalities	X		
Electroconvulsive therapy procedure codes	X		
Organ transplant	X		
Home oxygen use	X		
Hospice care	X		

Covariate	Data Source		
	Medicare/Medicaid Claims	MDS	OSCAR
Functional impairment		X	
General indicators of comorbidity			
Charlson Comorbidity Index	X		
Number of different drugs (generic entities) received	X		
Number of outpatient medical services	X		
Number of days hospitalized for any condition	X		
Number of days in nursing home	X		
Other health conditions, treatments and services			
Admitted from psychiatric hospital		X	
Bedfast		X	
Sleeps all/most of the day		X	
Unclear or no speech		X	
Alzheimer/dementia unit		X	
Psychological therapy		X	
Mood/behavioral intervention		X	
Medication history			
Antidepressants	X		
Hypnotic agents	X		
Other psychoactive medication (i.e., barbiturate, non-benzodiazepine anxiolytic, stimulant/ADHD medication, lithium, valproate, carbamazepine, lamotrigine)	X		
Dementia treatment	X		
Anti-arrhythmia medication	X		
FACILITY-LEVEL			
Number of beds in facility			X
Hospital based			X
Part of multi-facility ownership structure (chain)			X
For profit			X
Government ownership			X
Nonprofit ownership			X
Religious based nonprofit			X
Occupancy rate			X
Proportion of residents on Medicaid			X
Proportion of residents on Medicare			X
Proportion private pay/private insurance residents			X
Alzheimer's special care unit			X
Any non-Alzheimer's special care unit			X
Organized group of family members			X
Quality Indicators			
Proportion residents bedfast			X
Proportion residents chair fast			X
Proportion with facility acquired bedsores			X
Proportion with restraints			X
Proportion on psychoactive medicines			X
Proportion with symptoms in behavior program			X
Proportion with catheter			X
Proportion with contractures			X
Total number of deficits			X
Staffing			

Covariate	Data Source		
	Medicare/Medicaid Claims	MDS	OSCAR
Team-based physician care			x
No physicians available ⁽¹⁾			x
Mental health staffing			x
Residents			
Proportion with dementia			x
Proportion with psychiatric diagnosis			x
Proportion with signs/symptoms of depression			x
Urban vs. rural setting	Source: Rural-Urban Commuting Areas file		

⁽¹⁾ No physician on staff who supervises the care of residents when the attending physician is unavailable.