

ICF-Enhanced ESRD Case Scenario

Case Scenario #01.ESRD.2006

JP is an 83 year-old man with end-stage renal disease (ESRD) maintained on dialysis for the past 9 years secondary to hypertensive nephrosclerosis. JP did well on dialysis for a number of years, but over the last few months he has been described as “declining”. Several months ago he was hospitalized for “confusion and weakness”. He had become too weak to get out of the bathtub without assistance. Workup was negative for an infectious process. An MRI of the brain showed cerebral cortex volume loss consistent with chronic ischemic microvascular disease. An echocardiogram showed severe aortic stenosis, mitral regurgitation, left and right atrial dilatation, and severely increased right ventricular systolic pressure, consistent with pulmonary hypertension.

JP was not deemed to be a good candidate for aortic valve replacement and declined surgical intervention. He was seen in consultation by a physical therapist who recommended a wheelchair. Placement in a nursing home was also recommended, but JP adamantly refused nursing home placement. He was discharged home in the care of his son. Over the following six weeks, JP had two more hospitalizations for “weakness, confusion, and aspiration pneumonia”. His serum albumin was noted to have declined from normal to 2.9 g/dL. On his most recent admission he was noted to be hypophosphatemic with a serum phosphorus of 1.9 mg/dL. JP’s pre-dialysis BUN of 16 was also consistent with poor protein intake. His creatinine declined from 8.3 to 5 - consistent with decreasing muscle mass.

JP had other medical problems including a 5.8 cm abdominal aortic aneurysm. While surgery is usually recommended for an aneurysm larger than 5 cm in diameter, JP had also declined this surgery. Additional conditions identified in the medical record were secondary hyperparathyroidism, degenerative joint disease, bilateral hip replacement from osteoarthritis, peripheral neuropathy secondary to peripheral vascular disease, and coronary artery disease status post myocardial infarction in 1999.

Two months prior to his death, JP had a PEG feeding tube inserted because of the increasing problem with recurrent aspiration – thought secondary to worsening dementia and swallowing difficulties. He was transferred to a nursing home for “long-term rehabilitation.” He continued dialysis three times a week. The patient continued to do poorly with “increasing weakness and frailty” thought to be due to the “combination of age and his multiple medical problems”.

JP’s cognitive status was noted to be generally confused and disoriented. Restraints were used at times to prevent harm. On his final admission to the hospital JP vomited and aspirated. After a detailed discussion between the patient’s attending nephrologists and the family, it was decided to stop dialysis and go to “a comfort care approach”. Tube feedings were stopped. The patient was transferred back to the nursing home for comfort care measures. He died several days later.

Description of scenario using ICD-9-CM:

585.6 End stage renal disease

Comorbid Conditions

290.41 Vascular dementia with delirium
787.2 Dysphagia
507.0 Pneumonitis due to solids and liquids - inhalation of food and vomitus
396.2 Mitral valve insufficiency and aortic valve stenosis
441.4 Aortic aneurysm – Abdominal, without mention of rupture
414.9 Chronic ischemic heart disease, unspecified

Description of scenario using the ICF:**ICF Component: Body Functions and Structures****ICF Domain: Structures of the nervous system**

s110 Structure of brain
 s1100 Structure of cortical lobes
 s11009 Structure of cortical lobes, unspecified (atrophy)

ICF Domain: Structures of the cardiovascular ...and respiratory system

s410 Structure of cardiovascular system
 s4100 Heart
 s41000 Atria (atrial dilatation)

ICF Domain: Structures related to the digestive, metabolic and endocrine systems

s530 Structure of stomach (due to PEG tube)

ICF Domain: Structure related to the genitourinary and reproductive system

s610 Structure of urinary system
 s6100 Kidneys (due to nephrosclerosis)

ICF Domain: Mental Function***Global mental function***

b110 Consciousness function
 b1100 State of consciousness

b114 Orientation functions
 b1149 Orientation function, unspecified

b117 Intellectual functions

b126 Temperament and personality function
b1261 Agreeableness

ICF Domain: Functions of the cardiovascular, hematological, immunological and respiratory system

Functions of the cardiovascular system

b410 Heart functions
b4103 Blood supply to the heart

ICF Domain: Functions of the digestive, metabolic and endocrine systems

Functions related to the digestive system

b510 Ingestion function
b51059 Swallowing, unspecified

b5106 Regurgitation and vomiting (as evidence by aspiration pneumonia)

ICF Domain: Genitourinary and reproductive functions

Urinary functions

b610 Urinary excretory functions
b6100 Filtration of urine

ICF Domain: Neuromusculoskeletal and movement related functions

Muscle functions

b730 Muscle power functions
b7309 Muscle power functions, unspecified

b740 Muscle endurance functions
b7409 Muscle endurance functions, unspecified

ICF Component: [Activities and Participation](#)

ICF Domain: General tasks and demands

d230 Carrying out daily routines
d2309 Carrying out daily routines, unspecified

ICF Domain: Mobility

Changing and maintaining body position

d410 Changing basic body position
d4104 Standing

Walking and moving

d450 Walking
d4509 Walking, unspecified

ICF Domain: Self Care

d510 Washing oneself
d5109 Washing oneself, unspecified

d520 Caring for body parts
d5209 Caring for body parts, unspecified

d530 Toileting
d5309 Toileting, unspecified

d540 Dressing
d5409 Dressing, unspecified

ICF Domain: Interpersonal interactions and relationship

Particular interpersonal relationships

d760 Family relationships
d7600 Parent-child relationships

ICF Component: Environmental Factors

ICF Domain: Products and technology

e120 Products and technology for personal indoor and outdoor mobility and transportation
d1201 Assistive products and technology for personal indoor and outdoor mobility and transportation

ICF Domain: Support and relationships

e310 Immediate family

ICF Domain: Services, systems, and policies

e580 Health services, systems, and policies
e5802 Health policies