

## SUPPLEMENT

Critical illness during hospitalization was defined by the presence of an *ICD9-CM* code for any one of the following conditions:

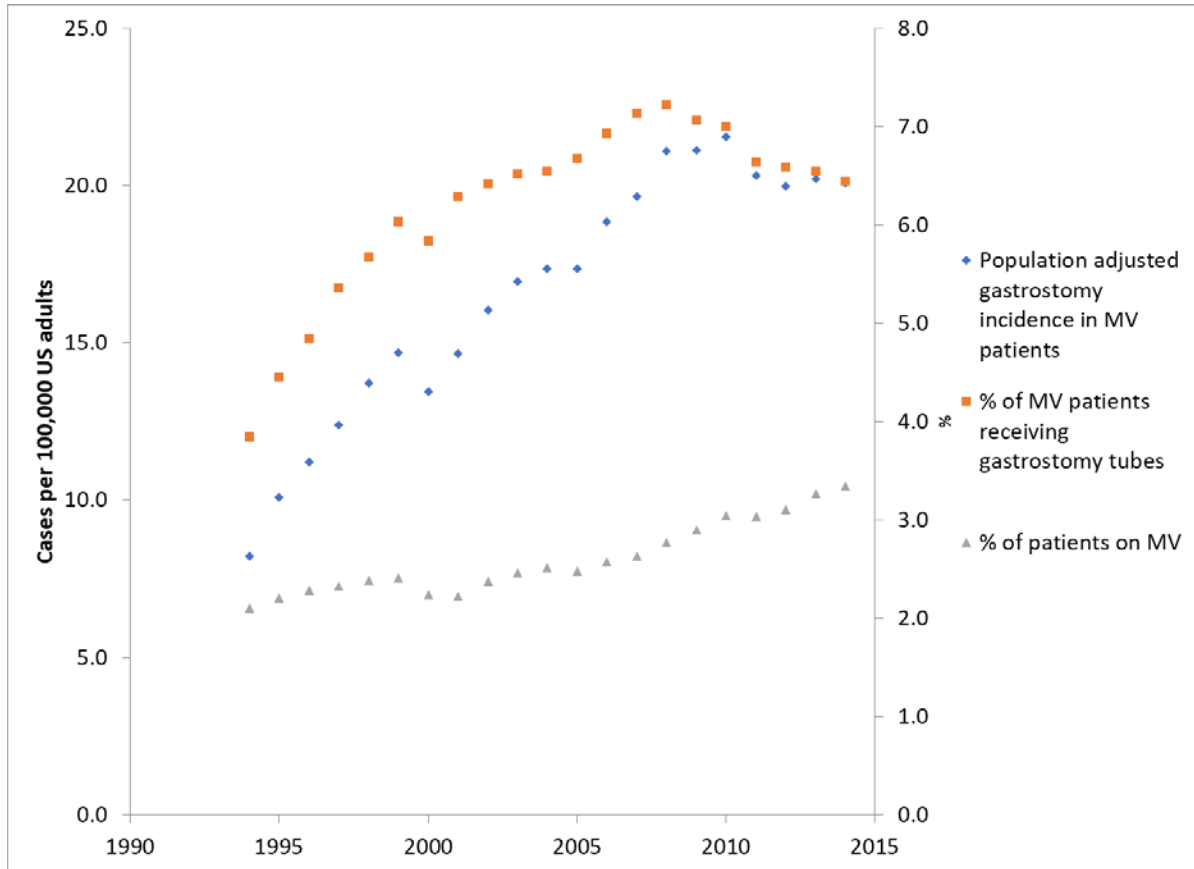
Severe Sepsis	Sepsis (038, 020.0, 790.7 117.9, 112.4, or 112.81) AND One form of organ failure: - Respiratory: 518.81, acute respiratory failure; 518.82, acute respiratory distress syndrome; 518.85, acute respiratory distress syndrome after shock or trauma; 786.09, respiratory insufficiency; 799.1, respiratory arrest; 96.7x, ventilator management - Cardiovascular: 458.0, hypotension, postural; 785.5, shock; 785.51, shock, cardiogenic; 785.59, shock, circulatory or septic; 458.8 hypotension, specified type, not elsewhere classified; 458.9, hypotension, arterial, constitutional; 796.3, hypotension, transient - Renal: 584, acute renal failure; 580, acute glomerulonephritis; 585 renal shutdown, unspecified; 39.95, hemodialysis - Hepatic: 570, acute hepatic failure or necrosis; 572.2, hepatic encephalopathy; 573.3, hepatitis, septic or unspecified - Hematologic: 286.2, disseminated intravascular coagulation; 286.6, purpura fulminans; 286.9, coagulopathy; 287.3-5, thrombocytopenia, primary, secondary, or unspecified - Metabolic: 276.2, acidosis, metabolic or lactic - Neurologic: 293, transient organic psychosis; 348.1, anoxic brain injury; 348.3, encephalopathy, acute; 780.01, coma; 780.09, altered consciousness, unspecified; 89.14, electroencephalography
Shock without mention of trauma	785.5 and all 5-digit breakouts
Traumatic shock	958.4
Postoperative shock	998.0
Respiratory failure	Acute respiratory failure (518.81), other pulmonary insufficiency not elsewhere classified (518.82), acute on chronic respiratory failure (518.84)
Hypotension	458
Arrest	Respiratory arrest (799.1), cardiac arrest (427.5), cardiopulmonary resuscitation not otherwise specified (99.60), closed chest cardiac massage (99.63)
Continuous mechanical ventilation for >=96 hours	96.72

Patients with the following DRGs were excluded, as they may have received a gastrotomy for anatomic reasons unrelated to critical illness (i.e., face, head, neck, esophageal conditions):  
DRG10 or DRG18: 055, 063, 064, 073, 154, 155, 168, 169, 182, 183, 185, 288, 482  
DRG24: 055, 063, 064, 073, 155, 168, 169, 182, 183, 185, 288, 482, 567, 568, 571

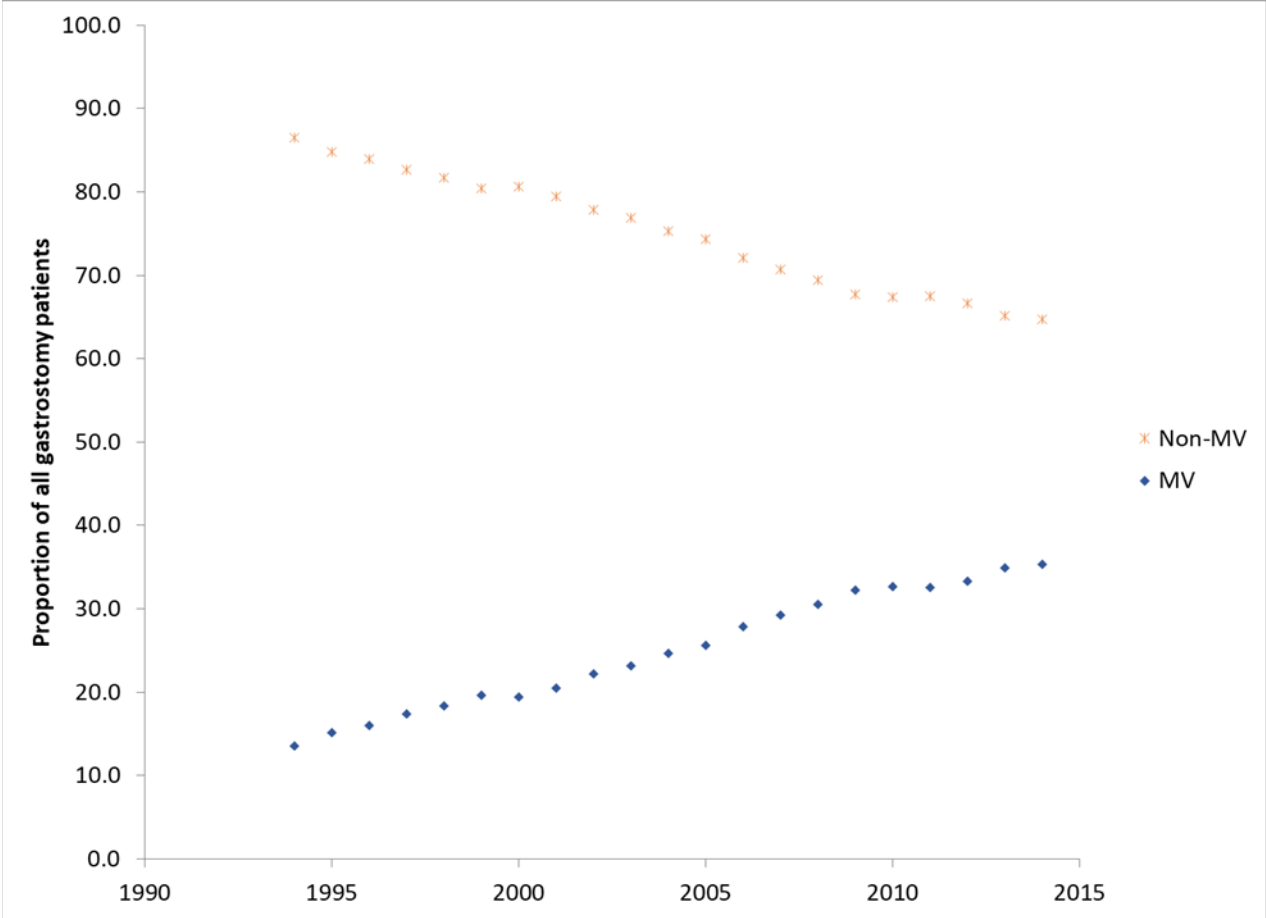
Dementia was defined by the presence of an ICD-9-CM code for any one of the following conditions. Note that ICD-10-CM codes included in the original validation (Amra et al, 2017) were excluded, as our study period preceded the adoption of ICD-10-CM codes.

ICD 9 codes	DIAGNOSIS
290.0	Senile dementia, uncomplicated
290.10	Pre-senile dementia, uncomplicated
290.11	Pre-senile dementia with delirium
290.12	Pre-senile dementia with delusional features
290.13	Pre-senile dementia with depressive features
290.20	Senile dementia with delusional features
290.21	Senile dementia with depressive features
290.3	Senile dementia with delirium
290.40	Vascular dementia, uncomplicated
290.41	Vascular dementia with delirium
290.42	Vascular dementia with delusions
290.43	Vascular dementia with depressed mood
291.2	Alcohol induced persisting dementia
292.82	Drug induced persisting dementia
294.10	Dementia in conditions classified elsewhere with behavior
294.11	Dementia in conditions classified elsewhere with behavioral
294.20	Dementia, unspecified without behavioral disturbance
294.21	Dementia, unspecified with behavioral disturbance
331.1	Frontotemporal dementia
331.19	Other frontotemporal dementia
331.82	Dementia with Lewy bodies

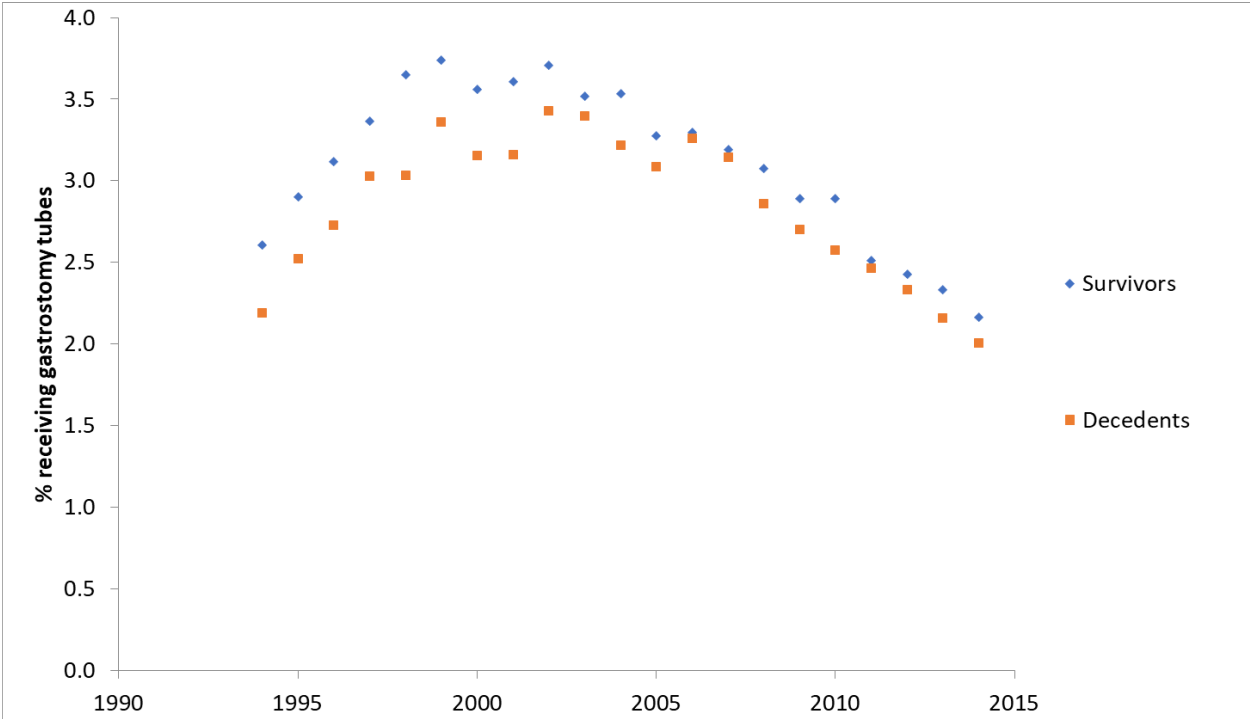
**FIGURE E1. Gastrostomy use rates in the United States among the mechanically ventilated, 1994-2014.** Left axis: population-adjusted incidence of gastrostomy tubes among MV patients (per 100,000 US adults). Right axis: gray triangle, % of hospitalized adults with receiving MV; orange squares, % of adults with MV receiving a gastrostomy tube.



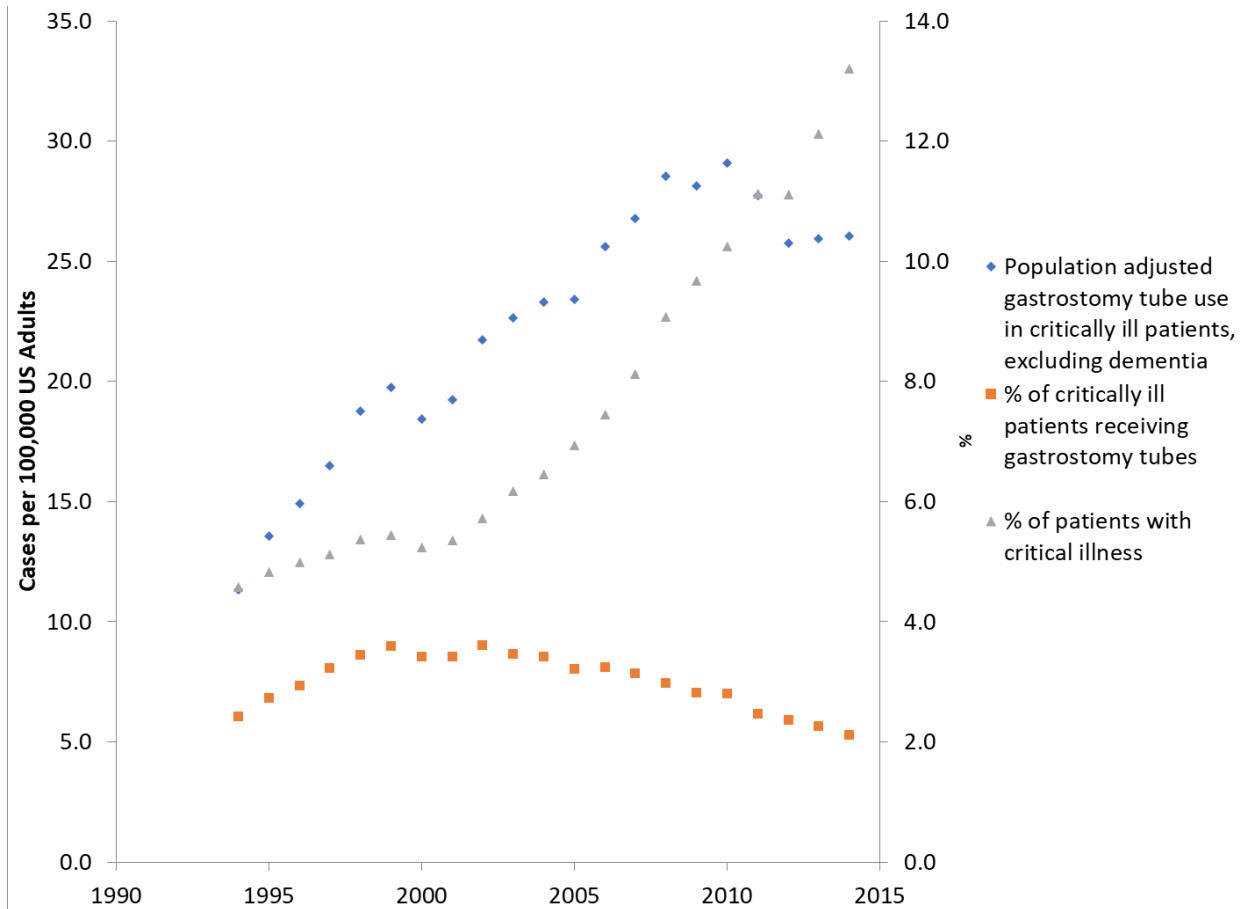
**FIGURE E2. Proportion of gastrostomy tubes placed in MV patients and Non-MV patients.** Among all recipients of gastrostomy tube recipients, the proportion of gastrostomy tubes placed in mechanically ventilated patients (blue diamonds) has steadily increased while the proportion of gastrostomy tubes placed in non-mechanically ventilated patients (orange stars) over the last 20 years.



**FIGURE E3. Gastrostomy use rates in the critically ill, 1994-2014, comparing survivors to decedents.** Over time, survivors (blue diamonds) and decedents (orange squares) received gastrostomy at similar rates.



**FIGURE E4. Gastrostomy use rates in the critically ill in the United States, 1994-2014, excluding patients with dementia.** Left axis: population-adjusted incidence of gastrostomy tubes among the critically ill (per 100,000 US adults). Right axis: gray triangle, % of hospitalized adults with critical illness; orange squares, % of adults with critical illness receiving a gastrostomy tube.



**FIGURE E5. Proportion of gastrostomy tubes placed in critically ill and non-critically ill hospitalized patients, 1994-2014, excluding patients with dementia.** Among all recipients of gastrostomy tube recipients, the proportion of gastrostomy tubes placed in critically ill patients (orange squares) has steadily increased and ultimately superseded the proportion of gastrostomy tubes placed in non-critically ill (blue diamonds) over the last 20 years.

