Supplementary Material

Supplementary Table S1. List of ICD-9 diagnosis codes used for the primary and

secondary outcomes

Diagnosis code (ICD-9)	Definition	
Primary outcomes		
Bone fractures		
733.1	Pathologic fracture	
812	Fracture of humerus	
813	Fracture of radius and ulna	
819	Multiple fractures involving both upper limbs, and upper limb with	
	rib(s) and sternum	
820	Fracture of neck of femur	
821	Fracture of other and unspecified parts of femur	
823	Fracture of tibia and fibula	
827	Other, multiple, and ill-defined fractures of lower limb	
828	Multiple fractures involving both lower limbs, lower with upper	
	limb, and lower limb(s) with rib(s) and sternum	
Secondary outcomes		
Hepatic morbidity		
570	Acute and sub-acute necrosis of the liver	
571.4	Chronic hepatitis	
571.5	Cirrhosis of liver without mention of alcohol	
571.6	Biliary cirrhosis	
571.8	Other chronic non-alcoholic liver disease	
573.3	Hepatitis, unspecified	
573.4	Hepatic infarction	
GI morbidity		
531	Gastric ulcer	
532	Duodenal ulcer	
533	Peptic ulcer, site unspecified	
534	Gastrojejunal ulcer	
535.2	Gastric mucosal hypertrophy	
535.4	Other specified gastritis	
558.2	Toxic gastroenteritis and colitis	
560.3	Impaction of intestine, unspecified	
560.9	Unspecified intestinal obstruction	
569.82	Ulceration of intestine	
569.83	Perforation of intestine	
578	Gastrointestinal hemorrhage	
579.9	Unspecified intestinal malabsorption	
Malignancy morbid	570Acute and sub-acute necrosis of the liver571.4Chronic hepatitis571.5Cirrhosis of liver without mention of alcohol571.6Biliary cirrhosis571.8Other chronic non-alcoholic liver disease573.3Hepatitis, unspecified573.4Hepatic infarctionGI morbidity531532Duodenal ulcer533Peptic ulcer, site unspecified534Gastric mucosal hypertrophy535.2Gastric mucosal hypertrophy535.4Other specified gastritis560.3Impaction of intestine, unspecified560.3Ulceration of intestine569.83Perforation of intestine578Gastrointestinal hemorrhage	
150	Malignant neoplasm of esophagus	
151	Malignant neoplasm of stomach	
152	Malignant neoplasm of small intestine, including duodenum	
153	Malignant neoplasm of colon	
154	Malignant neoplasm of rectum, rectosigmoid junction, and anus	
155	Malignant neoplasm of liver and intrahepatic bile ducts	
156	Malignant neoplasm of gallbladder and extrahepatic bile ducts	
159	Malignant neoplasm of other and ill-defined sites within the	
	digestive organs and peritoneum	
Infection morbidity		

- 003 Other salmonella infections, including: infection or food poisoning by Salmonella (any serotype)
- 004 Shigellosis includes: bacillary dysentery
- 005 Other food poisoning (bacterial)
- 006 Amebiasis
- 007 Other protozoal intestinal diseases
- 008 Intestinal infections due to other organisms
- 009 Ill-defined intestinal infections
- 038 Septicemia
- 041 Bacterial infection in conditions classified elsewhere and of unspecified site

GI, gastrointestinal; ICD-9, International Classification of Diseases, Ninth Revision.

Supplementary Table S2. Summary of US region categories^a

Region	US states / territories
East North Central	Illinois, Indiana, Michigan, Ohio, Wisconsin
East South Central	Alabama, Kentucky, Mississippi, Tennessee
Middle Atlantic and New England	Connecticut, Maine, Massachusetts, New
	Hampshire, New Jersey, New York,
	Pennsylvania, Rhode Island, Vermont
Mountain	Arizona, Colorado, Idaho, Montana, New
	Mexico, Nevada, Utah, Wyoming
Pacific	Alaska, California, Hawaii, Oregon,
	Washington
South Atlantic	District of Columbia, Delaware, Florida,
	Georgia, Maryland, North Carolina, South
	Carolina, Virginia, West Virginia
West North Central	Iowa, Kansas, Minnesota, Missouri, North
	Dakota, Nebraska, South Dakota
West South Central	Arkansas, Louisiana, Oklahoma, Texas
Other/unknown	American Samoa, Baker Island,
	Canton/Enderbury Islands, Foreign (SSA
	state code), Guam, Howland Island, Jarvis
	Island, Johnston Atoll, Kingman Reef,
	Marshall Islands, Micronesia, Midway Island,
	Minor Islands, North Mariana Islands,
	Oceania (SSA state code), Pacific Trust
	Territories, Palau, Palmyra Atoll, Panama
	Canal Zone, Puerto Rico, unknown state, US
	Caribbean Islands, US miscellaneous Pacific
	Islands, US poss. (SSA state code), Virgin
	Islands, Wake Island

^aThese geographical regions were included as a covariate term in the CPH model.

CPH, Cox proportional hazards; SSA, Social Security Administration.