

Supplemental Table 1 : Defintions of various causes of death

Cause of death	Code of primary cause of death
Cadiovascular	23: Myocardial Infarction, Acute
	25: Pericarditis, Incl. Cardiac Tamponade
	26: Atherosclerotic Heart Disease
	27: Cardiomyopathy
	28: Cardiac Arrhythmia
	29: Cardiac Arrest, Cause Unknown
	30: Valvular Heart Disease
	31: Pulmonary Edema Due To Exogenous Fluid
	32: Congestive heart failure
	37: Ischemic Brain Damage/Anoxic Enecephalopathy
Infectious	33: Septicemia due to internal vascular access
	34: Septicemia due to vascular access catheter
	50: Septicemia, Due To Peritonitis
	52: Septicemia, Other
	53: Pulmonary Infection (Bacterial)
	54: Pulmonary Infection (Fungal))
	55: Pulmonary Infection (Other)
	56: Viral Infection, Cmv
	57: Viral Infection, Other (Not 64 Or 65)
	58: Tuberculosis
60: Infection, Other	

Malignant

- 61: Cardiac infection (endocarditis)
- 62: Pulmonary infection (pneumonia, influenza)

Other

- 83: Malignant Disease (Not 82)
- 24: Hyperkalemia
- 35: Pulmonary Embolus
- 38: Hemorrhage From Transplant Site
- 39: Hemorrhage From Vascular Access
- 41: Hemorrhage From Ruptured Vascular Aneurysm
- 42: Hemorrhage From Surgery (Not 38,39 Or 40)
- 43: Other Hemorrhage (Not Codes 38-42,72)
- 44: Mesenteric Infarction/Ischemic Bowel
- 64: Hepatitis B
- 65: Other Viral Hepatitis
- 66: Liver-Drug Toxicity
- 67: Cirrhosis
- 68: Polycystic Liver Disease
- 69: Liver Failure, Cause Unknown Other
- 71: Hepatitis C
- 72: Gastro-Intestinal Hemorrhage
- 73: Pancreatitis
- 75: Perforation Of Peptic Ulcer
- 76: Perforation Of Bowel (Not 75)
- 78: Hyponatremia

79: Hyponatremia  
80: Bone Marrow Depression  
81: Cachexia  
84: Dementia, Incl. Dialysis Dementia, Alzheimers  
85: Seizures  
87: Chronic Obstructive Lung Disease (Copl)  
88: Complications Of Surgery  
89: Air Embolism  
90: Accident Related To Treatment  
91: Accident Unrelated To Treatment  
92: Suicide  
93: Drug Overdose (Street Drugs)  
94: Drug Overdose (Not 92 Or 93)  
95: Acidosis  
97: Hypothyroidism  
100: Hypoglycemia  
101: Hyperglycemia  
102: Diabetic coma  
104: Withdrawal from dialysis/uremia

Unknown/missing

99: Unknown

No code

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Supplemental Table 2: Trend of one- year cause-specific and all-cause mortality

<i>Cause of death</i>	<i>Transplantation year</i>																		
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Cardiovascular	1.21	1.20	0.80	0.91	0.78	0.94	0.92	0.92	0.86	1.02	0.81	0.80	0.81	0.87	0.82	0.64	0.59	0.52	0.59
Infectious	0.86	0.59	0.54	0.50	0.50	0.67	0.51	0.46	0.50	0.59	0.60	0.54	0.53	0.58	0.50	0.45	0.41	0.28	0.29
Malignant	0.08	0.11	0.04	0.07	0.07	0.04	0.05	0.08	0.14	0.15	0.18	0.12	0.11	0.06	0.09	0.09	0.08	0.09	0.11
Other	0.61	0.69	0.43	0.49	0.59	0.44	0.55	0.65	0.65	0.71	0.63	0.66	0.64	0.62	0.54	0.58	0.50	0.41	0.46
All-cause mortality	4.05	4.41	3.75	4.31	4.37	4.02	3.82	3.79	3.50	3.69	3.37	3.04	2.90	3.12	2.83	2.83	2.58	2.41	2.53

Supplemental Table 3: Trend of ten-year cause-specific and all-cause mortality

<i>Cause of death</i>	<i>Transplantation year</i>									
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Cardiovascular	4.53	4.63	3.71	4.15	3.90	3.99	4.05	3.69	3.21	3.14
Infectious	2.42	1.93	2.03	2.04	2.33	2.23	2.03	2.09	2.23	2.11
Malignant	1.53	1.38	1.36	1.30	1.49	1.42	1.35	1.40	1.62	1.86
Other	2.71	2.61	2.60	2.68	2.63	2.65	2.58	2.93	2.89	3.05
All-cause	28.06	28.55	27.15	27.87	28.05	27.96	26.55	27.31	25.91	26.98

Supplemental Table 4. Transplantation year and *one*-year cause of death with a functioning graft in kidney transplant recipients, stratified by use of depleting drugs in induction

Transplantation year	Hazard ratio (95% CI) from adjusted model*													
	Any depleting drug in induction							No depleting drug in induction						
	All-cause <sup>[1]</sup>	Cardiovascular <sup>[2]</sup>	Infections <sup>[2]</sup>	Malignant <sup>[2]</sup>	Other <sup>[2]</sup>	Unknown <sup>[2]</sup>	Missing <sup>[2]</sup>	All-cause <sup>[1]</sup>	Cardiovascular <sup>[2]</sup>	Infections <sup>[2]</sup>	Malignant <sup>[2]</sup>	Other <sup>[2]</sup>	Unknown <sup>[2]</sup>	Missing <sup>[2]</sup>
1996-2001	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2002-2007	0.65 (0.57, 0.74)	0.59 (0.46, 0.76)	0.63 (0.45, 0.88)	1.50 (0.63, 3.55)	0.86 (0.60, 1.23)	0.93 (0.61, 1.42)	0.50 (0.39, 0.63)	0.79 (0.73, 0.84)	0.89 (0.77, 1.03)	0.83 (0.69, 0.99)	1.28 (0.79, 2.07)	1.17 (0.98, 1.40)	1.50 (1.17, 1.91)	0.48 (0.42, 0.54)
2008-2014	0.44 (0.39, 0.51)	0.42 (0.33, 0.54)	0.47 (0.34, 0.65)	0.82 (0.35, 1.94)	0.64 (0.45, 0.91)	0.68 (0.45, 1.02)	0.29 (0.23, 0.37)	0.60 (0.56, 0.65)	0.66 (0.57, 0.77)	0.63 (0.53, 0.76)	0.89 (0.54, 1.46)	0.97 (0.81, 1.15)	1.57 (1.24, 1.98)	0.30 (0.26, 0.35)

\*Adjusted for age, sex, race

<sup>[1]</sup> Cox proportional hazard model

<sup>[2]</sup> Cause specific hazard model

Supplemental Table 5. Transplantation year and *ten*-year cause of death with a functioning graft in kidney transplant recipients, stratified by use of depleting drugs in induction

Transplantation year	Hazard ratio (95% CI) from adjusted model*													
	Any depleting drug in induction							No depleting drug in induction						
	All-cause <sup>[1]</sup>	Cardiovascular <sup>[2]</sup>	Infectious <sup>[2]</sup>	Malignant <sup>[2]</sup>	Other <sup>[2]</sup>	Unknown <sup>[2]</sup>	Missing <sup>[2]</sup>	All-cause <sup>[1]</sup>	Cardiovascular <sup>[2]</sup>	Infectious <sup>[2]</sup>	Malignant <sup>[2]</sup>	Other <sup>[2]</sup>	Unknown <sup>[2]</sup>	Missing <sup>[2]</sup>
1996	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
1997	1.13 (0.96, 1.33)	1.26 (0.88, 1.80)	1.41 (0.79, 2.49)	0.69 (0.37, 1.29)	1.04 (0.65, 1.66)	1.42 (0.90, 2.24)	1.06 (0.81, 1.38)	0.97 (0.91, 1.05)	0.92 (0.77, 1.11)	0.66 (0.51, 0.86)	0.94 (0.67, 1.33)	0.93 (0.73, 1.19)	1.17 (0.93, 1.48)	1.03 (0.93, 1.14)
1998	0.95 (0.79, 1.14)	0.77 (0.50, 1.18)	1.07 (0.56, 2.04)	0.64 (0.32, 1.26)	0.76 (0.44, 1.32)	1.69 (1.06, 2.68)	0.94 (0.70, 1.25)	0.92 (0.85, 0.99)	0.78 (0.65, 0.94)	0.74 (0.58, 0.95)	0.91 (0.65, 1.27)	0.94 (0.75, 1.19)	1.13 (0.90, 1.41)	0.95 (0.86, 1.05)
1999	1.00 (0.83, 1.20)	1.16 (0.78, 1.71)	0.83 (0.41, 1.67)	0.38 (0.16, 0.88)	0.94 (0.55, 1.60)	1.21 (0.73, 2.00)	1.05 (0.79, 1.40)	0.92 (0.86, 0.99)	0.82 (0.69, 0.99)	0.76 (0.59, 0.96)	0.94 (0.68, 1.30)	0.93 (0.74, 1.18)	1.34 (1.08, 1.66)	0.90 (0.82, 1.00)
2000	1.01 (0.85, 1.20)	0.84 (0.56, 1.24)	1.32 (0.73, 2.38)	0.85 (0.47, 1.54)	0.69 (0.40, 1.18)	1.18 (0.73, 1.90)	1.13 (0.87, 1.47)	0.91 (0.84, 0.97)	0.79 (0.66, 0.95)	0.79 (0.63, 1.00)	0.93 (0.67, 1.28)	0.95 (0.76, 1.19)	1.31 (1.06, 1.63)	0.88 (0.80, 0.97)
2001	0.91 (0.77, 1.06)	0.72 (0.50, 1.04)	1.29 (0.75, 2.22)	0.74 (0.43, 1.28)	0.96 (0.62, 1.50)	1.32 (0.86, 2.03)	0.83 (0.64, 1.07)	0.89 (0.83, 0.95)	0.82 (0.69, 0.98)	0.73 (0.58, 0.93)	0.87 (0.63, 1.20)	0.84 (0.66, 1.05)	1.42 (1.15, 1.75)	0.85 (0.77, 0.94)
2002	0.79 (0.68, 0.92)	0.59 (0.41, 0.83)	1.06 (0.63, 1.79)	0.55 (0.32, 0.93)	0.70 (0.45, 1.08)	1.24 (0.82, 1.87)	0.80 (0.63, 1.02)	0.81 (0.75, 0.87)	0.84 (0.71, 1.01)	0.63 (0.50, 0.81)	0.78 (0.56, 1.09)	0.85 (0.67, 1.07)	1.20 (0.96, 1.48)	0.75 (0.68, 0.83)
2003	0.82 (0.72, 0.95)	0.65 (0.47, 0.90)	0.81 (0.48, 1.37)	0.61 (0.37, 0.99)	0.64 (0.42, 0.97)	0.99 (0.66, 1.48)	0.97 (0.78, 1.21)	0.80 (0.74, 0.86)	0.68 (0.56, 0.82)	0.70 (0.55, 0.89)	0.74 (0.53, 1.04)	1.03 (0.82, 1.29)	1.42 (1.15, 1.76)	0.70 (0.63, 0.78)
2004	0.72 (0.62, 0.82)	0.51 (0.36, 0.70)	0.77 (0.46, 1.29)	0.49 (0.30, 0.81)	0.69 (0.46, 1.03)	0.88 (0.59, 1.31)	0.82 (0.66, 1.02)	0.77 (0.72, 0.83)	0.62 (0.52, 0.76)	0.79 (0.62, 1.00)	1.06 (0.78, 1.45)	0.97 (0.78, 1.22)	1.31 (1.06, 1.63)	0.65 (0.59, 0.73)
2005	0.70 (0.61, 0.80)	0.45 (0.33, 0.63)	0.78 (0.47, 1.28)	0.65 (0.41, 1.04)	0.72 (0.48, 1.06)	0.82 (0.55, 1.23)	0.78 (0.63, 0.97)	0.79 (0.73, 0.85)	0.61 (0.51, 0.74)	0.69 (0.54, 0.88)	1.02 (0.75, 1.40)	0.98 (0.79, 1.23)	1.39 (1.13, 1.72)	0.69 (0.62, 0.76)

\*Adjusted for age, sex, race

<sup>[1]</sup> Cox proportional hazard model

<sup>[2]</sup> Cause specific hazard model