

Author Year	Clinical Area	Minority Group(s)	N	Relevant Conclusions	Adjustment	Setting Timeframe
Alvord 2009 ¹	Postoperative complications	AI/AN	4,419	Postoperative complications: frequency distribution similar between racial groups (p=.51) Specific complications: progressive renal insufficiency: 0.2% (AI/AN) vs 0.7% (white) p=.01; pulmonary edema: 0.5% (AI/AN) vs 1.5% (white) p=.04; prolonged ileus: 0.7% (AI/AN) vs 1.4% (white) p=.03 The numbers of complications during hospitalization compared with after discharge were similar among AI/AN and whites (p=.24)	Age group, clinical and laboratory variables, surgical variables	VA-wide NSQIP data 1991-2002
Alvord 2005 ²	Postoperative complications	AI/AN	4,419	Morbidity: AI/AN race not associated with risk of 30-day postop morbidity OR=0.9 (0.8-1.1) Mortality: AI/AN race associated with increased risk of 30-day postop mortality OR=1.6 (1.0-2.4)	None	VA-wide NSQIP data 1991-2002
Aujesky 2007 ³	VTE	AA	168	Overall complication rate (death, recurrent VTE, major bleeding): AA race independently associated with increased 90-day overall complication rate OR=5.2 (1.3-21.6).	Study site, age, sex, history of prior VTE, surgery in past 30 days, pulse, systolic blood pressure, respiratory rate, altered mental status, Charlson Comorbidity Index, hemoglobin, creatine, diagnosis of pulmonary embolism	VA Pittsburgh Healthcare System and Philadelphia VA Medical Center 2000-2002
Ayotte 2012 ⁴	Coronary artery obstruction	AA	793	Proportion with moderate/sever angiographic coronary obstruction: black: 25% (13/52) white: 39% (101/259)	None	5 VA sites Cardiac Decision Making Study data 1999-2001
Choi 2009 ⁵	ESRD	AA	420,334	Among Veterans with CKD Stage 3A or 3B followed for a median of 3.7 years, black race is associated with increased mortality risk aHR: 1.32 (1.27-1.36) and 1.21 (p<.05), respectively Among Veterans with CKD Stage 4 or 5 followed for a median of 4.8 years, black race is not associated with mortality risk aHR: 1.07 (p>.05) and 0.97 (p>.05), respectively	Age, sex, baseline comorbidities, SES, stratified by eGFR at baseline, adjusted for VA center fixed effects.	VA-wide VA National Patient Care Database, Medicare 2000-2001

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Choi 2007 6	HIV	AA	HIV: 12,955 HIV + diabetes: 2,180	ESRD among HIV-infected individuals black vs white: aHR: 5.97 (3.12-11) ESRD among HIV-infected individuals with diabetes black vs white: aHR: 2.33 (1.02-5.35)	Age, sex, baseline eGFR category, CAD, HTN, heart failure, COPD, PVD, HCV infection, CVD, SES	VA-wide VA National Patient Care Database, Medicare 2000-2001
Daskivich 2015 7	Prostate cancer	AA, Hispanic	1,258	Cancer-specific and other-cause mortality: AA did not have a statistically significant difference in hazard of prostate cancer mortality, sub-hazard ratio 0.6 (0.28-1.26) or other-cause mortality, sub-hazard ratio 0.98 (0.78-1.22). Hispanic Veterans did not have a statistically significant difference in hazard of prostate cancer mortality, sub-hazard ratio 0.24 (0.03-1.82) or other-cause mortality, sub-hazard ratio 0.87 (0.57-1.31).	Age, tumor risk, site, year of diagnosis, comorbidity	Greater Los Angeles and Long Beach VA Medical Centers, California Cancer Registry 1998-2004
Egede 2012 8	TBI	Hispanic, AA	14,690	Higher mortality (Hispanic): HR 1.61 (1.00-2.58) No difference in mortality (AA) HR 1.25 (0.90-1.73)	Socio-demographics, comorbidities	Nationwide Veterans Health Administration Decision Support System and Vital Status Files 2006

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El-Serag 2014 ⁹	HCV	AA, Hispanic, other	149,407	Incident cirrhosis: AA and Hispanic race associated with incident cirrhosis. AA adjusted hazard ratio=0.576 (0.553-0.601), Hispanic adjusted hazard ratio=1.283 (1.206-1.365), Other adjusted hazard ratio=0.919 (0.807-1.047). Incident HCC: AA and Hispanic race associated with incident HCC. AA adjusted hazard ratio=0.770 (0.713-0.832), Hispanic adjusted hazard ratio=1.610 (1.440-1.801), Other adjusted hazard ratio=1.005 (0.782-1.292). Prevalent cirrhosis: AA, Hispanic and other race associated with prevalent cirrhosis. AA OR=0.393 (0.374-0.413), Hispanic OR=1.224 (1.141-1.313), Other OR=0.826 (0.711-0.960). Prevalent HCC: AA and Hispanic race associated with prevalent HCC. AA OR=0.586 (0.492-0.697), Hispanic OR=2.009 (1.613-2.502), Other OR=0.790 (0.434-1.441).	Age, sex, period of service, year of HCV diagnosis, diabetes, alcohol abuse, HIV, Hep B co-infection, BMI, HCV genotype, antiviral treatment	VA-wide Veterans Administration HCV Clinical Case Registry data 1999-2010
Freeman 2003 ¹⁰	Prostate cancer	AA	864	All-cause mortality: black vs. white HRR 1.50 (0.94-2.38)	Age, Charlson comorbidity score, tumor differentiation, first-course treatment, mean household income per capita by zip code	2 VA hospitals and 2 private university medical centers Medical records data 1986-1990
Frei 2010 ¹¹	Community-acquired pneumonia	AA	Medical ward: 35,706 ICU: 5,172	Mortality - medical wards: AA race was not associated with 30-day mortality OR=0.98 (0.87-1.10) Mortality - intensive care units: AA race was associated with 30-day mortality OR=0.82 (0.68-0.99)	Age, sex, marital status, priority group, comorbid conditions, organ failure and sepsis, hospital	VA-wide VHA administrative data 2002-2007

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Fudalej 2010 ¹²	Alcohol use disorders	AA	122,427	Injury related mortality: Caucasian race associated with injury-related mortality compared to black hazard ratio=2.16 (1.93-2.42) Non-injury-related mortality: Caucasian race associated with non-injury-related mortality compared to black hazard ratio=1.32 (1.28-1.38)	Age, gender, medical comorbidity, drug use disorder, schizophrenia, PTSD, other anxiety disorder, bipolar disorder, personality disorder, major depression	VA-wide VA National Patient Care Database 2000-2001
Ganti 2014 ¹³	NSCLC	AA, Native American, Asian	82,414	Lower risk of mortality (AA): HR 0.94 (0.92-0.96) No difference in risk of mortality for Asian (HR: 0.96 (0.84-1.09)) or Native American (1.05 (0.93-1.20)) Veterans	Age, sex, smoking history, family history of cancer, disease stage, treatment received	National VA Central Cancer Registry 1995-2009
Graham-Steed 2013 ¹⁴	Prostate cancer	AA	1,249	Race was not associated with an increased risk of prostate cancer mortality (black aOR: 0.90 (0.58-1.40 p=.65))	Age, comorbidity, D'Amico score	9 VAMCs Medical records data 1991-1995
Hou 2012 ¹⁵	CRC	AA	16,490	CRC incidence rate ratio: 3 year (%): AA/Caucasian: 0.881 (0.353-2.200) 5 year (%): AA/Caucasian: 0.974 (0.491-1.931) 10 year (%): AA/Caucasian: 1.124 (0.659-1.918) All follow up: AA/Caucasian: 1.172 (0.698-1.996) "African Americans were not at an increased risk for CRC (adjusted hazard ratio: 1.10, 95% CI 0.65–1.87) compared to Caucasians"	History of endoscopy in the VA, frequency of VA encounters, age at UC index, and unreported race	VA-wide VA PTF and OPC files data 1998-2009

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Jha 2010 ¹⁶	AMI, hip fracture, stroke, CHF, GI hemorrhage, pneumonia	AA	318,610	aOR of 30-day mortality for black vs white (95% CI) Pneumonia: Under 65: 1.07 (0.96-1.18) 65 and older: 0.89 (0.84-0.94) CHF: Under 65: 0.72 (0.62-0.83) 65 and older: 0.69 (0.65-0.75) GI bleed: Under 65: 0.92 (0.77-1.09) 65 and older: 0.90 (0.80-1.00) Hip fracture: Under 65: 0.60 (0.25-1.45) 65 and older: 0.72 (0.58-0.90) Stroke: Under 65: 1.15 (0.97-1.35) 65 and older: 0.83 (0.75-0.91) AMI: Under 65: 1.16 (0.97-1.40) 65 and older: 0.74 (0.67-0.83) Higher for MI and pneumonia, but comparable for others	Hospital minority-serving status, age, Elixhauser comorbidities	VA-wide VA PTF 1996-2002
Jones 2014 ¹⁷	Advanced chronic systolic heart failure	AA	898	Black not a predictor of death in VA sample: 2-year all-cause mortality: HR 1.14 (0.86-1.50)	Age, sex, NYHA class, CAD, diabetes, HTN, afib, PVD, CKD, randomization to bucindolol, pulmonary edema, and LVEF/RVEF	VA hospitals participating in BEST trial 1995-1999
Kamalesh 2007 ¹⁸	Stroke	AA	55,094	1-year mortality higher for whites: 13.1% vs 12.2%; absolute difference = 0.9%; HR 1.06 (1.02-1.10)	Age, sex, comorbid conditions and prior hospitalizations	VA-wide VA PTF 1990-1997
Kokkinos 2009 ¹⁹	DM	AA	3,148	The risk of all-cause mortality is higher in black compared to white Veterans aHR: 1.23 (1.02-1.47)	Age, CVD, BP, cardiovascular meds, insulin and oral glycemic agents, and peak exercise capacity	2 VAMCs Medical records data 1986-2007

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Kovesdy 2013 ²⁰	CKD	AA	570,808	Among Veterans with CKD Stage 3A or 3B followed for a median of 4.7 years, black race is associated with decreased 5-year mortality aHR: 0.88 (0.81-0.97) and 0.81 (0.71-0.92), respectively Among Veterans with CKD Stage 4 or 5 followed for a median of 4.7 years, black race is not associated with 5-year mortality aHR: 1.01 (0.81-1.27) and 0.83 (0.48-1.44), respectively	Age, sex, marital and insurance status, region, DM, CVD, vascular disease, cerebrovascular disease, CHF, comorbidity score, glomerular filtration rate, serum albumin, cholesterol, hemoglobin, WBC, serum alkaline phosphatase values	VA-wide VA Inpatient and Outpatient SAS datasets, Medicare 2004-2006
Kressin 2007 ²¹	CVD	AA	1,022	Change in functional status outcomes (whites relative to AA): Models excluding Negative Affectivity, experiences of discrimination, optimism, and magnitude of ischemia: mean (95% posterior intervals) Baseline-6 month: PCS: -2.31 (-4.03, -0.60) MCS: 0.44 (-1.68, 2.62) PL: 0.18 (-4.49, 4.84) TS: -1.33 (-4.62, 2.05) AF: 1.39 (-2.17, 5.01) AS: -1.32 (-6.25, 3.42) DP: 0.43 (-3.79, 4.81) "The baseline Bayesian regression analysis indicated that there were no significant effects of race, after adjusting for the covariates"	Sociodemographics, comorbid conditions, maximal medical therapy, severity of ischemia on nuclear imaging study, personal attitudes, and beliefs	5 VA hospitals Seattle Angina Questionnaire for functional status data 1999-2001
Lynch 2014 ²²	DM	AA, Hispanic	625,903	Adjusted for race/ethnicity in the association between comorbidities and mortality in diabetes, but did not report measure of association.	Age, sex, marital status, area of residence, service connection, geographic region.	VA-wide VA patient and administrative files data 2002-2006

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Meyers 2008 ²³	Angina, CHF, acute myocardial infarction, GI hemorrhage, stroke, diabetes	AA, other	14,122	No association between African American race and risk of hospital death aOR=0.95 (0.72-1.26) No association between Other race and risk of hospital death aOR=1.01 (0.73-1.40)	Patient-level: Age, fiscal year, military rank, marital status, comorbidities, length of stay, primary admission diagnosis Hospital-level: # of patients treated annually, availability of coronary artery bypass surgery, proportion of non-Caucasian patients with diagnoses of interest, and region	54 hospitals in the DCS of the MHS 2000-2004
Optenberg 1995 ²⁴	Prostate cancer	AA	1,606	5-yr survival: blacks=76.7% vs whites=76.5%, NSD for stage groups A/B and C/D ₁ , but blacks with distant metastases (stage D ₂) had statistically significant survival improvement compared to whites, 48.3% and 36.2%, respectively (P=.04, likelihood ratio)	Stratified by stage and then adjusted for age and date of entry	National, DEERS ACTUR database 1973-1994

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Polsky 2007 ²⁵	Pneumonia, CHF, GI bleeding, hip fracture, stroke, or AMI	AA	369,155	aOR 30-day mortality for black vs white (95% CI) Pneumonia: Under 65: 1.11 (0.99-1.26) 65 and older: 0.95 (0.89-1.02) CHF: Under 65: 0.74 (0.64-0.85) 65 and older: 0.72 (0.65-0.80) GI bleed: Under 65: 0.97 (0.83-1.13) 65 and older: 0.90 (0.80-1.01) Hip fracture: Under 65: 0.57 (0.21-1.55) 65 and older: 0.74 (0.61-0.89) Stroke: Under 65: 1.06 (0.86-1.30) 65 and older: 0.81 (0.73-0.90) AMI: Under 65: 1.14 (0.92-1.40) 65 and older: 0.83 (0.73-0.95)	Age, year of discharge, and 30 comorbidities	VA-wide VA PTF and VA Beneficiary Identification Record Locator System Death File 1996-2001

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Polsky 2008 ²⁶	Pneumonia, CHF, GI bleeding, hip fracture, stroke, or AMI	AA	155,529	Difference in mortality rate between black and white (%) Pneumonia: 30-day: -1.3 (p<.05) 2-year: 0.3 CHF: 30-day: -1.3 (p<.05) 2-year: -2.8 (p<.05) GI bleed: 30-day: -0.5 (p<.05) 2-year: 0.4 Hip fracture: 30-day: -2.9 (p<.05) 2-year: 2.3 Stroke: 30-day: -2.1 (p<.05) 2-year: 2.5 (p<.05) AMI: 30-day: -2.7 (p<.05) 2-year: -1.0	Health risk (age, sex, year of discharge, comorbid conditions), SES (median household income, percentage of population with college degrees, and urbanicity of patient's zipcode of residence), and hospital fixed effects.	VA-wide VA PTF 1998-2002
Samuel 2014 ²⁷	Cancer (colorectal, prostate, lung)	AA	Colorectal N=12,897 Lung N=25,608 Prostate N=38,202	Lower 3-year survival for colon cancer aOR 0.75 (0.62-0.89) and rectal cancer=aOR 0.61 (0.42-0.87)	Age, gender, marital status, cancer history, Charlson comorbidity score, year of diagnosis, tumor grade, stage and size; hospital fixed effects	Nationwide, VA cancer registry data and Medicare administrative data 2001-2004

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Sarrazin 2009 ²⁸	COPD	AA	50,979	Risk adjusted odds of death were lower in AA relative to white patients (aOR: 0.69; p<.001) Mortality rate: 7.1% AA vs. 9.2% white, p<.001	Clinical-demographic factors (admission source, principle diagnosis, year of admission, prior hospital and COPD-related admissions, comorbidities), ICU admission and mechanical ventilation or noninvasive ventilation use	Nationwide VA PTF and OCF 2002-2006
Shaw 2014 ²⁹	PTSD and spontaneous preterm delivery	AA, AI/AN	16,334	Black (aOR: 1.49 (1.29-1.71), p<.001) and AI/AN (aOR: 1.99 (1.15-3.45), p=.01) were associated with PTSD and spontaneous preterm birth.	Model 1: PTSD status, age, twins or higher order, deployed Model 2: Model 1 + chronic disease indicators Model 3: Model 1 + substance abuse Model 4: Model 1 + other psychiatric diagnoses	VA-wide National clinical and administrative databases for VHA and outsourced care 2000-2012
Shimada 2008 ³⁰	Postoperative and surgical complications	AA, Latino, API, AI/AN	black: 294,381 Latino: 244,397 API: 236,845 AI/AN: 236,369	Death in low mortality DRGs: black vs white: aOR=1.18 (p>.05) Latino vs white: aOR=1.32 (p>.05) Asian American/PI vs white: OR=0.44 (p>.05) American Indian vs white: OR=0.94 (p>.05)	Age, sex, and 27 comorbidities	VA-wide VA PTF and OCF 2001-2005

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Tseng 2011 ³¹	DM	AA	405,580 - 739,377	Rate of decline in initial lower extremity amputation (ILEA) is not different between black and white Veterans (p=.37) and Hispanic and white Veterans (p=.91).	Age, sex, marital status, census region, rural/urban, disability, microvascular, macrovascular, and metabolic complications, diabetes medications	VA-wide VA Diabetes Epidemiology Cohorts data 2000-2004
Volpp 2007 ³²	pneumonia, CHF, GI bleeding, hip fracture, stroke, or AMI	AA	283,912	aOR 30-day mortality for black vs white (95% CI) Pneumonia: Under 65: 1.09 (0.98-1.21) 65 and older: 0.90 (0.85-0.95) CHF: Under 65: 0.71 (0.62-0.82) 65 and older: 0.70 (0.65-0.76) GI bleed: Under 65: 0.93 (0.78-1.10) 65 and older: 0.88 (0.79-0.99) Hip fracture: Under 65: 0.66 (0.28-1.55) 65 and older: 0.73 (0.58-0.90) Stroke: Under 65: 1.12 (0.95-1.32) 65 and older: 0.81 (0.74-0.89) AMI: Under 65: 1.19 (0.99-1.43) 65 and older: 0.75 (0.67-0.84)	Age, discharge year, comorbidities, SES, hospital site, national death index deaths added	VA-wide VA PTF 1996-2002
Zullig 2013 ³³	NSCLC	2,200	AA	Longer survival for AA patients than for Caucasian patients (133 days vs 117 days, hazard ratio 0.31, P<0.01)	Stage at diagnosis, performance stage, age	National External Peer Review Program data 2006-2007