

DUKECATH Dataset Dictionary

Variables Included in Version 1.1 Release

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Catheterization Identification and Linking

Variable Name (Type) **DAYSFROMINDEX** (Numeric)

Label: Days from Index Cath

	Stats
N	155980
Mean (SD)	682.1 (1460.7)
Median (25th, 75th)	0.0 (0.0, 483.0)
Min, Max	0.0, 10442.0

Description: For each unique patient, this variable records the days from the date of the first catheterization for that patient that is recorded in the Duke Health System since 1/1/1985 to this catheterization date. This will be 0 if the catheterization is the first recorded procedure. Because multiple cathes may occur on the same day, it is possible for multiple cathes to have the same value for this variable.

Variable Name (Type) **SEQCATHNUM** (Numeric)

Label: Patient's Sequential Cath Number

	Stats
N	155980
Mean (SD)	2.5 (3.1)

	Stats
Median (25th, 75th)	1.0 (1.0, 3.0)
Min, Max	1.0, 65.0

Description: For each unique patient, this variable records the sequential number for the current catheterization record. For example, if seqcathnum=1 then this is the first recorded Duke catheterization since 1/1/1985 for this patient. If seqcathnum=2, then this record is the second Duke catheterization. The database does not contain information on catheterizations received outside of the Duke Health System.

Variable Name (Type) SUBJID (Numeric)

Label: Subject ID

	Stats
N	155980
Mean (SD)	49800.5 (28811.7)
Median (25th, 75th)	49728.5 (24843.0, 74549.0)
Min, Max	0.0, 100000.0

Description: Unique patient identifier

Variable Name (Type) YRCATH_G (Numeric)

Label: Year of Cardiac Cath (categorized)

Value	Format	Stats
1	1985-1990	32445 / 155980 (20.8%)
2	1991-1994	22474 / 155980 (14.4%)
3	1995-1998	21789 / 155980 (14.0%)
4	1999-2002	24119 / 155980 (15.5%)
5	2003-2006	23642 / 155980 (15.2%)
6	2007-2010	18111 / 155980 (11.6%)
7	2011-2013	13400 / 155980 (8.6%)

Description: The calendar year in which this catheterization occurred. Years have been grouped: '1985-1990', '1991-1994', '1995-1998', '1999-2002', '2003-2006', '2007-2010', and '2011-2013'.

Demographics

Variable Name (Type) AGE_G (Numeric)

Label: Age in years (categorized)

Value	Format	Stats
1	18-24	820 / 155980 (0.5%)
2	25-29	1074 / 155980 (0.7%)
3	30-34	2032 / 155980 (1.3%)
4	35-39	4476 / 155980 (2.9%)
5	40-44	9167 / 155980 (5.9%)
6	45-49	14373 / 155980 (9.2%)
7	50-54	18950 / 155980 (12.1%)
8	55-59	22056 / 155980 (14.1%)
9	60-64	23235 / 155980 (14.9%)
10	65-69	22431 / 155980 (14.4%)
11	70-74	17855 / 155980 (11.4%)
12	75-79	11931 / 155980 (7.6%)
13	>=80	7580 / 155980 (4.9%)

Description: Age at the time of catheterization in years. Age has been grouped: '18-<25', '25-<30', '30-<35', '35-<40', '40-<45', '45-<50', '50-<55', '55-<60', '60-<65', '65-<70', '70-<75', '75-<80', and '>=80'

Variable Name (Type) GENDER (Numeric)

Label: Gender

Value	Format	Stats
0	Male	97565 / 155980 (62.5%)
1	Female	58415 / 155980 (37.5%)

Description: Sex as recorded in the Duke Health System

Variable Name (Type) RACE_G (Numeric)

Label: Race

Value	Format	Stats
1	Caucasian	119005 / 155980 (76.3%)
2	African American	28146 / 155980 (18.0%)
3	Other	6189 / 155980 (4.0%)
.	Missing	2640 / 155980 (1.7%)

Description: Race as recorded in the Duke Health System

Patient History

Variable Name (Type) ACS (Numeric)**Label:** Acute Coronary Syndrome Status Upon Presentation

Value	Format	Stats
0	No ACS	82419 / 155980 (52.8%)
1	STEMI	21747 / 155980 (13.9%)
2	Non-STEMI	10111 / 155980 (6.5%)
3	MI Unspecified	2814 / 155980 (1.8%)
4	Unstable Angina	38889 / 155980 (24.9%)

Description: Acute coronary syndrome, coronary artery disease symptom status at the time of presentation

Variable Name (Type) CHFSEV (Numeric)**Label:** CHF Severity (NYHA Class)

Value	Format	Stats
0	None	114373 / 155980 (73.3%)
1	I	4639 / 155980 (3.0%)
2	II	9004 / 155980 (5.8%)
3	III	13310 / 155980 (8.5%)
4	IV	9444 / 155980 (6.1%)
.	Missing	5210 / 155980 (3.3%)

Description: Congestive heart failure severity is defined as the worst dyspnea or functional class in the previous 2 weeks, coded as the New York Heart Association (NYHA) classification. Congestive heart failure is defined as evidence of fluid retention due to cardiac causes. There should be a history of one or more of the following: exertional dyspnea, orthopnea, paroxysmal nocturnal dyspnea, rales, pulmonary congestion on x-ray, or a ventricular gallop. Prior to 1994, a 6 week window was used for past CHF sx severity. Also, the classification included transient CHF as Class V. Transient CHF sx (Class V) has been converted to Class I. Class I - patient has cardiac disease but without resulting limitations of ordinary physical activity. Ordinary physical activity (e.g., walking several blocks or climbing stairs) does not cause undue fatigue, palpitation, dyspnea, or anginal pain. Limiting symptoms may occur with marked exertion. Class II - Patient has cardiac disease resulting in slight limitation of ordinary physical activity. Patient is comfortable at rest. Ordinary physical activity such as walking more than two blocks or climbing more than one flight of stairs results in limiting symptoms (e.g., fatigue, palpitation, dyspnea, or anginal pain). Class III - Patient has cardiac disease resulting in marked limitation of physical activity. Patient is comfortable at rest. Less than ordinary physical activity (e.g., walking one to two level blocks or climbing one flight of stairs) causes fatigue, palpitation, dyspnea, or anginal pain. Class IV - Patient has symptoms at rest that increase with any physical activity. Patient has cardiac disease resulting in inability to perform any physical activity without discomfort. Symptoms may be present even at rest. If any physical activity is undertaken, discomfort is increased.

Variable Name (Type) DIALYSIS (Numeric)**Label:** Patient Currently on Dialysis

Value	Format	Stats
0	No	102822 / 155980 (65.9%)
1	Yes	2127 / 155980 (1.4%)
.	Missing	51031 / 155980 (32.7%)

Description: Patient is currently on dialysis. This information was not collected before implementation of the Duke Information System for Cardiovascular Care (DISCC).

Variable Name (Type) DPCABG (Numeric)

Label: Days to Closest Previous Coronary Artery Bypass Surgery

	Stats
N	28874
Mean (SD)	2629.8 (2081.4)
Median (25th, 75th)	2285.0 (877.0, 3934.0)
Min, Max	1.0, 12950.0

Description: Days from this catheterization to the closest preceding CABG. If no previous CABG is identified, then the value is set to missing. The previous procedure may not have been performed at Duke.

Variable Name (Type) DPMI (Numeric)

Label: Days to Closest Previous Myocardial Infarction

	Stats
N	68212
Mean (SD)	1004.8 (1942.3)
Median (25th, 75th)	16.0 (2.0, 1100.0)
Min, Max	0.0, 21802.0

Description: Days from this catheterization to the closest preceding myocardial infarction. If no previous MI is identified, then the value is set to missing.

Variable Name (Type) DPPCI (Numeric)

Label: Days to Closest Previous Percutaneous Coronary Intervention

	Stats
N	38669
Mean (SD)	882.6 (1314.1)
Median (25th, 75th)	259.0 (88.0, 1170.0)
Min, Max	0.0, 11058.0

Description: Days from this catheterization to the closest preceding Percutaneous Coronary Intervention. If no previous PCI is identified, then the value is set to missing. The previous procedure may not have been performed at Duke.

Variable Name (Type) DPVALVE (Numeric)

Label: Days to Closest Previous Valve Repair or Replacement Surgery

	Stats
N	3000
Mean (SD)	2207.5 (2129.9)
Median (25th, 75th)	1668.0 (548.0, 3310.0)
Min, Max	1.0, 16298.0

Description: Days from this catheterization to the closest preceding valve repair or replacement surgery. If no previous valve surgery is identified, then the value is set to missing. The previous procedure may not have been performed at Duke.

Variable Name (Type) HXANGINA (Numeric)

Label: History of Angina

Value	Format	Stats
0	No	32271 / 155980 (20.7%)
1	Yes	123135 / 155980 (78.9%)
.	Missing	574 / 155980 (0.4%)

Description: History of anginal pain ever (excluding myocardial infarction pain)

Variable Name (Type) HXCEREB (Numeric)

Label: History of Cerebrovascular Disease

Value	Format	Stats
0	No	139425 / 155980 (89.4%)
1	Yes	16555 / 155980 (10.6%)

Description: History of a stroke, a transient ischemic attack, hemiplegia, carotid surgery or stenting. An asymptomatic bruit is not included in the definition.

Variable Name (Type) HXCHF (Numeric)

Label: History of CHF

Value	Format	Stats
0	No	104455 / 155980 (67.0%)
1	Yes	49113 / 155980 (31.5%)

Value	Format	Stats
.	Missing	2412 / 155980 (1.5%)

Description: History of congestive heart failure not due to acute MI. This is defined as physician documentation or report of any of the following clinical symptoms of heart failure described as unusual dyspnea on light exertion, recurrent dyspnea occurring in the supine position, fluid retention; or the description of rales, jugular venous distension, pulmonary edema on physical exam, or pulmonary edema on chest x-ray presumed to be cardiac dysfunction. A low ejection fraction alone, without clinical evidence of heart failure does not qualify as heart failure.

Variable Name (Type) HXCOPD (Numeric)

Label: History of COPD

Value	Format	Stats
0	No	145353 / 155980 (93.2%)
1	Yes	10627 / 155980 (6.8%)

Description: History of chronic obstructive pulmonary disease (COPD). The data collection form changed in 1990 when a specific option for COPD was added to the life-threatening comorbidity section of the form. Prior to this, information was collected as a free text field.

Variable Name (Type) HXCTDZ (Numeric)

Label: History of Connective Tissue Disease

Value	Format	Stats
0	No	154014 / 155980 (98.7%)
1	Yes	1966 / 155980 (1.3%)

Description: History of connective tissue disease. The data collection form changed in 1990 when a specific option for connective tissue disease (collagen vascular disease) was added to the life-threatening comorbidity section of the form. Prior to this, information was collected as a free text field.

Variable Name (Type) HXDIAB (Numeric)

Label: History of Diabetes

Value	Format	Stats
0	No	114466 / 155980 (73.4%)
1	Yes	41514 / 155980 (26.6%)

Description: A previous physician diagnosis of diabetes mellitus. The patient need not be under current therapy for diabetes, nor is current lab data or lab verification required. This does not differentiate between Type I and Type II diabetes.

Variable Name (Type) HXHTN (Numeric)

Label: History of Hypertension

Value	Format	Stats
0	No	59615 / 155980 (38.2%)
1	Yes	96365 / 155980 (61.8%)

Description: Clinically significant hypertension by history. This does not depend upon a history of treatment; documentation by blood pressure determination is not required.

Variable Name (Type) HXHYL (Numeric)

Label: History of Hyperlipidemia

Value	Format	Stats
0	No	72831 / 155980 (46.7%)
1	Yes	83149 / 155980 (53.3%)

Description: Previous diagnosis and/or treatment of hypercholesterolemia by a physician. Current lipid lab data was not used in the definition.

Variable Name (Type) HXLEUK (Numeric)

Label: History of Leukemia

Value	Format	Stats
0	No	104771 / 155980 (67.2%)
1	Yes	178 / 155980 (0.1%)
.	Missing	51031 / 155980 (32.7%)

Description: History of leukemia (acute or chronic - lymphocytic or myelogenous, polycythemia). This information was not collected before implementation of the Duke Information System for Cardiovascular Care (DISCC).

Variable Name (Type) HXLIVER (Numeric)

Label: History of Liver Disease (mild or with clinical sequelae)

Value	Format	Stats
0	No	103991 / 155980 (66.7%)
1	Yes	958 / 155980 (0.6%)
.	Missing	51031 / 155980 (32.7%)

Description: History of liver disease (mild or with clinical sequelae). This information was not collected before implementation of the Duke Information System for Cardiovascular Care (DISCC).

Variable Name (Type) HXLYMPH (Numeric)

Label: History of Lymphoma

Value	Format	Stats
0	No	104549 / 155980 (67.0%)
1	Yes	400 / 155980 (0.3%)
.	Missing	51031 / 155980 (32.7%)

Description: History of lymphoma. This information was not collected before implementation of the Duke Information System for Cardiovascular Care (DISCC).

Variable Name (Type) HXMETAST (Numeric)

Label: History of Metastatic Cancer

Value	Format	Stats
0	No	104623 / 155980 (67.1%)
1	Yes	326 / 155980 (0.2%)
.	Missing	51031 / 155980 (32.7%)

Description: History of any metastatic malignancy. This information was not collected before implementation of the Duke Information System for Cardiovascular Care (DISCC).

Variable Name (Type) HXMI (Numeric)

Label: History of Myocardial Infarction

Value	Format	Stats
0	No	87768 / 155980 (56.3%)
1	Yes	68212 / 155980 (43.7%)

Description: History of a prior myocardial infarction. An MI is recorded during this admission and prior to catheterization only if the patient has documentation or typical evolutionary ECG changes with a consistent clinical history.

Variable Name (Type) HXPEPULC (Numeric)

Label: History of Peptic Ulcer Disease

Value	Format	Stats
0	No	101185 / 155980 (64.9%)
1	Yes	3764 / 155980 (2.4%)
.	Missing	51031 / 155980 (32.7%)

Description: History of peptic ulcer disease. This information was not collected before implementation of the Duke Information System for Cardiovascular Care (DISCC).

Variable Name (Type) HXPVD (Numeric)

Label: History of Peripheral Vascular Disease

Value	Format	Stats
0	No	139221 / 155980 (89.3%)
1	Yes	16759 / 155980 (10.7%)

Description: History of peripheral vascular disease (below the diaphragm - symptoms or repair). This includes claudication, amputation, PVI, surgical intervention, positive test, and AAA surg/stent.

Variable Name (Type) HXRENAL (Numeric)

Label: History of Renal Disease

Value	Format	Stats
0	No	102199 / 155980 (65.5%)
1	Yes	2750 / 155980 (1.8%)
.	Missing	51031 / 155980 (32.7%)

Description: History of renal disease, defined by serum creatinine >3.0, dialysis, or renal transplant. This information was not collected before implementation of the Duke Information System for Cardiovascular Care (DISCC).

Variable Name (Type) HXSMOKE (Numeric)

Label: History of Smoking

Value	Format	Stats
0	No	67956 / 155980 (43.6%)
1	Yes	88024 / 155980 (56.4%)

Description: History of smoking

Variable Name (Type) HXTUMOR (Numeric)

Label: History of Solid Tumor

Value	Format	Stats
0	No	101657 / 155980 (65.2%)
1	Yes	3292 / 155980 (2.1%)
.	Missing	51031 / 155980 (32.7%)

Description: History of solid tumor, initially treated within the last 5 years. This information was not collected before implementation of the Duke Information System for Cardiovascular Care (DISCC).

Variable Name (Type) NUMPRMI (Numeric)

Label: Number of Previous MIs

	Stats
N	155980
Mean (SD)	0.6 (0.8)
Median (25th, 75th)	0.0 (0.0, 1.0)
Min, Max	0.0, 10.0

Description: Number of previous myocardial infarctions (counts 1 MI per day).

Vital Signs

Variable Name (Type) DIASBP_A (Numeric)

Label: Diastolic Blood Pressure (mmHg) (excluding extremes)

	Stats
N	145834
Mean (SD)	77.4 (14.0)
Median (25th, 75th)	78.0 (69.0, 86.0)
Min, Max	20.0, 150.0

Description: Diastolic Blood Pressure (mmHg), omitting extreme values: <20 or >150

Variable Name (Type) DIASBP_R (Numeric)

Label: Diastolic Blood Pressure (mmHg) (as reported)

	Stats
N	145892
Mean (SD)	77.4 (14.1)
Median (25th, 75th)	78.0 (69.0, 86.0)
Min, Max	1.0, 210.0

Description: Diastolic Blood Pressure (mmHg) as reported in patient record

Variable Name (Type) PULSE_A (Numeric)

Label: Heart Rate (bpm) (excluding extremes)

	Stats
N	151347
Mean (SD)	74.8 (18.5)
Median (25th, 75th)	72.0 (63.0, 83.0)
Min, Max	30.0, 250.0

Description: Heart Rate (bpm), omitting extreme values: < 30 or > 250.

Variable Name (Type) PULSE_R (Numeric)

Label: Heart Rate (bpm) (as reported)

	Stats
N	151581
Mean (SD)	75.0 (19.7)
Median (25th, 75th)	72.0 (63.0, 83.0)
Min, Max	13.0, 297.0

Description: Heart Rate (bpm) as recorded in the patient record

Variable Name (Type) SYSBP_A (Numeric)

Label: Systolic Blood Pressure (mmHg) (excluding extremes)

	Stats
N	146564
Mean (SD)	136.4 (25.4)
Median (25th, 75th)	134.0 (120.0, 151.0)
Min, Max	50.0, 250.0

Description: Systolic Blood Pressure (mmHg) omitting extreme values: < 50 or > 250.

Variable Name (Type) SYSBP_R (Numeric)

Label: Systolic Blood Pressure (mmHg) (as reported)

	Stats
N	146599
Mean (SD)	136.4 (25.5)
Median (25th, 75th)	134.0 (120.0, 151.0)
Min, Max	36.0, 299.0

Description: Systolic Blood Pressure (mmHg) as recorded in the patient record

Physical Examination (Performed Prior to Cardiac Catheterization)

Variable Name (Type) BMI_A (Numeric)

Label: Body Mass Index (kg/m²) (excluding extremes)

	Stats
N	154312
Mean (SD)	28.5 (6.5)
Median (25th, 75th)	27.5 (24.4, 31.4)
Min, Max	6.6, 100.0

Description: Body Mass Index, calculated from Height (cm) and Weight (kg). The formula is: $(wt/(ht^2))*10000$. Extreme values are omitted (< 5 or > 100).

Variable Name (Type) BMI_R (Numeric)

Label: Body Mass Index (kg/m²) (as reported)

	Stats
N	154352
Mean (SD)	28.5 (7.0)
Median (25th, 75th)	27.5 (24.4, 31.4)
Min, Max	6.6, 266.7

Description: Body Mass Index, calculated from Height (cm) and Weight (kg). The formula is: $(wt/(ht^2))*10000$

Variable Name (Type) BSA_A (Numeric)

Label: Body Surface Area, Du Bois algorithm (m²) (excluding extremes)

	Stats
N	154347
Mean (SD)	2.0 (0.2)
Median (25th, 75th)	2.0 (1.8, 2.1)
Min, Max	1.0, 3.1

Description: Body Surface area, calculated from Height (cm) and Weight (kg) .The formula (DuBois) is: $.007184*(wt^.425)*(ht^.725)$. Extreme values are omitted (< 1 or > 3.5).

Variable Name (Type) BSA_R (Numeric)

Label: Body Surface Area, Du Bois algorithm (m²) (as reported)

	Stats
N	154352
Mean (SD)	2.0 (0.2)
Median (25th, 75th)	2.0 (1.8, 2.1)
Min, Max	0.8, 3.1

Description: Body Surface area, calculated from Height (cm) and Weight (kg) . The formula (DuBois) is: $.007184*(wt^{.425})*(ht^{.725})$

Variable Name (Type) CBRUITS (Numeric)

Label: Carotid Bruits

Value	Format	Stats
0	No	142204 / 155980 (91.2%)
1	Yes	12853 / 155980 (8.2%)
.	Missing	923 / 155980 (0.6%)

Description: Carotid bruits detected during physical examination prior to catheterization. Bruits can be left, right, or bilateral.

Variable Name (Type) HEIGHT_A (Numeric)

Label: Height (cm) (excluding extremes)

	Stats
N	154462
Mean (SD)	171.4 (10.2)
Median (25th, 75th)	173.0 (164.0, 180.0)
Min, Max	122.0, 211.0

Description: Height (cm), omitting extreme values: < 122 or > 213

Variable Name (Type) HEIGHT_R (Numeric)

Label: Height (cm) (as reported)

	Stats
N	154555
Mean (SD)	171.3 (10.3)
Median (25th, 75th)	173.0 (164.0, 180.0)
Min, Max	80.0, 220.0

Description: Height (cm) as recorded in the patient record

Variable Name (Type) S3 (Numeric)

Label: Third Heart Sound

Value	Format	Stats
0	No	145361 / 155980 (93.2%)
1	Yes	6793 / 155980 (4.4%)

Value	Format	Stats
.	Missing	3826 / 155980 (2.5%)

Description: S3 gallop or the third heart sound detected.

Variable Name (Type) WEIGHT_A (Numeric)

Label: Weight (kg) (excluding extremes)

	Stats
N	153682
Mean (SD)	83.5 (19.4)
Median (25th, 75th)	82.0 (70.0, 94.0)
Min, Max	40.0, 170.0

Description: Weight in kilograms with extreme values omitted: < 40 or > 170

Variable Name (Type) WEIGHT_R (Numeric)

Label: Weight (kg) (as reported)

	Stats
N	154568
Mean (SD)	83.9 (20.5)
Median (25th, 75th)	82.0 (70.0, 95.0)
Min, Max	30.0, 200.0

Description: Weight in kilograms as recorded in the patient record

Laboratory Results (Prior to Cardiac Catheterization, Closest Value Within 1 Year)

Variable Name (Type) CREATININE_A (Numeric)

Label: Serum Creatinine (mg/dL) (excluding extremes)

	Stats
N	121058
Mean (SD)	1.2 (0.9)
Median (25th, 75th)	1.0 (0.9, 1.3)
Min, Max	0.1, 9.0

Description: Most recent Serum Creatinine (mg/dL) within 1 year preceding or on the day of this catheterization. Extreme values have been omitted: < 0.10 or > 9.0

Variable Name (Type) CREATININE_R (Numeric)**Label:** Serum Creatinine (mg/dL) (as reported)

	Stats
N	122034
Mean (SD)	1.3 (1.7)
Median (25th, 75th)	1.0 (0.9, 1.3)
Min, Max	0.0, 142.0

Description: Most recent Serum Creatinine (mg/dL) within 1 year preceding or on the day of this catheterization

Variable Name (Type) DPCHOL (Numeric)**Label:** Days from Total Cholesterol acquisition to cath

	Stats
N	59912
Mean (SD)	24.3 (63.8)
Median (25th, 75th)	1.0 (0.0, 6.0)
Min, Max	0.0, 365.0

Description: Use the closest date of the total cholesterol laboratory measurements preceding or on the day of this catheterization, but no more than 365 days before this catheterization. This variable is the days from that lab measure date to this catheterization date.

Variable Name (Type) DPCREAT (Numeric)**Label:** Days from Serum Creatinine acquisition to cath

	Stats
N	122034
Mean (SD)	3.8 (24.5)
Median (25th, 75th)	0.0 (0.0, 0.0)
Min, Max	0.0, 365.0

Description: Use the closest date of the serum creatinine laboratory measurements preceding or on the day of this catheterization, but no more than 365 days before this catheterization. This variable is the days from that lab measure date to this catheterization date.

Variable Name (Type) DPHDL (Numeric)**Label:** Days from HDL acquisition to cath

	Stats
N	58877
Mean (SD)	24.5 (64.1)
Median (25th, 75th)	1.0 (0.0, 6.0)
Min, Max	0.0, 365.0

Description: Use the closest date of the HDL laboratory measurements preceding or on the day of this catheterization, but no more than 365 days before this catheterization. This variable is the days from that lab measure date to this catheterization date.

Variable Name (Type) DPLDL (Numeric)

Label: Days from LDL acquisition to cath

	Stats
N	53776
Mean (SD)	26.9 (67.9)
Median (25th, 75th)	1.0 (0.0, 7.0)
Min, Max	0.0, 365.0

Description: Use the closest date of the LDL laboratory measurements preceding or on the day of this catheterization, but no more than 365 days before this catheterization. This variable is the days from that lab measure date to this catheterization date.

Variable Name (Type) EGFR_EPI_G (Numeric)

Label: eGFR Calculated Using the CKD EPI Formula (mL/min per 1.73 m²) excluding extremes (categorized)

Value	Format	Stats
1	<15	3591 / 155980 (2.3%)
2	15-<30	4004 / 155980 (2.6%)
3	30-<45	11114 / 155980 (7.1%)
4	45-<60	19315 / 155980 (12.4%)
5	60-<90	54516 / 155980 (35.0%)
6	>=90	29175 / 155980 (18.7%)
.	Missing	34265 / 155980 (22.0%)

Description: GFR Stage, determined from estimated Glomerular Filtration Rate (eGFR) within 1 year preceding or on the day of this catheterization. Stages: >=90 (normal or high), 60-90 (mildly decreased), 45-59 (mildly or moderately decreased), 30-44 (moderately to severely decreased), 15-29 (severely decreased), or <15 (kidney failure). eGFR is calculated according to the CKD-EPI formula. When the patient is on dialysis, the value is set to <15. Extreme values of creatinine have been omitted in this calculation (if not on dialysis and serum creatinine is < 0.10 or > 9.0). For more information on the calculation of eGFR, refer to <https://www.niddk.nih.gov/healthinformation/health-communication-programs/nkdep/lab-evaluation/gfr/estimating/Pages/estimating.aspx>.

Variable Name (Type) HDL_A (Numeric)**Label:** High Density Lipid (mg/dL) (excluding extremes)

	Stats
N	58874
Mean (SD)	43.2 (15.6)
Median (25th, 75th)	40.0 (33.0, 50.0)
Min, Max	0.0, 251.0

Description: Most recent High Density Lipid (mg/dL) within 1 year preceding or on the day of this catheterization. Extreme values have been omitted: > 300.

Variable Name (Type) HDL_R (Numeric)**Label:** High Density Lipid (mg/dL) (as reported)

	Stats
N	58877
Mean (SD)	43.3 (26.2)
Median (25th, 75th)	40.0 (33.0, 50.0)
Min, Max	0.0, 5135.0

Description: Most recent High Density Lipid (mg/dL) within 1 year preceding or on the day of this catheterization

Variable Name (Type) LDL_A (Numeric)**Label:** Low Density Lipid (mg/dL) (excluding extremes)

	Stats
N	53758
Mean (SD)	103.1 (40.1)
Median (25th, 75th)	99.0 (75.0, 126.0)
Min, Max	1.0, 609.0

Description: Most recent Low Density Lipid (mg/dL) within 1 year preceding or on the day of this catheterization. Extreme values have been omitted: <0.8 or > 800.

Variable Name (Type) LDL_R (Numeric)**Label:** Low Density Lipid (mg/dL) (as reported)

	Stats
N	53776
Mean (SD)	103.1 (40.6)

	Stats
Median (25th, 75th)	99.0 (75.0, 126.0)
Min, Max	-37.0, 1313.0

Description: Most recent Low Density Lipid (mg/dL) within 1 year preceding or on the day of this catheterization

Variable Name (Type) TOTCHOL_A (Numeric)

Label: Total Cholesterol (mg/dL) (excluding extremes)

	Stats
N	59912
Mean (SD)	177.7 (51.0)
Median (25th, 75th)	174.0 (144.0, 206.0)
Min, Max	0.0, 874.0

Description: Most recent Total Cholesterol (mg/dL) within 1 year preceding or on the day of this catheterization. Extreme values have been omitted: > 1500.

Variable Name (Type) TOTCHOL_R (Numeric)

Label: Total Cholesterol (mg/dL) (as reported)

	Stats
N	59912
Mean (SD)	177.7 (51.0)
Median (25th, 75th)	174.0 (144.0, 206.0)
Min, Max	0.0, 874.0

Description: Most recent Total Cholesterol (mg/dL) within 1 year preceding or on the day of this catheterization

Catheterization Procedure

Variable Name (Type) BMS (Numeric)

Label: Bare Metal Stent Placed During Cath

Value	Format	Stats
0	No	140590 / 155980 (90.1%)
1	Yes	15390 / 155980 (9.9%)

Description: Bare Metal Stent is placed during this catheterization

Variable Name (Type) CATHAPPR (Numeric)**Label:** Type of Cardiac Catheterization (approach)

Value	Format	Stats
0	Unknown	3883 / 155980 (2.5%)
1	Right Heart Only	9672 / 155980 (6.2%)
2	Left Heart Only	115067 / 155980 (73.8%)
3	Right and Left Heart	27358 / 155980 (17.5%)

Description: The catheterization approach: Right, left or both.**Variable Name (Type) DES (Numeric)****Label:** Drug Eluting Stent Placed During Cath

Value	Format	Stats
0	No	147740 / 155980 (94.7%)
1	Yes	8240 / 155980 (5.3%)

Description: Drug Eluting Stent Placed During this Catheterization.**Variable Name (Type) DIAGCATH (Numeric)****Label:** Diagnostic Coronary Cath

Value	Format	Stats
0	No	16227 / 155980 (10.4%)
1	Yes	139753 / 155980 (89.6%)

Description: This is a diagnostic coronary cardiac catheterization (i.e., with an available arteriogram).**Variable Name (Type) INTCCOTH (Numeric)****Label:** Percutaneous Intervention other than BMS, DES or POBA

Value	Format	Stats
0	No	154572 / 155980 (99.1%)
1	Yes	1408 / 155980 (0.9%)

Description: A type of percutaneous coronary intervention other than a balloon angioplasty (POBA) or a stent was performed during this catheterization.**Variable Name (Type) INTVCATH (Numeric)****Label:** Interventional Coronary Cath

Value	Format	Stats
0	No	117550 / 155980 (75.4%)
1	Yes	38430 / 155980 (24.6%)

Description: Catheterization procedure which included some form of a percutaneous coronary intervention.

Variable Name (Type) POBA (Numeric)

Label: Balloon Angioplasty without Other Percutaneous Intervention

Value	Format	Stats
0	No	142107 / 155980 (91.1%)
1	Yes	13873 / 155980 (8.9%)

Description: Balloon angioplasty was the only percutaneous coronary intervention performed.

Catheterization Results

Variable Name (Type) AORTINS (Numeric)

Label: Aortic Valve Insufficiency

Value	Format	Stats
0	Absent	3694 / 155980 (2.4%)
1	Mild	2415 / 155980 (1.5%)
2	Moderate	1361 / 155980 (0.9%)
3	Severe	688 / 155980 (0.4%)
5	Catheter-induced	9 / 155980 (0.0%)
6	Trace	521 / 155980 (0.3%)
.	Missing	147292 / 155980 (94.4%)

Description: The severity of aortic valve insufficiency (regurgitation)

Variable Name (Type) AORTSTEN (Numeric)

Label: Aortic Valve Stenosis

Value	Format	Stats
0	Absent	10379 / 155980 (6.7%)
1	Mild (>1.0 cm ²)	910 / 155980 (0.6%)
2	Moderate (0.7-1.0 cm ²)	910 / 155980 (0.6%)
3	Severe (<0.7 cm ²)	1417 / 155980 (0.9%)

Value	Format	Stats
.	Missing	142364 / 155980 (91.3%)

Description: The extent of stenosis of the aortic valve

Variable Name (Type) CORDOM (Numeric)

Label: Coronary Dominance

Value	Format	Stats
1	Left	12978 / 155980 (8.3%)
2	Right	132061 / 155980 (84.7%)
3	Balanced	4939 / 155980 (3.2%)
.	Missing	6002 / 155980 (3.8%)

Description: Dominance of the coronary tree: right, left or balanced. This is based on the coronary flow provided by the posterior descending artery.

Variable Name (Type) GRAFTST (Numeric)

Label: Maximum Stenosis in any Graft

	Stats
N	18188
Mean (SD)	79.0 (33.5)
Median (25th, 75th)	100.0 (75.0, 100.0)
Min, Max	0.0, 100.0

Description: Maximum percent stenosis detected across all coronary artery bypass grafts.

Variable Name (Type) LADST (Numeric)

Label: Maximum Stenosis of the Left Anterior Descending Artery

	Stats
N	124250
Mean (SD)	56.1 (38.9)
Median (25th, 75th)	70.0 (25.0, 95.0)
Min, Max	0.0, 100.0

Description: Maximum percent stenosis in all major arteries of the left anterior descending arterial system

Variable Name (Type) LCXST (Numeric)

Label: Maximum Stenosis of the Left Circumflex Artery

	Stats
N	121770
Mean (SD)	47.3 (40.7)
Median (25th, 75th)	50.0 (0.0, 95.0)
Min, Max	0.0, 100.0

Description: Maximum percent stenosis across the Left Circumflex Arterial system

Variable Name (Type) LMST (Numeric)

Label: Maximum Stenosis of the Left Main Artery

	Stats
N	129087
Mean (SD)	11.1 (22.0)
Median (25th, 75th)	0.0 (0.0, 20.0)
Min, Max	0.0, 100.0

Description: Maximum percent stenosis of the left main coronary artery

Variable Name (Type) LVEF_A (Numeric)

Label: Left Ventricular Ejection Fraction (%) (excluding extremes)

	Stats
N	89262
Mean (SD)	54.2 (14.3)
Median (25th, 75th)	56.8 (45.5, 64.5)
Min, Max	5.0, 90.0

Description: Left Ventricular Ejection Fraction (%) as measured during left ventriculogram, omitting extreme values: <5.0 or > 90.

Variable Name (Type) LVEF_R (Numeric)

Label: Left Ventricular Ejection Fraction (%) (as reported)

	Stats
N	89316
Mean (SD)	54.2 (14.3)
Median (25th, 75th)	56.8 (45.5, 64.6)
Min, Max	0.0, 97.0

Description: Left Ventricular Ejection Fraction (%) as measured during left ventriculogram.

Variable Name (Type) MITSTEN (Numeric)**Label:** Mitral Valve Stenosis

Value	Format	Stats
0	Absent	2096 / 155980 (1.3%)
1	Mild (>1.5 cm2)	558 / 155980 (0.4%)
2	Moderate (1.0-1.5 cm2)	787 / 155980 (0.5%)
3	Severe (<1.0 cm2)	751 / 155980 (0.5%)
.	Missing	151788 / 155980 (97.3%)

Description: Severity of mitral valve stenosis**Variable Name (Type) MRGRADE (Numeric)****Label:** Mitral Regurgitation Grade (Left Ventriculogram)

Value	Format	Stats
0	None	67420 / 155980 (43.2%)
1	I	9575 / 155980 (6.1%)
2	II	5225 / 155980 (3.3%)
3	III	2132 / 155980 (1.4%)
4	IV	1506 / 155980 (1.0%)
.	Missing	70122 / 155980 (45.0%)

Description: Mitral valve regurgitation grade (severity)**Variable Name (Type) NUMDZV (Numeric)****Label:** Number of Significantly Diseased Vessels (major arterial regions)

Value	Format	Stats
0	None	40355 / 155980 (25.9%)
1	One	42232 / 155980 (27.1%)
2	Two	25771 / 155980 (16.5%)
3	Three	30099 / 155980 (19.3%)
.	Missing	17523 / 155980 (11.2%)

Description: Number of arterial systems with significant occlusion in a major segment. Prior to 7/1/2007, the threshold for defining a significant lesion was 75% or greater. Beginning 7/1/2007, the threshold for determining significance was changed to 50%. The coding of this variable is determined by physician judgment. Taken into account by the cathing physicians is the coronary dominance (left, right, or balanced). For example, the number of diseased vessels in a right dominant heart takes into consideration equally, the right coronary, left anterior descending, and left circumflex systems. However, left or balanced dominance as well as extent of left main disease will result in greater consideration of the

left systems and potentially little or no contribution from the right coronary system. This variable will be missing if no arteriograms were performed during catheterization.

Variable Name (Type) PRXLADST (Numeric)

Label: Maximum Stenosis of the Proximal Left Anterior Descending Artery

	Stats
N	124129
Mean (SD)	24.7 (35.3)
Median (25th, 75th)	0.0 (0.0, 50.0)
Min, Max	0.0, 100.0

Description: Maximum percent stenosis in the proximal segment of the left anterior descending arterial system

Variable Name (Type) RCAST (Numeric)

Label: Maximum Stenosis of the Right Coronary Artery

	Stats
N	122356
Mean (SD)	51.1 (41.2)
Median (25th, 75th)	50.0 (5.0, 95.0)
Min, Max	0.0, 100.0

Description: Maximum percent stenosis in the Right Coronary Arterial system

Variable Name (Type) VALVEDZ (Numeric)

Label: Valvular Heart Disease (Final Impressions)

Value	Format	Stats
0	No	147961 / 155980 (94.9%)
1	Yes	8019 / 155980 (5.1%)

Description: Valvular heart disease (aortic, mitral, any)

Follow-Up: All Days to Event Variables Are Censored in Dec2014

Variable Name (Type) DAYS2LKA (Numeric)

Label: Days to Last Known Alive

	Stats
N	155980

	Stats
Mean (SD)	3458.9 (2645.0)
Median (25th, 75th)	3030.0 (1195.0, 5235.0)
Min, Max	0.0, 10937.0

Description: Days from this catheterization to the last date that the patient was known to be alive. This will be zero for patients without any follow-up and whose vital status is alive. For deceased patients this is the number of days from this catheterization to date of death. Events and follow-up are censored in Dec2014.

Variable Name (Type) DEATH (Numeric)

Label: Vital Status at Last Contact

Value	Format	Stats
0	Alive	72930 / 155980 (46.8%)
1	Deceased	83050 / 155980 (53.2%)

Description: Indicator for whether the patient died or was still alive at end of follow-up. Follow-up censored in Dec2014.

Variable Name (Type) DSCABG (Numeric)

Label: Days to First Subsequent Coronary Artery Bypass Surgery

	Stats
N	34741
Mean (SD)	961.7 (1631.6)
Median (25th, 75th)	27.0 (4.0, 1428.0)
Min, Max	0.0, 10179.0

Description: Days from this catheterization to the first subsequent CABG. If the patient is never treated with CABG, then the value is set to missing. Event is censored in Dec2014. The subsequent procedure may not have been performed at Duke.

Variable Name (Type) DSHOSP (Numeric)

Label: Days to First Subsequent Hospitalization for Any Cause

	Stats
N	115119
Mean (SD)	931.0 (1351.3)
Median (25th, 75th)	305.0 (62.0, 1290.0)
Min, Max	1.0, 10547.0

Description: Days from this catheterization to the first subsequent hospitalization for any cause. If a subsequent hospitalization was not reported then the value is set to missing. Event is censored in

Dec2014. The subsequent hospitalization may have occurred at a Duke or a non-Duke hospital. Hospital admissions on the same day as the catheterization procedure are not included.

Variable Name (Type) DSMI (Numeric)

Label: Days to First Subsequent Non-Fatal Myocardial Infarction

	Stats
N	18807
Mean (SD)	1965.4 (1919.7)
Median (25th, 75th)	1409.0 (394.0, 2982.0)
Min, Max	0.0, 10308.0

Description: Days from this catheterization to the first subsequent MI. If there is no evidence of a subsequent MI, then the value is set to missing. Event is censored in Dec2014.

Variable Name (Type) DSPCI (Numeric)

Label: Days to First Subsequent Percutaneous Coronary Intervention

	Stats
N	65742
Mean (SD)	351.7 (1049.4)
Median (25th, 75th)	0.0 (0.0, 2.0)
Min, Max	0.0, 10308.0

Description: Days from this catheterization to the first subsequent PCI. If the patient is never treated with PCI, then the value is set to missing. Event is censored in Dec2014. The subsequent procedure may not have been performed at Duke.

Variable Name (Type) DSSTROKE (Numeric)

Label: Days to First Subsequent Non-Fatal Stroke

	Stats
N	17657
Mean (SD)	2093.6 (2133.9)
Median (25th, 75th)	1483.0 (221.0, 3318.0)
Min, Max	0.0, 10580.0

Description: Days from this catheterization to the first subsequent stroke. If there is no evidence of a subsequent stroke, then the value is set to missing. Event is censored in Dec2014.

Variable Name (Type) DSVOLVE (Numeric)

Label: Days to First Subsequent Valve Repair or Replacement Surgery

	Stats
N	8703
Mean (SD)	730.9 (1586.5)
Median (25th, 75th)	12.0 (3.0, 504.0)
Min, Max	0.0, 10413.0

Description: Days from this catheterization to the first subsequent valve repair or replacement surgery. If the patient is never treated with valve repair or replacement, then the value is set to missing. Event is censored in Dec2014. The subsequent procedure may not have been performed at Duke.

Variable Name (Type) FUCOMP30D (Numeric)

Label: Follow-up is Complete at 30 days

Value	Format	Stats
0	No	2452 / 155980 (1.6%)
1	Yes	153528 / 155980 (98.4%)

Description: This is Yes (1) if the patient died or was followed through 30 days post catheterization. If the patient was last known alive and the follow-up was less than 30 days, then the value is No (0)

Variable Name (Type) FUPROTCL (Numeric)

Label: Patient on Follow-up Protocol

Value	Format	Stats
0	No	36411 / 155980 (23.3%)
1	Yes	119569 / 155980 (76.7%)

Description: Only a subset of the patients in this study were on a follow-up protocol. Follow-up protocol includes patient administered questionnaires, telephone contact and subsequent National Death Index submissions for non-responders. Follow-up protocol eligibility included all patients diagnosed at Duke with significant coronary disease or patients for whom follow-up was needed for other studies.

Variable Name (Type) TRT30DAY (Numeric)

Label: Initial Treatment for Coronary Artery or Valvular Heart Disease within 30 days

Value	Format	Stats
0	Medical	83465 / 155980 (53.5%)
1	PCI	53416 / 155980 (34.2%)
2	CABG	13968 / 155980 (9.0%)
3	Valve repair/replacement only	2981 / 155980 (1.9%)
4	CABG and Valve repair/replacement	2150 / 155980 (1.4%)

Description: Reflects the initial treatment decision following cardiac catheterization for the next 30 days. Intervention classification is the first attempted procedure during or post-catheterization. Medical

treatment is assumed if no intervention is attempted within 30 days. Isolated valve surgeries outside of Duke are likely unavailable for this cohort since these patients are not likely to be on follow-up protocol.