

Supplementary Tables:

Sickle Cell Disease:

Clinical Diagnosis	ICD-9-CM	ICD-10-CM
Sickle Cell Thalassemia	282.41 Sickle-cell crisis	D57.40 Sickle-cell thalassemia without crisis
	282.42 Sickle-cell thalassemia with crisis	D57.411 Sickle-cell thalassemia with acute chest syndrome
		D57.412 Sickle-cell thalassemia with acute chest syndrome
		D57.419 Sickle-cell thalassemia with crisis, unspecified
Hb-SS	282.61 Hb-SS disease without crisis	(EXCLUDED) D57.1 Sickle-cell disease without crisis
	282.62 Hb-SS disease with crisis	D57.00 Hb-SS disease with crisis, unspecified
		D57.01 Hb-SS disease with acute chest syndrome
		D57.02 Hb-SS disease with splenic sequestration
Hb-SC	282.63 Sickle-cell/Hb-C disease without crisis	D57.20 Sickle-cell/Hb-C disease without crisis
	282.64 Sickle-cell/Hb-C disease with crisis	D57.211 Sickle-cell/Hb-C disease with acute chest syndrome
		D57.212 Sickle-cell/Hb-C disease with splenic sequestration
		D57.219 Sickle-cell/Hb-C disease with crisis, unspecified
Other abnormal hemoglobin (Hb-D) (Hb-E) (Hb-G) (Hb-J) (Hb-K) (Hb-O) (Hb-P) (high fetal gene)	282.68 Other sickle-cell disease without crisis	D57.80 Other sickle-cell disorders without crisis
	282.69 Other sickle-cell disease with crisis	D57.811 Other sickle-cell disorders with acute chest syndrome
		D57.812 Other sickle-cell disorders with splenic sequestration
		D57.819 Other sickle-cell disorders with crisis, unspecified

Venous Thromboembolism:

Clinical Diagnosis	ICD-9-CM	ICD-10-CM
Deep Venous Thrombosis	<u>453</u> Other venous embolism and thrombosis	<u>I82</u> Other venous embolism and thrombosis
Pulmonary Embolism	<u>415.1</u> Pulmonary embolism and infarction	<u>I26</u> Pulmonary embolism
Portal Vein Thrombosis	<u>452</u> Portal vein thrombosis	<u>I81</u> Portal vein thrombosis
Intracardiac thrombus	<u>429.89</u> Other ill-defined heart diseases	<u>I51.3</u> Intracardiac thrombosis, not elsewhere classified

Arterial Thromboembolism:

Clinical Diagnosis	ICD-9-CM	ICD-10-CM
CVA	<u>434</u> Occlusion of cerebral arteries	<u>I63</u> Cerebral infarction <u>I66</u> Occlusion and stenosis of cerebral arteries, not resulting in cerebral infarction
	<u>433</u> Occlusion and stenosis of precerebral arteries	<u>I65</u> Occlusion and stenosis of precerebral arteries, not resulting in cerebral infarction
Colonic ischemia	<u>557</u> Vascular insufficiency of intestine	<u>K55.0</u> Acute vascular disorders of intestine
eye	<u>362.3</u> Retinal vascular occlusion	<u>H34</u> Retinal vascular occlusions
kidney	<u>593.81</u> Vascular disorders of kidney	<u>N28.0</u> Ischemia and infarction of kidney
Aorta and peripheral arteries	<u>444</u> Arterial embolism and thrombosis	<u>I74</u> Arterial embolism and thrombosis

Pregnancy:

Clinical Diagnosis	ICD-9-CM	ICD-10-CM
Outcome of delivery	<u>V27</u> Outcome of delivery	<u>Z37</u> Outcome of delivery
Spontaneous Abortion	<u>633</u> Ectopic pregnancy	<u>O00</u> Ectopic pregnancy
	<u>634</u> Spontaneous abortion	<u>O03</u> Spontaneous abortion
Abortion	<u>632</u> Missed abortion	<u>O02.1</u> Missed abortion
	<u>635</u> Legally induced abortion	<u>Z33.2</u> Encounter for elective termination of pregnancy
	<u>636</u> Illegal abortion	
	<u>637</u> Unspecified abortion	







Procedure Queries:

Procedure	ICD-9-PCS	ICD-10-PCS
Central Venous Catheter Placement (Peripherally or Centrally inserted)	38.93 Venous catheterization, not elsewhere classified	02HV33Z Insertion of infusion device into superior vena cava, percutaneous approach
		06HM33Z Insertion of Infusion Device into Right Femoral Vein, Percutaneous Approach
Tunneled Dialysis Catheter Placement	38.95 for venous catheterization for renal dialysis	02HV33Z (infusion device) 0JH63XZ (vascular access device, tunneled)
Total Knee Arthroplasty	81.54 Total knee replacement	0SRD0xx - Replacement of Left Knee Joint 0SRC0xx - Replacement of Right Knee Joint
Removal of Prosthesis Knee	80.06 Removal of Prosthesis Knee	0SPD0xx - Right Knee 0SPC0xx - Left Knee
Revision Knee Replacement	81.55 Revision total knee replacement	0SWC0xx - Revision of synthetic substitute Right Knee joint 0SWD0xx - Revision of synthetic substitute Left Knee Joint
Knee Arthroscopy	80.26 Arthroscopy, Knee	0SxC4ZZ Arthroscopic approach of R knee (surgery unspecified) 0SxD4ZZ Arthroscopic approach of L knee (surgery unspecified)
Total Hip Arthroplasty	81.51 Total hip replacement	0SR90xx – Replacement of Right Hip Joint with Synthetic Substitute, Open Approach 0SRB0xx – Replacement of Left Hip Joint with Synthetic Substitute, Open Approach
Hemiarthroplasty	81.52 Partial hip replacement / Hemi-arthroplasty Unipolar or bipolar femoral head	0SRR0xx - Femoral Head Surface Right 0SRS0xx - Femoral Head Surface Left
Revision Hip Replacement	81.53 Revision of hip replacement not otherwise specified	0SW90xx (Right Hip) 0SWB0xx (Left Hip)

Hip Arthroscopy	80.25 Arthroscopy, Hip	0Sx94ZZ Arthroscopic approach of R hip (surgery unspecified) 0SxB4ZZ Arthroscopic approach of L hip (surgery unspecified)
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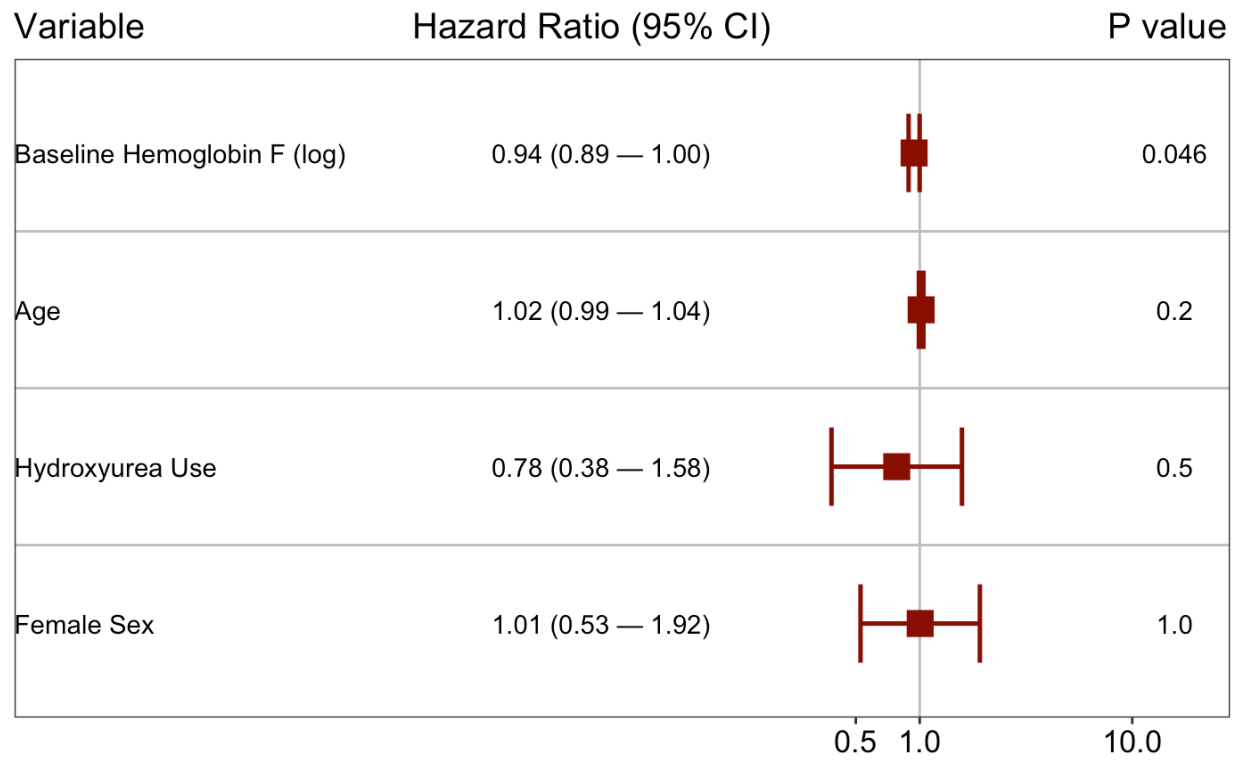
Note: x within the above ICD-10-PCS codes refer to a wildcard character, where any character could be evaluated.

Supplementary Figure 1: Thrombotic risk in Hb SS/S β^0 patients.








Variable	Hazard Ratio (95% CI)		P value
Estimated GFR (log)	0.54 (0.42 — 0.71)		< 0.001
AST (log)	1.68 (1.15 — 2.47)		0.007
Hydroxyurea Use	1.73 (1.09 — 2.76)		0.021
Female Sex	1.36 (0.94 — 1.96)		0.1
Tobacco Use	1.15 (0.80 — 1.65)		0.5
Age	1.00 (0.99 — 1.02)		0.7

0.5 1.0 10.0

Supplementary Figure 2: Cerebrovascular accident risk in Hb SS/S β^0 patients.



Supplementary Figure 3: Venous thrombotic risk in Hb SS/Sp⁰ patients.

Variable	Hazard Ratio (95% CI)		P value
Estimated GFR (log)	0.51 (0.38 — 0.68)		< 0.001
Hydroxyurea Use	2.17 (1.26 — 3.72)		0.005
White Blood Cell Count (log)	2.17 (1.25 — 3.75)		0.006
Hemoglobin	1.13 (0.99 — 1.28)		0.06
Female Sex	1.31 (0.88 — 1.94)		0.2
Tobacco Use	1.16 (0.79 — 1.70)		0.5
Age	1.01 (0.99 — 1.02)		0.5

0.5 1.0 10.0

Supplementary Figure 4: Venous thrombotic risk in non-catheter related venous thrombotic events.

Variable	Hazard Ratio (95% CI)		P value
Estimated GFR (log)	0.47 (0.35 — 0.64)		< 0.001
White Blood Cell Count (log)	2.15 (1.21 — 3.83)		0.009
Hydroxyurea Use	1.90 (1.13 — 3.20)		0.015
Hemoglobin	1.17 (1.02 — 1.34)		0.021
HbSS/HbSβ0-thalassemia	1.81 (0.94 — 3.48)		0.07
Age	1.01 (1.00 — 1.03)		0.1
Tobacco Use	1.11 (0.73 — 1.68)		0.6
Female Sex	0.96 (0.63 — 1.46)		0.9

0.5 1.0 10.0