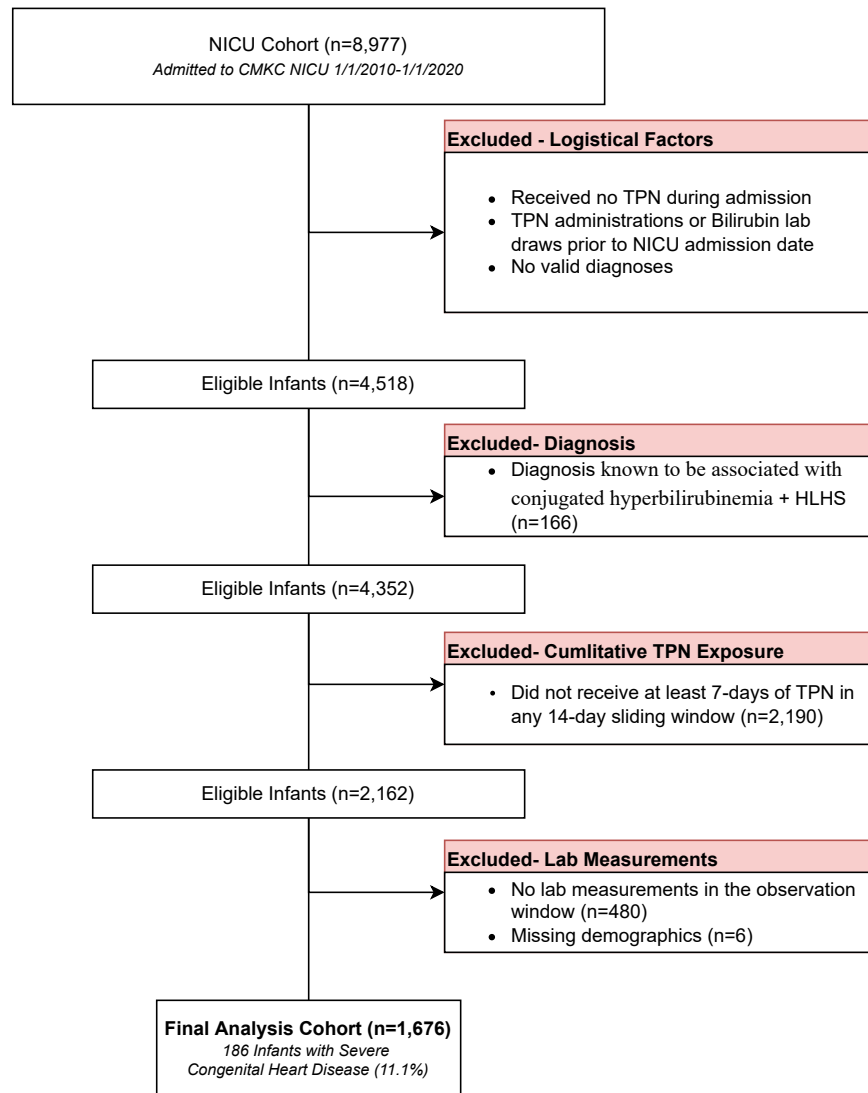


Diagnosis Category	Diagnosis Description
<i>Meconium disorders</i>	meconium ileus with cystic fibrosis
	alpha1-antitrypsin deficiency
	Biliary Atresia
	Choledochal Cyst
	Cholelithiasis/Cholecystitis
	Cystic fibrosis
<i>Miscellaneous</i>	Hemochromatosis
	Hepatic (Liver) Necrosis
	Hepatic Infarction
	Liver Failure, dysfunction, insufficiency, NOS
	Neonatal Hepatitis
	Portal Hypertension
	Barth syndrome
	biotinidase deficiency
	Glutaric Acidemia Type 1
	glutaric acidemia (type II-multiple acyl-CoA dehydrogenase deficiency)
	Hartnup disease
	hereditary tyrosinemia type 1
	holocarboxylase synthetase deficiency (multiple carboxylase deficiency)
	homocystinuria
<i>Inborn Errors Metabolism</i>	hydroxymethylglutaryl-CoA (HMG-CoA) lyase deficiency
	isovaleric acidemia
	maple syrup urine disease
	methionine synthase deficiency
	methylmalonic acidemia
	nonketotic hyperglycinemia
	other disorder of amino or organic acid metabolism, NOS
	phenylketonuria
	propionic acidemia
	galactosemia
	glycogen storage disease
<i>Carbohydrate Metabolism Disorders</i>	hereditary fructose intolerance
	other carbohydrate metabolism/transport disorder, NOS
	phosphoenolpyruvate carboxykinase deficiency
<i>Disorders of Metal Metabolism</i>	Disorders of mineral metabolism, NOS
	Carnitine deficiency
	long-chain 3-hydroxyacyl CoA dehydrogenase deficiency (LCHAD)
<i>Fatty Acid Oxidation Defects</i>	Medium-chain acyl CoA dehydrogenase deficiency (MCAD)
	other fatty acid oxidation defect, NOS
	Short/branched-chain acyl CoA Dehydrogenase deficiency (SBCADD)
	Very-Long-chain Acyl CoA dehydrogenase Deficiency (VCLAD)
<i>Lysosomal Storage Disorders</i>	Fabry disease

	Fucosidosis
	Gaucher disease
	Krabbe disease
	mannosidosis
	Mucopolysaccharidosis (e.g. Hunter's, Hurler's, or I-cell)
	Niemann-Pick disease
	other lysosomal storage disorder, NOS
	Wolman disease
	cytochrome oxidase deficiency (complex IV)
	Leigh syndrome
<i>Mitochondrial Disorders</i>	NADH-CoQ reductase (complex I deficiency)
	other mitochondrial disorder NOS
	pyruvate carboxylase deficiency
	pyruvate dehydrogenase deficiency
<i>Peroxisomal Disorders</i>	neonatal adrenoleukodystrophy
	other peroxisomal disorder, NOS
	rhizomelic chondrodysplasia punctata
	Zellweger syndrome
<i>Urea Cycle Disorders</i>	arginosuccinate lyase deficiency
	arginosuccinate synthetase deficiency
	carbamoyl phosphate synthetase deficiency
	citrullinemia
	hyperammonemia
	ornithine transcarbamylase deficiency
	other urea cycle defects NOS
<i>Other Diagnoses</i>	Other Diagnosis - Not Listed
	Vitamin B 12 Deficiency
	Canavan Disease
	Congenital disorders of glycosylation
	hereditary orotic aciduria
	Hypophosphatasia
	other metabolic disorder NOS
	pyridoxine dependency with seizures

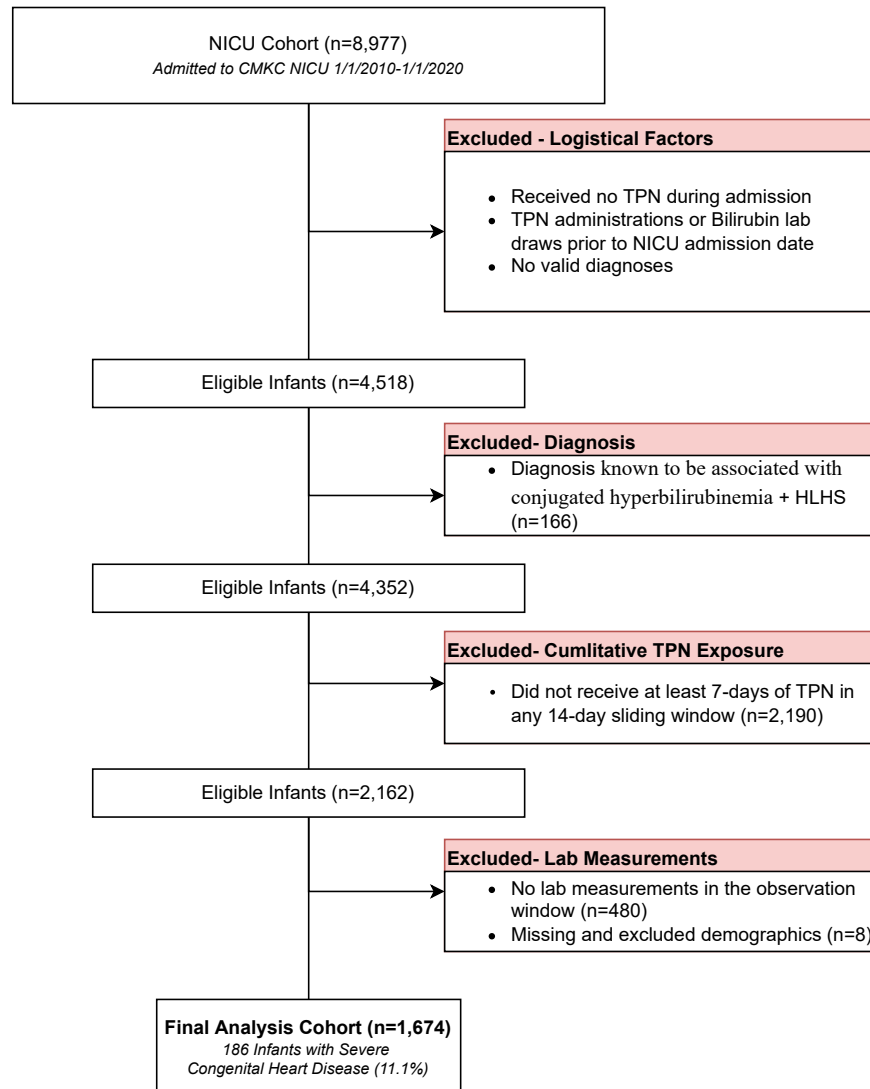
Supplementary Table S1: Exclusion Diagnoses



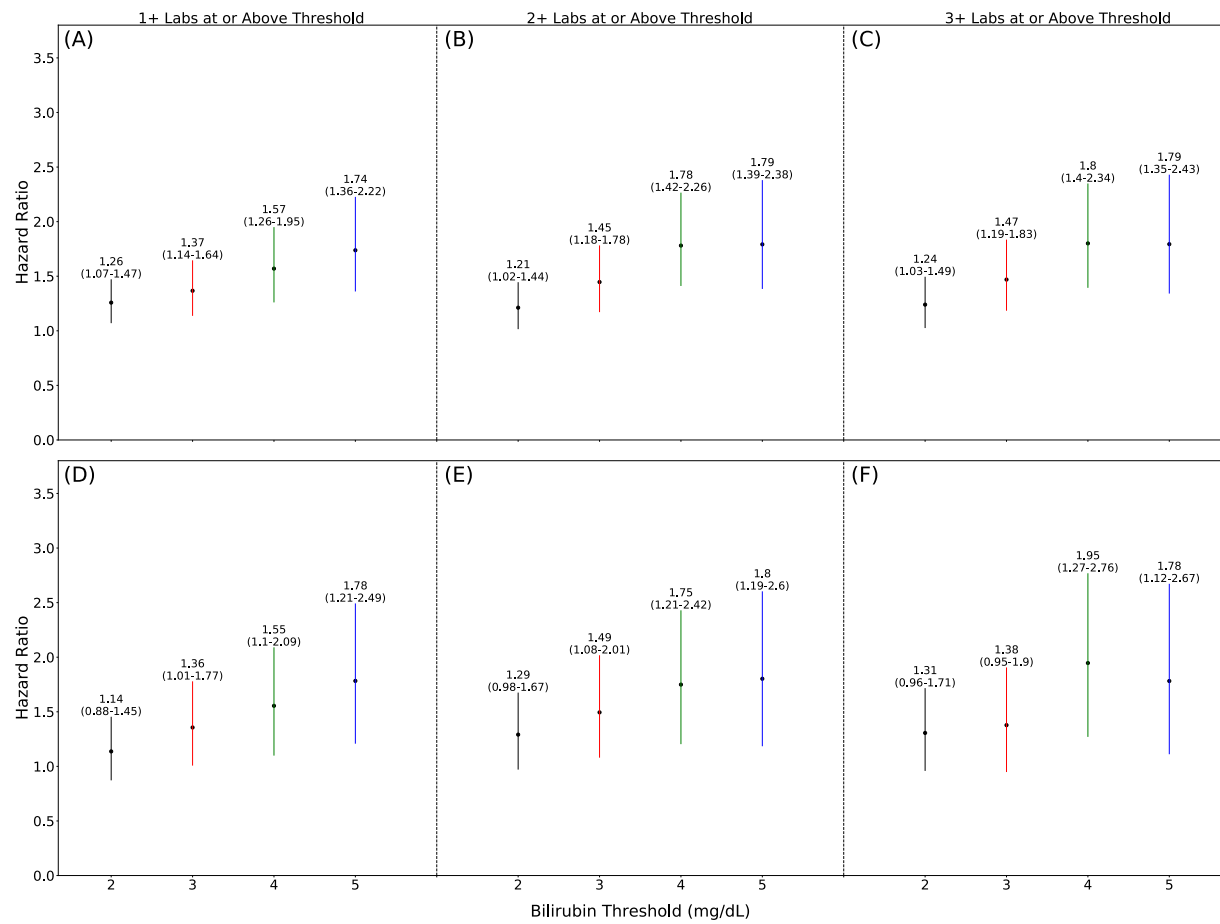
Supplementary Figure S1: Inclusion and Exclusion Criteria for Primary Study Cohort (14-days)

Sensitivity Analysis

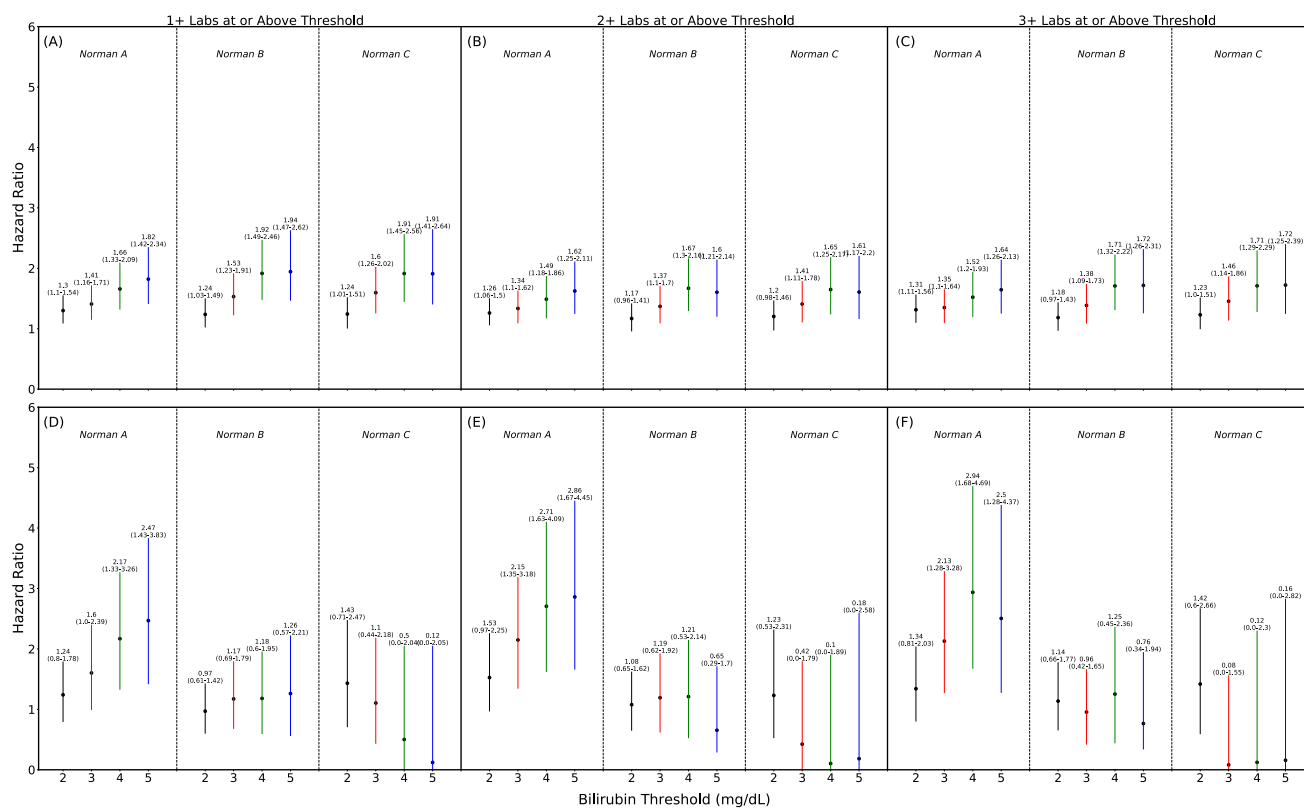
TPN Exposure Days: 7



Supplementary Figure S2: Inclusion and Exclusion Criteria for Study Cohort (7-days)



Supplementary Figure S3: CHD (All Norman Categories) PNALD Risk

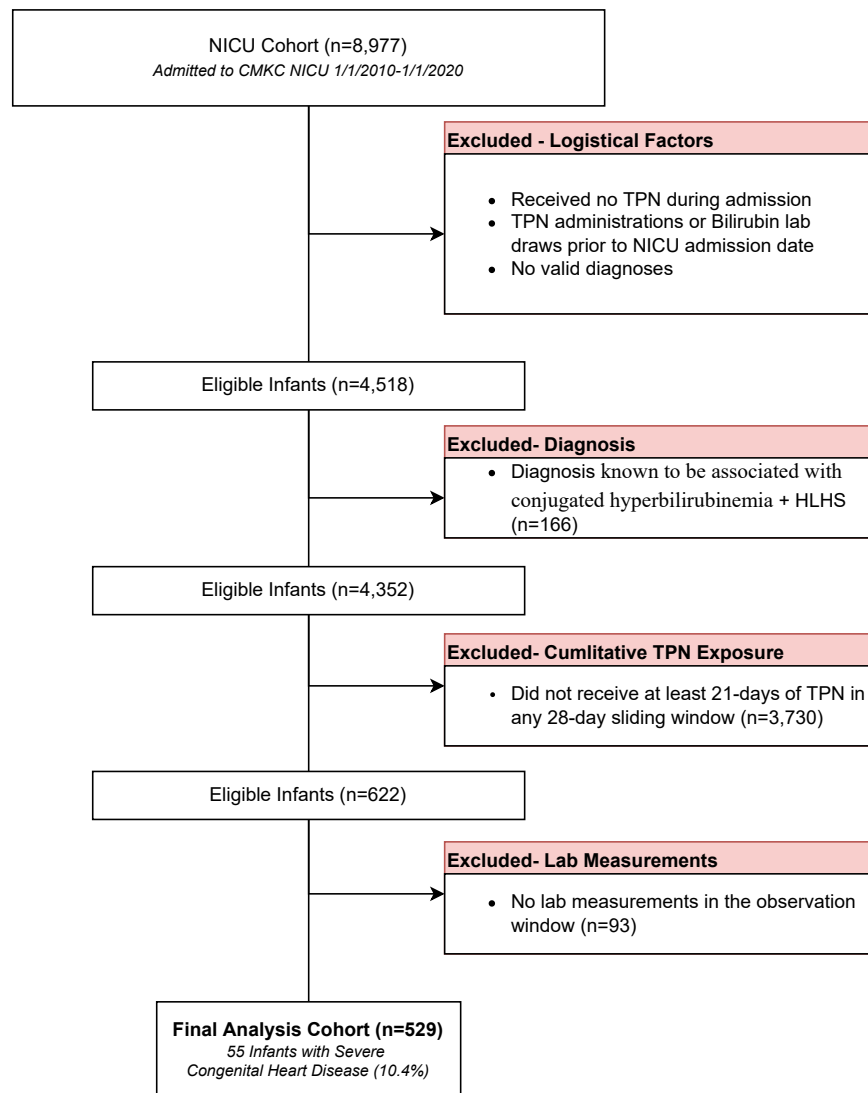


Supplementary Figure S4: PNALD Risk for CHD defined by each Norman Category

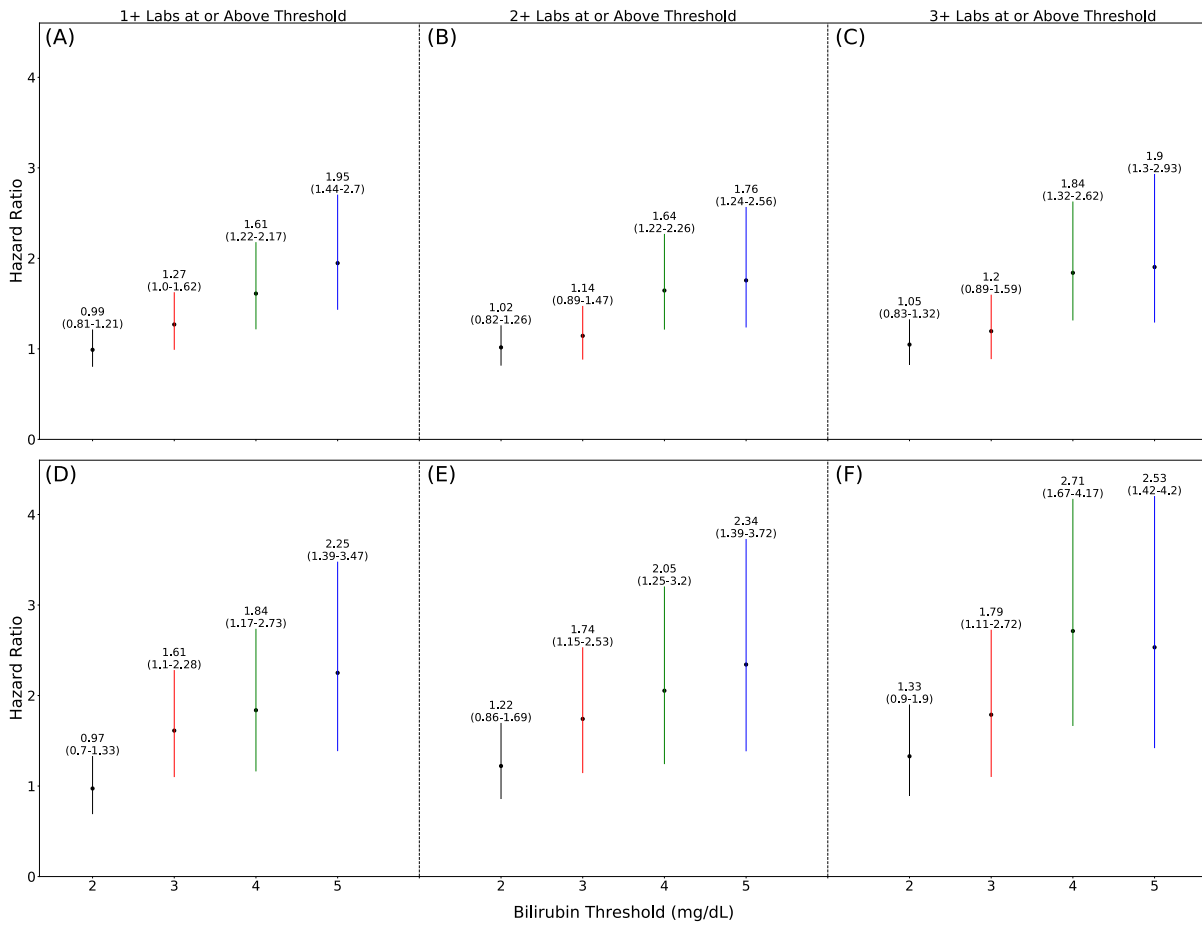
	Diagnoses	Bili Threshold	1+ Labs HR (95% CI)	2+ Labs HR (95% CI)	3+ Labs HR (95% CI)
<i>Norman A</i>	Coarctation of Aorta	2	0.46 (-0.01-0.84)	0.67 (0.2-1.07)	0.54 (0.0-0.97)
		3	0.53 (-0.0-0.97)	0.82 (0.32-1.27)	0.73 (0.11-1.21)
		4	0.85 (0.3-1.28)	0.91 (0.33-1.37)	0.88 (0.17-1.41)
		5	0.97 (0.39-1.43)	1.06 (0.45-1.54)	0.7 (-0.21-1.43)
	Hypoplastic Aortic Arch	2	0.23 (-0.46-0.75)	0.35 (-0.42-0.93)	0.5 (-0.26-1.1)
		3	0.56 (-0.19-1.12)	0.75 (-0.05-1.35)	0.7 (-0.22-1.38)
		4	0.92 (0.16-1.49)	1.1 (0.32-1.72)	0.96 (-0.02-1.71)
		5	0.97 (0.08-1.61)	1.01 (0.07-1.73)	0.92 (-0.14-1.75)
	Interrupted Aortic Arch	2	-3.25 (-18.25-0.02)	-2.76 (-17.98-0.27)	-2.71 (-17.87-0.41)
		3	-2.73 (-17.83-0.47)	-2.27 (-17.59-0.76)	-1.92 (-17.4-1.1)
		4	-2.03 (-17.51-0.9)	-1.78 (-16.77-1.25)	-1.52 (-16.67-1.49)
		5	-1.68 (-16.8-1.25)	-1.62 (-16.72-1.21)	-1.5 (-16.62-1.34)
<i>Norman B</i>	Pulmonary Valve Stenosis	2	0.12 (-0.6-0.65)	0.18 (-0.66-0.75)	0.28 (-0.5-0.85)
		3	0.35 (-0.38-0.92)	0.08 (-0.86-0.9)	-0.15 (-1.01-0.91)
		4	0.26 (-0.74-1.06)	0.54 (-0.45-1.33)	0.21 (-0.64-1.28)
		5	0.11 (-0.74-1.18)	-2.31 (-17.51-0.72)	-2.03 (-17.44-0.78)
	Transposition of Great Vessels	2	0.19 (-0.73-0.88)	0.07 (-0.75-1.02)	-0.58 (-17.35-0.94)
		3	0.25 (-0.47-1.17)	-0.22 (-16.59-1.25)	-1.84 (-16.59-1.22)
		4	-0.12 (-16.51-1.39)	-5.83 (-16.65-0.77)	-5.5 (-16.62-1.05)
		5	-1.48 (-16.61-1.41)	-5.58 (-16.65-1.06)	-5.36 (-16.48-1.27)
<i>Norman C</i>	Double Outlet Right Ventricle	2	-0.07 (-0.91-0.55)	-0.17 (-1.14-0.62)	-0.02 (-1.01-0.75)
		3	0.05 (-0.9-0.74)	-2.99 (-17.77-0.17)	-2.63 (-17.63-0.4)
		4	-0.82 (-17.31-0.65)	-2.4 (-17.59-0.56)	-2.16 (-17.45-0.78)
		5	-2.36 (-17.55-0.63)	-2.15 (-16.94-0.85)	-1.88 (-16.79-0.97)
<i>Norman Minor</i>	Atrial Septal Defect (ASD)	2	0.43 (0.17-0.68)	0.41 (0.11-0.67)	0.42 (0.12-0.68)
		3	0.57 (0.29-0.84)	0.66 (0.35-0.95)	0.67 (0.34-0.98)
		4	0.7 (0.38-0.99)	0.69 (0.34-1.01)	0.66 (0.28-1.0)
		5	0.63 (0.25-0.96)	0.62 (0.22-0.98)	0.64 (0.21-1.03)
	Patent Ductus Arteriosus (PDA)	2	0.21 (0.02-0.38)	0.14 (-0.06-0.34)	0.17 (-0.05-0.37)
		3	0.21 (0.0-0.41)	0.21 (-0.02-0.44)	0.27 (0.03-0.51)
		4	0.35 (0.1-0.58)	0.39 (0.12-0.64)	0.35 (0.06-0.62)
		5	0.36 (0.09-0.62)	0.4 (0.11-0.69)	0.37 (0.04-0.69)
	Systemic Vein Anomalies	2	0.71 (-0.04-1.28)	0.86 (0.12-1.45)	0.8 (0.06-1.41)
		3	0.33 (-0.6-1.11)	0.08 (-1.03-1.19)	0.37 (-0.53-1.43)
		4	0.41 (-0.45-1.4)	-0.17 (-16.45-1.48)	-0.01 (-16.37-1.7)
		5	-0.14 (-16.5-1.53)	0.12 (-16.32-1.8)	0.27 (-16.3-1.91)
	Ventricular Septal Defect (VSD)	2	0.39 (0.1-0.64)	0.21 (-0.12-0.5)	0.15 (-0.2-0.45)
		3	0.37 (0.04-0.67)	0.4 (0.05-0.73)	0.38 (-0.03-0.73)
		4	0.36 (-0.03-0.69)	0.52 (0.11-0.88)	0.39 (-0.1-0.78)
		5	0.41 (-0.05-0.79)	0.55 (0.04-0.96)	0.19 (-0.43-0.67)
<i>Other</i>	Other Dx	2	0.02 (-0.34-0.34)	0.11 (-0.3-0.45)	0.21 (-0.21-0.57)
		3	0.22 (-0.19-0.57)	0.27 (-0.2-0.66)	0.09 (-0.48-0.55)
		4	0.08 (-0.47-0.51)	0.3 (-0.28-0.75)	0.44 (-0.18-0.93)
		5	0.47 (-0.1-0.92)	0.25 (-0.43-0.75)	0.14 (-0.68-0.69)

Supplementary Table S2: PNALD Risk at Diagnosis Level

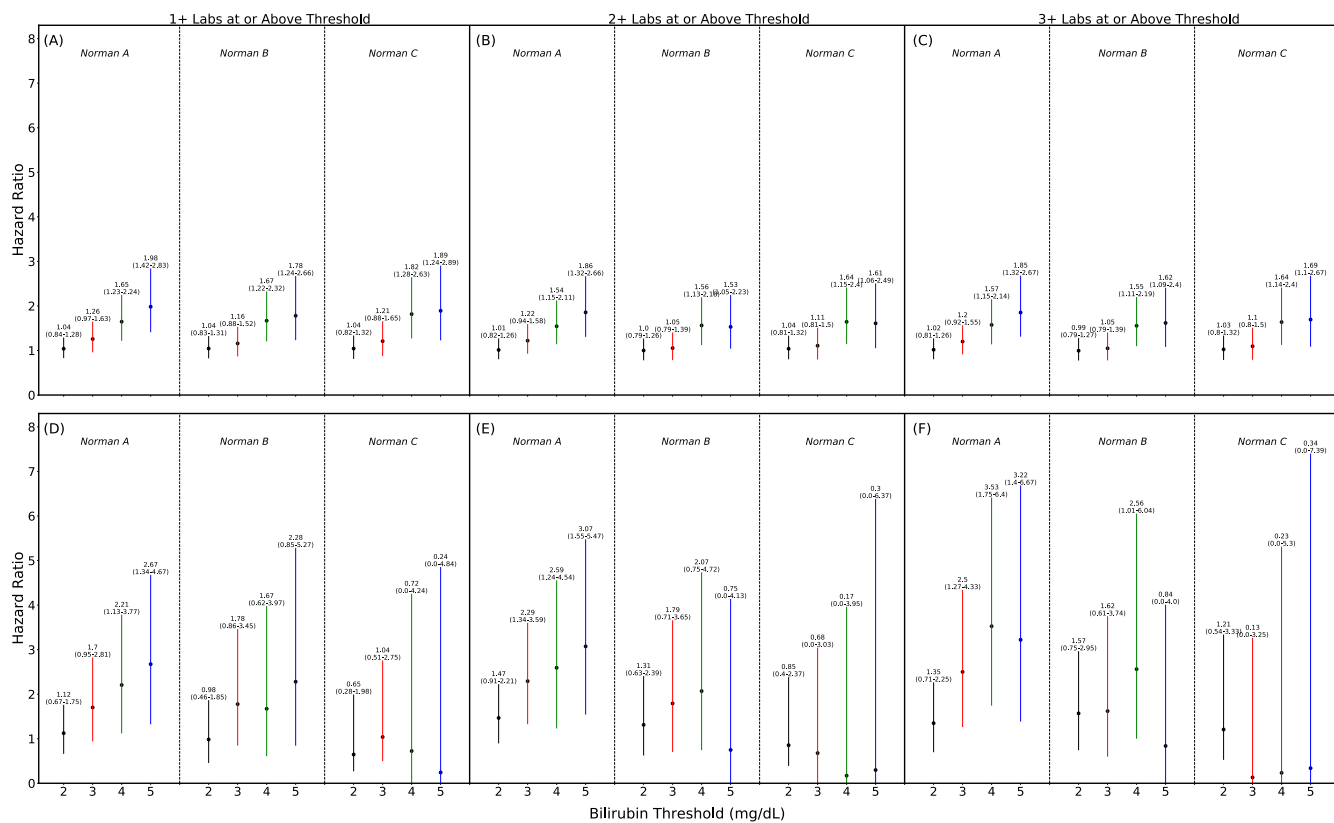
TPN Exposure Days: 21



Supplementary Figure S5: Inclusion and Exclusion Criteria for Study Cohort (21-days)



Supplementary Figure S6: CHD (All Norman Categories) PNALD Risk



Supplementary Figure S7: PNALD Risk for CHD defined by each Norman Category

	Diagnoses	Bili Threshold	1+ Labs	2+ Labs	3+ Labs
			HR (95% CI)	HR (95% CI)	HR (95% CI)
Norman A	Coarctation of Aorta	2	0.47 (-0.04-0.95)	0.69 (0.21-1.14)	0.67 (0.04-1.21)
		3	0.77 (0.15-1.32)	1.02 (0.47-1.51)	1.21 (0.58-1.79)
		4	1.06 (0.4-1.63)	1.14 (0.44-1.73)	1.45 (0.71-2.07)
		5	1.17 (0.49-1.76)	1.41 (0.69-2.06)	1.4 (0.47-2.2)
	Interrupted Aortic Arch	2	-6.85 (-17.98-0.09)	-6.53 (-17.68-0.28)	-6.45 (-17.61-0.53)
		3	-6.05 (-17.57-0.7)	-5.95 (-17.37-0.94)	-5.41 (-16.64-1.23)
		4	-5.53 (-16.76-1.31)	-5.3 (-16.55-1.53)	-5.2 (-16.48-1.77)
		5	-5.09 (-16.56-1.73)	-5.54 (-16.42-1.13)	-5.27 (-16.38-1.26)
Norman B	Pulmonary Valve Stenosis	2	0.33 (-0.43-1.07)	0.55 (-0.24-1.36)	0.67 (-0.13-1.46)
		3	0.77 (-0.0-1.54)	0.25 (-0.69-1.49)	0.52 (-0.52-1.74)
		4	0.56 (-0.41-1.78)	0.69 (-0.3-1.88)	0.82 (-0.11-2.09)
		5	0.74 (-0.18-1.91)	-1.58 (-16.69-1.49)	-1.64 (-16.62-1.34)
Norman C	Double Outlet Right Ventricle	2	-0.19 (-1.04-0.56)	-0.44 (-1.22-0.55)	-0.3 (-1.19-0.82)
		3	0.24 (-0.61-0.96)	-2.46 (-17.58-0.51)	-2.21 (-17.49-0.87)
		4	-0.44 (-16.71-1.13)	-2.17 (-17.43-1.03)	-1.78 (-17.27-1.29)
		5	-2.08 (-17.37-1.17)	-1.76 (-16.68-1.46)	-1.55 (-16.57-1.68)
Norman Minor	Atrial Septal Defect (ASD)	2	0.25 (-0.07-0.57)	0.2 (-0.16-0.53)	0.25 (-0.12-0.6)
		3	0.62 (0.27-0.95)	0.44 (0.06-0.8)	0.45 (0.02-0.84)
		4	0.53 (0.1-0.92)	0.43 (-0.05-0.82)	0.58 (0.11-1.01)
		5	0.56 (0.08-0.97)	0.61 (0.11-1.06)	0.56 (-0.02-1.04)
	Patent Ductus Arteriosus (PDA)	2	0.01 (-0.21-0.23)	-0.05 (-0.28-0.18)	-0.01 (-0.26-0.24)
		3	-0.0 (-0.26-0.24)	-0.04 (-0.32-0.22)	0.07 (-0.24-0.37)
		4	0.4 (0.11-0.68)	0.36 (0.04-0.66)	0.31 (-0.04-0.65)
		5	0.41 (0.09-0.73)	0.31 (-0.05-0.66)	0.28 (-0.13-0.68)
	Systemic Vein Anomalies	2	-0.13 (-1.02-0.72)	0.13 (-0.67-0.91)	0.31 (-0.48-1.09)
		3	-0.03 (-0.88-1.02)	-0.74 (-16.63-0.9)	-0.42 (-16.36-1.24)
		4	-0.3 (-16.42-1.37)	-1.95 (-17.32-1.32)	-1.67 (-17.08-1.59)
		5	-1.81 (-17.2-1.34)	-1.36 (-16.43-1.71)	-1.44 (-16.38-1.87)
	Ventricular Septal Defect (VSD)	2	0.24 (-0.14-0.6)	0.24 (-0.21-0.62)	0.21 (-0.27-0.63)
		3	0.51 (0.09-0.89)	0.41 (-0.1-0.85)	0.26 (-0.33-0.74)
		4	0.13 (-0.52-0.62)	0.23 (-0.46-0.76)	0.46 (-0.21-1.0)
		5	0.33 (-0.35-0.85)	0.62 (-0.05-1.15)	0.23 (-0.69-0.9)
Other	Other Dx	2	-0.38 (-0.93-0.05)	-0.21 (-0.78-0.26)	-0.1 (-0.73-0.4)
		3	0.19 (-0.36-0.66)	0.26 (-0.36-0.76)	0.08 (-0.72-0.68)
		4	0.04 (-0.76-0.63)	0.31 (-0.52-0.91)	0.55 (-0.26-1.17)
		5	0.38 (-0.42-1.0)	0.14 (-0.89-0.94)	0.29 (-0.74-1.11)

Supplementary Table S3: PNALD Risk at Diagnosis Level