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Supplementary Table 1: Detailed ethnic group recorded by PICANet for each individual child

Ethnic Group	n
WHITE (total)	3251
White British	3094
White Irish	11
Any Other White	146
MIXED (total)	146
Mixed White/Black Caribbean	30
Mixed White/Black African	18
Mixed White/Asian	53
Any Other Mixed	45
ASIAN (total)	444
Asian/British-Indian	126
Asian/British-Pakistani	185
Asian/British-Bangladeshi	52
Any Other Asian	81
BLACK (total)	160
Black/British Caribbean	22
Black/British African	107
Any Other Black	31
CHINESE (total)	22
Chinese	22
OTHER (total)	104
Any Other Ethnicity	104
MISSING (total)	1223
Not stated	1223
TOTAL	5350

Supplementary Table 2: Comparison of ethnic group recorded for each individual in PICANet and NCHDA for 5350 infants undergoing a cardiac intervention* in England and Wales, 2006-2009

Ethnic Group (PICANet)	Ethnic Group (NCHDA)					
	Caucasian	Black	Asian	Oriental	Other	Missing
White	3068	5	19	*	27	131
Black	6	140	*	*	*	8
Asian	15	*	398	9	5	14
Chinese	*	*	*	16	*	*
Other-Mixed	76	32	48	*	75	16
Ethnicity missing	717	80	160	16	32	218

Notes: *Cardiac intervention includes surgical and interventional catheter procedures. *cells with n<5 are omitted to reduce statistical disclosure risk. Children of mixed ethnicity are recorded as 'Other' in NCHDA, and as a separate 'Mixed' category in PICANet; for this comparison Mixed and Other groups in PICANet were merged (Other-Mixed).

Supplementary Table 3: Agreement between ethnic group categories recorded in PICANet and NCHDA for 5350 infants undergoing a cardiac intervention* in England and Wales, 2006-2009

Ethnic group (PICANet/NCHDA)	Sensitivity: Percentage children with concordant ethnic group	PPV: Percentage children whose NCHDA ethnicity 'correctly' predicts corresponding PICANet ethnicity
White/Caucasian	98.3%	97.1%
Black/Black	92.1%	77.6%
Asian/Asian	92.6%	84.5%
Chinese/Oriental	76.2%	55.2%
Other/Other-Mixed	32.1%	67.2%

Notes: Children of mixed ethnicity are recorded as 'Other' in NCHDA, and as a separate 'Mixed' category in PICANet; for this comparison Mixed and Other groups in PICANet were merged (Other-Mixed category). *Cardiac intervention includes surgical and interventional catheter procedures.

Supplementary Table 4: Annual incidence rate of CHD diagnoses by individual year

Year of index procedure <i>(all infants aged under 1 year)</i>	CHD cases undergoing index procedure	Mid-year population* <i>aged under 1 year (all ethnic groups)</i>	Rate per 1000 infants (95% CI)
2006	1250	653400	1.91 (1.81, 2.02)
2007	1292	674700	1.91 (1.81, 2.02)
2008	1344	702800	1.91 (1.81, 2.02)
2009	1464	698800	2.09 (1.99, 2.20)
2006-2009	5350	2729700	1.96 (1.91, 2.01)

Note: *Mid-year population estimates from the Office for National Statistics²⁰

Supplementary Table 5: Incidence of individual CHD subgroups by ethnic group (infants undergoing a procedure between 2006 and 2009)**

Ethnic Group	White				Asian				Black				All Other			
Sample	N=3968				N=604				N=240				N=22			
Population	N=2230400				N=220100				N=93700				N=19700			
	n	IR*	95%CI		n	IR	95%CI		n	IR	95%CI		n	IR	95%CI	
Hypoplastic left heart syndrome	231	1.0	0.9	1.2	30	1.4	1.0	1.9	22	2.3	1.5	3.6	17	0.9	0.5	1.5
Functionally univentricular heart	193	0.9	0.7	1.0	41	1.9	1.3	2.5	16	1.7	1.0	2.8	11	0.6	0.3	1.1
Common arterial trunk	72	0.3	0.3	0.4	8	0.4	0.2	0.7	<5	-	-	-	9	0.5	0.2	0.9
TGA with VSD/DORV-TGA type	354	1.6	1.4	1.8	44	2.0	1.5	2.7	11	1.2	0.6	2.1	30	1.6	1.1	2.3
Interrupted aortic arch	51	0.2	0.2	0.3	5	0.2	0.1	0.5	<5	-	-	-	<5	-	-	-
TGA with intact ventricular septum	128	0.6	0.5	0.7	27	1.2	0.8	1.8	<5	-	-	-	13	0.7	0.4	1.2
Pulmonary atresia + intact ventricular septum (IVS)	104	0.5	0.4	0.6	22	1.0	0.6	1.5	<5	-	-	-	6	0.3	0.1	0.7
Pulmonary atresia + VSD (incl. Fallot-type)	129	0.6	0.4	0.7	23	1.0	0.7	1.6	9	1.0	0.4	1.8	17	0.9	0.5	1.5
Miscellaneous (rare) primary cardiac diagnoses	222	1.0	0.9	1.1	33	1.5	1.0	2.1	11	1.2	0.6	2.1	13	0.7	0.4	1.2
Complete AVSD	360	1.7	1.7	1.8	36	1.6	1.1	2.3	37	3.9	2.8	5.4	26	1.4	0.9	2.1
Fallot's tetralogy/DORV-Fallot type	416	1.9	1.7	2.1	80	3.6	2.9	4.5	16	1.7	1.0	2.8	29	1.6	1.0	2.2
Aortic valve stenosis (isolated)	106	0.5	0.4	0.6	8	0.4	0.2	0.7	<5	-	-	-	<5	-	-	-
Tricuspid valve abnormality (incl. Ebstein's anomaly)	35	0.2	0.1	0.2	5	0.2	0.1	0.5	<5	-	-	-	<5	-	-	-
Mitral valve abnormality (incl. supra-, subvalvar)	38	0.2	0.1	0.2	7	0.3	0.1	0.7	<5	-	-	-	7	0.4	0.2	0.8
Totally Anomalous Pulmonary Venous Connection	90	0.4	0.3	0.5	20	0.9	0.6	1.4	5	0.5	0.2	1.2	7	0.4	0.2	0.8
Aortic arch obstruction ±VSD/ASD	467	2.1	1.9	2.3	54	2.5	1.8	3.2	19	2.0	1.2	3.2	23	1.2	0.8	1.9
Pulmonary stenosis	143	0.6	0.5	0.8	12	0.5	0.3	0.9	7	0.7	0.3	1.5	10	0.5	0.3	1.0
VSD	661	3.0	2.7	3.2	111	5.0	4.1	6.1	55	5.9	4.4	7.6	66	3.6	2.8	4.5
ASD	40	0.2	0.1	0.2	12	0.5	0.3	0.9	<5	-	-	-	12	0.6	0.3	1.1
PDA	74	0.3	0.3	0.4	19	0.9	0.5	1.3	6	0.6	0.2	1.4	7	0.4	0.2	0.8
Miscellaneous congenital terms	41	0.2	0.1	0.2	<5	-	-	-	<5	-	-	-	<5	-	-	-

Notes: Incidence rates (IR) per 10,000 infants aged 0-1 years estimated from national audit (2006 to 2009), excluding children with no ethnicity record (n=218); 95% confidence intervals (CI) estimated by binomial exact method; data for subaortic stenosis and aortic regurgitation omitted as disclosive (sample size < 10 children). Cell counts <5 are suppressed to reduce disclosure risk. **Abbreviations:** ASD = atrial septal defect; TGA

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= transposition of the great arteries; DORV = Double Outlet Right Ventricle; AVSD = atrioventricular septal defect; PDA = patent ductus arteriosus; VSD = ventricular septal defect.