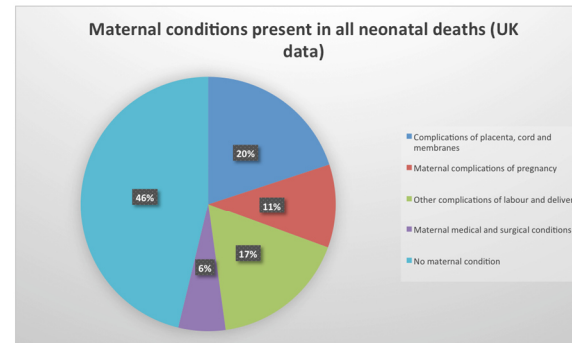


**Figure S1.** ICD-PM tabulation of neonatal causes of death and maternal conditions, UK dataset

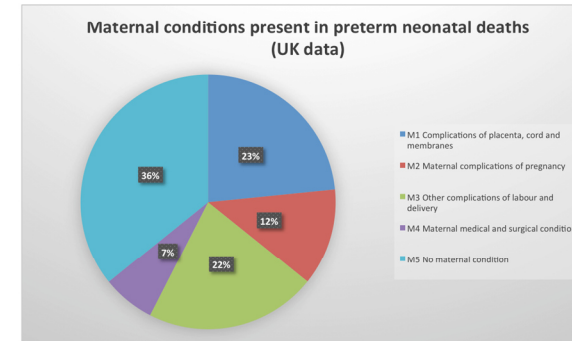
**ICD-PM tabulation of neonatal causes of death and maternal conditions, UK dataset**

	ALL NEONATAL DEATHS UK					Total	%
	Maternal codes						
	M1	M2	M3	M4	M5		
	Complications of placenta, cord and membranes	Maternal complications of pregnancy	Other complications of labour and delivery	Maternal medical and surgical conditions	No maternal condition		
N1: Congenital malformations, deformations and chromosomal abnormalities	78	247	3	50	775	1153	27.43
N2: Disorders related fetal growth	3	1	2	2	6	14	0.33
N3: Birth trauma	0	0	1	3	7	11	0.26
N4: Complications of intrapartum events	31	1	3	3	35	73	1.74
N5: Convulsions and disorders of cerebral status	7	0	2	1	16	26	0.62
N6: Infection	7	1	2	4	48	62	1.47
N7: Respiratory and cardiovascular disorders	40	24	4	22	194	284	6.76
N8: other neonatal conditions	15	6	2	8	72	103	2.45
N9: Low birth weight and prematurity	363	93	691	51	130	1328	31.59
N10: Miscellaneous	1	5	0	1	46	53	1.26
N11: Neonatal death of unspecified cause	293	70	14	106	614	1097	26.09
Total	838	448	724	251	1943	4204	100.00
%	19.93	10.66	17.22	5.97	46.22		



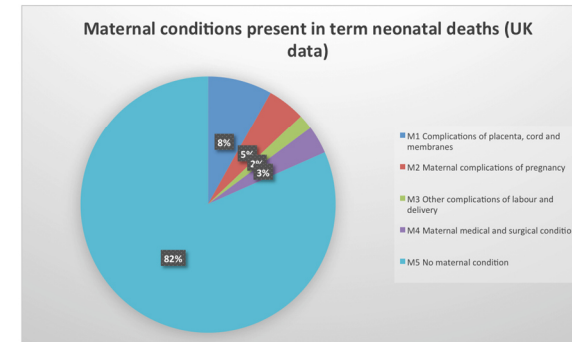
**PRETERM NEONATAL DEATHS UK**

	PRETERM NEONATAL DEATHS UK					Total	%
	Maternal codes						
	M1	M2	M3	M4	M5		
	Complications of placenta, cord and membranes	Maternal complications of pregnancy	Other complications of labour and delivery	Maternal medical and surgical conditions	No maternal condition		
N1: Congenital malformations, deformations and chromosomal abnormalities	64	215	3	38	357	677	20.84
N2: Disorders related fetal growth	2	1		2	1	6	0.18
N3: Birth trauma					1	1	0.03
N4: Complications of intrapartum events	9	1	0		6	16	0.49
N5: Convulsions and disorders of cerebral status	3	0	1		2	6	0.18
N6: Infection	3	1	0	1	15	20	0.62
N7: Respiratory and cardiovascular disorders	29	18	1	17	90	155	4.77
N8: other neonatal conditions	11	6	2	7	37	63	1.94
N9: Low birth weight and prematurity	363	93	691	51	130	1328	40.89
N10: Miscellaneous	1	3	0		12	16	0.49
N11: Neonatal death of unspecified cause	275	64	8	101	512	960	29.56
Total	760	402	706	217	1163	3248	100.00
%	23.40	12.38	21.74	6.68	35.81		



**TERM NEONATAL DEATHS UK**

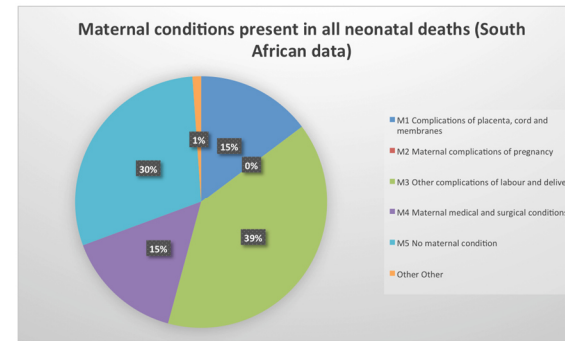
	TERM NEONATAL DEATHS UK					Total	%
	Maternal codes						
	M1	M2	M3	M4	M5		
	Complications of placenta, cord and membranes	Maternal complications of pregnancy	Other complications of labour and delivery	Maternal medical and surgical conditions	No maternal condition		
N1: Congenital malformations, deformations and chromosomal abnormalities	14	32	0	12	418	476	49.79
N2: Disorders related fetal growth	1		2		5	8	0.84
N3: Birth trauma	0	0	1	3	6	10	1.05
N4: Complications of intrapartum events	22	0	3	3	29	57	5.96
N5: Convulsions and disorders of cerebral status	4	0	1	1	14	20	2.09
N6: Infection	4	0	2	3	33	42	4.39
N7: Respiratory and cardiovascular disorders	11	6	3	5	104	129	13.49
N8: other neonatal conditions	4	0	0	1	35	40	4.18
N9: Low birth weight and prematurity	0	0	0	0	0	0	0.00
N10: Miscellaneous	0	2	0	1	34	37	3.87
N11: Neonatal death of unspecified cause	18	6	6	5	102	137	14.33
Total	78	46	18	34	780	956	100.00
%	8.16	4.81	1.88	3.56	81.59		



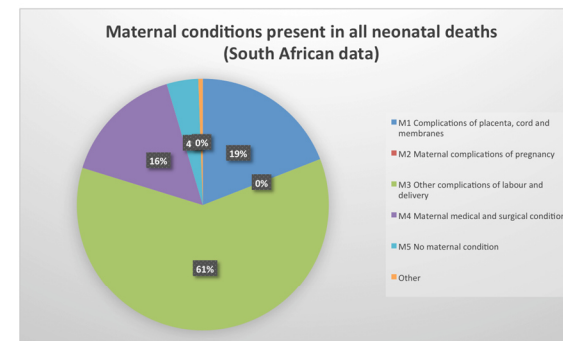
**Figure S2. ICD-PM tabulation of neonatal causes of death and maternal conditions, South Africa dataset**

ICD-PM tabulation of neonatal causes of death and maternal conditions, South Africa dataset

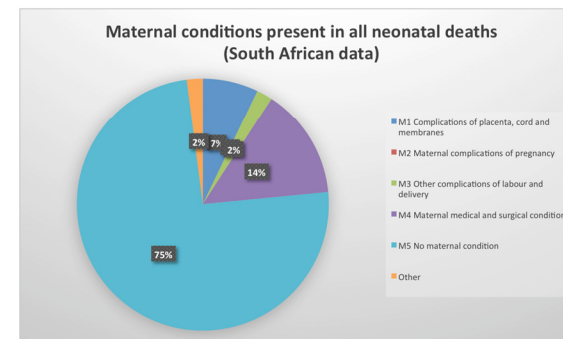
	ALL NEONATAL DEATHS SOUTH AFRICA						Total	%
	Maternal codes							
	M1	M2	M3	M4	M5	Other		
	Complications of placenta, cord and membranes	Maternal complications of pregnancy	Other complications of labour and delivery	Maternal medical and surgical conditions	No maternal condition	Other		
N1: Congenital malformations, deformations and chromosomal abnormalities					1	11	1	13
N2: Disorders related fetal growth								0
N3: Birth trauma								0
N4: Complications of intrapartum events								0
N5: Convulsions and disorders of cerebral status		9		14	8	38		69
N6: Infection		3		2				5
N7: Respiratory and cardiovascular disorders		18		29	16	30	1	94
N8: other neonatal conditions		3		2	3			8
N9: Low birth weight and prematurity		7		59	13			79
N10: Miscellaneous								0
N11: Neonatal death of unspecified cause				1		1	1	3
Total		40	0	107	41	80	3	271
%		14.7601476	0	39.4833948	15.1291513	29.5202952	1.10701107	100



	PRETERM NEONATAL DEATHS SOUTH AFRICA						Total	%
	Maternal codes							
	M1	M2	M3	M4	M5	Other		
	Complications of placenta, cord and membranes	Maternal complications of pregnancy	Other complications of labour and delivery	Maternal medical and surgical conditions	No maternal condition	Other		
N1: Congenital malformations, deformations and chromosomal abnormalities						5	1	6
N2: Disorders related fetal growth								0
N3: Birth trauma								0
N4: Complications of intrapartum events								0
N5: Convulsions and disorders of cerebral status		6		14	2			22
N6: Infection		3		2		0	0	5
N7: Respiratory and cardiovascular disorders		14		32	10	0	0	56
N8: other neonatal conditions		3		2	2	0	0	7
N9: Low birth weight and prematurity		7		55	13	1	0	75
N10: Miscellaneous								0
N11: Neonatal death of unspecified cause						1	1	2
Total		33	0	105	27	7	1	173
%		19.0751445	0	60.6936416	15.6069364	4.04624277	0.57803468	100



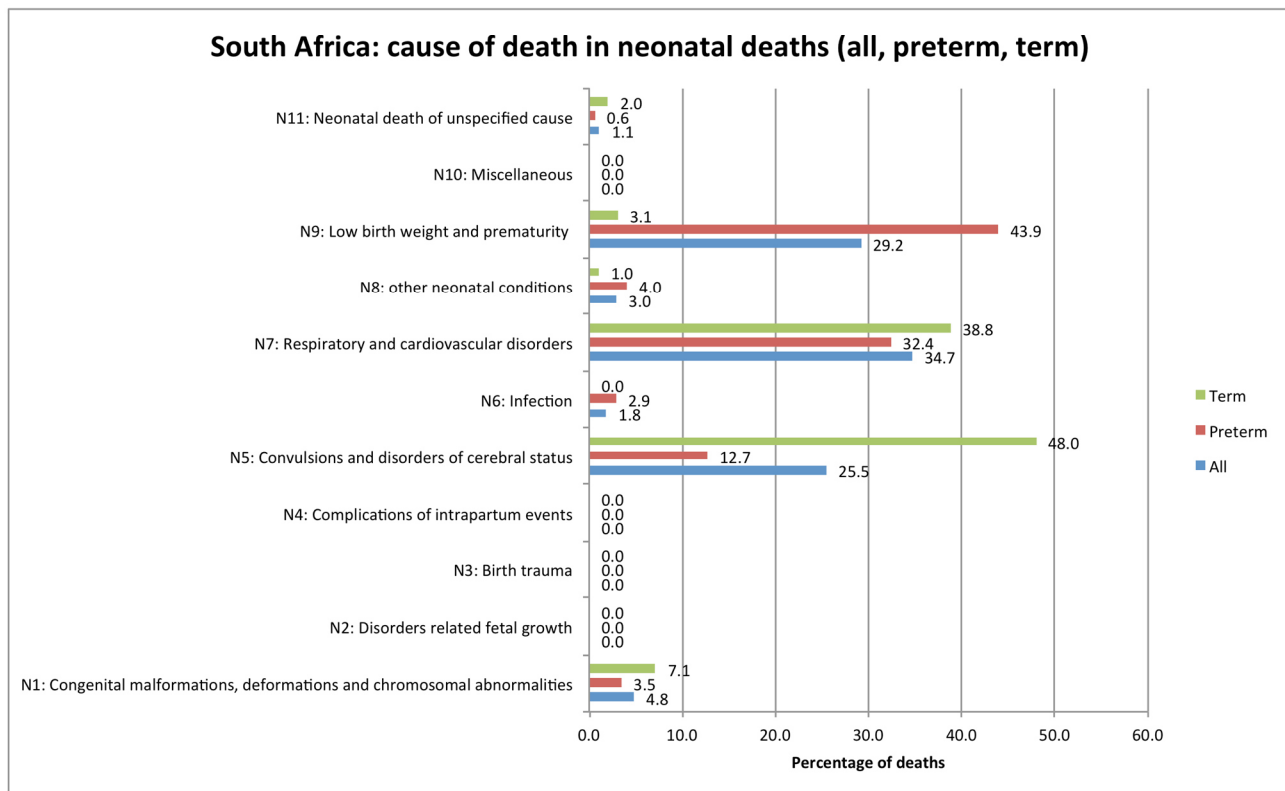
	TERM NEONATAL DEATHS SOUTH AFRICA						Total	%
	Maternal codes							
	M1	M2	M3	M4	M5	Other		
	Complications of placenta, cord and membranes	Maternal complications of pregnancy	Other complications of labour and delivery	Maternal medical and surgical conditions	No maternal condition	Other		
N1: Congenital malformations, deformations and chromosomal abnormalities		0	0		1	6	0	7
N2: Disorders related fetal growth								0
N3: Birth trauma								0
N4: Complications of intrapartum events								0
N5: Convulsions and disorders of cerebral status		3			6	38		47
N6: Infection				0	5	28	1	38
N7: Respiratory and cardiovascular disorders		4			1			5
N8: other neonatal conditions				2	1			3
N9: Low birth weight and prematurity								0
N10: Miscellaneous								0
N11: Neonatal death of unspecified cause						1	1	2
Total		7	0	2	14	73	2	98
%		7.14285714	0	2.04081633	14.2857143	74.4897959	2.04081633	100



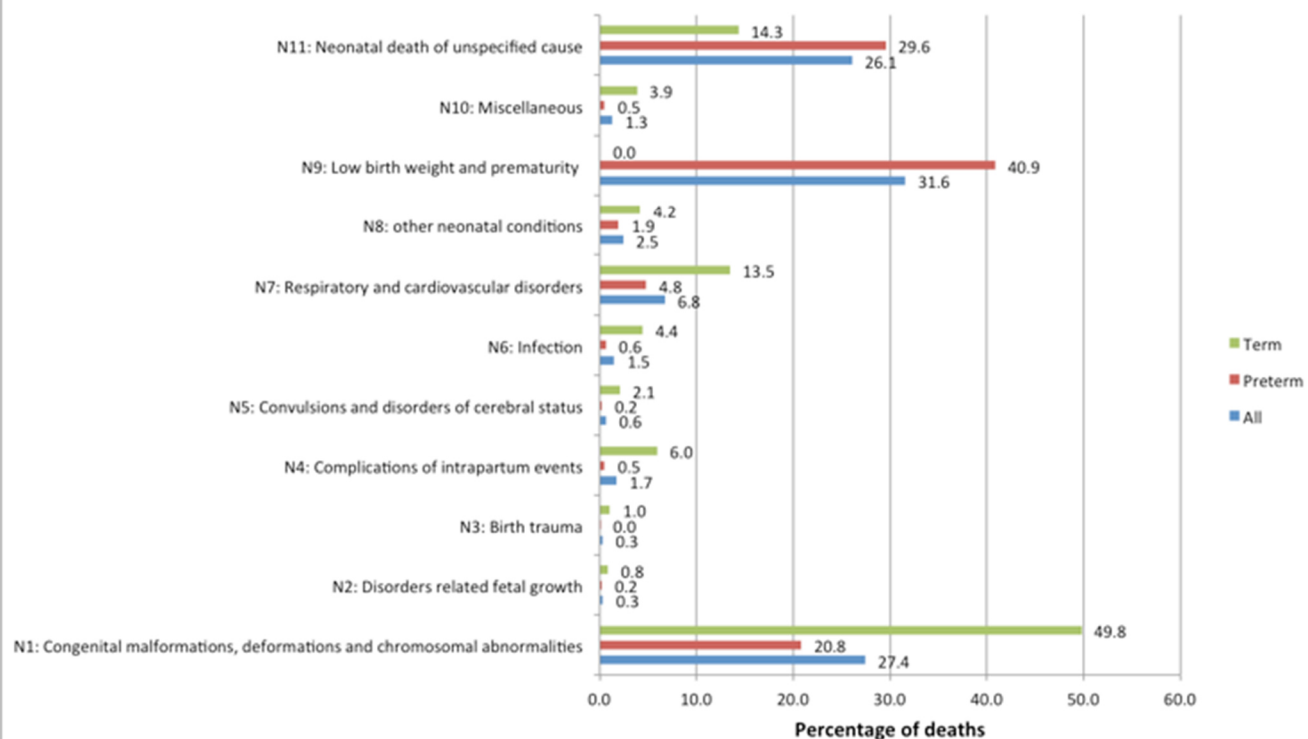
**Figure S3. Neonatal causes of death for UK and South Africa**

	UK data		
	All	Preterm	Term
N1: Congenital malformations, deformations and chromosomal abnormalities	27.4	20.8	49.8
N2: Disorders related fetal growth	0.3	0.2	0.8
N3: Birth trauma	0.3	0.0	1.0
N4: Complications of intrapartum events	1.7	0.5	6.0
N5: Convulsions and disorders of cerebral status	0.6	0.2	2.1
N6: Infection	1.5	0.6	4.4
N7: Respiratory and cardiovascular disorders	6.8	4.8	13.5
N8: other neonatal conditions	2.5	1.9	4.2
N9: Low birth weight and prematurity	31.6	40.9	0.0
N10: Miscellaneous	1.3	0.5	3.9
N11: Neonatal death of unspecified cause	26.1	29.6	14.3
	100.0	100.0	100.0

	South Africa data		
	All	Preterm	Term
N1: Congenital malformations, deformations and chromosomal abnormalities	4.8	3.5	7.1
N2: Disorders related fetal growth	0.0	0.0	0.0
N3: Birth trauma	0.0	0.0	0.0
N4: Complications of intrapartum events	0.0	0.0	0.0
N5: Convulsions and disorders of cerebral status	25.5	12.7	48.0
N6: Infection	1.8	2.9	0.0
N7: Respiratory and cardiovascular disorders	34.7	32.4	38.8
N8: other neonatal conditions	3.0	4.0	1.0
N9: Low birth weight and prematurity	29.2	43.9	3.1
N10: Miscellaneous	0.0	0.0	0.0
N11: Neonatal death of unspecified cause	1.1	0.6	2.0
	100.0	100.0	100.0



### UK: cause of death in neonatal deaths (all, preterm, term)



**Figure S4. Specific causes of neonatal death for South Africa and the UK**

PRETERM NEONATAL DEATHS UK							PRETERM NEONATAL DEATHS SOUTH AFRICA								
	Maternal codes					Total	%		Maternal codes					Total	%
	M1	M2	M3	M4	M5				M1	M2	M3	M4	M5		
	Complicatio		Other com		Maternal r	No maternal condition		Complicatio		Other com		Maternal r	No maternal condition		
N1: Conger	64	215	3	38	357	677	20.8436	N1: Congenital malformations, deformations and chromos	5	1	6	3.468208			
N2: Disordr	2	1		2	1	6	0.184729	N2: Disorders related fetal growth			0	0			
N3: Birth trauma						1	0.030788	N3: Birth trauma				0	0		
N4: Compli	9	1	0		2	6	0.492611	N4: Complications of intrapartum events				0	0		
N5: Convul	3	0	1		2	6	0.184729	N5: Convul	6	14	2	22	12.71676		
N6: Infecti	3	1	0	1	15	20	0.615764	N6: Infecti	3	2	0	5	2.890173		
N7: Respira	29	18	1	17	90	155	4.772167	N7: Respira	14	32	10	0	56	32.36994	
N8: other n	11	6	2	7	37	63	1.939655	N8: other n	3	2	2	0	7	4.046243	
N9: Low bir	363	93	691	51	130	1328	40.8867	N9: Low bir	7	55	13	1	76	43.93064	
N10: Misc	1	3	0		12	16	0.492611	N10: Miscellaneous					0	0	
N11: Neon	275	64	8	101	512	960	29.55665	N11: Neonatal death of unspecified cause			1	1	0.578035		
Total	760	402	706	217	1163	3248	100	Total	33	0	105	27	1	173	100
%	23.39901	12.37685	21.73645	6.681034	35.80665	100		%	19.07514	0	60.69364	15.60694	4.046243	0.578035	100

