Appendix

April 28, 2011

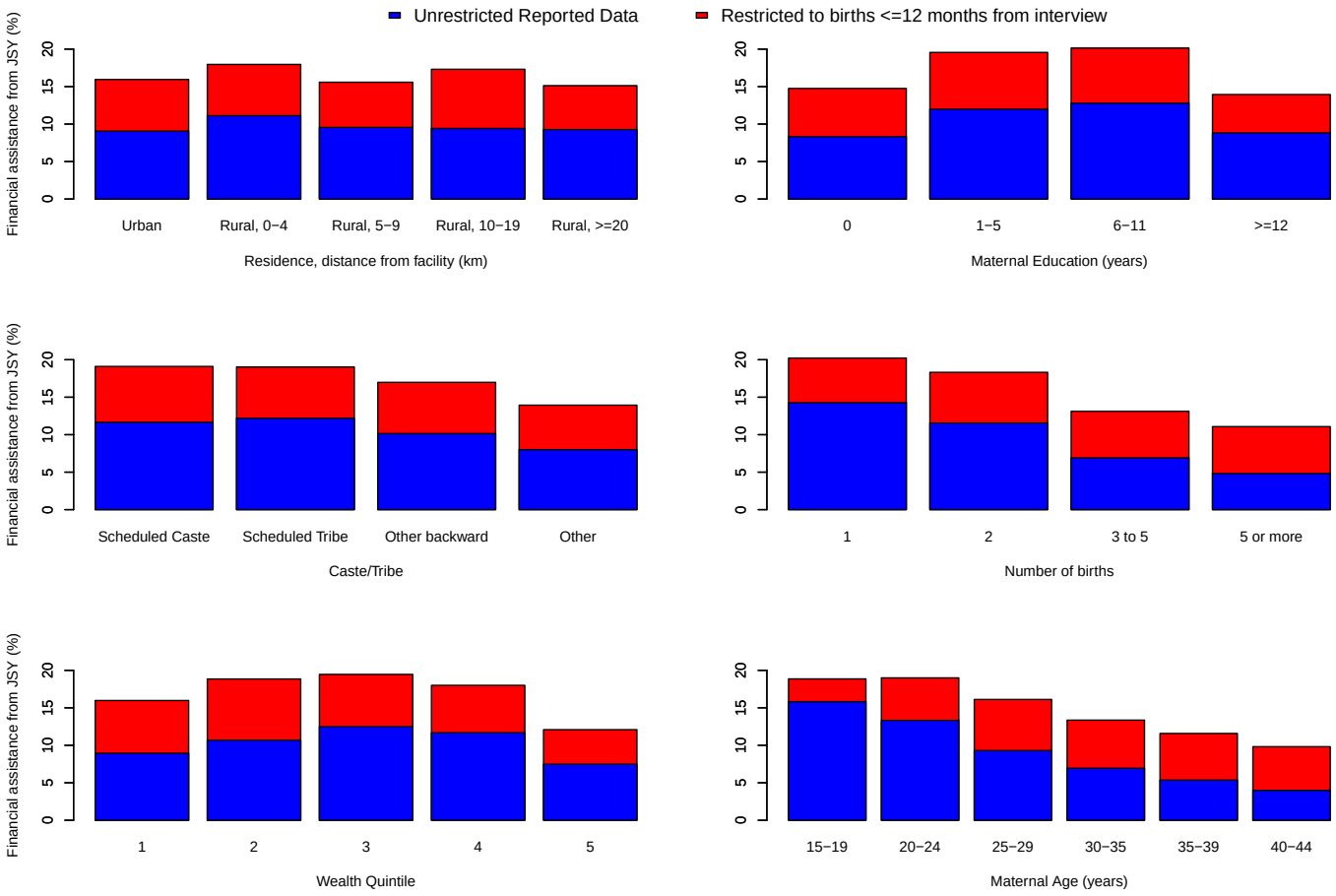

Figure 1 – Uptake of JSY by characteristic for Author's data (Blue) and Restricted data (Red)

	Antenatal care, 3 visits		In-facility birth		Skilled birth attendance		Perinatal death		Neonatal death	
	SE	p-value	SE	p-value	SE	p-value	SE	p-value	SE	p-value
JSY	1.6(0.03)	<0.0001	11.1(0.27)	<0.0001	10.3(0.26)	<0.0001	0.77(0.06)	4e-04	0.78(0.05)	1e-04
Maternal Age (years)										
15-19	0.69(0.02)	<0.0001	0.63(0.02)	<0.0001	0.63(0.02)	<0.0001	0.98(0.1)	0.8738	1.12(0.09)	0.2003
20-24	0.83(0.02)	<0.0001	0.66(0.02)	<0.0001	0.67(0.02)	<0.0001	0.76(0.07)	0.0012	0.81(0.06)	0.0038
25-29	0.93(0.02)	0.0016	0.8(0.02)	<0.0001	0.81(0.02)	<0.0001	0.72(0.06)	1e-04	0.77(0.06)	3e-04
35-39	1.05(0.03)	0.1704	1.1(0.04)	0.007	1.08(0.04)	0.0334	1.24(0.15)	0.0785	1.26(0.13)	0.0236
40-44	0.9(0.05)	0.0773	1.09(0.07)	0.1781	1.07(0.06)	0.2589	1.42(0.26)	0.061	1.4(0.22)	0.0343
Number of live births										
1	1.00	..	1.00	..						
2	0.73(0.01)	<0.0001	0.56(0.01)	<0.0001	0.56(0.01)	<0.0001	0.67(0.04)	<0.0001	0.74(0.04)	<0.0001
3 to 5	0.57(0.01)	<0.0001	0.39(0.01)	<0.0001	0.39(0.01)	<0.0001	0.47(0.04)	<0.0001	0.55(0.03)	<0.0001
5 or more	0.4(0.01)	<0.0001	0.29(0.01)	<0.0001	0.29(0.01)	<0.0001	0.4(0.05)	<0.0001	0.47(0.05)	<0.0001
Birth interval										
0-11 Months	2.2(0.53)	0.0012	1.37(0.35)	0.2104	1.5(0.38)	0.1015	3.51(1.52)	0.0037	4.95(1.66)	<0.0001
12-23 Months	0.96(0.03)	0.137	0.96(0.03)	0.1891	0.98(0.03)	0.5112	1.66(0.14)	<0.0001	1.63(0.11)	<0.0001
24+ months	1.00	..	1.00	..						
Unknown	0.96(0.02)	0.0365	0.72(0.01)	<0.0001	0.77(0.01)	<0.0001	0.38(0.03)	<0.0001	0.37(0.03)	<0.0001
Multiple births	1.28(0.09)	3e-04	2.59(0.18)	<0.0001	2.41(0.17)	<0.0001	10.12(1.09)	<0.0001	9.61(0.91)	<0.0001
Maternal education										
No education	1.00	..	1.00	..						
1 to 5 years	1.29(0.02)	<0.0001	1.26(0.02)	<0.0001	1.26(0.02)	<0.0001	0.94(0.06)	0.3033	0.96(0.05)	0.4179
6 to 11 years	1.73(0.03)	<0.0001	1.8(0.03)	<0.0001	1.79(0.03)	<0.0001	0.83(0.05)	0.0011	0.86(0.04)	0.0014
12 years or more	3(0.08)	<0.0001	3.42(0.1)	<0.0001	3.48(0.1)	<0.0001	0.53(0.06)	<0.0001	0.55(0.05)	<0.0001
Household wealth (decile)										
Poorest	1.00	..	1.00	..						
2	1.08(0.03)	0.005	1.16(0.03)	<0.0001	1.13(0.03)	<0.0001	0.97(0.07)	0.7039	0.98(0.06)	0.7068
3	1.24(0.03)	<0.0001	1.27(0.04)	<0.0001	1.27(0.03)	<0.0001	0.81(0.06)	0.005	0.82(0.05)	0.0021
4	1.37(0.04)	<0.0001	1.47(0.04)	<0.0001	1.47(0.04)	<0.0001	0.77(0.06)	0.0013	0.84(0.06)	0.0093
5	1.36(0.04)	<0.0001	1.6(0.05)	<0.0001	1.58(0.04)	<0.0001	0.83(0.07)	0.0331	0.81(0.06)	0.0035
6	1.65(0.05)	<0.0001	1.92(0.06)	<0.0001	1.9(0.05)	<0.0001	0.81(0.07)	0.0201	0.8(0.06)	0.004
7	2.05(0.06)	<0.0001	2.29(0.07)	<0.0001	2.26(0.07)	<0.0001	0.66(0.07)	<0.0001	0.63(0.05)	<0.0001
8	2.5(0.08)	<0.0001	3.04(0.1)	<0.0001	3.15(0.1)	<0.0001	0.63(0.07)	<0.0001	0.56(0.05)	<0.0001
9	3.33(0.12)	<0.0001	4.32(0.16)	<0.0001	4.52(0.17)	<0.0001	0.52(0.07)	<0.0001	0.45(0.05)	<0.0001
Richest	4.5(0.19)	<0.0001	7.56(0.35)	<0.0001	8.63(0.43)	<0.0001	0.42(0.07)	<0.0001	0.41(0.06)	<0.0001
Caste/Tribe										
Scheduled Caste	0.86(0.02)	<0.0001	0.74(0.02)	<0.0001	0.74(0.02)	<0.0001	1.05(0.07)	0.5041	1.07(0.07)	0.2794
Scheduled Tribe	0.7(0.02)	<0.0001	0.53(0.01)	<0.0001	0.5(0.01)	<0.0001	1.09(0.09)	0.3147	1.06(0.08)	0.4399
Other backward class	0.93(0.02)	<0.0001	0.86(0.02)	<0.0001	0.87(0.02)	<0.0001	1.02(0.07)	0.7803	0.99(0.05)	0.8374
Other	1.00	..	1.00	..						
Religion										
Muslim	0.92(0.02)	1e-04	0.68(0.02)	<0.0001	0.65(0.01)	<0.0001	1.07(0.08)	0.3324	1.1(0.07)	0.1275
Christian	0.84(0.04)	1e-04	0.9(0.04)	0.0311	0.85(0.04)	6e-04	1.03(0.18)	0.845	1.02(0.15)	0.91
Sikh	1.29(0.08)	<0.0001	1.67(0.11)	<0.0001	1.42(0.1)	<0.0001	0.97(0.23)	0.8966	1.15(0.24)	0.5072
Buddhist/Neo-buddhist	1.13(0.06)	0.0371	1.17(0.06)	0.0039	1.16(0.06)	0.0093	0.74(0.22)	0.3167	0.76(0.19)	0.271
Jain	0.86(0.04)	0.002	0.82(0.05)	8e-04	0.87(0.05)	0.0123	0.92(0.2)	0.7031	0.99(0.18)	0.9607
Residence type, distance from health facility										
Urban	1.00	..	1.00	..						
Rural, 0-4 km	0.99(0.02)	0.801	0.82(0.02)	<0.0001	0.8(0.02)	<0.0001	1.02(0.08)	0.7729	0.94(0.06)	0.3556
Rural, 5-9 km	0.95(0.02)	0.0593	0.78(0.02)	<0.0001	0.73(0.02)	<0.0001	0.99(0.09)	0.9398	0.9(0.07)	0.1756
Rural, 10-19 km	0.92(0.02)	0.0027	0.72(0.02)	<0.0001	0.67(0.02)	<0.0001	0.97(0.09)	0.743	0.85(0.07)	0.0496
Rural, 20+ km	0.78(0.03)	<0.0001	0.53(0.02)	<0.0001	0.51(0.02)	<0.0001	0.87(0.11)	0.2546	0.85(0.09)	0.1147
District mean household wealth	1.17(0.02)	<0.0001	1.62(0.03)	<0.0001	1.51(0.03)	<0.0001	0.97(0.07)	0.6063	1.02(0.06)	0.7306
State										
Andaman & Nicobar Islands	9.01(2.43)	<0.0001	2.33(0.54)	3e-04	1.85(0.44)	0.0091	0(0)	0.9283	0(0)	0.9261
Andhra Pradesh	30.65(1.87)	<0.0001	4.46(0.2)	<0.0001	4.17(0.19)	<0.0001	0.62(0.09)	0.0013	0.57(0.07)	<0.0001
Arunachal Pradesh	2.48(0.14)	<0.0001	1.79(0.11)	<0.0001	1.4(0.09)	<0.0001	0.17(0.08)	2e-04	0.13(0.06)	<0.0001
Assam	2.24(0.07)	<0.0001	0.83(0.03)	<0.0001	0.83(0.03)	<0.0001	0.6(0.07)	<0.0001	0.56(0.05)	<0.0001
Bihar	1.72(0.04)	<0.0001	1.91(0.05)	<0.0001	1.65(0.04)	<0.0001	0.74(0.05)	1e-04	0.69(0.04)	<0.0001
Chhattisgarh	4.97(0.18)	<0.0001	0.68(0.03)	<0.0001	1.07(0.04)	0.0789	0.94(0.1)	0.5724	0.91(0.09)	0.3323
Dadra & Nagar Haveli	9.84(3.9)	<0.0001	4.49(1.74)	1e-04	3.56(1.43)	0.0016	0(0)	0.9462	0(0)	0.9446
Daman & Diu	8.74(2.93)	<0.0001	2.76(0.84)	8e-04	2.16(0.68)	0.0139	0(0)	0.9313	0.35(0.41)	0.3688
Delhi	2.96(0.23)	<0.0001	0.56(0.04)	<0.0001	0.45(0.04)	<0.0001	1.06(0.3)	0.8363	1.03(0.24)	0.8903
Gujarat	3.28(0.12)	<0.0001	2.2(0.08)	<0.0001	2.17(0.08)	<0.0001	0.36(0.06)	<0.0001	0.34(0.05)	<0.0001
Haryana	1.7(0.07)	<0.0001	0.68(0.03)	<0.0001	0.74(0.03)	<0.0001	1.06(0.15)	0.6709	0.92(0.11)	0.4752
Himachal Pradesh	1.97(0.12)	<0.0001	0.6(0.04)	<0.0001	0.5(0.03)	<0.0001	0.36(0.13)	0.0035	0.26(0.09)	1e-04
Jammu & Kashmir	9.57(0.56)	<0.0001	2.34(0.12)	<0.0001	2.16(0.11)	<0.0001	0.43(0.1)	4e-04	0.37(0.08)	<0.0001
Jharkhand	2.48(0.08)	<0.0001	1.08(0.04)	0.0336	1.33(0.05)	<0.0001	0.4(0.05)	<0.0001	0.39(0.04)	<0.0001
Karnataka	12.92(0.53)	<0.0001	3.95(0.15)	<0.0001	4.28(0.17)	<0.0001	0.58(0.08)	1e-04	0.55(0.06)	<0.0001
Kerala	125.1(25.49)	<0.0001	94.58(21.22)	<0.0001	71.02(15.93)	<0.0001	0.26(0.08)	<0.0001	0.33(0.07)	<0.0001
Lakshadweep	244.08(251.76)	<0.0001	18.23(6.34)	<0.0001	17.65(6.63)	<0.0001	1.27(0.76)	0.6886	0.89(0.53)	0.8424
Madhya Pradesh	1.77(0.04)	<0.0001	2.11(0.06)	<0.0001	1.81(0.05)	<0.0001	0.69(0.06)	<0.0001	0.64(0.05)	<0.0001
Maharashtra	7.49(0.26)	<0.0001	2.45(0.09)	<0.0001	2.56(0.09)	<0.0001	0.43(0.06)	<0.0001	0.38(0.05)	<0.0001
Manipur	5.14(0.3)	<0.0001	1.45(0.08)	<0.0001	2.57(0.16)	<0.0001	0.14(0.06)	<0.0001	0.16(0.05)	<0.0001
Meghalaya	3.87(0.26)	<0.0001	1.37(0.11)	<0.0001	1.42(0.11)	<0.0001	0.5(0.14)	0.0141	0.47(0.12)	0.0022
Mizoram	10.04(0.78)	<0.0001	2.27(0.17)	<0.0001	2.48(0.19)	<0.0001	0.29(0.11)	9e-04	0.25(0.08)	<0.0001
Orissa	4.13(0.13)	<0.0001	1.66(0.06)	<0.0001	1.82(0.06)	<0.0001	0.65(0.07)	1e-04	0.58(0.06)	<0.0001
Pondicherry	13(1.98)	<0.0001	361.93(349.79)	<0.0001	393.08(466.4)	<0.0001	0.13(0.1)	0.011	0.13(0.09)	0.0015
Punjab	1.6(0.1)	<0.0001	0.62(0.04)	<0.0001	1.15(0.08)	0.0524	0.97(0.23)	0.8824	0.68(0.14)	0.068
Rajasthan	1.02(0.03)	0.5586	1.58(0.05)	<0.0001	1.68(0.05)	<0.0001	0.76(0.07)	0.0038	0.77(0.06)	0.0011
Sikkim	4.9(0.41)	<0.0001	0.88(0.07)	0.1059	0.97(0.08)	0.6758	0.41(0.16)	0.0251	0.64(0.18)	0.1155
Tamil Nadu	43.89(3.28)	<0.0001	21.47(1.48)	<0.0001	22.93(1.82)	<0.0001	0.51(0.08)	<0.0001	0.53(0.07)	<0.0001
Tripura	2.4(0.17)	<0.0001	1.88(0.15)	<0.0001	1.5(0.12)	<0.0001	0.52(0.15)	0.0269	0.41(0.11)	0.0013
Uttarakhand	0.75(0.04)	<0.0001	0.29(0.01)	<0.0001	0.29(0.01)	<0.0001	0.12(0.05)	<0.0001	0.1(0.04)	<0.0001
West Bengal	7.73(0.28)	<0.0001	2.89(0.11)	<0.0001	2.41(0.09)	<0.0001	0.56(0.07)	<0.0001	0.56(0.06)	<0.0001

Table 1 – Results from the Exact Matching and logistic regression analysis of JSY and health outcomes: odds ratios at the national level

Change in predicted probabilities (95% CI)	National		High-Focus States	
	Restricted	Unrestricted	Restricted	Unrestricted
Antenatal care, three visits (%)	10.0 (7.1−12.8)	11.0 (8.8−13.1)	9.2 (7.0−11.3)	11.3 (9.8−12.8)
In-facility births (%)	46.6 (44.8−48.4)	44.0 (42.6−45.4)	65.2 (63.8−66.6)	64.1 (63.0−65.2)
Skilled birth attendance (%)	40.0 (38.3−41.8)	37.1 (35.8−38.5)	59.7 (58.4−61.1)	59.1 (58.1−60.2)
Perinatal deaths (per 1000 pregnancies)	-7.4 (-11.5−-3.3)	-2.1 (-3.8− -0.4)	-9.3 (-14.5−-4.1)	-1.3 (-3.8−1.2)
Neonatal deaths (per 1000 live births)	-10.6 (-15.8−-5.4)	-2.7 (-4.8−-0.6)	-11.5 (-17.9−-5.1)	-1.6 (-4.6−1.5)

Table 2 – Stata output of estimated treatment effects from the matched dataset for full unrestricted data versus restricted to births <=12 months from date of interview

	RR	SD	2.5%	97.5%
Maternal Age (Uttar Pradesh)	1.429317	0.55668115	0.6508263	2.711562
Maternal Age (Bihar)	1.993194	0.48008069	1.2399976	3.174945
Maternal Age (Madhya Pradesh)	1.709853	0.51188270	1.0051834	3.022578
Maternal Age (Rajasthan)	1.695798	0.41415758	0.9522947	2.554041
Maternal Age (Orisa)	1.496408	0.20365508	1.1478454	1.934195
Number of Live births (Uttar Pradesh)	1.548215	0.28488553	1.0542450	2.217040
Number of Live births (Bihar)	2.003706	0.30764739	1.4777453	2.669282
Number of Live births (Madhya Pradesh)	1.120967	0.11338050	0.9224681	1.361550
Number of Live births (Rajasthan)	1.157777	0.09885722	0.9841611	1.360977
Number of Live births (Orisa)	2.735017	0.73800528	1.5846854	4.463396
Maternal Education (Uttar Pradesh)	1.705101	0.26830998	1.2194223	2.267534
Maternal Education (Bihar)	1.836521	0.56863351	1.0208264	3.222519
Maternal Education (Madhya Pradesh)	1.216442	0.11345798	1.0140412	1.469603
Maternal Education (Rajasthan)	1.197026	0.08238824	1.0349364	1.365353
Maternal Education (Orisa)	1.499207	0.12113323	1.2885457	1.755536
Weath Decile (Uttar Pradesh)	1.272464	0.19648198	0.9263572	1.688817
Weath Decile (Bihar)	3.928622	2.63882356	1.0459581	11.109042
Weath Decile (Madhya Pradesh)	1.925270	0.32063588	1.3893025	2.590042
Weath Decile (Rajasthan)	1.438593	0.15203912	1.1757011	1.754858
Weath Decile (Orisa)	2.332290	0.70672667	1.2521113	4.019337
Urban or Rural Residence (Uttar Pradesh)	1.126643	0.16817581	0.8320415	1.487426
Urban or Rural Residence (Bihar)	1.786967	0.21467417	1.4078346	2.269414
Urban or Rural Residence (Madhya Pradesh)	1.206369	0.06629402	1.0792024	1.334819
Urban or Rural Residence (Rajasthan)	1.001541	0.08182928	0.8558692	1.163720
Urban or Rural Residence (Orisa)	1.333805	0.17512726	1.0336000	1.737244

Table 3 – Relative Risk of JSY uptake by maternal characteristics for selected states

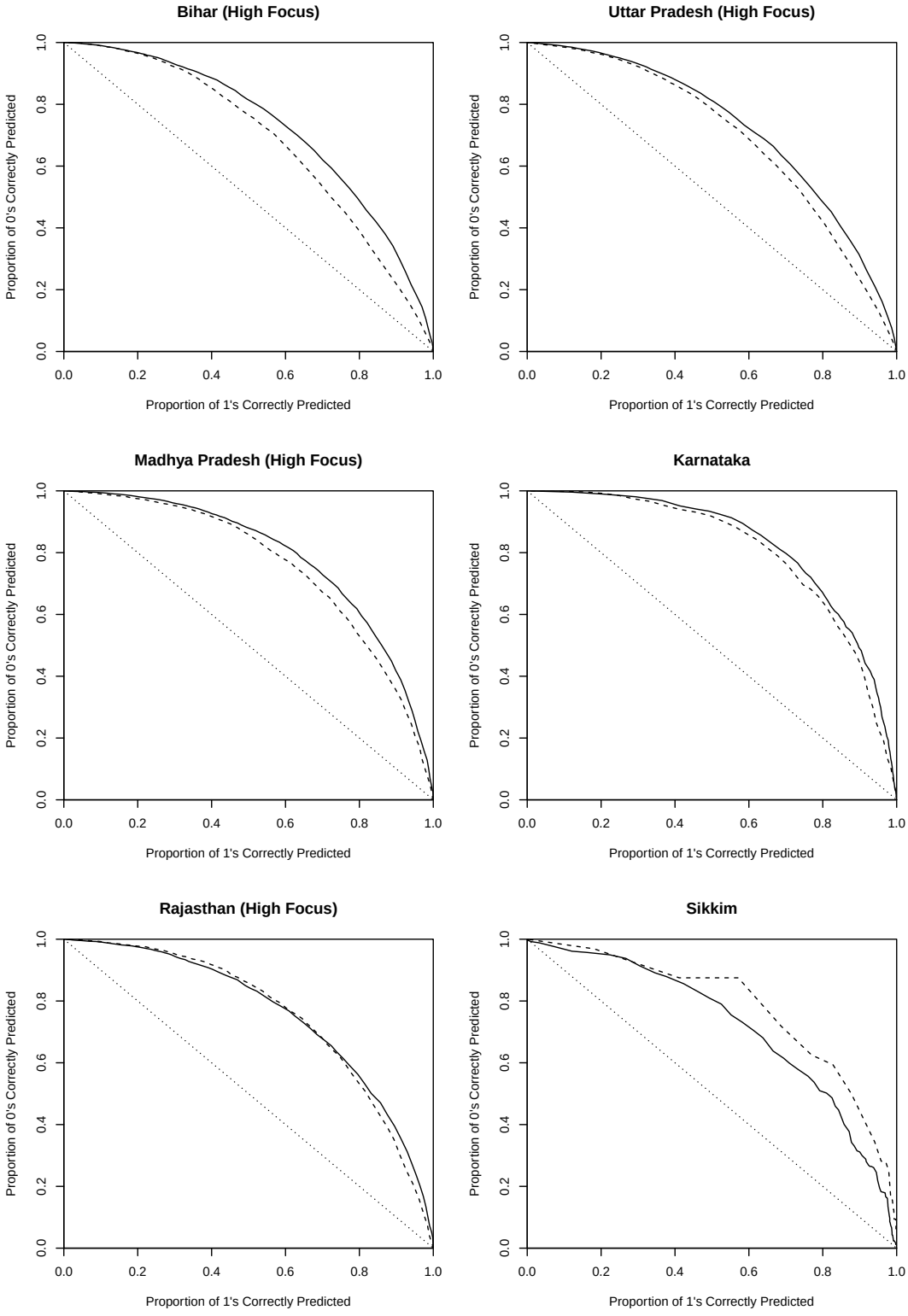

Figure 2 – ROC plots of antenatal care for National model vs State-specific model