

TABLE S1 Uganda Results: ME=0

		Linreg	MSS	LRSOE	MiniPred	Mini+alg
Sensitivity						
	Mean (95% CI)	100% (95.4%, 100%)	100% (95.4%, 100%)	100% (95.4%, 100%)	100% (95.4%, 100%)	100% (95.4%, 100%)
Efficiency						
	Mean (95% CI)	76.8% (75.3%, 78.2%)	76.5% (75.1%, 78%)	76.3% (74.8%, 77.8%)	85.4% (84.1%, 86.6%)	76.2% (74.7%, 77.6%)
	Median (Q1, Q3)	77% (75%, 79%)	77% (76%, 78%)	77% (74%, 78%)	86% (83%, 88%)	76% (70%, 81%)
	Min, Max	72%, 80%	70%, 80%	71%, 80%	78%, 90%	59%, 90%
Rounds						
	Mean (95% CI)	2.7 (2.4, 3)	2.2 (2, 2.4)	2 (1.9, 2.2)	4 (3.2, 4.8)	8.1 (7, 9.1)
	Median (Q1, Q3)	3 (2, 3)	2 (2, 3)	2 (2, 2)	3 (2, 5)	9 (6, 11)
	Min, Max	1, 5	1, 3	1, 3	1, 10	1, 11

TABLE S2 Uganda Results: ME=0.025

		Linreg	MSS	LRSOE	MiniPred	Mini+alg
Sensitivity						
	Mean (95% CI)	97.5% (91.2%, 99.7%)	97.5% (91.2%, 99.7%)	98.7% (93.1%, 100%)	100% (95.4%, 100%)	100% (95.4%, 100%)
Efficiency						
	Mean (95% CI)	76.5% (75.1%, 78%)	76.5% (75.1%, 78%)	76% (74.5%, 77.5%)	81.8% (80.5%, 83.1%)	73.1% (71.5%, 74.6%)
	Median (Q1, Q3)	77% (76%, 79%)	77% (75%, 78%)	76% (74%, 78%)	84% (78%, 87%)	73% (67%, 80%)
	Min, Max	66%, 80%	70%, 80%	70%, 80%	67%, 90%	56%, 90%
Rounds						
	Mean (95% CI)	2.7 (2.3, 3.1)	2.2 (2, 2.4)	2 (1.9, 2.2)	5.8 (4.4, 7.2)	9.2 (8.3, 10.2)
	Median (Q1, Q3)	3 (2, 3)	2 (2, 3)	2 (2, 2)	4 (2, 11)	10 (9, 11)
	Min, Max	1, 6	1, 3	1, 3	1, 11	1, 11

TABLE S3 Uganda Results: ME=0.05

		Linreg	MSS	LRSOE	MiniPred	Mini+alg
Sensitivity	Mean (95% CI)	96.2% (89.3%, 99.2%)	96.2% (89.3%, 99.2%)	97.5% (91.2%, 99.7%)	100% (95.4%, 100%)	100% (95.4%, 100%)
	Efficiency					
Efficiency	Mean (95% CI)	76.5% (75%, 77.9%)	76.5% (75%, 77.9%)	76% (74.5%, 77.4%)	81.1% (79.7%, 82.4%)	72.8% (71.2%, 74.3%)
	Median (Q1, Q3)	76% (75%, 79%)	77% (74%, 78%)	76% (74%, 78%)	84% (78%, 87%)	72% (67%, 80%)
	Min, Max	66%, 80%	72%, 80%	70%, 80%	67%, 90%	56%, 90%
Rounds	Mean (95% CI)	2.8 (2.4, 3.2)	2.2 (2, 2.4)	2 (1.8, 2.2)	6 (4.6, 7.4)	9.2 (8.3, 10.2)
	Median (Q1, Q3)	3 (2, 3)	2 (2, 3)	2 (2, 2)	5 (2, 11)	10 (9, 11)
	Min, Max	1, 6	1, 3	1, 4	1, 11	1, 11

TABLE S4 Uganda Results: ME=0.075

		Linreg	MSS	LRSOE	MiniPred	Mini+alg
Sensitivity	Mean (95% CI)	93.7% (85.8%, 97.9%)	93.7% (85.8%, 97.9%)	94.9% (87.5%, 98.6%)	98.7% (93.1%, 100%)	98.7% (93.1%, 100%)
	Efficiency					
Efficiency	Mean (95% CI)	76.5% (75%, 77.9%)	76.4% (74.9%, 77.9%)	76% (74.5%, 77.4%)	80.7% (79.3%, 82%)	72.5% (71%, 74.1%)
	Median (Q1, Q3)	77% (75%, 79%)	77% (75%, 78%)	76% (74%, 78%)	83% (75%, 87%)	72% (67%, 79%)
	Min, Max	66%, 80%	70%, 80%	69%, 80%	64%, 90%	56%, 90%
Rounds	Mean (95% CI)	2.8 (2.4, 3.3)	2.2 (2, 2.5)	2 (1.8, 2.2)	6.2 (4.8, 7.7)	9.4 (8.4, 10.3)
	Median (Q1, Q3)	3 (2, 4)	2 (2, 3)	2 (2, 2)	5 (2, 11)	10 (9, 11)
	Min, Max	1, 6	1, 4	1, 4	1, 11	1, 11

TABLE S5 Uganda Results: ME=0.1

		Linreg	MSS	LRSOE	MiniPred	Mini+alg
Sensitivity	Mean (95% CI)	91.1% (82.6%, 96.4%)	92.4% (84.2%, 97.2%)	93.7% (85.8%, 97.9%)	98.7% (93.1%, 100%)	98.7% (93.1%, 100%)
	Efficiency					
Efficiency	Mean (95% CI)	76.4% (74.9%, 77.9%)	76.4% (74.9%, 77.9%)	76% (74.5%, 77.4%)	80.2% (78.7%, 81.5%)	72.2% (70.6%, 73.7%)
	Median (Q1, Q3)	76% (76%, 79%)	77% (75%, 78%)	76% (74%, 78%)	83% (75%, 87%)	72% (65%, 79%)
	Min, Max	66%, 80%	70%, 80%	69%, 80%	59%, 90%	56%, 90%
Rounds	Mean (95% CI)	2.8 (2.4, 3.3)	2.2 (2, 2.5)	2.1 (1.9, 2.3)	6.2 (4.8, 7.6)	9.4 (8.4, 10.3)
	Median (Q1, Q3)	3 (2, 4)	2 (2, 2)	2 (2, 2)	5 (2, 11)	10 (9, 11)
	Min, Max	1, 6	1, 4	1, 4	1, 11	1, 11

TABLE S6 Uganda Results: ME=0.125

		Linreg	MSS	LRSOE	MiniPred	Mini+alg
Sensitivity	Mean (95% CI)	88.6% (79.5%, 94.7%)	89.9% (81%, 95.5%)	89.9% (81%, 95.5%)	98.7% (93.1%, 100%)	98.7% (93.1%, 100%)
	Efficiency					
Efficiency	Mean (95% CI)	76.6% (75.1%, 78%)	76.3% (74.8%, 77.7%)	76.1% (74.6%, 77.5%)	79.8% (78.4%, 81.1%)	72% (70.5%, 73.6%)
	Median (Q1, Q3)	77% (76%, 79%)	77% (75%, 78%)	76% (75%, 78%)	84% (74%, 87%)	72% (65%, 79%)
	Min, Max	66%, 80%	70%, 80%	69%, 80%	58%, 90%	56%, 90%
Rounds	Mean (95% CI)	2.8 (2.3, 3.2)	2.2 (1.9, 2.4)	2 (1.8, 2.2)	6.2 (4.8, 7.6)	9.4 (8.4, 10.3)
	Median (Q1, Q3)	3 (2, 4)	2 (2, 2)	2 (2, 2)	5 (2, 11)	10 (9, 11)
	Min, Max	1, 6	1, 4	1, 4	1, 11	1, 11

TABLE S7 Uganda Results: ME=0.15

		Linreg	MSS	LRSOE	MiniPred	Mini+alg
Sensitivity	Mean (95% CI)	88.6% (79.5%, 94.7%)	89.9% (81%, 95.5%)	91.1% (82.6%, 96.4%)	98.7% (93.1%, 100%)	97.5% (91.2%, 99.7%)
Efficiency	Mean (95% CI)	76.5% (75.1%, 78%)	76.1% (74.6%, 77.6%)	75.5% (74%, 77%)	78.3% (76.9%, 79.7%)	70.8% (69.2%, 72.4%)
	Median (Q1, Q3)	77% (76%, 79%)	77% (75%, 78%)	76% (73%, 78%)	84% (71%, 87%)	71% (62%, 78%)
	Min, Max	66%, 80%	70%, 80%	66%, 80%	46%, 90%	46%, 90%
Rounds	Mean (95% CI)	2.8 (2.4, 3.3)	2.2 (1.9, 2.4)	2.1 (1.9, 2.3)	6.3 (4.8, 7.7)	9.4 (8.4, 10.4)
	Median (Q1, Q3)	3 (2, 4)	2 (2, 2)	2 (2, 2)	5 (2, 11)	10 (9, 11)
	Min, Max	1, 6	1, 4	1, 4	1, 11	1, 11

TABLE S8 Uganda Results: ME=0.175

		Linreg	MSS	LRSOE	MiniPred	Mini+alg
Sensitivity	Mean (95% CI)	88.6% (79.5%, 94.7%)	89.9% (81%, 95.5%)	89.9% (81%, 95.5%)	97.5% (91.2%, 99.7%)	96.2% (89.3%, 99.2%)
Efficiency	Mean (95% CI)	76.4% (74.9%, 77.9%)	76.1% (74.6%, 77.5%)	75.5% (74%, 76.9%)	76.3% (74.8%, 77.8%)	69.1% (67.5%, 70.7%)
	Median (Q1, Q3)	77% (76%, 79%)	77% (74%, 78%)	76% (73%, 78%)	82% (68%, 87%)	70% (61%, 78%)
	Min, Max	66%, 80%	70%, 80%	66%, 80%	22%, 90%	22%, 90%
Rounds	Mean (95% CI)	2.8 (2.4, 3.3)	2.2 (1.9, 2.5)	2.1 (1.8, 2.3)	6.4 (4.9, 7.8)	9.5 (8.5, 10.4)
	Median (Q1, Q3)	3 (2, 4)	2 (2, 3)	2 (2, 2)	5 (2, 11)	11 (9, 11)
	Min, Max	1, 6	1, 4	1, 4	1, 11	1, 11

TABLE S9 Uganda Results: ME=0.2

		Linreg	MSS	LRSOE	MiniPred	Mini+alg
Sensitivity	Mean (95% CI)	86.1% (76.5%, 92.8%)	89.9% (81%, 95.5%)	88.6% (79.5%, 94.7%)	97.5% (91.2%, 99.7%)	96.2% (89.3%, 99.2%)
Efficiency	Mean (95% CI)	76.5% (75%, 77.9%)	76.2% (74.7%, 77.6%)	75.3% (73.8%, 76.7%)	73.2% (71.6%, 74.7%)	66.2% (64.5%, 67.8%)
	Median (Q1, Q3)	77% (76%, 79%)	77% (74%, 78%)	76% (73%, 78%)	81% (68%, 87%)	70% (60%, 78%)
	Min, Max	66%, 80%	70%, 80%	64%, 80%	-10%, 90%	-10%, 90%
Rounds	Mean (95% CI)	2.8 (2.3, 3.2)	2.2 (1.9, 2.5)	2.1 (1.8, 2.3)	6.5 (5.1, 8)	9.5 (8.6, 10.4)
	Median (Q1, Q3)	3 (2, 4)	2 (2, 3)	2 (2, 2)	5 (2, 11)	11 (9, 11)
	Min, Max	1, 6	1, 4	1, 4	1, 11	1, 11

TABLE S10 Uganda Results: ME=0.225

		Linreg	MSS	LRSOE	MiniPred	Mini+alg
Sensitivity	Mean (95% CI)	86.1% (76.5%, 92.8%)	88.6% (79.5%, 94.7%)	87.3% (78%, 93.8%)	97.5% (91.2%, 99.7%)	94.9% (87.5%, 98.6%)
Efficiency	Mean (95% CI)	76% (74.5%, 77.4%)	76.1% (74.6%, 77.5%)	74.9% (73.4%, 76.4%)	70.8% (69.2%, 72.3%)	63.9% (62.2%, 65.5%)
	Median (Q1, Q3)	77% (76%, 79%)	77% (74%, 78%)	76% (73%, 78%)	81% (67%, 87%)	70% (59%, 78%)
	Min, Max	53%, 80%	70%, 80%	57%, 80%	-10%, 90%	-10%, 90%
Rounds	Mean (95% CI)	3 (2.3, 3.6)	2.2 (1.9, 2.5)	2.1 (1.8, 2.3)	6.6 (5.2, 8.1)	9.6 (8.8, 10.5)
	Median (Q1, Q3)	3 (2, 4)	2 (2, 3)	2 (2, 2)	7 (2, 11)	11 (9, 11)
	Min, Max	1, 11	1, 4	1, 4	1, 11	1, 11

TABLE S11 Uganda Results: ME=0.25

		Linreg	MSS	LRSOE	MiniPred	Mini+alg
Sensitivity						
	Mean (95% CI)	83.5% (73.5%, 90.9%)	86.1% (76.5%, 92.8%)	86.1% (76.5%, 92.8%)	97.5% (91.2%, 99.7%)	94.9% (87.5%, 98.6%)
Efficiency						
	Mean (95% CI)	76.1% (74.6%, 77.5%)	75.8% (74.3%, 77.2%)	74.6% (73.1%, 76.1%)	68.7% (67.1%, 70.3%)	62% (60.3%, 63.7%)
	Median (Q1, Q3)	77% (76%, 79%)	77% (74%, 78%)	76% (73%, 78%)	81% (67%, 87%)	70% (56%, 78%)
	Min, Max	53%, 80%	58%, 80%	51%, 80%	-10%, 90%	-10%, 90%
Rounds						
	Mean (95% CI)	2.9 (2.2, 3.6)	2.2 (1.9, 2.6)	2 (1.8, 2.3)	6.7 (5.3, 8.2)	9.7 (8.9, 10.5)
	Median (Q1, Q3)	3 (2, 4)	2 (2, 3)	2 (2, 2)	7 (2, 11)	11 (9, 11)
	Min, Max	1, 11	1, 6	1, 4	1, 11	1, 11

TABLE S12 Uganda Results: ME=0.5

		Linreg	MSS	LRSOE	MiniPred	Mini+alg
Sensitivity						
	Mean (95% CI)	77.2% (66.4%, 85.9%)	79.7% (69.2%, 88%)	79.7% (69.2%, 88%)	91.1% (82.6%, 96.4%)	91.1% (82.6%, 96.4%)
Efficiency						
	Mean (95% CI)	73% (71.5%, 74.5%)	72% (70.4%, 73.5%)	70.8% (69.3%, 72.4%)	55% (53.3%, 56.7%)	49% (47.3%, 50.7%)
	Median (Q1, Q3)	77% (74%, 79%)	75% (73%, 79%)	76% (69%, 79%)	81% (-10%, 88%)	69% (-10%, 79%)
	Min, Max	-20%, 80%	-20%, 80%	-20%, 80%	-10%, 90%	-10%, 90%
Rounds						
	Mean (95% CI)	3.6 (2, 5.2)	2.9 (1.6, 4.2)	2.2 (1.7, 2.8)	6.4 (4.9, 8)	9.5 (8.4, 10.5)
	Median (Q1, Q3)	2 (2, 4)	2 (2, 3)	2 (2, 2)	5 (2, 11)	11 (9, 11)
	Min, Max	1, 24	1, 21	1, 9	1, 11	1, 11

TABLE S13 Uganda Results: ME=0.75

		Linreg	MSS	LRSOE	MiniPred	Mini+alg
Sensitivity						
	Mean (95% CI)	70.9% (59.6%, 80.6%)	72.2% (60.9%, 81.7%)	70.9% (59.6%, 80.6%)	89.9% (81%, 95.5%)	89.9% (81%, 95.5%)
Efficiency						
	Mean (95% CI)	72.7% (71.1%, 74.2%)	71.7% (70.2%, 73.3%)	69.8% (68.3%, 71.4%)	51% (49.3%, 52.7%)	45.6% (43.9%, 47.3%)
	Median (Q1, Q3)	78% (76%, 80%)	75% (74%, 80%)	76% (69%, 80%)	81% (-10%, 88%)	70% (-10%, 79%)
	Min, Max	-20%, 80%	-20%, 80%	-20%, 80%	-10%, 90%	-10%, 90%
Rounds						
	Mean (95% CI)	3.6 (2, 5.3)	2.9 (1.6, 4.2)	2.3 (1.7, 2.9)	6.5 (4.9, 8)	9.5 (8.4, 10.5)
	Median (Q1, Q3)	2 (1, 4)	2 (1, 3)	2 (1, 2)	5 (2, 11)	11 (9, 11)
	Min, Max	1, 24	1, 21	1, 9	1, 11	1, 11

