

# MIPaperFigures

Kylie Getz and Kristin Linn

5/17/2022

Results using 500 simulations, 10 MI trueTreatment approx -0.69, trueEcog approx 0.4

```
os1 <- coxph(Surv(cmonth, dead) ~ treat + genderf +  
reth_black + reth_hisp + reth_oth + practypec + b.ecogvalue + smokey + dgradeh + surgery + site_ureter  
+ site_renal + site_urethra + age + var1 + var2, data=sdat.c, x=T)
```

# Treat

Table 1: Treatment

	Bias			MSE		
	Low	Medium	High	Low	Medium	High
ORACLE	-0.0047	-0.0006	-0.0018	0.0055	0.0053	0.0054
<b>MCAR</b>						
CC	-0.0054	-0.0041	-0.0095	0.0066	0.0099	0.0158
MICE	-0.0008	0.0079	0.0099	0.0055	0.0056	0.0057
RF	0.0004	0.0100	0.0148	0.0055	0.0056	0.0059
DAE	0.0086	0.0273	0.0402	0.0056	0.0062	0.0071
<b>MAR</b>						
CC	-0.0040	-0.0066	-0.0012	0.0069	0.0110	0.0183
MICE	0.0011	0.0099	0.0210	0.0052	0.0056	0.0059
RF	0.0024	0.0138	0.0262	0.0051	0.0058	0.0062
DAE	0.0252	0.0474	0.0656	0.0056	0.0075	0.0093
<b>MNAR 1</b>						
CC	-0.0034	-0.0054	-0.0033	0.0070	0.0114	0.0192
MICE	0.0386	0.0522	0.0669	0.0066	0.0082	0.0098
RF	0.0405	0.0593	0.0728	0.0067	0.0089	0.0106
DAE	0.0516	0.0666	0.0790	0.0077	0.0097	0.0113
<b>MNAR 2</b>						
CC	-0.0048	0.0005	-0.0016	0.0073	0.0105	0.0178
MICE	0.0175	0.0403	0.0528	0.0059	0.0072	0.0082
RF	0.0168	0.0417	0.0595	0.0058	0.0073	0.0088
DAE	0.0316	0.0620	0.0781	0.0065	0.0092	0.0112

Table 2: Treatment

	SE			Coverage		
	Low	Medium	High	Low	Medium	High
ORACLE	0.0513	0.0512	0.0513	0.946	0.954	0.952
<b>MCAR</b>						
CC	0.0571	0.0689	0.0882	0.954	0.942	0.958
MICE	0.0518	0.0522	0.0528	0.948	0.948	0.946
RF	0.0516	0.0519	0.0526	0.944	0.944	0.938
DAE	0.0513	0.0510	0.0509	0.930	0.896	0.844
<b>MAR</b>						
CC	0.0596	0.0741	0.0944	0.958	0.948	0.946
MICE	0.0520	0.0526	0.0533	0.960	0.944	0.920
RF	0.0518	0.0526	0.0536	0.966	0.934	0.916
DAE	0.0508	0.0506	0.0504	0.934	0.824	0.750
<b>MNAR 1</b>						
CC	0.0603	0.0755	0.0969	0.960	0.950	0.940
MICE	0.0513	0.0518	0.0521	0.896	0.806	0.760
RF	0.0512	0.0515	0.0518	0.886	0.778	0.734
DAE	0.0506	0.0505	0.0504	0.818	0.740	0.680
<b>MNAR 2</b>						
CC	0.0590	0.0728	0.0944	0.934	0.958	0.956
MICE	0.0517	0.0519	0.0524	0.922	0.880	0.824
RF	0.0515	0.0517	0.0520	0.930	0.872	0.796
DAE	0.0509	0.0506	0.0504	0.896	0.764	0.650

# ECOG

Table 3: ECOG

	Bias			MSE		
	Low	Medium	High	Low	Medium	High
ORACLE	0.0026	0.0026	0.0022	0.0011	0.0011	0.0011
<b>MCAR</b>						
CC	0.0023	0.0034	0.0042	0.0014	0.0020	0.0035
MICE	-0.0024	-0.0061	-0.0102	0.0012	0.0014	0.0018
RF	-0.0010	-0.0048	-0.0095	0.0012	0.0014	0.0017
DAE	-0.0011	-0.0037	-0.0051	0.0012	0.0013	0.0016
<b>MAR</b>						
CC	0.0029	0.0035	0.0059	0.0013	0.0019	0.0030
MICE	-0.0063	-0.0158	-0.0228	0.0012	0.0016	0.0021
RF	0.0006	-0.0040	-0.0030	0.0012	0.0015	0.0018
DAE	-0.0028	-0.0073	-0.0075	0.0012	0.0014	0.0015
<b>MNAR 1</b>						
CC	0.0026	0.0023	0.0059	0.0014	0.0022	0.0037
MICE	-0.0079	-0.0134	-0.0207	0.0013	0.0017	0.0022
RF	-0.0041	-0.0157	-0.0251	0.0013	0.0018	0.0026
DAE	-0.0075	-0.0099	-0.0070	0.0013	0.0016	0.0018
<b>MNAR 2</b>						
CC	0.0007	0.0008	0.0073	0.0014	0.0021	0.0034
MICE	-0.0088	-0.0177	-0.0234	0.0013	0.0018	0.0023
RF	-0.0025	-0.0089	-0.0132	0.0012	0.0016	0.0020
DAE	-0.0071	-0.0123	-0.0124	0.0012	0.0016	0.0018

Table 4: ECOG

	SE			Coverage		
	Low	Medium	High	Low	Medium	High
ORACLE	0.0234	0.0233	0.0234	0.942	0.944	0.950
<b>MCAR</b>						
CC	0.0260	0.0314	0.0404	0.950	0.958	0.928
MICE	0.0249	0.0265	0.0285	0.956	0.960	0.930
RF	0.0246	0.0261	0.0282	0.958	0.952	0.946
DAE	0.0246	0.0260	0.0280	0.940	0.950	0.954
<b>MAR</b>						
CC	0.0259	0.0305	0.0378	0.952	0.948	0.942
MICE	0.0249	0.0267	0.0285	0.966	0.912	0.896
RF	0.0248	0.0270	0.0306	0.948	0.960	0.962
DAE	0.0243	0.0255	0.0271	0.952	0.942	0.948
<b>MNAR 1</b>						
CC	0.0269	0.0328	0.0417	0.946	0.946	0.948
MICE	0.0255	0.0279	0.0305	0.952	0.924	0.908
RF	0.0256	0.0283	0.0323	0.954	0.912	0.908
DAE	0.0253	0.0274	0.0299	0.950	0.934	0.944
<b>MNAR 2</b>						
CC	0.0265	0.0320	0.0408	0.952	0.942	0.948
MICE	0.0254	0.0276	0.0299	0.944	0.906	0.900
RF	0.0252	0.0275	0.0305	0.954	0.932	0.922
DAE	0.0250	0.0267	0.0291	0.950	0.920	0.946

# Var 1

Table 5: Var 1

	Bias			MSE		
	Low	Medium	High	Low	Medium	High
ORACLE	0.0019	-0.0003	-0.0013	0.0010	0.0010	0.0010
<b>MCAR</b>						
CC	0.0015	0.0009	0.0002	0.0013	0.0018	0.0031
MICE	0.0008	-0.0026	-0.0042	0.0010	0.0010	0.0011
RF	0.0010	-0.0022	-0.0040	0.0010	0.0010	0.0011
DAE	-0.0011	-0.0037	-0.0051	0.0012	0.0013	0.0016
<b>MAR</b>						
CC	0.0009	-0.0004	0.0013	0.0013	0.0019	0.0029
MICE	-0.0049	-0.0090	-0.0098	0.0011	0.0011	0.0012
RF	-0.0020	-0.0047	-0.0051	0.0010	0.0011	0.0011
DAE	-0.0028	-0.0073	-0.0075	0.0012	0.0014	0.0015
<b>MNAR 1</b>						
CC	0.0011	0.0002	0.0023	0.0013	0.0019	0.0028
MICE	0.0141	0.0178	0.0179	0.0012	0.0013	0.0014
RF	0.0145	0.0184	0.0189	0.0012	0.0014	0.0014
DAE	-0.0075	-0.0099	-0.0070	0.0013	0.0016	0.0018
<b>MNAR 2</b>						
CC	0.0010	0.0004	0.0034	0.0012	0.0017	0.0027
MICE	0.0047	0.0049	0.0061	0.0010	0.0011	0.0011
RF	0.0050	0.0060	0.0079	0.0010	0.0011	0.0012
DAE	-0.0071	-0.0123	-0.0124	0.0012	0.0016	0.0018

Table 6: Var 1

	SE			Coverage		
	Low	Medium	High	Low	Medium	High
ORACLE	0.0225	0.0225	0.0225	0.946	0.960	0.954
<b>MCAR</b>						
CC	0.0250	0.0304	0.0390	0.942	0.960	0.950
MICE	0.0228	0.0233	0.0239	0.950	0.962	0.958
RF	0.0227	0.0231	0.0236	0.950	0.964	0.958
DAE	0.0246	0.0260	0.0280	0.940	0.950	0.954
<b>MAR</b>						
CC	0.0253	0.0304	0.0383	0.942	0.944	0.958
MICE	0.0229	0.0233	0.0239	0.946	0.942	0.954
RF	0.0228	0.0232	0.0238	0.954	0.952	0.950
DAE	0.0243	0.0255	0.0271	0.952	0.942	0.948
<b>MNAR 1</b>						
CC	0.0252	0.0303	0.0380	0.938	0.942	0.960
MICE	0.0229	0.0233	0.0237	0.902	0.874	0.876
RF	0.0228	0.0231	0.0235	0.892	0.866	0.860
DAE	0.0253	0.0274	0.0299	0.950	0.934	0.944
<b>MNAR 2</b>						
CC	0.0248	0.0293	0.0366	0.954	0.948	0.940
MICE	0.0228	0.0232	0.0237	0.968	0.950	0.946
RF	0.0227	0.0230	0.0235	0.962	0.944	0.938
DAE	0.0250	0.0267	0.0291	0.950	0.920	0.946

## Var 2

Table 7: Var 2

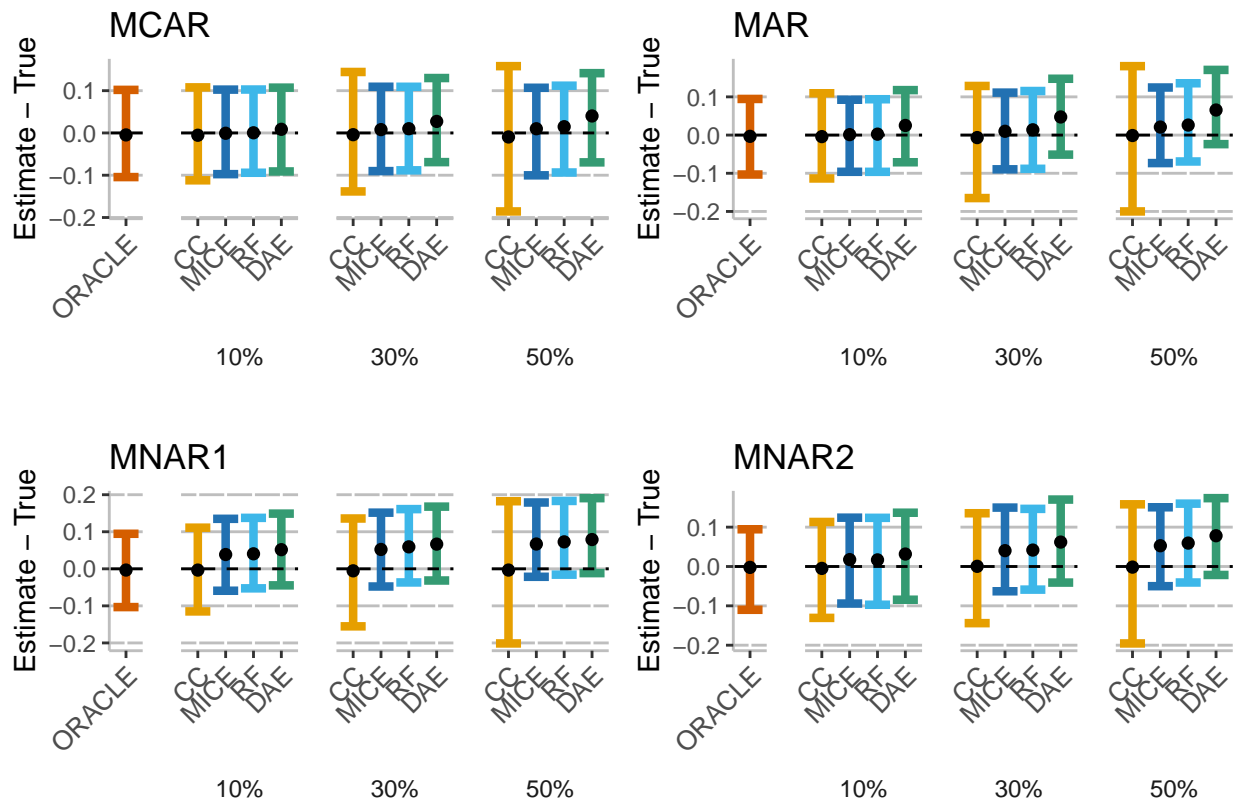
	Bias			MSE		
	Low	Medium	High	Low	Medium	High
ORACLE	0.0012	0.0010	0.0008	0.0009	0.0008	0.0009
<b>MCAR</b>						
CC	0.0011	0.0006	0.0018	0.0011	0.0015	0.0027
MICE	0.0011	0.0007	-0.0005	0.0009	0.0009	0.0010
RF	0.0021	0.0031	0.0036	0.0009	0.0009	0.0010
DAE	-0.0011	-0.0037	-0.0051	0.0012	0.0013	0.0016
<b>MAR</b>						
CC	-0.0002	0.0010	0.0013	0.0010	0.0015	0.0022
MICE	-0.0061	-0.0112	-0.0178	0.0009	0.0010	0.0013
RF	0.0007	0.0038	0.0031	0.0009	0.0009	0.0010
DAE	-0.0028	-0.0073	-0.0075	0.0012	0.0014	0.0015
<b>MNAR 1</b>						
CC	-0.0003	0.0009	0.0001	0.0011	0.0015	0.0023
MICE	0.0001	-0.0034	-0.0075	0.0009	0.0009	0.0010
RF	0.0070	0.0124	0.0143	0.0009	0.0010	0.0012
DAE	-0.0075	-0.0099	-0.0070	0.0013	0.0016	0.0018
<b>MNAR 2</b>						
CC	-0.0009	0.0014	-0.0011	0.0011	0.0015	0.0023
MICE	-0.0031	-0.0057	-0.0100	0.0009	0.0009	0.0010
RF	0.0027	0.0059	0.0064	0.0009	0.0009	0.0009
DAE	-0.0071	-0.0123	-0.0124	0.0012	0.0016	0.0018



Table 8: Var 2

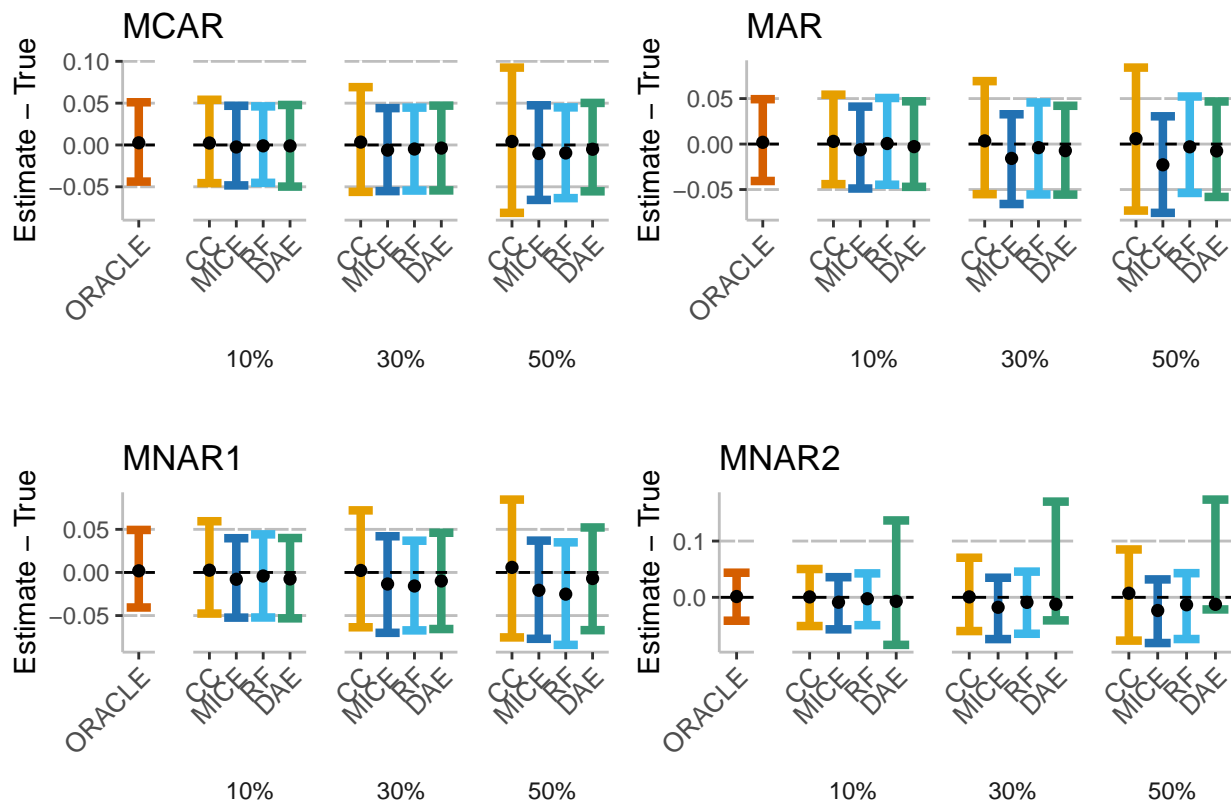
	SE			Coverage		
	Low	Medium	High	Low	Medium	High
ORACLE	0.0207	0.0207	0.0207	0.956	0.962	0.944
<b>MCAR</b>						
CC	0.0230	0.0280	0.0358	0.946	0.958	0.934
MICE	0.0211	0.0217	0.0225	0.952	0.964	0.948
RF	0.0209	0.0213	0.0219	0.954	0.958	0.938
DAE	0.0246	0.0260	0.0280	0.940	0.950	0.954
<b>MAR</b>						
CC	0.0231	0.0274	0.0341	0.944	0.958	0.966
MICE	0.0212	0.0218	0.0227	0.944	0.942	0.888
RF	0.0210	0.0214	0.0222	0.958	0.954	0.948
DAE	0.0243	0.0255	0.0271	0.952	0.942	0.948
<b>MNAR 1</b>						
CC	0.0233	0.0278	0.0345	0.942	0.960	0.964
MICE	0.0212	0.0217	0.0225	0.956	0.962	0.950
RF	0.0210	0.0213	0.0220	0.948	0.926	0.906
DAE	0.0253	0.0274	0.0299	0.950	0.934	0.944
<b>MNAR 2</b>						
CC	0.0229	0.0271	0.0338	0.948	0.954	0.946
MICE	0.0210	0.0213	0.0219	0.942	0.940	0.938
RF	0.0209	0.0210	0.0215	0.938	0.938	0.970
DAE	0.0250	0.0267	0.0291	0.950	0.920	0.946

Treat Percentiles of Est - Truth



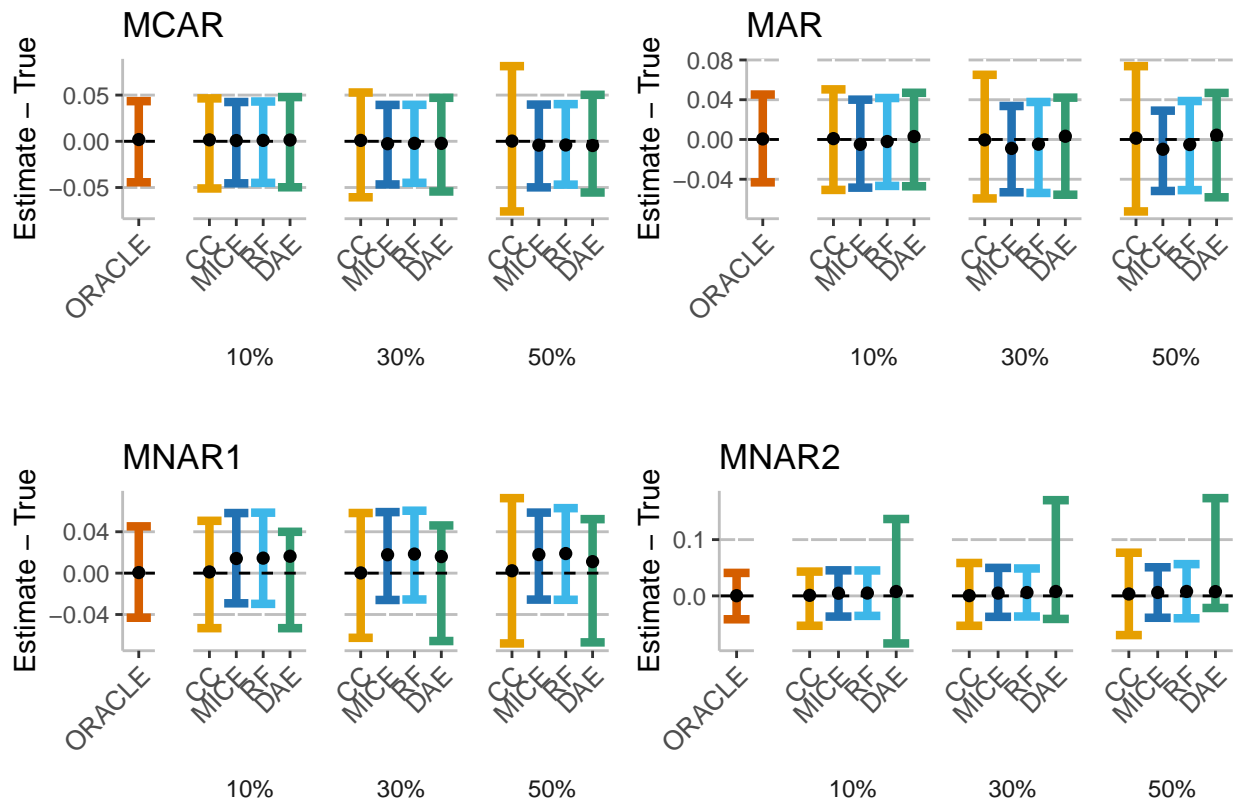
## pdf  
## 2

# Ecog Percentiles of Est - Truth



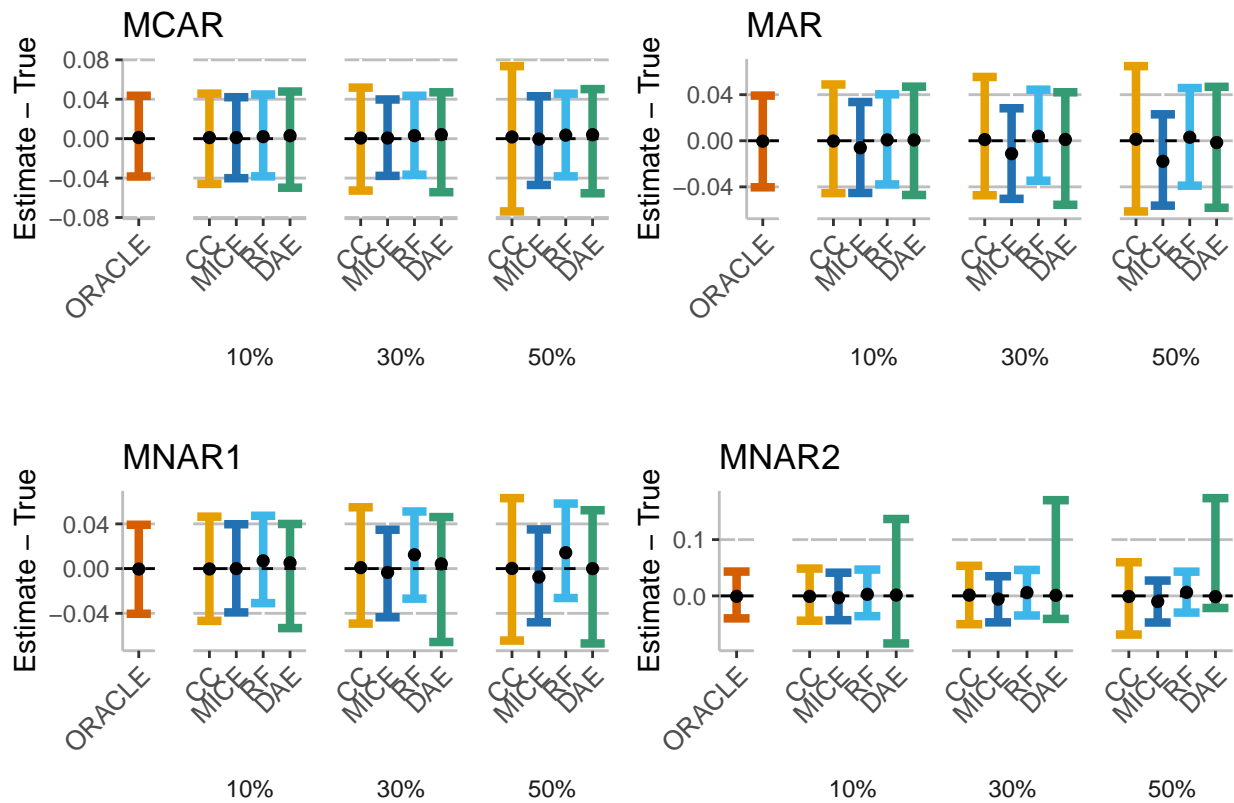
## pdf  
## 2

Var1 Percentiles of Est - Truth



## pdf  
## 2

Var2 Percentiles of Est - Truth



## pdf  
## 2