Testing different models (fitting one time)

Using control only

$\beta_0 = -6$**: prevalence** ≈ 0.01

Model	β_0	β_1	β_2	β_3	Abs. Bias
Default LOM	-5.550(0.578)	1.428(1.680)	-0.643(0.413)	3.431(2.192)	0.802
CLOM(X1X2)	-5.708(0.596)	1.665(1.897)	-0.641(0.416)	3.677(2.441)	1.037
CLOM(X3X4)	-6.620(0.673)	1.781(1.951)	-0.537(0.539)	3.748(2.611)	1.108
CLOM(X5X6)	-5.515(0.584)	1.178(1.519)	-0.646(0.412)	3.056(2.019)	0.416
CLOM(all)	-6.817(0.716)	1.884(2.144)	-0.562(0.516)	3.721(2.871)	1.081
MSLOM(X1X2)	-5.748(0.580)	1.671(1.869)	-0.623(0.436)	5.061(3.322)	2.432
MSLOM(X3X4)	-5.751(0.582)	1.691(1.887)	-0.697(0.350)	4.087(2.654)	1.458
MSLOM(X5X6)	-5.788(0.590)	2.086(2.199)	-0.537(0.537)	2.906(2.335)	0.277
MSLOM(all)	-6.141(0.586)	2.316(2.356)	-0.567(0.503)	4.006(2.960)	1.377
DR	-7.690(0.474)	2.918(1.811)	-0.446(0.405)	5.098(2.351)	2.458

Marginal: $RERI_{OR}^{true} = 2.629$, $RERI_{RR}^{true} = 2.553$; Conditional: $RERI_{OR}^{true} = 2.64$

$\beta_0 = -4.5$**: prevalence** ≈ 0.05

Model	β_0	β_1	β_2	β_3	Abs. Bias
Default LOM	-4.071(0.280)	1.616(0.871)	0.845(0.653)	3.100(1.165)	0.855
CLOM(X1X2)	-4.238(0.288)	1.645(0.906)	0.854(0.659)	3.281(1.252)	0.641
CLOM(X3X4)	-4.813(0.309)	1.918(0.996)	1.447(0.890)	4.059(1.619)	1.419
CLOM(X5X6)	-4.074(0.283)	1.425(0.813)	0.937(0.694)	2.967(1.171)	0.327
CLOM(all)	-5.077(0.330)	1.870(1.031)	1.636(0.989)	4.346(1.896)	1.706
MSLOM(X1X2)	-4.172(0.308)	2.048(1.111)	1.216(0.855)	2.860(1.344)	0.615
MSLOM(X3X4)	-4.237(0.282)	1.861(0.962)	1.229(0.800)	4.200(1.545)	1.955
MSLOM(X5X6)	-4.132(0.298)	1.689(0.955)	0.916(0.717)	3.213(1.337)	0.968
MSLOM(all)	-4.440(0.311)	2.834(1.454)	2.068(1.252)	2.843(1.853)	0.598
DR	-5.335(0.190)	3.315(0.870)	2.764(0.779)	3.465(0.998)	0.825

Marginal: $RERI_{OR}^{true} = 2.245$, $RERI_{RR}^{true} = 1.998$; Conditional: $RERI_{OR}^{true} = 2.64$

$\beta_0 = -3.7$**: prevalence** ≈ 0.1

Model	β_0	β_1	β_2	β_3	Abs. Bias
Default LOM	-2.835(0.157)	0.536(0.316)	0.160(0.254)	1.944(0.464)	0.099
CLOM(X1X2)	-2.986(0.164)	0.532(0.329)	0.163(0.257)	2.064(0.499)	0.576
CLOM(X3X4)	-3.499(0.182)	0.679(0.363)	0.554(0.358)	2.713(0.693)	0.073
CLOM(X5X6)	-2.790(0.159)	0.375(0.286)	0.140(0.254)	1.670(0.425)	0.970
CLOM(all)	-3.703(0.199)	0.513(0.353)	0.541(0.373)	2.530(0.714)	0.110
MSLOM(X1X2)	-2.775(0.178)	0.523(0.347)	0.082(0.261)	1.790(0.471)	0.253
MSLOM(X3X4)	-2.973(0.160)	0.645(0.345)	0.429(0.321)	2.567(0.609)	0.524
MSLOM(X5X6)	-2.753(0.170)	0.344(0.296)	0.127(0.263)	1.731(0.453)	0.312
MSLOM(all)	-2.950(0.174)	0.619(0.379)	0.492(0.375)	1.822(0.628)	0.221
DR	-3.751(0.102)	0.748(0.207)	0.758(0.211)	2.234(0.329)	0.406

Marginal: $RERI_{OR}^{true} = 2.043$, $RERI_{RR}^{true} = 1.634$; Conditional: $RERI_{OR}^{true} = 2.64$

$\beta_0 = -3$**: prevalence** ≈ 0.2

Model	β_0	β_1	β_2	β_3	Abs. Bias
Default LOM	-2.055(0.113)	0.066(0.170)	-0.134(0.146)	2.196(0.328)	0.355
CLOM(X1X2)	-2.124(0.118)	0.017(0.170)	-0.140(0.146)	2.232(0.342)	0.408
CLOM(X3X4)	-2.633(0.134)	0.131(0.194)	0.095(0.198)	3.113(0.523)	0.473
CLOM(X5X6)	-1.989(0.115)	-0.060(0.152)	-0.173(0.142)	1.877(0.289)	0.763
CLOM(all)	-2.687(0.145)	-0.078(0.172)	0.018(0.194)	2.632(0.479)	0.008
MSLOM(X1X2)	-2.041(0.124)	0.037(0.179)	-0.081(0.169)	2.136(0.354)	0.295
MSLOM(X3X4)	-2.155(0.116)	0.136(0.185)	0.022(0.178)	2.838(0.438)	0.997
MSLOM(X5X6)	-1.967(0.123)	-0.085(0.156)	-0.196(0.144)	1.944(0.312)	0.103
MSLOM(all)	-2.091(0.130)	-0.019(0.181)	0.062(0.210)	2.264(0.464)	0.423
DR	-2.754(0.072)	-0.015(0.093)	0.173(0.108)	3.118(0.254)	0.478

Marginal: $RERI_{OR}^{true} = 1.841$, $RERI_{RR}^{true} = 1.269$; Conditional: $RERI_{OR}^{true} = 2.64$

$\beta_0 = -2$**: prevalence** ≈ 0.4

Model	β_0	β_1	β_2	β_3	Abs. Bias
Default LOM	-1.461(0.092)	0.236(0.157)	0.190(0.153)	1.902(0.300)	0.235
CLOM(X1X2)	-1.512(0.096)	0.200(0.161)	0.192(0.156)	1.986(0.319)	0.654
CLOM(X3X4)	-1.895(0.107)	0.355(0.189)	0.507(0.214)	2.828(0.485)	0.188
CLOM(X5X6)	-1.377(0.094)	0.088(0.141)	0.115(0.148)	1.560(0.259)	1.080
CLOM(all)	-1.893(0.116)	0.121(0.171)	0.386(0.210)	2.336(0.440)	0.304
MSLOM(X1X2)	-1.427(0.100)	0.196(0.166)	0.175(0.164)	1.690(0.303)	0.023
MSLOM(X3X4)	-1.580(0.094)	0.375(0.179)	0.445(0.193)	2.484(0.401)	0.817
MSLOM(X5X6)	-1.421(0.100)	0.105(0.150)	0.183(0.164)	1.595(0.295)	0.072
MSLOM(all)	-1.521(0.108)	0.196(0.183)	0.437(0.220)	1.658(0.421)	0.009
DR	-1.971(0.059)	0.296(0.101)	0.582(0.119)	2.327(0.207)	0.313

Marginal: $RERI_{OR}^{true} = 1.667$, $RERI_{RR}^{true} = 0.826$; Conditional: $RERI_{OR}^{true} = 2.64$

$\beta_0 = -1$**: prevalence** ≈ 0.6

Model	β_0	β_1	β_2	β_3	Abs. Bias
Default LOM	-0.808(0.078)	0.558(0.168)	0.154(0.128)	2.248(0.348)	0.646
CLOM(X1X2)	-0.825(0.082)	0.503(0.173)	0.156(0.131)	2.356(0.369)	0.284
CLOM(X3X4)	-1.076(0.088)	0.781(0.212)	0.434(0.176)	3.598(0.589)	0.958
CLOM(X5X6)	-0.730(0.080)	0.395(0.153)	0.105(0.126)	1.915(0.310)	0.725
CLOM(all)	-1.013(0.097)	0.484(0.195)	0.351(0.178)	3.178(0.563)	0.538
MSLOM(X1X2)	-0.770(0.082)	0.513(0.176)	0.095(0.128)	1.889(0.340)	0.287
MSLOM(X3X4)	-0.943(0.080)	0.759(0.195)	0.454(0.168)	3.494(0.530)	1.892
MSLOM(X5X6)	-0.739(0.084)	0.414(0.162)	0.068(0.127)	1.876(0.356)	0.274
MSLOM(all)	-0.786(0.093)	0.405(0.184)	0.214(0.160)	2.073(0.525)	0.471
DR	-0.898(0.051)	0.384(0.094)	0.154(0.078)	2.687(0.189)	0.047

Marginal: $RERI_{OR}^{true} = 1.602$, $RERI_{RR}^{true} = 0.484$; Conditional: $RERI_{OR}^{true} = 2.64$

Using both control and case

$\beta_0 = -6$**: prevalence** ≈ 0.01

Model	β_0	β_1	β_2	β_3	Abs. Bias
Default LOM	-5.550(0.578)	1.428(1.680)	-0.643(0.413)	3.431(2.192)	0.802
CLOM(X1X2)	-5.708(0.596)	1.665(1.897)	-0.641(0.416)	3.677(2.441)	1.037
CLOM(X3X4)	-6.620(0.673)	1.781(1.951)	-0.537(0.539)	3.748(2.611)	1.108
CLOM(X5X6)	-5.515(0.584)	1.178(1.519)	-0.646(0.412)	3.056(2.019)	0.416
CLOM(all)	-6.817(0.716)	1.884(2.144)	-0.562(0.516)	3.721(2.871)	1.081
MSLOM(X1X2)	-5.748(0.580)	1.672(1.869)	-0.624(0.435)	5.030(3.300)	2.401
MSLOM(X3X4)	-5.743(0.583)	1.652(1.861)	-0.699(0.349)	3.983(2.585)	1.354
MSLOM(X5X6)	-5.793(0.590)	2.102(2.212)	-0.536(0.540)	2.904(2.342)	0.275
MSLOM(all)	-6.140(0.587)	2.293(2.342)	-0.564(0.506)	3.866(2.879)	1.237
DR	-7.705(0.473)	2.983(1.835)	-0.434(0.411)	5.155(2.393)	2.515

Marginal: $RERI_{OR}^{true} = 2.629$, $RERI_{RR}^{true} = 2.553$; Conditional: $RERI_{OR}^{true} = 2.64$

$\beta_0 = -4.5$**: prevalence** ≈ 0.05

Model	β_0	β_1	β_2	β_3	Abs. Bias
Default LOM	-4.071(0.280)	1.616(0.871)	0.845(0.653)	3.100(1.165)	0.855
CLOM(X1X2)	-4.238(0.288)	1.645(0.906)	0.854(0.659)	3.281(1.252)	0.641
CLOM(X3X4)	-4.813(0.309)	1.918(0.996)	1.447(0.890)	4.059(1.619)	1.419
CLOM(X5X6)	-4.074(0.283)	1.425(0.813)	0.937(0.694)	2.967(1.171)	0.327
CLOM(all)	-5.077(0.330)	1.870(1.031)	1.636(0.989)	4.346(1.896)	1.706
MSLOM(X1X2)	-4.158(0.312)	1.998(1.102)	1.188(0.852)	2.738(1.304)	0.493
MSLOM(X3X4)	-4.190(0.282)	1.703(0.911)	1.135(0.767)	3.641(1.372)	1.396
MSLOM(X5X6)	-4.132(0.299)	1.687(0.957)	0.918(0.719)	3.209(1.334)	0.964
MSLOM(all)	-4.392(0.318)	2.595(1.382)	1.942(1.221)	2.212(1.652)	0.033
DR	-5.344(0.185)	3.310(0.842)	2.858(0.773)	3.462(1.027)	0.822

Marginal: $RERI_{OR}^{true} = 2.245$, $RERI_{RR}^{true} = 1.998$; Conditional: $RERI_{OR}^{true} = 2.64$

$\beta_0 = -3.7$**: prevalence** ≈ 0.1

Model	β_0	β_1	β_2	β_3	Abs. Bias
Default LOM	-2.835(0.157)	0.536(0.316)	0.160(0.254)	1.944(0.464)	0.099
CLOM(X1X2)	-2.986(0.164)	0.532(0.329)	0.163(0.257)	2.064(0.499)	0.576
CLOM(X3X4)	-3.499(0.182)	0.679(0.363)	0.554(0.358)	2.713(0.693)	0.073
CLOM(X5X6)	-2.790(0.159)	0.375(0.286)	0.140(0.254)	1.670(0.425)	0.970
CLOM(all)	-3.703(0.199)	0.513(0.353)	0.541(0.373)	2.530(0.714)	0.110
MSLOM(X1X2)	-2.751(0.180)	0.475(0.337)	0.057(0.257)	1.697(0.447)	0.346
MSLOM(X3X4)	-2.916(0.160)	0.531(0.321)	0.350(0.303)	2.213(0.535)	0.170
MSLOM(X5X6)	-2.751(0.170)	0.343(0.297)	0.129(0.264)	1.727(0.450)	0.316
MSLOM(all)	-2.890(0.175)	0.504(0.353)	0.414(0.359)	1.444(0.551)	0.599
DR	-3.770(0.099)	0.769(0.202)	0.816(0.211)	2.221(0.347)	0.419

Marginal: $RERI_{OR}^{true} = 2.043$, $RERI_{RR}^{true} = 1.634$; Conditional: $RERI_{OR}^{true} = 2.64$

$\beta_0 = -3$**: prevalence** ≈ 0.2

Model	β_0	β_1	β_2	β_3	Abs. Bias
Default LOM	-2.055(0.113)	0.066(0.170)	-0.134(0.146)	2.196(0.328)	0.355
CLOM(X1X2)	-2.124(0.118)	0.017(0.170)	-0.140(0.146)	2.232(0.342)	0.408
CLOM(X3X4)	-2.633(0.134)	0.131(0.194)	0.095(0.198)	3.113(0.523)	0.473
CLOM(X5X6)	-1.989(0.115)	-0.060(0.152)	-0.173(0.142)	1.877(0.289)	0.763
CLOM(all)	-2.687(0.145)	-0.078(0.172)	0.018(0.194)	2.632(0.479)	0.008
MSLOM(X1X2)	-2.016(0.125)	0.016(0.176)	-0.108(0.166)	2.045(0.336)	0.204
MSLOM(X3X4)	-2.080(0.115)	0.025(0.167)	-0.048(0.165)	2.425(0.367)	0.584
MSLOM(X5X6)	-1.967(0.124)	-0.085(0.157)	-0.189(0.146)	1.938(0.309)	0.097
MSLOM(all)	-2.017(0.133)	-0.093(0.169)	-0.005(0.199)	1.887(0.392)	0.046
DR	-2.783(0.071)	0.001(0.091)	0.218(0.109)	3.132(0.272)	0.492

Marginal: $RERI_{OR}^{true} = 1.841$, $RERI_{RR}^{true} = 1.269$; Conditional: $RERI_{OR}^{true} = 2.64$

$\beta_0 = -2$**: prevalence** ≈ 0.4

Model	β_0	β_1	β_2	β_3	Abs. Bias
Default LOM	-1.498(0.093)	0.197(0.156)	0.265(0.163)	1.378(0.264)	0.289
CLOM(X1X2)	-1.583(0.097)	0.245(0.169)	0.330(0.174)	1.458(0.289)	1.182
CLOM(X3X4)	-1.921(0.109)	0.254(0.179)	0.617(0.233)	2.459(0.450)	0.181
CLOM(X5X6)	-1.434(0.095)	0.053(0.140)	0.190(0.158)	1.195(0.235)	1.445
CLOM(all)	-2.010(0.118)	0.146(0.177)	0.635(0.250)	2.313(0.465)	0.327
MSLOM(X1X2)	-1.518(0.101)	0.112(0.155)	0.292(0.181)	1.627(0.299)	0.040
MSLOM(X3X4)	-1.589(0.096)	0.234(0.166)	0.474(0.197)	1.635(0.316)	0.032
MSLOM(X5X6)	-1.334(0.108)	0.007(0.146)	0.074(0.153)	1.085(0.225)	0.582
MSLOM(all)	-1.454(0.123)	0.025(0.166)	0.278(0.210)	1.506(0.334)	0.161
DR	-1.992(0.058)	0.065(0.081)	0.507(0.111)	2.566(0.224)	0.074

Marginal: $RERI_{OR}^{true} = 1.667$, $RERI_{RR}^{true} = 0.826$; Conditional: $RERI_{OR}^{true} = 2.64$

$\beta_0 = -1$**: prevalence** ≈ 0.6

Model	β_0	β_1	β_2	β_3	Abs. Bias
Default LOM	-0.731(0.077)	0.417(0.154)	0.441(0.153)	1.206(0.273)	0.396
CLOM(X1X2)	-0.803(0.081)	0.506(0.174)	0.537(0.167)	1.305(0.307)	1.335
CLOM(X3X4)	-1.033(0.089)	0.589(0.194)	0.764(0.213)	2.914(0.530)	0.274
CLOM(X5X6)	-0.642(0.079)	0.276(0.142)	0.328(0.145)	0.891(0.235)	1.749
CLOM(all)	-1.054(0.097)	0.518(0.203)	0.810(0.233)	2.408(0.520)	0.232
MSLOM(X1X2)	-0.785(0.086)	0.463(0.177)	0.518(0.181)	1.221(0.318)	0.381
MSLOM(X3X4)	-0.833(0.080)	0.518(0.170)	0.620(0.178)	1.664(0.339)	0.062
MSLOM(X5X6)	-0.545(0.091)	0.219(0.149)	0.204(0.143)	0.908(0.235)	0.694
MSLOM(all)	-0.747(0.111)	0.408(0.205)	0.446(0.208)	1.350(0.452)	0.252
DR	-1.091(0.046)	0.698(0.105)	0.805(0.111)	2.110(0.232)	0.530

Marginal: $RERI_{OR}^{true} = 1.602$, $RERI_{RR}^{true} = 0.484$; Conditional: $RERI_{OR}^{true} = 2.64$