Table 3. Winbug Code for Bayesian network meta analysis

```
Outcome – reduction in monthly migraine by ≥50% or perceived clinically important treatment success
# Model - heterogeneous random effects model
# Assume correlation within study (rho = 0.5)
# Assume heterogeneous between studies

model {
  for (i in 1:NS) {
    s[i,1] <- 0
    delta[i, t[i,1]] <- 0
    mu[i] ~ dnorm(mmu[t[i,1]], taumu)  # handle different baseline treatments

    for (k in 1:na[i]) {
      r[i,k] ~ dbin(p[i,t[i,k]], n[i,k])
      logit(p[i,t[i,k]]) <- mu[i] + delta[i,t[i,k]]
    }

    for (k in 2:na[i]) {
      delta[i,t[i,k]] ~ dnorm(md[i,t[i,k]], taud[i,t[i,k]])
      md[i,t[i,k]] <- d[t[i,k]] - d[t[i,1]] + ss[i,k]
      taud[i,t[i,k]] <- tau[t[i,1],t[i,k]]*2*(k-1)/k
      s[i,k] <- (delta[i, t[i,k]] - d[t[i,k]] + d[t[i,1]])
      ss[i,k] <- sum(s[i, 1:k-1])/(k-1)
    }
  }

  mmu[5] <- 0    #Treatments 1,2,3,4,6,7 are one of baseline treatments.
  mmu[8] <- 0    # other treatments should be assigned to 0.
  mmu[9] <- 0
  mmu[10] <- 0
  mmu[11] <- 0
mmu[12] <- 0
mmu[13] <- 0
mmu[14] <- 0
  mmu[1] ~ dnorm(0, 0.0001)
  mmu[2] ~ dnorm(0, 0.0001)
  mmu[3] ~ dnorm(0, 0.0001)
  mmu[4] ~ dnorm(0, 0.0001)
  mmu[6] ~ dnorm(0, 0.0001)
  mmu[7] ~ dnorm(0, 0.0001)
  sdmu ~ dunif(0.01, 2)
  taumu <- 1/pow(sdmu,2)

  d[1] <- 0
  for (k in 2:NT) {
    d[k] ~ dnorm(0,0.0001)
    ed[k] <- exp(d[k])         # ed is odds ratio against placebo
  }

  for(i in 1:(NT-1)) {
    for(j in (i+1):NT) {
      v[i,j] ~ dnorm(0, 8.32)
      log(sd[i,j]) <- log(sd0) + v[i,j]
      tau[i,j] <- 1/pow(sd[i,j],2)
      var[i,j] <- pow(sd[i,j],2)
    }
  }
  sd0 ~ dunif(0.01, 2)
  var0 <- pow(sd0,2)
```

```
  # pairwise ORs
  # Example: or[2,3] = odds ratio of active(2) vs. control(3)
  for (k in 1:NT) {
    for (c in 1:NT) {
      lor[k,c] <- d[k] - d[c]
      log(or[k,c]) <- lor[k,c]
    }
  }

  # ranking
  mP <- mmu[1]  # "mP" means the odds of placebo.

  for (k in 1:NT) { logit(T[k]) <- mP + d[k] }
  for (k in 1:NT) {
    rk[k] <- NT + 1 - rank(T[],k)
    best1[k] <- equals(rk[k],1)
    best2[k] <- equals(rk[k],2)
    best12[k] <- best1[k] + best2[k]
  }
}

#Init
list(
d=c(NA,0,0,0,0, 0,0,0,0,0,    0,0,0,0),
sd0=1,
mu=c(0,0,0,0,0,  0,0,0,0,0, 0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,
0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,    0,0,0,0,0,  0,0),
mmu=c(0,0,0,0,NA, 0,0,NA,NA,NA, NA,NA,NA,NA), sdmu=1
)


#Data


#Data
list(NT=14, NS=97)
```

r[,1]	n[,1]	r[,2]	n[,2]	r[,3]	n[,3]	t[,1]	t[,2]	t[,3]	na[]
17	83	34	83	NA	1	1	4	NA	2
18	61	26	55	NA	1	1	8	NA	2
0	14	2	14	NA	1	1	7	NA	2
15	22	14	22	NA	1	3	14	NA	2
24	48	31	46	NA	1	4	14	NA	2
1	16	6	16	NA	1	1	8	NA	2
45	75	44	74	NA	1	7	14	NA	2
818	11034	661	11037	NA	1	1	6	NA	2
3	28	14	28	NA	1	6	7	NA	2
12	20	6	20	NA	1	4	12	NA	2
5	44	18	47	NA	1	4	7	NA	2
16	77	29	77	NA	1	1	7	NA	2
9	15	5	13	NA	1	4	7	NA	2
12	54	10	54	NA	1	4	8	NA	2
10	31	8	31	NA	1	7	11	NA	2
5	19	6	19	NA	1	1	6	NA	2

5	48	26	48	NA	1	1	9	NA	2
4	18	10	17	NA	1	1	14	NA	2
12	48	48	96	NA	1	1	4	NA	2
10	47	25	47	NA	1	1	4	NA	2
15	36	17	36	NA	1	4	7	NA	2
3	15	1	14	NA	1	4	8	NA	2
4	37	10	34	NA	1	1	7	NA	2
3	13	13	25	NA	1	1	4	NA	2
13	23	8	23	NA	1	4	11	NA	2
5	37	33	70	NA	1	1	3	NA	2
6	43	17	43	NA	1	1	3	NA	2
7	23	16	23	NA	1	1	6	NA	2
7	32	14	36	NA	1	1	13	NA	2
10	34	10	35	NA	1	1	13	NA	2
2	15	19	44	NA	1	1	3	NA	2
24	37	25	37	NA	1	3	4	NA	2
0	60	14	60	NA	1	1	5	NA	2
5	45	26	98	NA	1	1	9	NA	2
34	69	32	66	NA	1	11	14	NA	2
61	135	40	135	NA	1	6	7	NA	2
2	21	5	19	NA	1	1	2	NA	2
9	27	8	26	NA	1	1	9	NA	2
125	270	141	275	NA	1	4	14	NA	2
32	116	50	123	NA	1	1	3	NA	2
2	60	23	60	NA	1	1	5	NA	2
1	14	10	14	NA	1	1	2	NA	2
18	84	23	93	NA	1	1	13	NA	2
112	200	112	184	NA	1	1	10	NA	2
12	57	37	58	NA	1	1	2	NA	2
0	19	9	21	NA	1	1	8	NA	2
93	372	188	386	NA	1	1	2	NA	2
20	22	21	22	NA	1	2	3	NA	2
25	73	55	140	NA	1	1	2	NA	2
16	372	8	384	NA	1	1	2	NA	2
0	27	7	32	NA	1	1	2	NA	2
8	13	8	15	NA	1	2	9	NA	2
27	45	30	45	NA	1	2	13	NA	2
31	85	28	85	NA	1	1	9	NA	2
37	58	41	67	NA	1	3	13	NA	2
24	65	24	59	NA	1	1	13	NA	2
99	178	78	169	NA	1	2	8	NA	2

50	163	64	165	NA	1	1	2	NA	2
11	25	7	24	NA	1	4	8	NA	2
6	16	18	53	NA	1	1	4	NA	2
48	197	47	194	NA	1	1	8	NA	2
16	40	15	40	NA	1	2	9	NA	2
8	84	20	91	NA	1	1	6	NA	2
0	11	5	8	NA	1	1	4	NA	2
0	28	3	28	NA	1	1	7	NA	2
2	43	13	43	NA	1	1	7	NA	2
2	31	14	31	NA	1	1	6	NA	2
0	8	6	24	NA	1	1	7	NA	2
0	33	10	33	NA	1	1	12	NA	2
8	34	12	35	NA	1	4	14	NA	2
2	29	8	29	NA	1	1	14	NA	2
17	71	20	72	NA	1	1	14	NA	2
4	36	20	36	NA	1	1	12	NA	2
0	17	5	17	NA	1	4	14	NA	2
4	30	8	30	NA	1	1	12	NA	2
19	75	28	75	NA	1	1	10	NA	2
24	54	14	48	NA	1	11	14	NA	2
7	36	16	37	NA	1	1	8	NA	2
12	33	11	33	NA	1	1	7	NA	2
1	13	3	11	NA	1	4	8	NA	2
0	29	5	29	NA	1	1	14	NA	2
1	40	17	40	NA	1	1	6	NA	2
0	12	8	12	NA	1	1	5	NA	2
1	14	2	14	NA	1	4	13	NA	2
0	30	10	30	NA	1	1	11	NA	2
11	35	10	38	NA	1	1	6	NA	2
6	14	6	18	NA	1	11	14	NA	2
12	22	18	23	NA	1	1	9	NA	2
16	32	13	27	NA	1	4	14	NA	2
11	47	16	48	NA	1	1	5	NA	2
0	24	8	24	NA	1	1	7	NA	2
10	20	40	62	NA	1	1	9	NA	2
8	36	58	112	NA	1	1	2	NA	2
0	19	6	22	0	17	4	7	12	3
11	49	50	144	62	144	1	2	4	3
18	60	38	60	28	60	1	2	9	3
13	50	21	50	22	50	1	7	11	3

END

node	mean	sd	MC error	2.5%	median	97.5%	start	sample
best1[1]	0.0	0.0	1.414E-12	0.0	0.0	0.0	50001	5000
best1[2]	0.0018	0.04239	7.992E-4	0.0	0.0	0.0	50001	5000
best1[3]	0.053	0.224	0.004245	0.0	0.0	1.0	50001	5000
best1[4]	0.0014	0.03739	5.815E-4	0.0	0.0	0.0	50001	5000
best1[5]	0.7118	0.4529	0.01115	0.0	1.0	1.0	50001	5000
best1[6]	0.01	0.0995	0.001563	0.0	0.0	0.0	50001	5000
best1[7]	0.027	0.1621	0.002892	0.0	0.0	1.0	50001	5000
best1[8]	0.0018	0.04239	5.62E-4	0.0	0.0	0.0	50001	5000
best1[9]	0.0016	0.03997	6.033E-4	0.0	0.0	0.0	50001	5000
best1[10]	0.0048	0.06912	0.001058	0.0	0.0	0.0	50001	5000
best1[11]	0.1004	0.3005	0.006587	0.0	0.0	1.0	50001	5000
best1[12]	0.0584	0.2345	0.007058	0.0	0.0	1.0	50001	5000
best1[13]	4.0E-4	0.02	2.817E-4	0.0	0.0	0.0	50001	5000
best1[14]	0.0276	0.1638	0.003541	0.0	0.0	1.0	50001	5000
best2[1]	0.0	0.0	1.414E-12	0.0	0.0	0.0	50001	5000
best2[2]	0.0096	0.09751	0.001736	0.0	0.0	0.0	50001	5000
best2[3]	0.1468	0.3539	0.007527	0.0	0.0	1.0	50001	5000
best2[4]	0.0162	0.1262	0.002781	0.0	0.0	0.0	50001	5000
best2[5]	0.117	0.3214	0.005758	0.0	0.0	1.0	50001	5000
best2[6]	0.0454	0.2082	0.003424	0.0	0.0	1.0	50001	5000
best2[7]	0.149	0.3561	0.009166	0.0	0.0	1.0	50001	5000
best2[8]	0.0074	0.0857	0.001582	0.0	0.0	0.0	50001	5000
best2[9]	0.008	0.08908	0.001439	0.0	0.0	0.0	50001	5000
best2[10]	0.011	0.1043	0.001426	0.0	0.0	0.0	50001	5000
best2[11]	0.2504	0.4332	0.009641	0.0	0.0	1.0	50001	5000
best2[12]	0.12	0.325	0.008177	0.0	0.0	1.0	50001	5000
best2[13]	0.0028	0.05284	0.001012	0.0	0.0	0.0	50001	5000
best2[14]	0.1164	0.3207	0.006902	0.0	0.0	1.0	50001	5000
d[2]	0.9084	0.1925	0.004303	0.5261	0.9094	1.281	50001	5000
d[3]	1.185	0.2705	0.009589	0.6785	1.175	1.726	50001	5000
d[4]	1.055	0.1783	0.006629	0.712	1.054	1.422	50001	5000
d[5]	1.776	0.4397	0.01533	0.9306	1.767	2.685	50001	5000
d[6]	0.9348	0.2981	0.007378	0.3516	0.9321	1.54	50001	5000
d[7]	1.226	0.2077	0.007711	0.8384	1.216	1.668	50001	5000
d[8]	0.7579	0.2531	0.007698	0.2864	0.7527	1.279	50001	5000
d[9]	0.7709	0.2503	0.007164	0.2765	0.7705	1.26	50001	5000
d[10]	0.4083	0.4418	0.008455	-0.4678	0.4051	1.321	50001	5000
d[11]	1.297	0.2976	0.009451	0.7107	1.297	1.87	50001	5000
d[12]	0.9983	0.4622	0.01963	-0.003467	1.02	1.843	50001	5000
d[13]	0.6217	0.2782	0.008488	0.09102	0.6165	1.194	50001	5000
d[14]	1.202	0.2302	0.008453	0.7564	1.2	1.667	50001	5000
or[1,2]	0.4107	0.07978	0.001746	0.2779	0.4029	0.5916	50001	5000
or[1,3]	0.3171	0.08641	0.003069	0.1781	0.309	0.5075	50001	5000
or[1,4]	0.3536	0.06348	0.002347	0.2412	0.3486	0.4908	50001	5000
or[1,5]	0.1861	0.08501	0.002623	0.06825	0.1709	0.3954	50001	5000
or[1,6]	0.4104	0.1244	0.003053	0.2145	0.3938	0.704	50001	5000
or[1,7]	0.2999	0.06137	0.002257	0.1887	0.2966	0.433	50001	5000
or[1,8]	0.4837	0.122	0.003743	0.2787	0.4711	0.7515	50001	5000
or[1,9]	0.4774	0.1225	0.003379	0.2838	0.4628	0.7587	50001	5000
or[1,10]	0.7342	0.3754	0.006939	0.2674	0.667	1.6	50001	5000
or[1,11]	0.2859	0.08863	0.002711	0.1542	0.2734	0.4914	50001	5000
or[1,12]	0.4132	0.2282	0.009619	0.1588	0.3605	1.013	50001	5000
or[1,13]	0.558	0.1563	0.004771	0.3033	0.5399	0.9146	50001	5000
or[1,14]	0.3087	0.07165	0.002561	0.1891	0.3013	0.4694	50001	5000
or[2,1]	2.527	0.4929	0.01111	1.692	2.483	3.599	50001	5000
or[2,2]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[2,3]	0.7985	0.2637	0.007936	0.3947	0.7568	1.417	50001	5000
or[2,4]	0.8887	0.2173	0.005923	0.5373	0.8614	1.39	50001	5000
or[2,5]	0.4699	0.2374	0.006563	0.1602	0.4235	1.076	50001	5000

or[2,6]	1.037	0.3772	0.00904	0.4744	0.975	1.946	50001	5000
or[2,7]	0.7558	0.2085	0.006392	0.4223	0.7321	1.239	50001	5000
or[2,8]	1.211	0.3508	0.009806	0.6492	1.172	2.017	50001	5000
or[2,9]	1.193	0.3377	0.008759	0.6598	1.15	1.954	50001	5000
or[2,10]	1.855	1.019	0.0183	0.6082	1.652	4.231	50001	5000
or[2,11]	0.7203	0.2607	0.007358	0.3401	0.678	1.341	50001	5000
or[2,12]	1.044	0.6237	0.02546	0.3598	0.9035	2.669	50001	5000
or[2,13]	1.403	0.4644	0.01297	0.7018	1.337	2.49	50001	5000
or[2,14]	0.7778	0.2281	0.006172	0.4194	0.7468	1.309	50001	5000
or[3,1]	3.393	0.9489	0.03265	1.971	3.237	5.616	50001	5000
or[3,2]	1.388	0.4632	0.0145	0.7068	1.321	2.534	50001	5000
or[3,3]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[3,4]	1.189	0.3607	0.01263	0.6474	1.142	2.01	50001	5000
or[3,5]	0.6321	0.3542	0.01034	0.1933	0.5518	1.558	50001	5000
or[3,6]	1.393	0.589	0.01761	0.5745	1.285	2.834	50001	5000
or[3,7]	1.013	0.3406	0.01221	0.5044	0.9566	1.854	50001	5000
or[3,8]	1.635	0.6102	0.01852	0.7315	1.534	3.121	50001	5000
or[3,9]	1.612	0.5991	0.01972	0.7551	1.507	3.099	50001	5000
or[3,10]	2.483	1.45	0.02967	0.762	2.195	5.918	50001	5000
or[3,11]	0.965	0.3987	0.012	0.4189	0.8921	1.94	50001	5000
or[3,12]	1.398	0.8712	0.03537	0.456	1.177	3.648	50001	5000
or[3,13]	1.872	0.7018	0.02272	0.885	1.745	3.534	50001	5000
or[3,14]	1.037	0.3468	0.01144	0.5139	0.9821	1.84	50001	5000
or[4,1]	2.919	0.5273	0.01958	2.038	2.869	4.147	50001	5000
or[4,2]	1.192	0.2909	0.007924	0.7213	1.161	1.862	50001	5000
or[4,3]	0.918	0.279	0.009932	0.4985	0.876	1.546	50001	5000
or[4,4]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[4,5]	0.5406	0.2626	0.008061	0.1915	0.4879	1.182	50001	5000
or[4,6]	1.194	0.4135	0.01059	0.5746	1.133	2.19	50001	5000
or[4,7]	0.8661	0.2015	0.007501	0.5302	0.8462	1.334	50001	5000
or[4,8]	1.398	0.3899	0.01264	0.7829	1.339	2.297	50001	5000
or[4,9]	1.39	0.4264	0.01383	0.7506	1.327	2.418	50001	5000
or[4,10]	2.142	1.163	0.02307	0.73	1.919	4.846	50001	5000
or[4,11]	0.8228	0.2601	0.007328	0.4335	0.7845	1.434	50001	5000
or[4,12]	1.19	0.649	0.02738	0.4413	1.043	2.855	50001	5000
or[4,13]	1.622	0.526	0.01662	0.8185	1.556	2.871	50001	5000
or[4,14]	0.8858	0.2016	0.006694	0.5573	0.8596	1.336	50001	5000
or[5,1]	6.531	3.288	0.1157	2.536	5.852	14.66	50001	5000
or[5,2]	2.677	1.456	0.04636	0.9294	2.362	6.308	50001	5000
or[5,3]	2.07	1.221	0.03897	0.6437	1.812	5.204	50001	5000
or[5,4]	2.295	1.197	0.03874	0.848	2.05	5.231	50001	5000
or[5,5]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[5,6]	2.672	1.621	0.04912	0.8174	2.316	6.636	50001	5000
or[5,7]	1.955	1.066	0.03516	0.6719	1.717	4.553	50001	5000
or[5,8]	3.15	1.794	0.05298	1.026	2.755	7.529	50001	5000
or[5,9]	3.11	1.795	0.05865	1.037	2.723	7.501	50001	5000
or[5,10]	4.801	3.679	0.1041	1.181	3.869	13.77	50001	5000
or[5,11]	1.851	1.08	0.03124	0.5856	1.612	4.51	50001	5000
or[5,12]	2.688	2.076	0.07465	0.6582	2.121	8.163	50001	5000
or[5,13]	3.622	2.123	0.06779	1.202	3.129	8.84	50001	5000
or[5,14]	2.012	1.125	0.03638	0.6848	1.772	4.766	50001	5000
or[6,1]	2.664	0.8302	0.02023	1.421	2.54	4.664	50001	5000
or[6,2]	1.094	0.4074	0.009772	0.5144	1.026	2.118	50001	5000
or[6,3]	0.8444	0.3539	0.0103	0.3536	0.7785	1.742	50001	5000
or[6,4]	0.9382	0.3281	0.007893	0.4569	0.8826	1.742	50001	5000
or[6,5]	0.4947	0.2848	0.007716	0.1509	0.4319	1.228	50001	5000
or[6,6]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[6,7]	0.789	0.2674	0.007402	0.392	0.7476	1.431	50001	5000
or[6,8]	1.287	0.5236	0.01269	0.5518	1.193	2.541	50001	5000
or[6,9]	1.273	0.5417	0.01404	0.5703	1.167	2.605	50001	5000
or[6,10]	1.949	1.22	0.02262	0.5963	1.715	4.644	50001	5000
or[6,11]	0.7575	0.3323	0.009191	0.3127	0.6934	1.566	50001	5000

or[6,12]	1.095	0.7089	0.02537	0.3425	0.9217	2.939	50001	5000
or[6,13]	1.485	0.6386	0.01708	0.6241	1.355	3.133	50001	5000
or[6,14]	0.818	0.3116	0.008111	0.3773	0.7668	1.595	50001	5000
or[7,1]	3.482	0.7557	0.02785	2.313	3.372	5.3	50001	5000
or[7,2]	1.426	0.4009	0.01212	0.8085	1.366	2.369	50001	5000
or[7,3]	1.098	0.3688	0.01338	0.5396	1.045	1.984	50001	5000
or[7,4]	1.217	0.2859	0.0103	0.7494	1.182	1.887	50001	5000
or[7,5]	0.647	0.3291	0.009561	0.2199	0.5826	1.49	50001	5000
or[7,6]	1.411	0.4764	0.01345	0.7015	1.338	2.553	50001	5000
or[7,7]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[7,8]	1.674	0.5254	0.01659	0.8696	1.597	2.905	50001	5000
or[7,9]	1.661	0.5657	0.01858	0.8533	1.575	3.051	50001	5000
or[7,10]	2.553	1.428	0.03081	0.8536	2.273	5.905	50001	5000
or[7,11]	0.9766	0.3159	0.01037	0.508	0.9282	1.727	50001	5000
or[7,12]	1.423	0.8003	0.03107	0.5094	1.232	3.579	50001	5000
or[7,13]	1.934	0.665	0.01738	0.9433	1.829	3.519	50001	5000
or[7,14]	1.06	0.2863	0.009835	0.6117	1.019	1.733	50001	5000
or[8,1]	2.204	0.5772	0.01709	1.332	2.123	3.592	50001	5000
or[8,2]	0.8973	0.2697	0.007155	0.4966	0.8536	1.544	50001	5000
or[8,3]	0.6965	0.262	0.008014	0.322	0.6517	1.368	50001	5000
or[8,4]	0.7711	0.2161	0.006836	0.4358	0.7467	1.278	50001	5000
or[8,5]	0.4094	0.2198	0.005581	0.1328	0.3629	0.9753	50001	5000
or[8,6]	0.9033	0.3641	0.008663	0.3937	0.8381	1.813	50001	5000
or[8,7]	0.6574	0.2102	0.006771	0.3444	0.6262	1.151	50001	5000
or[8,8]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[8,9]	1.05	0.3833	0.01143	0.5071	0.9863	1.984	50001	5000
or[8,10]	1.615	0.9471	0.01815	0.5219	1.422	3.789	50001	5000
or[8,11]	0.6274	0.2537	0.00778	0.2803	0.5797	1.24	50001	5000
or[8,12]	0.9054	0.5685	0.02015	0.3116	0.7661	2.349	50001	5000
or[8,13]	1.228	0.4812	0.01452	0.5566	1.135	2.364	50001	5000
or[8,14]	0.6759	0.2259	0.00673	0.3414	0.6409	1.227	50001	5000
or[9,1]	2.231	0.5692	0.01642	1.319	2.161	3.525	50001	5000
or[9,2]	0.9062	0.2606	0.007071	0.5122	0.8695	1.517	50001	5000
or[9,3]	0.704	0.2577	0.008228	0.3233	0.6636	1.326	50001	5000
or[9,4]	0.7865	0.2391	0.008152	0.4155	0.7538	1.333	50001	5000
or[9,5]	0.4144	0.2211	0.006359	0.1334	0.3675	0.9641	50001	5000
or[9,6]	0.9146	0.3637	0.009147	0.384	0.8571	1.758	50001	5000
or[9,7]	0.6685	0.2209	0.008138	0.3281	0.6354	1.172	50001	5000
or[9,8]	1.076	0.3838	0.01124	0.5047	1.014	1.976	50001	5000
or[9,9]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[9,10]	1.641	0.9597	0.02114	0.5108	1.434	3.911	50001	5000
or[9,11]	0.6371	0.2566	0.008304	0.2724	0.5923	1.292	50001	5000
or[9,12]	0.9237	0.6074	0.02518	0.2976	0.7858	2.318	50001	5000
or[9,13]	1.244	0.4858	0.01515	0.5491	1.161	2.416	50001	5000
or[9,14]	0.6879	0.2382	0.007871	0.3344	0.6507	1.257	50001	5000
or[10,1]	1.664	0.8586	0.01569	0.6264	1.499	3.749	50001	5000
or[10,2]	0.6836	0.3811	0.006752	0.237	0.6054	1.657	50001	5000
or[10,3]	0.5274	0.3216	0.006715	0.169	0.4556	1.318	50001	5000
or[10,4]	0.5883	0.3268	0.006384	0.2064	0.5211	1.37	50001	5000
or[10,5]	0.3081	0.2156	0.005047	0.07301	0.2585	0.8507	50001	5000
or[10,6]	0.6783	0.3953	0.008176	0.2154	0.5832	1.683	50001	5000
or[10,7]	0.4985	0.2829	0.005705	0.1705	0.44	1.176	50001	5000
or[10,8]	0.8022	0.462	0.008587	0.264	0.7034	1.917	50001	5000
or[10,9]	0.7965	0.4792	0.01012	0.2557	0.698	1.959	50001	5000
or[10,10]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[10,11]	0.4751	0.2925	0.005487	0.1491	0.4092	1.201	50001	5000
or[10,12]	0.6889	0.5654	0.01655	0.1683	0.5466	2.14	50001	5000
or[10,13]	0.9306	0.5706	0.01091	0.2922	0.8073	2.271	50001	5000
or[10,14]	0.5118	0.2882	0.005148	0.1727	0.4544	1.236	50001	5000
or[11,1]	3.823	1.157	0.03686	2.035	3.658	6.489	50001	5000
or[11,2]	1.566	0.5627	0.01629	0.7472	1.475	2.942	50001	5000
or[11,3]	1.206	0.4829	0.01596	0.5155	1.121	2.388	50001	5000

or[11,4]	1.333	0.4115	0.0127	0.6975	1.275	2.31	50001	5000
or[11,5]	0.7085	0.4024	0.01146	0.2226	0.6203	1.712	50001	5000
or[11,6]	1.56	0.6583	0.01923	0.6386	1.442	3.207	50001	5000
or[11,7]	1.125	0.3488	0.01153	0.5795	1.078	1.969	50001	5000
or[11,8]	1.841	0.7114	0.02138	0.8076	1.726	3.575	50001	5000
or[11,9]	1.825	0.7421	0.02217	0.7768	1.689	3.682	50001	5000
or[11,10]	2.807	1.726	0.03829	0.8325	2.444	6.721	50001	5000
or[11,11]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[11,12]	1.569	1.0	0.03958	0.4864	1.325	4.072	50001	5000
or[11,13]	2.121	0.8682	0.02563	0.9066	1.971	4.26	50001	5000
or[11,14]	1.148	0.339	0.01027	0.6072	1.11	1.922	50001	5000
or[12,1]	3.002	1.347	0.05696	0.9965	2.774	6.314	50001	5000
or[12,2]	1.233	0.617	0.02324	0.3769	1.107	2.787	50001	5000
or[12,3]	0.9494	0.5025	0.01938	0.2742	0.85	2.193	50001	5000
or[12,4]	1.052	0.4949	0.0216	0.3509	0.9586	2.268	50001	5000
or[12,5]	0.5581	0.3784	0.01416	0.1234	0.4716	1.521	50001	5000
or[12,6]	1.228	0.6887	0.0251	0.3419	1.085	2.922	50001	5000
or[12,7]	0.8941	0.4358	0.01756	0.2797	0.8115	1.965	50001	5000
or[12,8]	1.442	0.7342	0.02749	0.4283	1.305	3.211	50001	5000
or[12,9]	1.435	0.7677	0.02954	0.4343	1.273	3.367	50001	5000
or[12,10]	2.208	1.646	0.04919	0.4683	1.83	5.988	50001	5000
or[12,11]	0.8539	0.4768	0.01929	0.2462	0.7546	2.066	50001	5000
or[12,12]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[12,13]	1.666	0.888	0.0304	0.4791	1.496	3.9	50001	5000
or[12,14]	0.9191	0.4596	0.01937	0.2843	0.8234	2.085	50001	5000
or[13,1]	1.937	0.5627	0.01684	1.095	1.852	3.301	50001	5000
or[13,2]	0.7908	0.2642	0.006907	0.402	0.7482	1.426	50001	5000
or[13,3]	0.6063	0.22	0.00689	0.2831	0.5731	1.134	50001	5000
or[13,4]	0.6818	0.2255	0.007283	0.3488	0.6429	1.224	50001	5000
or[13,5]	0.3578	0.1932	0.005586	0.1133	0.3196	0.8332	50001	5000
or[13,6]	0.7931	0.3321	0.008216	0.3198	0.7383	1.61	50001	5000
or[13,7]	0.5785	0.2018	0.005565	0.2843	0.547	1.061	50001	5000
or[13,8]	0.9342	0.3532	0.01031	0.4232	0.8808	1.804	50001	5000
or[13,9]	0.923	0.358	0.0105	0.4142	0.8613	1.823	50001	5000
or[13,10]	1.425	0.8753	0.01622	0.4407	1.239	3.434	50001	5000
or[13,11]	0.55	0.2271	0.006472	0.2353	0.5074	1.106	50001	5000
or[13,12]	0.7932	0.4827	0.01752	0.2565	0.6683	2.088	50001	5000
or[13,13]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[13,14]	0.5942	0.2104	0.005893	0.2814	0.5593	1.11	50001	5000
or[14,1]	3.415	0.8001	0.02964	2.131	3.319	5.296	50001	5000
or[14,2]	1.399	0.4212	0.01226	0.7642	1.339	2.387	50001	5000
or[14,3]	1.073	0.3607	0.01288	0.5439	1.018	1.948	50001	5000
or[14,4]	1.187	0.2673	0.008836	0.7488	1.163	1.794	50001	5000
or[14,5]	0.6355	0.3385	0.01012	0.2099	0.5646	1.461	50001	5000
or[14,6]	1.394	0.5189	0.01313	0.6273	1.304	2.652	50001	5000
or[14,7]	1.011	0.2683	0.009559	0.5773	0.9814	1.635	50001	5000
or[14,8]	1.641	0.5367	0.01665	0.8154	1.561	2.93	50001	5000
or[14,9]	1.629	0.5675	0.0181	0.7982	1.537	2.996	50001	5000
or[14,10]	2.501	1.404	0.0271	0.8112	2.201	5.796	50001	5000
or[14,11]	0.9504	0.298	0.009145	0.5211	0.9005	1.651	50001	5000
or[14,12]	1.393	0.7883	0.03157	0.4801	1.214	3.526	50001	5000
or[14,13]	1.896	0.6794	0.02013	0.9021	1.788	3.557	50001	5000
or[14,14]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000

```
# Model - heterogeneous random effects model
# Assume correlation within study (rho = 0.5)
# Assume heterogeneous between studies ;"sdmu" is  (0.01, 5)



model {
  for (i in 1:NS) {
    s[i,1] <- 0
    delta[i, t[i,1]] <- 0
    mu[i] ~ dnorm(mmu[t[i,1]], taumu)  # handle different baseline treatments

    for (k in 1:na[i]) {
      r[i,k] ~ dbin(p[i,t[i,k]], n[i,k])
      logit(p[i,t[i,k]]) <- mu[i] + delta[i,t[i,k]]
    }

    for (k in 2:na[i]) {
      delta[i,t[i,k]] ~ dnorm(md[i,t[i,k]], taud[i,t[i,k]])
      md[i,t[i,k]] <- d[t[i,k]] - d[t[i,1]] + ss[i,k]
      taud[i,t[i,k]] <- tau[t[i,1],t[i,k]]*2*(k-1)/k
      s[i,k] <- (delta[i, t[i,k]] - d[t[i,k]] + d[t[i,1]])
      ss[i,k] <- sum(s[i, 1:k-1])/(k-1)
    }
  }

  mmu[5] <- 0    #Treatments 1,2,3,4,6,7 are one of baseline treatments.
  mmu[8] <- 0    # other treatments should be assigned to 0.
  mmu[9] <- 0
  mmu[10] <- 0
  mmu[11] <- 0
mmu[12] <- 0
mmu[13] <- 0
mmu[14] <- 0
  mmu[1] ~ dnorm(0, 0.0001)
  mmu[2] ~ dnorm(0, 0.0001)
  mmu[3] ~ dnorm(0, 0.0001)
  mmu[4] ~ dnorm(0, 0.0001)
  mmu[6] ~ dnorm(0, 0.0001)
  mmu[7] ~ dnorm(0, 0.0001)
  sdmu ~ dunif(0.01, 5)
  taumu <- 1/pow(sdmu,2)

  d[1] <- 0
  for (k in 2:NT) {
    d[k] ~ dnorm(0,0.0001)
    ed[k] <- exp(d[k])         # ed is odds ratio against placebo
  }

  for(i in 1:(NT-1)) {
    for(j in (i+1):NT) {
      v[i,j] ~ dnorm(0, 8.32)
      log(sd[i,j]) <- log(sd0) + v[i,j]
      tau[i,j] <- 1/pow(sd[i,j],2)
      var[i,j] <- pow(sd[i,j],2)
    }
  }
  sd0 ~ dunif(0.01, 2)
  var0 <- pow(sd0,2)
```

```
  # pairwise ORs
  # Example: or[2,3] = odds ratio of active(2) vs. control(3)
  for (k in 1:NT) {
    for (c in 1:NT) {
      lor[k,c] <- d[k] - d[c]
      log(or[k,c]) <- lor[k,c]
    }
  }

  # ranking
  mP <- mmu[1]  # "mP" means the odds of placebo.

  for (k in 1:NT) { logit(T[k]) <- mP + d[k] }
  for (k in 1:NT) {
    rk[k] <- NT + 1 - rank(T[],k)
    best1[k] <- equals(rk[k],1)
    best2[k] <- equals(rk[k],2)
    best12[k] <- best1[k] + best2[k]
  }
}

#Init
list(
d=c(NA,0,0,0,0, 0,0,0,0,0,    0,0,0,0),
sd0=1,
mu=c(0,0,0,0,0,  0,0,0,0,0, 0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,
0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,    0,0,0,0,0,  0,0),
mmu=c(0,0,0,0,NA, 0,0,NA,NA,NA, NA,NA,NA,NA), sdmu=1
)


#Data


#Data
list(NT=14, NS=97)
```

r[,1]	n[,1]	r[,2]	n[,2]	r[,3]	n[,3]	t[,1]	t[,2]	t[,3]	na[]
17	83	34	83	NA	1	1	4	NA	2
18	61	26	55	NA	1	1	8	NA	2
0	14	2	14	NA	1	1	7	NA	2
15	22	14	22	NA	1	3	14	NA	2
24	48	31	46	NA	1	4	14	NA	2
1	16	6	16	NA	1	1	8	NA	2
45	75	44	74	NA	1	7	14	NA	2
818	11034	661	11037	NA	1	1	6	NA	2
3	28	14	28	NA	1	6	7	NA	2
12	20	6	20	NA	1	4	12	NA	2
5	44	18	47	NA	1	4	7	NA	2
16	77	29	77	NA	1	1	7	NA	2
9	15	5	13	NA	1	4	7	NA	2
12	54	10	54	NA	1	4	8	NA	2
10	31	8	31	NA	1	7	11	NA	2
5	19	6	19	NA	1	1	6	NA	2

5	48	26	48	NA	1	1	9	NA	2
4	18	10	17	NA	1	1	14	NA	2
12	48	48	96	NA	1	1	4	NA	2
10	47	25	47	NA	1	1	4	NA	2
15	36	17	36	NA	1	4	7	NA	2
3	15	1	14	NA	1	4	8	NA	2
4	37	10	34	NA	1	1	7	NA	2
3	13	13	25	NA	1	1	4	NA	2
13	23	8	23	NA	1	4	11	NA	2
5	37	33	70	NA	1	1	3	NA	2
6	43	17	43	NA	1	1	3	NA	2
7	23	16	23	NA	1	1	6	NA	2
7	32	14	36	NA	1	1	13	NA	2
10	34	10	35	NA	1	1	13	NA	2
2	15	19	44	NA	1	1	3	NA	2
24	37	25	37	NA	1	3	4	NA	2
0	60	14	60	NA	1	1	5	NA	2
5	45	26	98	NA	1	1	9	NA	2
34	69	32	66	NA	1	11	14	NA	2
61	135	40	135	NA	1	6	7	NA	2
2	21	5	19	NA	1	1	2	NA	2
9	27	8	26	NA	1	1	9	NA	2
125	270	141	275	NA	1	4	14	NA	2
32	116	50	123	NA	1	1	3	NA	2
2	60	23	60	NA	1	1	5	NA	2
1	14	10	14	NA	1	1	2	NA	2
18	84	23	93	NA	1	1	13	NA	2
112	200	112	184	NA	1	1	10	NA	2
12	57	37	58	NA	1	1	2	NA	2
0	19	9	21	NA	1	1	8	NA	2
93	372	188	386	NA	1	1	2	NA	2
20	22	21	22	NA	1	2	3	NA	2
25	73	55	140	NA	1	1	2	NA	2
16	372	8	384	NA	1	1	2	NA	2
0	27	7	32	NA	1	1	2	NA	2
8	13	8	15	NA	1	2	9	NA	2
27	45	30	45	NA	1	2	13	NA	2
31	85	28	85	NA	1	1	9	NA	2
37	58	41	67	NA	1	3	13	NA	2
24	65	24	59	NA	1	1	13	NA	2
99	178	78	169	NA	1	2	8	NA	2

50	163	64	165	NA	1	1	2	NA	2
11	25	7	24	NA	1	4	8	NA	2
6	16	18	53	NA	1	1	4	NA	2
48	197	47	194	NA	1	1	8	NA	2
16	40	15	40	NA	1	2	9	NA	2
8	84	20	91	NA	1	1	6	NA	2
0	11	5	8	NA	1	1	4	NA	2
0	28	3	28	NA	1	1	7	NA	2
2	43	13	43	NA	1	1	7	NA	2
2	31	14	31	NA	1	1	6	NA	2
0	8	6	24	NA	1	1	7	NA	2
0	33	10	33	NA	1	1	12	NA	2
8	34	12	35	NA	1	4	14	NA	2
2	29	8	29	NA	1	1	14	NA	2
17	71	20	72	NA	1	1	14	NA	2
4	36	20	36	NA	1	1	12	NA	2
0	17	5	17	NA	1	4	14	NA	2
4	30	8	30	NA	1	1	12	NA	2
19	75	28	75	NA	1	1	10	NA	2
24	54	14	48	NA	1	11	14	NA	2
7	36	16	37	NA	1	1	8	NA	2
12	33	11	33	NA	1	1	7	NA	2
1	13	3	11	NA	1	4	8	NA	2
0	29	5	29	NA	1	1	14	NA	2
1	40	17	40	NA	1	1	6	NA	2
0	12	8	12	NA	1	1	5	NA	2
1	14	2	14	NA	1	4	13	NA	2
0	30	10	30	NA	1	1	11	NA	2
11	35	10	38	NA	1	1	6	NA	2
6	14	6	18	NA	1	11	14	NA	2
12	22	18	23	NA	1	1	9	NA	2
16	32	13	27	NA	1	4	14	NA	2
11	47	16	48	NA	1	1	5	NA	2
0	24	8	24	NA	1	1	7	NA	2
10	20	40	62	NA	1	1	9	NA	2
8	36	58	112	NA	1	1	2	NA	2
0	19	6	22	0	17	4	7	12	3
11	49	50	144	62	144	1	2	4	3
18	60	38	60	28	60	1	2	9	3
13	50	21	50	22	50	1	7	11	3

END

node	mean	sd	MC error	2.5%	median	97.5%	start	sample
best1[1]	0.0	0.0	1.414E-12	0.0	0.0	0.0	50001	5000
best1[2]	0.0018	0.04239	7.992E-4	0.0	0.0	0.0	50001	5000
best1[3]	0.053	0.224	0.004245	0.0	0.0	1.0	50001	5000
best1[4]	0.0014	0.03739	5.815E-4	0.0	0.0	0.0	50001	5000
best1[5]	0.7118	0.4529	0.01115	0.0	1.0	1.0	50001	5000
best1[6]	0.01	0.0995	0.001563	0.0	0.0	0.0	50001	5000
best1[7]	0.027	0.1621	0.002892	0.0	0.0	1.0	50001	5000
best1[8]	0.0018	0.04239	5.62E-4	0.0	0.0	0.0	50001	5000
best1[9]	0.0016	0.03997	6.033E-4	0.0	0.0	0.0	50001	5000
best1[10]	0.0048	0.06912	0.001058	0.0	0.0	0.0	50001	5000
best1[11]	0.1004	0.3005	0.006587	0.0	0.0	1.0	50001	5000
best1[12]	0.0584	0.2345	0.007058	0.0	0.0	1.0	50001	5000
best1[13]	4.0E-4	0.02	2.817E-4	0.0	0.0	0.0	50001	5000
best1[14]	0.0276	0.1638	0.003541	0.0	0.0	1.0	50001	5000
best2[1]	0.0	0.0	1.414E-12	0.0	0.0	0.0	50001	5000
best2[2]	0.0096	0.09751	0.001736	0.0	0.0	0.0	50001	5000
best2[3]	0.1468	0.3539	0.007527	0.0	0.0	1.0	50001	5000
best2[4]	0.0162	0.1262	0.002781	0.0	0.0	0.0	50001	5000
best2[5]	0.117	0.3214	0.005758	0.0	0.0	1.0	50001	5000
best2[6]	0.0454	0.2082	0.003424	0.0	0.0	1.0	50001	5000
best2[7]	0.149	0.3561	0.009166	0.0	0.0	1.0	50001	5000
best2[8]	0.0074	0.0857	0.001582	0.0	0.0	0.0	50001	5000
best2[9]	0.008	0.08908	0.001439	0.0	0.0	0.0	50001	5000
best2[10]	0.011	0.1043	0.001426	0.0	0.0	0.0	50001	5000
best2[11]	0.2504	0.4332	0.009641	0.0	0.0	1.0	50001	5000
best2[12]	0.12	0.325	0.008177	0.0	0.0	1.0	50001	5000
best2[13]	0.0028	0.05284	0.001012	0.0	0.0	0.0	50001	5000
best2[14]	0.1164	0.3207	0.006902	0.0	0.0	1.0	50001	5000
d[2]	0.9084	0.1925	0.004303	0.5261	0.9094	1.281	50001	5000
d[3]	1.185	0.2705	0.009589	0.6785	1.175	1.726	50001	5000
d[4]	1.055	0.1783	0.006629	0.712	1.054	1.422	50001	5000
d[5]	1.776	0.4397	0.01533	0.9306	1.767	2.685	50001	5000
d[6]	0.9348	0.2981	0.007378	0.3516	0.9321	1.54	50001	5000
d[7]	1.226	0.2077	0.007711	0.8384	1.216	1.668	50001	5000
d[8]	0.7579	0.2531	0.007698	0.2864	0.7527	1.279	50001	5000
d[9]	0.7709	0.2503	0.007164	0.2765	0.7705	1.26	50001	5000
d[10]	0.4083	0.4418	0.008455	-0.4678	0.4051	1.321	50001	5000
d[11]	1.297	0.2976	0.009451	0.7107	1.297	1.87	50001	5000
d[12]	0.9983	0.4622	0.01963	-0.003467	1.02	1.843	50001	5000
d[13]	0.6217	0.2782	0.008488	0.09102	0.6165	1.194	50001	5000
d[14]	1.202	0.2302	0.008453	0.7564	1.2	1.667	50001	5000
or[1,2]	0.4107	0.07978	0.001746	0.2779	0.4029	0.5916	50001	5000
or[1,3]	0.3171	0.08641	0.003069	0.1781	0.309	0.5075	50001	5000
or[1,4]	0.3536	0.06348	0.002347	0.2412	0.3486	0.4908	50001	5000
or[1,5]	0.1861	0.08501	0.002623	0.06825	0.1709	0.3954	50001	5000
or[1,6]	0.4104	0.1244	0.003053	0.2145	0.3938	0.704	50001	5000
or[1,7]	0.2999	0.06137	0.002257	0.1887	0.2966	0.433	50001	5000
or[1,8]	0.4837	0.122	0.003743	0.2787	0.4711	0.7515	50001	5000
or[1,9]	0.4774	0.1225	0.003379	0.2838	0.4628	0.7587	50001	5000
or[1,10]	0.7342	0.3754	0.006939	0.2674	0.667	1.6	50001	5000
or[1,11]	0.2859	0.08863	0.002711	0.1542	0.2734	0.4914	50001	5000
or[1,12]	0.4132	0.2282	0.009619	0.1588	0.3605	1.013	50001	5000
or[1,13]	0.558	0.1563	0.004771	0.3033	0.5399	0.9146	50001	5000
or[1,14]	0.3087	0.07165	0.002561	0.1891	0.3013	0.4694	50001	5000
or[2,1]	2.527	0.4929	0.01111	1.692	2.483	3.599	50001	5000
or[2,2]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[2,3]	0.7985	0.2637	0.007936	0.3947	0.7568	1.417	50001	5000
or[2,4]	0.8887	0.2173	0.005923	0.5373	0.8614	1.39	50001	5000
or[2,5]	0.4699	0.2374	0.006563	0.1602	0.4235	1.076	50001	5000

or[2,6]	1.037	0.3772	0.00904	0.4744	0.975	1.946	50001	5000
or[2,7]	0.7558	0.2085	0.006392	0.4223	0.7321	1.239	50001	5000
or[2,8]	1.211	0.3508	0.009806	0.6492	1.172	2.017	50001	5000
or[2,9]	1.193	0.3377	0.008759	0.6598	1.15	1.954	50001	5000
or[2,10]	1.855	1.019	0.0183	0.6082	1.652	4.231	50001	5000
or[2,11]	0.7203	0.2607	0.007358	0.3401	0.678	1.341	50001	5000
or[2,12]	1.044	0.6237	0.02546	0.3598	0.9035	2.669	50001	5000
or[2,13]	1.403	0.4644	0.01297	0.7018	1.337	2.49	50001	5000
or[2,14]	0.7778	0.2281	0.006172	0.4194	0.7468	1.309	50001	5000
or[3,1]	3.393	0.9489	0.03265	1.971	3.237	5.616	50001	5000
or[3,2]	1.388	0.4632	0.0145	0.7068	1.321	2.534	50001	5000
or[3,3]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[3,4]	1.189	0.3607	0.01263	0.6474	1.142	2.01	50001	5000
or[3,5]	0.6321	0.3542	0.01034	0.1933	0.5518	1.558	50001	5000
or[3,6]	1.393	0.589	0.01761	0.5745	1.285	2.834	50001	5000
or[3,7]	1.013	0.3406	0.01221	0.5044	0.9566	1.854	50001	5000
or[3,8]	1.635	0.6102	0.01852	0.7315	1.534	3.121	50001	5000
or[3,9]	1.612	0.5991	0.01972	0.7551	1.507	3.099	50001	5000
or[3,10]	2.483	1.45	0.02967	0.762	2.195	5.918	50001	5000
or[3,11]	0.965	0.3987	0.012	0.4189	0.8921	1.94	50001	5000
or[3,12]	1.398	0.8712	0.03537	0.456	1.177	3.648	50001	5000
or[3,13]	1.872	0.7018	0.02272	0.885	1.745	3.534	50001	5000
or[3,14]	1.037	0.3468	0.01144	0.5139	0.9821	1.84	50001	5000
or[4,1]	2.919	0.5273	0.01958	2.038	2.869	4.147	50001	5000
or[4,2]	1.192	0.2909	0.007924	0.7213	1.161	1.862	50001	5000
or[4,3]	0.918	0.279	0.009932	0.4985	0.876	1.546	50001	5000
or[4,4]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[4,5]	0.5406	0.2626	0.008061	0.1915	0.4879	1.182	50001	5000
or[4,6]	1.194	0.4135	0.01059	0.5746	1.133	2.19	50001	5000
or[4,7]	0.8661	0.2015	0.007501	0.5302	0.8462	1.334	50001	5000
or[4,8]	1.398	0.3899	0.01264	0.7829	1.339	2.297	50001	5000
or[4,9]	1.39	0.4264	0.01383	0.7506	1.327	2.418	50001	5000
or[4,10]	2.142	1.163	0.02307	0.73	1.919	4.846	50001	5000
or[4,11]	0.8228	0.2601	0.007328	0.4335	0.7845	1.434	50001	5000
or[4,12]	1.19	0.649	0.02738	0.4413	1.043	2.855	50001	5000
or[4,13]	1.622	0.526	0.01662	0.8185	1.556	2.871	50001	5000
or[4,14]	0.8858	0.2016	0.006694	0.5573	0.8596	1.336	50001	5000
or[5,1]	6.531	3.288	0.1157	2.536	5.852	14.66	50001	5000
or[5,2]	2.677	1.456	0.04636	0.9294	2.362	6.308	50001	5000
or[5,3]	2.07	1.221	0.03897	0.6437	1.812	5.204	50001	5000
or[5,4]	2.295	1.197	0.03874	0.848	2.05	5.231	50001	5000
or[5,5]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[5,6]	2.672	1.621	0.04912	0.8174	2.316	6.636	50001	5000
or[5,7]	1.955	1.066	0.03516	0.6719	1.717	4.553	50001	5000
or[5,8]	3.15	1.794	0.05298	1.026	2.755	7.529	50001	5000
or[5,9]	3.11	1.795	0.05865	1.037	2.723	7.501	50001	5000
or[5,10]	4.801	3.679	0.1041	1.181	3.869	13.77	50001	5000
or[5,11]	1.851	1.08	0.03124	0.5856	1.612	4.51	50001	5000
or[5,12]	2.688	2.076	0.07465	0.6582	2.121	8.163	50001	5000
or[5,13]	3.622	2.123	0.06779	1.202	3.129	8.84	50001	5000
or[5,14]	2.012	1.125	0.03638	0.6848	1.772	4.766	50001	5000
or[6,1]	2.664	0.8302	0.02023	1.421	2.54	4.664	50001	5000
or[6,2]	1.094	0.4074	0.009772	0.5144	1.026	2.118	50001	5000
or[6,3]	0.8444	0.3539	0.0103	0.3536	0.7785	1.742	50001	5000
or[6,4]	0.9382	0.3281	0.007893	0.4569	0.8826	1.742	50001	5000
or[6,5]	0.4947	0.2848	0.007716	0.1509	0.4319	1.228	50001	5000
or[6,6]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[6,7]	0.789	0.2674	0.007402	0.392	0.7476	1.431	50001	5000
or[6,8]	1.287	0.5236	0.01269	0.5518	1.193	2.541	50001	5000
or[6,9]	1.273	0.5417	0.01404	0.5703	1.167	2.605	50001	5000
or[6,10]	1.949	1.22	0.02262	0.5963	1.715	4.644	50001	5000
or[6,11]	0.7575	0.3323	0.009191	0.3127	0.6934	1.566	50001	5000

or[6,12]	1.095	0.7089	0.02537	0.3425	0.9217	2.939	50001	5000
or[6,13]	1.485	0.6386	0.01708	0.6241	1.355	3.133	50001	5000
or[6,14]	0.818	0.3116	0.008111	0.3773	0.7668	1.595	50001	5000
or[7,1]	3.482	0.7557	0.02785	2.313	3.372	5.3	50001	5000
or[7,2]	1.426	0.4009	0.01212	0.8085	1.366	2.369	50001	5000
or[7,3]	1.098	0.3688	0.01338	0.5396	1.045	1.984	50001	5000
or[7,4]	1.217	0.2859	0.0103	0.7494	1.182	1.887	50001	5000
or[7,5]	0.647	0.3291	0.009561	0.2199	0.5826	1.49	50001	5000
or[7,6]	1.411	0.4764	0.01345	0.7015	1.338	2.553	50001	5000
or[7,7]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[7,8]	1.674	0.5254	0.01659	0.8696	1.597	2.905	50001	5000
or[7,9]	1.661	0.5657	0.01858	0.8533	1.575	3.051	50001	5000
or[7,10]	2.553	1.428	0.03081	0.8536	2.273	5.905	50001	5000
or[7,11]	0.9766	0.3159	0.01037	0.508	0.9282	1.727	50001	5000
or[7,12]	1.423	0.8003	0.03107	0.5094	1.232	3.579	50001	5000
or[7,13]	1.934	0.665	0.01738	0.9433	1.829	3.519	50001	5000
or[7,14]	1.06	0.2863	0.009835	0.6117	1.019	1.733	50001	5000
or[8,1]	2.204	0.5772	0.01709	1.332	2.123	3.592	50001	5000
or[8,2]	0.8973	0.2697	0.007155	0.4966	0.8536	1.544	50001	5000
or[8,3]	0.6965	0.262	0.008014	0.322	0.6517	1.368	50001	5000
or[8,4]	0.7711	0.2161	0.006836	0.4358	0.7467	1.278	50001	5000
or[8,5]	0.4094	0.2198	0.005581	0.1328	0.3629	0.9753	50001	5000
or[8,6]	0.9033	0.3641	0.008663	0.3937	0.8381	1.813	50001	5000
or[8,7]	0.6574	0.2102	0.006771	0.3444	0.6262	1.151	50001	5000
or[8,8]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[8,9]	1.05	0.3833	0.01143	0.5071	0.9863	1.984	50001	5000
or[8,10]	1.615	0.9471	0.01815	0.5219	1.422	3.789	50001	5000
or[8,11]	0.6274	0.2537	0.00778	0.2803	0.5797	1.24	50001	5000
or[8,12]	0.9054	0.5685	0.02015	0.3116	0.7661	2.349	50001	5000
or[8,13]	1.228	0.4812	0.01452	0.5566	1.135	2.364	50001	5000
or[8,14]	0.6759	0.2259	0.00673	0.3414	0.6409	1.227	50001	5000
or[9,1]	2.231	0.5692	0.01642	1.319	2.161	3.525	50001	5000
or[9,2]	0.9062	0.2606	0.007071	0.5122	0.8695	1.517	50001	5000
or[9,3]	0.704	0.2577	0.008228	0.3233	0.6636	1.326	50001	5000
or[9,4]	0.7865	0.2391	0.008152	0.4155	0.7538	1.333	50001	5000
or[9,5]	0.4144	0.2211	0.006359	0.1334	0.3675	0.9641	50001	5000
or[9,6]	0.9146	0.3637	0.009147	0.384	0.8571	1.758	50001	5000
or[9,7]	0.6685	0.2209	0.008138	0.3281	0.6354	1.172	50001	5000
or[9,8]	1.076	0.3838	0.01124	0.5047	1.014	1.976	50001	5000
or[9,9]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[9,10]	1.641	0.9597	0.02114	0.5108	1.434	3.911	50001	5000
or[9,11]	0.6371	0.2566	0.008304	0.2724	0.5923	1.292	50001	5000
or[9,12]	0.9237	0.6074	0.02518	0.2976	0.7858	2.318	50001	5000
or[9,13]	1.244	0.4858	0.01515	0.5491	1.161	2.416	50001	5000
or[9,14]	0.6879	0.2382	0.007871	0.3344	0.6507	1.257	50001	5000
or[10,1]	1.664	0.8586	0.01569	0.6264	1.499	3.749	50001	5000
or[10,2]	0.6836	0.3811	0.006752	0.237	0.6054	1.657	50001	5000
or[10,3]	0.5274	0.3216	0.006715	0.169	0.4556	1.318	50001	5000
or[10,4]	0.5883	0.3268	0.006384	0.2064	0.5211	1.37	50001	5000
or[10,5]	0.3081	0.2156	0.005047	0.07301	0.2585	0.8507	50001	5000
or[10,6]	0.6783	0.3953	0.008176	0.2154	0.5832	1.683	50001	5000
or[10,7]	0.4985	0.2829	0.005705	0.1705	0.44	1.176	50001	5000
or[10,8]	0.8022	0.462	0.008587	0.264	0.7034	1.917	50001	5000
or[10,9]	0.7965	0.4792	0.01012	0.2557	0.698	1.959	50001	5000
or[10,10]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[10,11]	0.4751	0.2925	0.005487	0.1491	0.4092	1.201	50001	5000
or[10,12]	0.6889	0.5654	0.01655	0.1683	0.5466	2.14	50001	5000
or[10,13]	0.9306	0.5706	0.01091	0.2922	0.8073	2.271	50001	5000
or[10,14]	0.5118	0.2882	0.005148	0.1727	0.4544	1.236	50001	5000
or[11,1]	3.823	1.157	0.03686	2.035	3.658	6.489	50001	5000
or[11,2]	1.566	0.5627	0.01629	0.7472	1.475	2.942	50001	5000
or[11,3]	1.206	0.4829	0.01596	0.5155	1.121	2.388	50001	5000

or[11,4]	1.333	0.4115	0.0127	0.6975	1.275	2.31	50001	5000
or[11,5]	0.7085	0.4024	0.01146	0.2226	0.6203	1.712	50001	5000
or[11,6]	1.56	0.6583	0.01923	0.6386	1.442	3.207	50001	5000
or[11,7]	1.125	0.3488	0.01153	0.5795	1.078	1.969	50001	5000
or[11,8]	1.841	0.7114	0.02138	0.8076	1.726	3.575	50001	5000
or[11,9]	1.825	0.7421	0.02217	0.7768	1.689	3.682	50001	5000
or[11,10]	2.807	1.726	0.03829	0.8325	2.444	6.721	50001	5000
or[11,11]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[11,12]	1.569	1.0	0.03958	0.4864	1.325	4.072	50001	5000
or[11,13]	2.121	0.8682	0.02563	0.9066	1.971	4.26	50001	5000
or[11,14]	1.148	0.339	0.01027	0.6072	1.11	1.922	50001	5000
or[12,1]	3.002	1.347	0.05696	0.9965	2.774	6.314	50001	5000
or[12,2]	1.233	0.617	0.02324	0.3769	1.107	2.787	50001	5000
or[12,3]	0.9494	0.5025	0.01938	0.2742	0.85	2.193	50001	5000
or[12,4]	1.052	0.4949	0.0216	0.3509	0.9586	2.268	50001	5000
or[12,5]	0.5581	0.3784	0.01416	0.1234	0.4716	1.521	50001	5000
or[12,6]	1.228	0.6887	0.0251	0.3419	1.085	2.922	50001	5000
or[12,7]	0.8941	0.4358	0.01756	0.2797	0.8115	1.965	50001	5000
or[12,8]	1.442	0.7342	0.02749	0.4283	1.305	3.211	50001	5000
or[12,9]	1.435	0.7677	0.02954	0.4343	1.273	3.367	50001	5000
or[12,10]	2.208	1.646	0.04919	0.4683	1.83	5.988	50001	5000
or[12,11]	0.8539	0.4768	0.01929	0.2462	0.7546	2.066	50001	5000
or[12,12]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[12,13]	1.666	0.888	0.0304	0.4791	1.496	3.9	50001	5000
or[12,14]	0.9191	0.4596	0.01937	0.2843	0.8234	2.085	50001	5000
or[13,1]	1.937	0.5627	0.01684	1.095	1.852	3.301	50001	5000
or[13,2]	0.7908	0.2642	0.006907	0.402	0.7482	1.426	50001	5000
or[13,3]	0.6063	0.22	0.00689	0.2831	0.5731	1.134	50001	5000
or[13,4]	0.6818	0.2255	0.007283	0.3488	0.6429	1.224	50001	5000
or[13,5]	0.3578	0.1932	0.005586	0.1133	0.3196	0.8332	50001	5000
or[13,6]	0.7931	0.3321	0.008216	0.3198	0.7383	1.61	50001	5000
or[13,7]	0.5785	0.2018	0.005565	0.2843	0.547	1.061	50001	5000
or[13,8]	0.9342	0.3532	0.01031	0.4232	0.8808	1.804	50001	5000
or[13,9]	0.923	0.358	0.0105	0.4142	0.8613	1.823	50001	5000
or[13,10]	1.425	0.8753	0.01622	0.4407	1.239	3.434	50001	5000
or[13,11]	0.55	0.2271	0.006472	0.2353	0.5074	1.106	50001	5000
or[13,12]	0.7932	0.4827	0.01752	0.2565	0.6683	2.088	50001	5000
or[13,13]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[13,14]	0.5942	0.2104	0.005893	0.2814	0.5593	1.11	50001	5000
or[14,1]	3.415	0.8001	0.02964	2.131	3.319	5.296	50001	5000
or[14,2]	1.399	0.4212	0.01226	0.7642	1.339	2.387	50001	5000
or[14,3]	1.073	0.3607	0.01288	0.5439	1.018	1.948	50001	5000
or[14,4]	1.187	0.2673	0.008836	0.7488	1.163	1.794	50001	5000
or[14,5]	0.6355	0.3385	0.01012	0.2099	0.5646	1.461	50001	5000
or[14,6]	1.394	0.5189	0.01313	0.6273	1.304	2.652	50001	5000
or[14,7]	1.011	0.2683	0.009559	0.5773	0.9814	1.635	50001	5000
or[14,8]	1.641	0.5367	0.01665	0.8154	1.561	2.93	50001	5000
or[14,9]	1.629	0.5675	0.0181	0.7982	1.537	2.996	50001	5000
or[14,10]	2.501	1.404	0.0271	0.8112	2.201	5.796	50001	5000
or[14,11]	0.9504	0.298	0.009145	0.5211	0.9005	1.651	50001	5000
or[14,12]	1.393	0.7883	0.03157	0.4801	1.214	3.526	50001	5000
or[14,13]	1.896	0.6794	0.02013	0.9021	1.788	3.557	50001	5000
or[14,14]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000

Outcome- treatment discontinuation due to intolerable adverse effects

```
# Model - heterogeneous random effects model
# Assume correlation within study (rho = 0.5)
# Assume heterogeneous between

model {
  for (i in 1:NS) {
    s[i,1] <- 0
    delta[i, t[i,1]] <- 0
    mu[i] ~ dnorm(mmu[t[i,1]], taumu)  # handle different baseline treatments

    for (k in 1:na[i]) {
      r[i,k] ~ dbin(p[i,t[i,k]], n[i,k])
      logit(p[i,t[i,k]]) <- mu[i] + delta[i,t[i,k]]
    }

    for (k in 2:na[i]) {
      delta[i,t[i,k]] ~ dnorm(md[i,t[i,k]], taud[i,t[i,k]])
      md[i,t[i,k]] <- d[t[i,k]] - d[t[i,1]] + ss[i,k]
      taud[i,t[i,k]] <- tau[t[i,1],t[i,k]]*2*(k-1)/k
      s[i,k] <- (delta[i, t[i,k]] - d[t[i,k]] + d[t[i,1]])
      ss[i,k] <- sum(s[i, 1:k-1])/(k-1)
    }
  }

  mmu[5] <- 0    #Treatments 1,2,3,4,6,7 are one of baseline treatments.
  mmu[8] <- 0    # other treatments should be assigned to 0.
  mmu[9] <- 0
  mmu[10] <- 0
  mmu[11] <- 0
mmu[12] <- 0
mmu[13] <- 0
mmu[14] <- 0
  mmu[1] ~ dnorm(0, 0.0001)
  mmu[2] ~ dnorm(0, 0.0001)
  mmu[3] ~ dnorm(0, 0.0001)
  mmu[4] ~ dnorm(0, 0.0001)
  mmu[6] ~ dnorm(0, 0.0001)
  mmu[7] ~ dnorm(0, 0.0001)
  sdmu ~ dunif(0.01, 2)
  taumu <- 1/pow(sdmu,2)

  d[1] <- 0
  for (k in 2:NT) {
    d[k] ~ dnorm(0,0.0001)
    ed[k] <- exp(d[k])         # ed is odds ratio against placebo
  }

  for(i in 1:(NT-1)) {
    for(j in (i+1):NT) {
      v[i,j] ~ dnorm(0, 8.32)
      log(sd[i,j]) <- log(sd0) + v[i,j]
      tau[i,j] <- 1/pow(sd[i,j],2)
      var[i,j] <- pow(sd[i,j],2)
    }
  }
  sd0 ~ dunif(0.01, 2)
  var0 <- pow(sd0,2)

  # pairwise ORs
```

```
  # Example: or[2,3] = odds ratio of active(2) vs. control(3)
  for (k in 1:NT) {
    for (c in 1:NT) {
      lor[k,c] <- d[k] - d[c]
      log(or[k,c]) <- lor[k,c]
    }
  }

  # ranking
  mP <- mmu[1]  # "mP" means the odds of placebo.

  for (k in 1:NT) { logit(T[k]) <- mP + d[k] }
  for (k in 1:NT) {
    rk[k] <- NT + 1 - rank(T[],k)
    best1[k] <- equals(rk[k],1)
    best2[k] <- equals(rk[k],2)
    best12[k] <- best1[k] + best2[k]
  }
}

#Init
list(
d=c(NA,0,0,0,0, 0,0,0,0,0,    0,0,0,0),
sd0=1,
mu=c(0,0,0,0,0,  0,0,0,0,0, 0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,
0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0),
mmu=c(0,0,0,0,NA, 0,0,NA,NA,NA, NA,NA,NA,NA), sdmu=1
)


#Data
```

```
#Data
list(NT=14, NS=68)
```

r[,1]	n[,1]	r[,2]	n[,2]	r[,3]	n[,3]	t[,1]	t[,2]	t[,3]	na[]
1	96	2	96	NA	1	1	12	NA	2
2	61	5	55	NA	1	1	8	NA	2
1	83	6	83	NA	1	1	5	NA	2
3	48	5	46	NA	1	5	14	NA	2
2	32	1	32	NA	1	1	3	NA	2
1	75	10	74	NA	1	7	14	NA	2
5	20	13	20	NA	1	5	9	NA	2
5	24	9	31	NA	1	1	5	NA	2
4	46	3	43	NA	1	1	9	NA	2
4	44	2	47	NA	1	5	7	NA	2
2	34	4	31	NA	1	1	8	NA	2
0	31	4	31	NA	1	7	12	NA	2
0	48	1	48	NA	1	1	4	NA	2
2	74	1	74	NA	1	1	10	NA	2
0	47	2	47	NA	1	1	6	NA	2
1	37	1	34	NA	1	1	7	NA	2
2	37	9	70	NA	1	1	3	NA	2

2	43	4	43	NA	1	1	3	NA	2
0	38	3	43	NA	1	1	13	NA	2
1	34	3	35	NA	1	1	13	NA	2
3	40	7	18	NA	1	1	4	NA	2
2	38	7	77	NA	1	1	7	NA	2
4	37	1	37	NA	1	3	5	NA	2
4	26	4	27	NA	1	1	8	NA	2
4	45	16	98	NA	1	1	4	NA	2
6	69	1	66	NA	1	13	14	NA	2
5	20	4	20	NA	1	5	10	NA	2
2	27	9	26	NA	1	1	4	NA	2
18	270	19	275	NA	1	5	14	NA	2
10	116	10	123	NA	1	1	3	NA	2
4	64	9	72	NA	1	1	13	NA	2
0	36	6	34	NA	1	1	2	NA	2
2	84	2	93	NA	1	1	13	NA	2
2	57	3	58	NA	1	1	2	NA	2
6	20	9	30	NA	1	1	2	NA	2
4	73	21	140	NA	1	1	2	NA	2
10	163	18	165	NA	1	1	2	NA	2
3	60	3	60	3	60	1	2	4	3
41	383	96	391	NA	1	1	2	NA	2
10	45	0	45	NA	1	2	13	NA	2
4	85	8	85	NA	1	1	4	NA	2
3	58	2	67	NA	1	3	13	NA	2
2	24	4	28	NA	1	2	8	NA	2
1	65	2	59	NA	1	1	13	NA	2
35	178	38	169	NA	1	2	8	NA	2
18	197	21	188	NA	1	1	2	NA	2
13	197	23	194	NA	1	1	8	NA	2
0	28	3	28	NA	1	1	7	NA	2
0	71	2	71	NA	1	1	12	NA	2
1	38	2	38	NA	1	1	11	NA	2
1	33	0	33	NA	1	1	9	NA	2
0	40	1	40	NA	1	1	11	NA	2
3	72	0	72	NA	1	1	7	NA	2
3	45	0	45	NA	1	1	10	NA	2
1	24	5	24	NA	1	1	9	NA	2
5	75	12	75	NA	1	1	10	NA	2
4	54	0	48	NA	1	13	14	NA	2
3	21	2	20	NA	1	8	10	NA	2

0	29	3	29	NA	1	5	8	NA	2
2	30	3	29	NA	1	1	8	NA	2
1	14	2	18	NA	1	9	14	NA	2
1	22	2	23	NA	1	1	4	NA	2
1	46	2	46	NA	1	1	11	NA	2
3	32	2	27	NA	1	5	14	NA	2
2	20	13	62	NA	1	1	4	NA	2
1	13	0	15	NA	1	2	4	NA	2
0	63	18	63	NA	1	7	8	NA	2
3	48	3	44	9	49	5	8	10	3

END

node	mean	sd	MC error	2.5%	median	97.5%	start	sample
best1[1]	0.0	0.0	1.414E-12	0.0	0.0	0.0	50001	5000
best1[2]	0.0516	0.2212	0.005231	0.0	0.0	1.0	50001	5000
best1[3]	0.0342	0.1817	0.005157	0.0	0.0	1.0	50001	5000
best1[4]	0.141	0.348	0.01226	0.0	0.0	1.0	50001	5000
best1[5]	4.0E-4	0.02	2.777E-4	0.0	0.0	0.0	50001	5000
best1[6]	0.3646	0.4813	0.02054	0.0	0.0	1.0	50001	5000
best1[7]	0.0	0.0	1.414E-12	0.0	0.0	0.0	50001	5000
best1[8]	0.0412	0.1988	0.005382	0.0	0.0	1.0	50001	5000
best1[9]	0.086	0.2804	0.008756	0.0	0.0	1.0	50001	5000
best1[10]	0.0072	0.08455	0.001747	0.0	0.0	0.0	50001	5000
best1[11]	0.0628	0.2426	0.006461	0.0	0.0	1.0	50001	5000
best1[12]	0.1846	0.388	0.01594	0.0	0.0	1.0	50001	5000
best1[13]	0.0258	0.1585	0.004967	0.0	0.0	1.0	50001	5000
best1[14]	6.0E-4	0.02449	3.425E-4	0.0	0.0	0.0	50001	5000
best2[1]	0.0	0.0	1.414E-12	0.0	0.0	0.0	50001	5000
best2[2]	0.1248	0.3305	0.0074	0.0	0.0	1.0	50001	5000
best2[3]	0.0636	0.244	0.006352	0.0	0.0	1.0	50001	5000
best2[4]	0.217	0.4122	0.009941	0.0	0.0	1.0	50001	5000
best2[5]	0.0018	0.04239	7.449E-4	0.0	0.0	0.0	50001	5000
best2[6]	0.0896	0.2856	0.006711	0.0	0.0	1.0	50001	5000
best2[7]	0.0	0.0	1.414E-12	0.0	0.0	0.0	50001	5000
best2[8]	0.1068	0.3089	0.007261	0.0	0.0	1.0	50001	5000
best2[9]	0.1178	0.3224	0.007583	0.0	0.0	1.0	50001	5000
best2[10]	0.0202	0.1407	0.0025	0.0	0.0	0.0	50001	5000
best2[11]	0.0754	0.264	0.007277	0.0	0.0	1.0	50001	5000
best2[12]	0.1272	0.3332	0.007916	0.0	0.0	1.0	50001	5000
best2[13]	0.0546	0.2272	0.006064	0.0	0.0	1.0	50001	5000
best2[14]	0.0012	0.03462	6.173E-4	0.0	0.0	0.0	50001	5000
d[2]	0.8963	0.2501	0.009435	0.4273	0.89	1.407	50001	5000
d[3]	0.6082	0.4409	0.0188	-0.2297	0.6022	1.511	50001	5000
d[4]	1.027	0.3391	0.01314	0.3538	1.028	1.68	50001	5000
d[5]	0.1538	0.3677	0.01435	-0.6101	0.1626	0.8581	50001	5000
d[6]	0.9581	1.389	0.06647	-1.836	0.9836	3.633	50001	5000
d[7]	-1.279	0.5862	0.03166	-2.576	-1.248	-0.2382	50001	5000
d[8]	0.835	0.2937	0.01077	0.2566	0.8366	1.412	50001	5000
d[9]	0.7311	0.5374	0.02237	-0.4009	0.7564	1.73	50001	5000
d[10]	0.3228	0.4516	0.01741	-0.6187	0.3393	1.142	50001	5000
d[11]	0.3754	0.7572	0.03379	-1.117	0.3614	1.872	50001	5000
d[12]	0.8049	0.774	0.0374	-0.7337	0.7941	2.314	50001	5000
d[13]	0.6026	0.3885	0.01581	-0.1822	0.6048	1.338	50001	5000
d[14]	-0.1252	0.4832	0.01961	-1.104	-0.1081	0.8008	50001	5000
or[1,2]	0.4209	0.1051	0.003949	0.2449	0.4107	0.6522	50001	5000
or[1,3]	0.5994	0.2768	0.01133	0.2221	0.5476	1.259	50001	5000
or[1,4]	0.3793	0.134	0.005079	0.1865	0.3577	0.7047	50001	5000

or[1,5]	0.9189	0.3654	0.01358	0.4247	0.8499	1.842	50001	5000
or[1,6]	1.084	3.244	0.09586	0.02646	0.374	6.29	50001	5000
or[1,7]	4.363	3.563	0.1932	1.271	3.485	13.19	50001	5000
or[1,8]	0.453	0.136	0.004874	0.2438	0.4334	0.7739	50001	5000
or[1,9]	0.5604	0.3592	0.01455	0.1777	0.4695	1.493	50001	5000
or[1,10]	0.8048	0.4076	0.01548	0.3192	0.7124	1.859	50001	5000
or[1,11]	0.9148	0.8	0.03459	0.1547	0.6974	3.076	50001	5000
or[1,12]	0.6052	0.5691	0.02506	0.09896	0.4524	2.094	50001	5000
or[1,13]	0.5906	0.2411	0.00919	0.2624	0.5463	1.2	50001	5000
or[1,14]	1.28	0.7213	0.02903	0.4519	1.114	3.018	50001	5000
or[2,1]	2.53	0.6745	0.02498	1.533	2.435	4.085	50001	5000
or[2,2]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[2,3]	1.51	0.7924	0.03196	0.4867	1.342	3.517	50001	5000
or[2,4]	0.9466	0.3925	0.01426	0.414	0.8789	1.923	50001	5000
or[2,5]	2.31	1.1	0.04071	0.9095	2.085	4.987	50001	5000
or[2,6]	2.707	7.211	0.226	0.06141	0.9095	16.66	50001	5000
or[2,7]	11.02	9.848	0.4998	2.897	8.453	34.61	50001	5000
or[2,8]	1.13	0.422	0.01554	0.5463	1.054	2.162	50001	5000
or[2,9]	1.423	1.063	0.04281	0.3974	1.158	4.178	50001	5000
or[2,10]	2.036	1.211	0.04509	0.6819	1.746	5.162	50001	5000
or[2,11]	2.333	2.279	0.09269	0.3442	1.704	8.29	50001	5000
or[2,12]	1.532	1.555	0.06726	0.2188	1.105	5.5	50001	5000
or[2,13]	1.488	0.7274	0.03013	0.5534	1.35	3.315	50001	5000
or[2,14]	3.228	2.05	0.07553	0.9813	2.722	8.458	50001	5000
or[3,1]	2.029	0.9873	0.04067	0.7948	1.826	4.53	50001	5000
or[3,2]	0.8534	0.4911	0.02012	0.2849	0.7452	2.055	50001	5000
or[3,3]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[3,4]	0.7713	0.4993	0.01918	0.23	0.6577	2.072	50001	5000
or[3,5]	1.822	1.115	0.04282	0.5741	1.552	4.89	50001	5000
or[3,6]	2.101	6.734	0.1831	0.04494	0.6867	12.55	50001	5000
or[3,7]	8.794	9.033	0.4293	1.779	6.295	30.62	50001	5000
or[3,8]	0.9127	0.5196	0.0201	0.2967	0.787	2.253	50001	5000
or[3,9]	1.124	0.932	0.03152	0.2441	0.8571	3.513	50001	5000
or[3,10]	1.625	1.191	0.04517	0.4179	1.31	4.691	50001	5000
or[3,11]	1.871	2.119	0.08808	0.2115	1.262	7.458	50001	5000
or[3,12]	1.21	1.407	0.05683	0.1496	0.8272	4.563	50001	5000
or[3,13]	1.165	0.7054	0.02566	0.3549	0.9926	2.982	50001	5000
or[3,14]	2.542	1.936	0.06991	0.6406	2.041	7.402	50001	5000
or[4,1]	2.959	1.048	0.03958	1.424	2.796	5.368	50001	5000
or[4,2]	1.228	0.4945	0.01842	0.5208	1.138	2.417	50001	5000
or[4,3]	1.773	1.08	0.04335	0.485	1.521	4.362	50001	5000
or[4,4]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[4,5]	2.701	1.453	0.0521	0.9572	2.37	6.358	50001	5000
or[4,6]	3.143	10.12	0.2869	0.0697	1.057	17.98	50001	5000
or[4,7]	12.89	12.09	0.6136	2.881	9.684	43.23	50001	5000
or[4,8]	1.33	0.5986	0.02199	0.5087	1.219	2.773	50001	5000
or[4,9]	1.648	1.235	0.04849	0.3987	1.339	4.824	50001	5000
or[4,10]	2.379	1.528	0.05204	0.7001	2.005	6.377	50001	5000
or[4,11]	2.688	2.664	0.1115	0.3824	1.911	9.943	50001	5000
or[4,12]	1.812	2.094	0.09474	0.2362	1.285	6.719	50001	5000
or[4,13]	1.742	0.9673	0.03607	0.565	1.535	4.161	50001	5000
or[4,14]	3.763	2.503	0.09802	1.048	3.126	10.24	50001	5000
or[5,1]	1.246	0.4618	0.0177	0.5433	1.177	2.359	50001	5000
or[5,2]	0.5213	0.2299	0.008892	0.2009	0.4797	1.105	50001	5000
or[5,3]	0.7281	0.4019	0.01537	0.2047	0.6445	1.742	50001	5000
or[5,4]	0.4689	0.2387	0.00845	0.1574	0.4219	1.046	50001	5000
or[5,5]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[5,6]	1.329	4.924	0.1203	0.02814	0.4363	8.032	50001	5000
or[5,7]	5.09	4.004	0.2086	1.452	4.053	14.57	50001	5000
or[5,8]	0.5502	0.2302	0.007781	0.2138	0.5144	1.115	50001	5000
or[5,9]	0.6607	0.4615	0.01614	0.1991	0.5547	1.72	50001	5000
or[5,10]	0.9541	0.5144	0.01831	0.3298	0.8341	2.3	50001	5000

or[5,11]	1.142	1.22	0.05539	0.1486	0.8099	4.217	50001	5000
or[5,12]	0.736	0.7612	0.03315	0.09378	0.5302	2.577	50001	5000
or[5,13]	0.7199	0.3685	0.01425	0.2314	0.6431	1.664	50001	5000
or[5,14]	1.453	0.718	0.0272	0.5855	1.303	3.194	50001	5000
or[6,1]	6.687	14.58	0.5624	0.1595	2.674	37.81	50001	5000
or[6,2]	2.825	6.383	0.2363	0.06025	1.1	16.3	50001	5000
or[6,3]	3.872	8.558	0.3288	0.07971	1.458	22.76	50001	5000
or[6,4]	2.558	6.361	0.233	0.05573	0.9466	14.42	50001	5000
or[6,5]	5.961	13.61	0.4665	0.125	2.296	36.1	50001	5000
or[6,6]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[6,7]	27.46	75.76	1.991	0.4817	9.548	159.9	50001	5000
or[6,8]	3.039	6.884	0.2493	0.06875	1.162	18.2	50001	5000
or[6,9]	3.781	9.956	0.3078	0.06009	1.241	24.97	50001	5000
or[6,10]	5.148	12.65	0.3837	0.1034	1.96	29.1	50001	5000
or[6,11]	5.679	15.12	0.5558	0.07721	1.88	33.31	50001	5000
or[6,12]	3.737	9.803	0.3142	0.04831	1.182	23.58	50001	5000
or[6,13]	3.985	9.449	0.3627	0.07632	1.479	24.63	50001	5000
or[6,14]	8.049	18.16	0.6391	0.1501	3.041	47.71	50001	5000
or[7,1]	0.3258	0.1848	0.008788	0.07605	0.2871	0.788	50001	5000
or[7,2]	0.1364	0.08471	0.003891	0.02902	0.1183	0.3469	50001	5000
or[7,3]	0.193	0.1465	0.006358	0.03282	0.1589	0.5631	50001	5000
or[7,4]	0.1232	0.08512	0.003776	0.02317	0.1033	0.3472	50001	5000
or[7,5]	0.2819	0.1701	0.007441	0.06881	0.2468	0.6891	50001	5000
or[7,6]	0.3295	0.917	0.02434	0.006258	0.1049	2.086	50001	5000
or[7,7]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[7,8]	0.1447	0.09074	0.004176	0.03113	0.1258	0.366	50001	5000
or[7,9]	0.1757	0.1553	0.005676	0.02997	0.1334	0.576	50001	5000
or[7,10]	0.254	0.1983	0.007711	0.04845	0.2028	0.7786	50001	5000
or[7,11]	0.3001	0.3727	0.01662	0.0277	0.1919	1.247	50001	5000
or[7,12]	0.1791	0.1829	0.007472	0.02183	0.1285	0.6609	50001	5000
or[7,13]	0.1914	0.1367	0.005824	0.03242	0.1604	0.5276	50001	5000
or[7,14]	0.3864	0.2802	0.01095	0.08454	0.3188	1.061	50001	5000
or[8,1]	2.407	0.7311	0.02678	1.293	2.308	4.103	50001	5000
or[8,2]	0.9971	0.348	0.01264	0.464	0.9488	1.834	50001	5000
or[8,3]	1.432	0.7873	0.02904	0.444	1.271	3.372	50001	5000
or[8,4]	0.9084	0.4339	0.01697	0.3611	0.8206	1.968	50001	5000
or[8,5]	2.158	0.9743	0.03447	0.8973	1.945	4.684	50001	5000
or[8,6]	2.576	9.39	0.2404	0.05526	0.8615	14.55	50001	5000
or[8,7]	10.3	9.012	0.4909	2.741	7.952	32.24	50001	5000
or[8,8]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[8,9]	1.342	0.967	0.03611	0.3583	1.1	3.829	50001	5000
or[8,10]	1.889	1.073	0.0413	0.6721	1.634	4.593	50001	5000
or[8,11]	2.194	2.142	0.08761	0.3251	1.602	7.909	50001	5000
or[8,12]	1.448	1.494	0.06267	0.2047	1.031	5.177	50001	5000
or[8,13]	1.412	0.7162	0.02844	0.5042	1.263	3.19	50001	5000
or[8,14]	3.023	1.962	0.07545	0.9764	2.558	7.846	50001	5000
or[9,1]	2.389	1.337	0.05126	0.6697	2.131	5.638	50001	5000
or[9,2]	1.005	0.6335	0.02332	0.2398	0.8635	2.52	50001	5000
or[9,3]	1.419	1.117	0.04034	0.2855	1.167	4.097	50001	5000
or[9,4]	0.9031	0.6194	0.02453	0.2074	0.7467	2.509	50001	5000
or[9,5]	2.066	1.203	0.04032	0.583	1.803	5.03	50001	5000
or[9,6]	2.583	10.63	0.2691	0.04035	0.8058	16.64	50001	5000
or[9,7]	9.884	9.62	0.4089	1.748	7.496	33.38	50001	5000
or[9,8]	1.079	0.7072	0.02503	0.2613	0.9092	2.795	50001	5000
or[9,9]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[9,10]	1.886	1.465	0.04698	0.3927	1.51	5.813	50001	5000
or[9,11]	2.17	2.512	0.1081	0.2257	1.458	8.505	50001	5000
or[9,12]	1.385	1.495	0.05898	0.1437	0.9514	5.051	50001	5000
or[9,13]	1.376	0.8986	0.03282	0.3154	1.184	3.818	50001	5000
or[9,14]	2.84	1.933	0.06731	0.6867	2.349	7.86	50001	5000
or[10,1]	1.524	0.6921	0.02479	0.5387	1.404	3.135	50001	5000
or[10,2]	0.6398	0.3306	0.01231	0.1946	0.5727	1.468	50001	5000

or[10,3]	0.908	0.5991	0.02261	0.2135	0.7637	2.402	50001	5000
or[10,4]	0.5781	0.3509	0.01119	0.1583	0.4992	1.432	50001	5000
or[10,5]	1.334	0.7006	0.02231	0.4359	1.199	3.037	50001	5000
or[10,6]	1.651	5.83	0.1717	0.03448	0.5107	9.68	50001	5000
or[10,7]	6.392	6.034	0.2966	1.285	4.932	20.74	50001	5000
or[10,8]	0.6712	0.3283	0.01224	0.2182	0.6122	1.488	50001	5000
or[10,9]	0.839	0.7273	0.02277	0.1725	0.6622	2.551	50001	5000
or[10,10]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[10,11]	1.399	1.534	0.0626	0.169	0.9511	5.604	50001	5000
or[10,12]	0.9059	0.9913	0.03709	0.1022	0.6357	3.323	50001	5000
or[10,13]	0.8891	0.5405	0.01875	0.2292	0.7699	2.227	50001	5000
or[10,14]	1.875	1.31	0.03939	0.4782	1.582	5.116	50001	5000
or[11,1]	1.94	1.742	0.06864	0.3272	1.435	6.501	50001	5000
or[11,2]	0.8255	0.8313	0.03436	0.1209	0.5869	2.922	50001	5000
or[11,3]	1.171	1.324	0.05152	0.1353	0.7928	4.744	50001	5000
or[11,4]	0.7306	0.7523	0.02825	0.1006	0.5235	2.619	50001	5000
or[11,5]	1.779	1.852	0.07447	0.2375	1.235	6.738	50001	5000
or[11,6]	2.202	12.7	0.3005	0.0302	0.5321	13.01	50001	5000
or[11,7]	8.319	10.72	0.4271	0.8039	5.213	36.16	50001	5000
or[11,8]	0.8745	0.8281	0.03216	0.1265	0.6249	3.087	50001	5000
or[11,9]	1.096	1.468	0.05678	0.1177	0.6859	4.433	50001	5000
or[11,10]	1.554	1.695	0.06203	0.1787	1.052	5.918	50001	5000
or[11,11]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[11,12]	1.099	1.426	0.05324	0.08756	0.6519	4.922	50001	5000
or[11,13]	1.164	1.396	0.05161	0.1438	0.7964	4.275	50001	5000
or[11,14]	2.464	2.823	0.1087	0.2957	1.641	9.584	50001	5000
or[12,1]	3.019	2.728	0.122	0.4801	2.212	10.12	50001	5000
or[12,2]	1.272	1.247	0.05361	0.182	0.9053	4.576	50001	5000
or[12,3]	1.771	1.842	0.07722	0.2205	1.209	6.703	50001	5000
or[12,4]	1.148	1.187	0.05144	0.1496	0.7785	4.246	50001	5000
or[12,5]	2.732	2.809	0.1241	0.3908	1.887	10.69	50001	5000
or[12,6]	3.247	12.43	0.3681	0.04243	0.8466	20.73	50001	5000
or[12,7]	12.06	20.13	0.8092	1.517	7.784	46.0	50001	5000
or[12,8]	1.365	1.367	0.05698	0.1942	0.9702	4.889	50001	5000
or[12,9]	1.664	2.343	0.08221	0.1985	1.051	7.055	50001	5000
or[12,10]	2.402	2.635	0.1056	0.3011	1.575	9.789	50001	5000
or[12,11]	2.605	3.606	0.1499	0.205	1.535	11.44	50001	5000
or[12,12]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[12,13]	1.788	1.989	0.08766	0.2447	1.196	6.787	50001	5000
or[12,14]	3.767	5.174	0.1768	0.4726	2.493	14.93	50001	5000
or[13,1]	1.969	0.7901	0.03229	0.8334	1.831	3.811	50001	5000
or[13,2]	0.827	0.4029	0.01727	0.3024	0.741	1.812	50001	5000
or[13,3]	1.146	0.6514	0.02321	0.3371	1.008	2.82	50001	5000
or[13,4]	0.7436	0.3973	0.01534	0.243	0.6513	1.771	50001	5000
or[13,5]	1.776	0.9796	0.03893	0.6011	1.555	4.323	50001	5000
or[13,6]	2.227	8.874	0.2376	0.04068	0.6789	13.16	50001	5000
or[13,7]	8.643	8.352	0.4695	1.896	6.236	30.91	50001	5000
or[13,8]	0.8868	0.4481	0.01865	0.3142	0.7922	1.986	50001	5000
or[13,9]	1.08	0.7962	0.0327	0.262	0.8449	3.176	50001	5000
or[13,10]	1.571	1.043	0.03929	0.4518	1.299	4.367	50001	5000
or[13,11]	1.831	1.998	0.08443	0.2344	1.256	6.957	50001	5000
or[13,12]	1.168	1.202	0.04993	0.1475	0.8366	4.09	50001	5000
or[13,13]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[13,14]	2.433	1.612	0.06847	0.719	2.038	6.54	50001	5000
or[14,1]	0.9897	0.5043	0.01855	0.3315	0.8975	2.227	50001	5000
or[14,2]	0.4149	0.2382	0.008061	0.1186	0.3675	1.021	50001	5000
or[14,3]	0.5776	0.3821	0.01402	0.1355	0.4899	1.565	50001	5000
or[14,4]	0.3748	0.272	0.008874	0.09782	0.3199	0.9563	50001	5000
or[14,5]	0.8267	0.3658	0.01397	0.3137	0.768	1.712	50001	5000
or[14,6]	1.029	2.929	0.08762	0.021	0.3293	6.694	50001	5000
or[14,7]	3.921	3.07	0.1389	0.945	3.138	11.86	50001	5000
or[14,8]	0.4377	0.2405	0.008284	0.1282	0.391	1.025	50001	5000

or[14,9]	0.5165	0.3895	0.01389	0.1272	0.4258	1.467	50001	5000
or[14,10]	0.768	0.5631	0.01839	0.1955	0.6322	2.094	50001	5000
or[14,11]	0.9033	1.052	0.04219	0.1048	0.6098	3.382	50001	5000
or[14,12]	0.5724	0.609	0.02446	0.06724	0.4011	2.117	50001	5000
or[14,13]	0.5625	0.3377	0.01329	0.153	0.4908	1.393	50001	5000
or[14,14]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000

```
# Model - heterogeneous random effects model
# Assume correlation within study (rho = 0.5)
# Assume heterogeneous between studies ; "sdmu" is (0.01, 5)

model {
  for (i in 1:NS) {
    s[i,1] <- 0
    delta[i, t[i,1]] <- 0
    mu[i] ~ dnorm(mmu[t[i,1]], taumu)  # handle different baseline treatments

    for (k in 1:na[i]) {
      r[i,k] ~ dbin(p[i,t[i,k]], n[i,k])
      logit(p[i,t[i,k]]) <- mu[i] + delta[i,t[i,k]]
    }

    for (k in 2:na[i]) {
      delta[i,t[i,k]] ~ dnorm(md[i,t[i,k]], taud[i,t[i,k]])
      md[i,t[i,k]] <- d[t[i,k]] - d[t[i,1]] + ss[i,k]
      taud[i,t[i,k]] <- tau[t[i,1],t[i,k]]*2*(k-1)/k
      s[i,k] <- (delta[i, t[i,k]] - d[t[i,k]] + d[t[i,1]])
      ss[i,k] <- sum(s[i, 1:k-1])/(k-1)
    }
  }

  mmu[5] <- 0    #Treatments 1,2,3,4,6,7 are one of baseline treatments.
  mmu[8] <- 0    # other treatments should be assigned to 0.
  mmu[9] <- 0
  mmu[10] <- 0
  mmu[11] <- 0
mmu[12] <- 0
mmu[13] <- 0
mmu[14] <- 0
  mmu[1] ~ dnorm(0, 0.0001)
  mmu[2] ~ dnorm(0, 0.0001)
  mmu[3] ~ dnorm(0, 0.0001)
  mmu[4] ~ dnorm(0, 0.0001)
  mmu[6] ~ dnorm(0, 0.0001)
  mmu[7] ~ dnorm(0, 0.0001)
  sdmu ~ dunif(0.01, 5)
  taumu <- 1/pow(sdmu,2)

  d[1] <- 0
  for (k in 2:NT) {
    d[k] ~ dnorm(0,0.0001)
    ed[k] <- exp(d[k])         # ed is odds ratio against placebo
  }

  for(i in 1:(NT-1)) {
    for(j in (i+1):NT) {
      v[i,j] ~ dnorm(0, 8.32)
      log(sd[i,j]) <- log(sd0) + v[i,j]
      tau[i,j] <- 1/pow(sd[i,j],2)
      var[i,j] <- pow(sd[i,j],2)
    }
```

```
  }
  sd0 ~ dunif(0.01, 2)
  var0 <- pow(sd0,2)

  # pairwise ORs
  # Example: or[2,3] = odds ratio of active(2) vs. control(3)
  for (k in 1:NT) {
    for (c in 1:NT) {
      lor[k,c] <- d[k] - d[c]
      log(or[k,c]) <- lor[k,c]
    }
  }

  # ranking
  mP <- mmu[1]  # "mP" means the odds of placebo.

  for (k in 1:NT) { logit(T[k]) <- mP + d[k] }
  for (k in 1:NT) {
    rk[k] <- NT + 1 - rank(T[],k)
    best1[k] <- equals(rk[k],1)
    best2[k] <- equals(rk[k],2)
    best12[k] <- best1[k] + best2[k]
  }
}

#Init
list(
d=c(NA,0,0,0,0, 0,0,0,0,0,    0,0,0,0),
sd0=1,
mu=c(0,0,0,0,0,  0,0,0,0,0, 0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,
0,0,0,0,0,  0,0,0,0,0,  0,0,0,0,0,  0,0,0),
mmu=c(0,0,0,0,NA, 0,0,NA,NA,NA, NA,NA,NA,NA), sdmu=1
)


#Data


#Data
list(NT=14, NS=68)
```

r[,1]	n[,1]	r[,2]	n[,2]	r[,3]	n[,3]	t[,1]	t[,2]	t[,3]	na[]
1	96	2	96	NA	1	1	12	NA	2
2	61	5	55	NA	1	1	8	NA	2
1	83	6	83	NA	1	1	5	NA	2
3	48	5	46	NA	1	5	14	NA	2
2	32	1	32	NA	1	1	3	NA	2
1	75	10	74	NA	1	7	14	NA	2
5	20	13	20	NA	1	5	9	NA	2
5	24	9	31	NA	1	1	5	NA	2
4	46	3	43	NA	1	1	9	NA	2
4	44	2	47	NA	1	5	7	NA	2
2	34	4	31	NA	1	1	8	NA	2
0	31	4	31	NA	1	7	12	NA	2
0	48	1	48	NA	1	1	4	NA	2
2	74	1	74	NA	1	1	10	NA	2

0	47	2	47	NA	1	1	6	NA	2
1	37	1	34	NA	1	1	7	NA	2
2	37	9	70	NA	1	1	3	NA	2
2	43	4	43	NA	1	1	3	NA	2
0	38	3	43	NA	1	1	13	NA	2
1	34	3	35	NA	1	1	13	NA	2
3	40	7	18	NA	1	1	4	NA	2
2	38	7	77	NA	1	1	7	NA	2
4	37	1	37	NA	1	3	5	NA	2
4	26	4	27	NA	1	1	8	NA	2
4	45	16	98	NA	1	1	4	NA	2
6	69	1	66	NA	1	13	14	NA	2
5	20	4	20	NA	1	5	10	NA	2
2	27	9	26	NA	1	1	4	NA	2
18	270	19	275	NA	1	5	14	NA	2
10	116	10	123	NA	1	1	3	NA	2
4	64	9	72	NA	1	1	13	NA	2
0	36	6	34	NA	1	1	2	NA	2
2	84	2	93	NA	1	1	13	NA	2
2	57	3	58	NA	1	1	2	NA	2
6	20	9	30	NA	1	1	2	NA	2
4	73	21	140	NA	1	1	2	NA	2
10	163	18	165	NA	1	1	2	NA	2
3	60	3	60	3	60	1	2	4	3
41	383	96	391	NA	1	1	2	NA	2
10	45	0	45	NA	1	2	13	NA	2
4	85	8	85	NA	1	1	4	NA	2
3	58	2	67	NA	1	3	13	NA	2
2	24	4	28	NA	1	2	8	NA	2
1	65	2	59	NA	1	1	13	NA	2
35	178	38	169	NA	1	2	8	NA	2
18	197	21	188	NA	1	1	2	NA	2
13	197	23	194	NA	1	1	8	NA	2
0	28	3	28	NA	1	1	7	NA	2
0	71	2	71	NA	1	1	12	NA	2
1	38	2	38	NA	1	1	11	NA	2
1	33	0	33	NA	1	1	9	NA	2
0	40	1	40	NA	1	1	11	NA	2
3	72	0	72	NA	1	1	7	NA	2
3	45	0	45	NA	1	1	10	NA	2
1	24	5	24	NA	1	1	9	NA	2

5	75	12	75	NA	1	1	10	NA	2
4	54	0	48	NA	1	13	14	NA	2
3	21	2	20	NA	1	8	10	NA	2
0	29	3	29	NA	1	5	8	NA	2
2	30	3	29	NA	1	1	8	NA	2
1	14	2	18	NA	1	9	14	NA	2
1	22	2	23	NA	1	1	4	NA	2
1	46	2	46	NA	1	1	11	NA	2
3	32	2	27	NA	1	5	14	NA	2
2	20	13	62	NA	1	1	4	NA	2
1	13	0	15	NA	1	2	4	NA	2
0	63	18	63	NA	1	7	8	NA	2
3	48	3	44	9	49	5	8	10	3

END

node	mean	sd	MC error	2.5%	median	97.5%	start	sample
best1[1]	0.0	0.0	1.414E-12	0.0	0.0	0.0	50001	5000
best1[2]	0.048	0.2138	0.005892	0.0	0.0	1.0	50001	5000
best1[3]	0.0462	0.2099	0.005419	0.0	0.0	1.0	50001	5000
best1[4]	0.1536	0.3606	0.01422	0.0	0.0	1.0	50001	5000
best1[5]	2.0E-4	0.01414	2.006E-4	0.0	0.0	0.0	50001	5000
best1[6]	0.3488	0.4766	0.02233	0.0	0.0	1.0	50001	5000
best1[7]	0.0	0.0	1.414E-12	0.0	0.0	0.0	50001	5000
best1[8]	0.0428	0.2024	0.005105	0.0	0.0	1.0	50001	5000
best1[9]	0.0978	0.297	0.009791	0.0	0.0	1.0	50001	5000
best1[10]	0.0078	0.08797	0.001628	0.0	0.0	0.0	50001	5000
best1[11]	0.0828	0.2756	0.008454	0.0	0.0	1.0	50001	5000
best1[12]	0.1458	0.3529	0.01337	0.0	0.0	1.0	50001	5000
best1[13]	0.0252	0.1567	0.003928	0.0	0.0	1.0	50001	5000
best1[14]	0.001	0.03161	4.331E-4	0.0	0.0	0.0	50001	5000
best2[1]	0.0	0.0	1.414E-12	0.0	0.0	0.0	50001	5000
best2[2]	0.1408	0.3478	0.008127	0.0	0.0	1.0	50001	5000
best2[3]	0.075	0.2634	0.006685	0.0	0.0	1.0	50001	5000
best2[4]	0.203	0.4022	0.008737	0.0	0.0	1.0	50001	5000
best2[5]	0.0038	0.06153	0.001243	0.0	0.0	0.0	50001	5000
best2[6]	0.0808	0.2725	0.006052	0.0	0.0	1.0	50001	5000
best2[7]	0.0	0.0	1.414E-12	0.0	0.0	0.0	50001	5000
best2[8]	0.108	0.3104	0.007817	0.0	0.0	1.0	50001	5000
best2[9]	0.1238	0.3294	0.007522	0.0	0.0	1.0	50001	5000
best2[10]	0.0182	0.1337	0.002555	0.0	0.0	0.0	50001	5000
best2[11]	0.084	0.2774	0.007281	0.0	0.0	1.0	50001	5000
best2[12]	0.1032	0.3042	0.006101	0.0	0.0	1.0	50001	5000
best2[13]	0.0586	0.2349	0.005443	0.0	0.0	1.0	50001	5000
best2[14]	8.0E-4	0.02827	3.884E-4	0.0	0.0	0.0	50001	5000
d[2]	0.8884	0.2447	0.008527	0.4178	0.8806	1.405	50001	5000
d[3]	0.6419	0.4462	0.0205	-0.1735	0.6181	1.559	50001	5000
d[4]	1.007	0.3599	0.01703	0.3205	1.005	1.705	50001	5000
d[5]	0.1856	0.3805	0.01226	-0.5701	0.1883	0.9327	50001	5000
d[6]	0.8932	1.431	0.06919	-1.87	0.9052	3.751	50001	5000
d[7]	-1.255	0.6031	0.03536	-2.619	-1.213	-0.1867	50001	5000
d[8]	0.8291	0.297	0.01152	0.2442	0.8268	1.423	50001	5000
d[9]	0.7334	0.5474	0.02262	-0.3835	0.7485	1.79	50001	5000
d[10]	0.3362	0.4494	0.01653	-0.5891	0.3491	1.185	50001	5000
d[11]	0.4371	0.7837	0.03416	-1.104	0.4526	1.968	50001	5000
d[12]	0.6907	0.7517	0.03829	-0.7297	0.6485	2.29	50001	5000
d[13]	0.628	0.408	0.01746	-0.1904	0.6351	1.439	50001	5000

d[14]	-0.1063	0.4735	0.01603	-1.091	-0.08985	0.7978	50001	5000
or[1,2]	0.4237	0.1035	0.003432	0.2458	0.4146	0.6585	50001	5000
or[1,3]	0.5796	0.2609	0.01139	0.2108	0.5391	1.19	50001	5000
or[1,4]	0.3904	0.1586	0.006856	0.1827	0.3661	0.7261	50001	5000
or[1,5]	0.8941	0.3665	0.01132	0.3939	0.8284	1.769	50001	5000
or[1,6]	1.162	3.709	0.08424	0.02351	0.4052	6.59	50001	5000
or[1,7]	4.286	3.394	0.1849	1.206	3.367	13.75	50001	5000
or[1,8]	0.4561	0.1398	0.005236	0.2411	0.4375	0.7836	50001	5000
or[1,9]	0.5608	0.356	0.01477	0.1671	0.4732	1.471	50001	5000
or[1,10]	0.7924	0.3933	0.01398	0.3062	0.7055	1.802	50001	5000
or[1,11]	0.912	1.343	0.05316	0.1404	0.6364	3.074	50001	5000
or[1,12]	0.6551	0.5299	0.02391	0.1014	0.5228	2.081	50001	5000
or[1,13]	0.5803	0.251	0.01071	0.2379	0.5299	1.211	50001	5000
or[1,14]	1.248	0.6642	0.02216	0.4505	1.095	2.978	50001	5000
or[2,1]	2.506	0.6435	0.02315	1.519	2.412	4.075	50001	5000
or[2,2]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[2,3]	1.454	0.7815	0.0324	0.4617	1.301	3.444	50001	5000
or[2,4]	0.9714	0.4664	0.01974	0.396	0.8869	2.027	50001	5000
or[2,5]	2.22	1.037	0.03343	0.8734	2.014	4.776	50001	5000
or[2,6]	2.924	8.867	0.2072	0.05464	0.9733	16.59	50001	5000
or[2,7]	10.63	8.71	0.4469	2.691	8.196	34.34	50001	5000
or[2,8]	1.126	0.4092	0.01374	0.5473	1.056	2.154	50001	5000
or[2,9]	1.403	0.996	0.03809	0.3775	1.141	4.104	50001	5000
or[2,10]	1.979	1.141	0.03941	0.6801	1.719	4.933	50001	5000
or[2,11]	2.322	3.883	0.1484	0.2986	1.55	8.424	50001	5000
or[2,12]	1.636	1.416	0.05834	0.2371	1.271	5.365	50001	5000
or[2,13]	1.435	0.6778	0.02578	0.5232	1.299	3.142	50001	5000
or[2,14]	3.107	1.816	0.06276	0.9814	2.662	7.901	50001	5000
or[3,1]	2.107	1.054	0.04751	0.8407	1.855	4.753	50001	5000
or[3,2]	0.8942	0.5264	0.02137	0.2916	0.7691	2.169	50001	5000
or[3,3]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[3,4]	0.817	0.5401	0.01969	0.2476	0.6791	2.186	50001	5000
or[3,5]	1.85	1.214	0.04808	0.553	1.561	4.954	50001	5000
or[3,6]	2.571	9.575	0.2364	0.04141	0.7706	15.43	50001	5000
or[3,7]	8.957	8.736	0.4769	1.691	6.465	33.01	50001	5000
or[3,8]	0.9575	0.5823	0.02467	0.2998	0.823	2.394	50001	5000
or[3,9]	1.193	1.108	0.05082	0.245	0.8856	3.944	50001	5000
or[3,10]	1.655	1.205	0.05222	0.422	1.333	4.984	50001	5000
or[3,11]	1.925	2.915	0.1106	0.2249	1.188	7.52	50001	5000
or[3,12]	1.346	1.333	0.05546	0.1723	0.9671	4.549	50001	5000
or[3,13]	1.184	0.7383	0.03288	0.3596	1.009	3.083	50001	5000
or[3,14]	2.591	1.989	0.07751	0.673	2.045	7.561	50001	5000
or[4,1]	2.92	1.081	0.05138	1.378	2.732	5.503	50001	5000
or[4,2]	1.228	0.5373	0.02447	0.4934	1.128	2.529	50001	5000
or[4,3]	1.674	0.9534	0.03791	0.4579	1.473	4.047	50001	5000
or[4,4]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[4,5]	2.597	1.466	0.05993	0.8501	2.25	6.507	50001	5000
or[4,6]	3.364	9.847	0.2425	0.0588	1.134	19.33	50001	5000
or[4,7]	12.52	11.76	0.5937	2.786	9.249	42.29	50001	5000
or[4,8]	1.33	0.6604	0.0291	0.503	1.177	3.03	50001	5000
or[4,9]	1.638	1.351	0.05941	0.3833	1.291	4.924	50001	5000
or[4,10]	2.311	1.511	0.0619	0.6503	1.912	6.247	50001	5000
or[4,11]	2.638	4.659	0.1637	0.339	1.755	9.104	50001	5000
or[4,12]	1.921	1.897	0.08342	0.2371	1.406	6.604	50001	5000
or[4,13]	1.683	0.9775	0.04343	0.5341	1.438	4.191	50001	5000
or[4,14]	3.618	2.412	0.08986	0.986	3.019	9.827	50001	5000
or[5,1]	1.293	0.5076	0.01625	0.5655	1.207	2.541	50001	5000
or[5,2]	0.5437	0.2488	0.008208	0.2096	0.4965	1.148	50001	5000
or[5,3]	0.7363	0.435	0.0186	0.2024	0.6408	1.811	50001	5000
or[5,4]	0.5009	0.2826	0.01052	0.1544	0.4446	1.177	50001	5000
or[5,5]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[5,6]	1.543	5.359	0.1199	0.02631	0.4881	9.104	50001	5000

or[5,7]	5.152	3.869	0.1929	1.374	4.09	15.81	50001	5000
or[5,8]	0.5709	0.244	0.00831	0.2345	0.5258	1.163	50001	5000
or[5,9]	0.6798	0.4572	0.01635	0.1995	0.5773	1.847	50001	5000
or[5,10]	0.9744	0.55	0.02149	0.3534	0.8456	2.304	50001	5000
or[5,11]	1.17	1.69	0.06378	0.1385	0.7688	4.46	50001	5000
or[5,12]	0.8274	0.7658	0.03029	0.109	0.6223	2.857	50001	5000
or[5,13]	0.7321	0.402	0.01582	0.2287	0.6449	1.767	50001	5000
or[5,14]	1.458	0.6572	0.0222	0.6313	1.315	3.176	50001	5000
or[6,1]	7.504	38.38	0.9885	0.1541	2.473	42.56	50001	5000
or[6,2]	3.182	15.66	0.4102	0.0603	1.028	18.31	50001	5000
or[6,3]	4.054	13.49	0.4374	0.06494	1.3	24.17	50001	5000
or[6,4]	3.074	18.56	0.4447	0.05255	0.8825	17.05	50001	5000
or[6,5]	6.506	22.45	0.7846	0.1111	2.049	38.19	50001	5000
or[6,6]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[6,7]	35.7	220.7	6.824	0.4368	8.754	205.9	50001	5000
or[6,8]	3.34	16.34	0.4179	0.06119	1.1	19.23	50001	5000
or[6,9]	4.584	28.8	0.8018	0.06188	1.144	24.2	50001	5000
or[6,10]	5.836	27.5	0.7544	0.09604	1.758	34.52	50001	5000
or[6,11]	7.185	58.91	1.288	0.06919	1.586	41.01	50001	5000
or[6,12]	4.867	18.32	0.5596	0.05313	1.19	30.0	50001	5000
or[6,13]	4.38	28.4	0.6474	0.0725	1.34	23.36	50001	5000
or[6,14]	8.697	29.33	0.9367	0.1499	2.758	51.76	50001	5000
or[7,1]	0.3372	0.1988	0.01084	0.07289	0.2972	0.8297	50001	5000
or[7,2]	0.1419	0.09073	0.004796	0.02916	0.1221	0.372	50001	5000
or[7,3]	0.1943	0.1519	0.008551	0.0304	0.1547	0.5939	50001	5000
or[7,4]	0.1303	0.09098	0.004251	0.02377	0.1081	0.3591	50001	5000
or[7,5]	0.2829	0.1787	0.008634	0.06351	0.2446	0.7281	50001	5000
or[7,6]	0.391	1.269	0.0295	0.004867	0.1143	2.294	50001	5000
or[7,7]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[7,8]	0.1497	0.09705	0.005185	0.03278	0.1283	0.3936	50001	5000
or[7,9]	0.1781	0.1458	0.006522	0.03062	0.1402	0.5419	50001	5000
or[7,10]	0.2589	0.2069	0.009831	0.04803	0.2047	0.7741	50001	5000
or[7,11]	0.2922	0.3652	0.01436	0.02506	0.1839	1.149	50001	5000
or[7,12]	0.2086	0.198	0.009478	0.01845	0.1514	0.7039	50001	5000
or[7,13]	0.1902	0.1384	0.006839	0.03512	0.1561	0.5519	50001	5000
or[7,14]	0.3862	0.2732	0.01226	0.08535	0.3224	1.097	50001	5000
or[8,1]	2.396	0.7441	0.02871	1.277	2.286	4.149	50001	5000
or[8,2]	0.9985	0.3517	0.01185	0.4662	0.9467	1.829	50001	5000
or[8,3]	1.383	0.7698	0.03313	0.4208	1.216	3.344	50001	5000
or[8,4]	0.9293	0.452	0.01896	0.3303	0.8496	1.989	50001	5000
or[8,5]	2.072	0.9183	0.0318	0.8601	1.903	4.264	50001	5000
or[8,6]	2.862	11.56	0.2297	0.05218	0.9094	16.35	50001	5000
or[8,7]	9.889	7.63	0.4251	2.546	7.798	30.6	50001	5000
or[8,8]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[8,9]	1.316	0.9113	0.03563	0.3493	1.085	3.722	50001	5000
or[8,10]	1.842	0.9964	0.03721	0.6556	1.62	4.357	50001	5000
or[8,11]	2.183	3.392	0.1356	0.2906	1.454	7.751	50001	5000
or[8,12]	1.546	1.324	0.0551	0.2174	1.191	5.178	50001	5000
or[8,13]	1.377	0.7219	0.02917	0.4723	1.22	3.327	50001	5000
or[8,14]	2.907	1.659	0.05733	0.9608	2.529	7.386	50001	5000
or[9,1]	2.41	1.383	0.05116	0.6814	2.114	5.992	50001	5000
or[9,2]	1.013	0.6203	0.0216	0.244	0.877	2.655	50001	5000
or[9,3]	1.4	1.127	0.04397	0.2552	1.13	4.085	50001	5000
or[9,4]	0.9295	0.655	0.02357	0.2034	0.7748	2.613	50001	5000
or[9,5]	2.016	1.217	0.04308	0.5418	1.733	5.032	50001	5000
or[9,6]	2.775	10.69	0.2339	0.04137	0.8762	16.42	50001	5000
or[9,7]	9.74	9.157	0.4377	1.851	7.135	32.9	50001	5000
or[9,8]	1.077	0.6784	0.02428	0.2698	0.9217	2.871	50001	5000
or[9,9]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[9,10]	1.844	1.402	0.05056	0.4228	1.497	5.535	50001	5000
or[9,11]	2.153	3.17	0.1244	0.2086	1.318	8.975	50001	5000
or[9,12]	1.545	1.607	0.06097	0.1568	1.083	5.726	50001	5000

or[9,13]	1.368	0.966	0.03683	0.2864	1.123	3.913	50001	5000
or[9,14]	2.773	1.866	0.06669	0.7011	2.323	7.591	50001	5000
or[10,1]	1.546	0.7207	0.02484	0.5549	1.418	3.271	50001	5000
or[10,2]	0.6505	0.3346	0.01126	0.2029	0.5818	1.475	50001	5000
or[10,3]	0.8877	0.5926	0.02422	0.2011	0.7503	2.381	50001	5000
or[10,4]	0.6001	0.3803	0.01313	0.161	0.523	1.538	50001	5000
or[10,5]	1.303	0.6333	0.02443	0.4376	1.183	2.83	50001	5000
or[10,6]	1.715	4.617	0.1106	0.02904	0.5706	10.54	50001	5000
or[10,7]	6.297	5.347	0.2482	1.293	4.885	20.84	50001	5000
or[10,8]	0.684	0.3436	0.0126	0.2298	0.6175	1.527	50001	5000
or[10,9]	0.8325	0.6297	0.024	0.1814	0.6683	2.39	50001	5000
or[10,10]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[10,11]	1.394	2.209	0.07881	0.1517	0.8892	5.307	50001	5000
or[10,12]	0.9935	0.94	0.04193	0.1137	0.7385	3.569	50001	5000
or[10,13]	0.8766	0.5291	0.01964	0.2223	0.7625	2.186	50001	5000
or[10,14]	1.837	1.182	0.04017	0.4724	1.563	4.747	50001	5000
or[11,1]	2.089	1.882	0.07924	0.3314	1.572	7.157	50001	5000
or[11,2]	0.8902	0.8863	0.03657	0.119	0.6453	3.352	50001	5000
or[11,3]	1.195	1.204	0.04714	0.133	0.842	4.462	50001	5000
or[11,4]	0.8042	0.8367	0.03145	0.1099	0.57	2.956	50001	5000
or[11,5]	1.864	1.943	0.07894	0.2244	1.301	7.254	50001	5000
or[11,6]	2.303	6.956	0.1805	0.02448	0.6307	14.52	50001	5000
or[11,7]	8.994	13.37	0.5397	0.871	5.444	39.92	50001	5000
or[11,8]	0.9484	0.9645	0.04113	0.129	0.6879	3.46	50001	5000
or[11,9]	1.161	1.394	0.05339	0.1117	0.7589	4.817	50001	5000
or[11,10]	1.647	1.882	0.07385	0.1888	1.125	6.638	50001	5000
or[11,11]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[11,12]	1.34	1.796	0.06115	0.07952	0.8094	6.135	50001	5000
or[11,13]	1.209	1.281	0.05074	0.1422	0.8254	4.524	50001	5000
or[11,14]	2.609	3.286	0.1205	0.2914	1.746	10.43	50001	5000
or[12,1]	2.713	2.801	0.1351	0.482	1.913	9.874	50001	5000
or[12,2]	1.15	1.316	0.0608	0.1871	0.7867	4.219	50001	5000
or[12,3]	1.526	1.743	0.08473	0.2206	1.034	5.814	50001	5000
or[12,4]	1.07	1.334	0.06243	0.1523	0.7112	4.23	50001	5000
or[12,5]	2.363	2.669	0.115	0.3501	1.609	9.172	50001	5000
or[12,6]	3.296	17.54	0.4395	0.0335	0.8405	18.89	50001	5000
or[12,7]	11.34	16.71	0.779	1.424	6.608	54.21	50001	5000
or[12,8]	1.225	1.386	0.05917	0.1932	0.8399	4.613	50001	5000
or[12,9]	1.529	2.363	0.09219	0.1758	0.9239	6.383	50001	5000
or[12,10]	2.125	2.574	0.1034	0.2815	1.354	8.815	50001	5000
or[12,11]	2.489	5.524	0.1886	0.1633	1.236	12.61	50001	5000
or[12,12]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[12,13]	1.568	1.89	0.09652	0.2179	1.04	6.292	50001	5000
or[12,14]	3.292	4.58	0.1919	0.4555	2.142	13.35	50001	5000
or[13,1]	2.037	0.8763	0.03607	0.8266	1.887	4.216	50001	5000
or[13,2]	0.8543	0.417	0.01586	0.3188	0.7698	1.92	50001	5000
or[13,3]	1.144	0.6579	0.0282	0.3245	0.9923	2.788	50001	5000
or[13,4]	0.7862	0.4515	0.01745	0.2389	0.6954	1.878	50001	5000
or[13,5]	1.781	1.033	0.03877	0.566	1.551	4.382	50001	5000
or[13,6]	2.323	6.847	0.1606	0.04297	0.7478	13.82	50001	5000
or[13,7]	8.419	7.119	0.3595	1.812	6.407	28.47	50001	5000
or[13,8]	0.9197	0.4795	0.01828	0.3015	0.8195	2.118	50001	5000
or[13,9]	1.124	0.9055	0.03878	0.2557	0.8902	3.494	50001	5000
or[13,10]	1.589	1.061	0.03495	0.4587	1.312	4.5	50001	5000
or[13,11]	1.849	3.026	0.1235	0.2216	1.214	7.113	50001	5000
or[13,12]	1.319	1.248	0.05894	0.1594	0.962	4.598	50001	5000
or[13,13]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000
or[13,14]	2.435	1.558	0.06049	0.7364	2.06	6.715	50001	5000
or[14,1]	1.004	0.4964	0.01563	0.3358	0.9141	2.221	50001	5000
or[14,2]	0.4223	0.2284	0.007802	0.127	0.3757	1.02	50001	5000
or[14,3]	0.569	0.3634	0.01498	0.1326	0.4891	1.487	50001	5000
or[14,4]	0.3876	0.2434	0.008838	0.1019	0.3312	1.015	50001	5000

or[14,5]	0.8089	0.3324	0.01133	0.3149	0.7606	1.589	50001	5000
or[14,6]	1.165	4.4	0.1012	0.01933	0.3631	6.706	50001	5000
or[14,7]	3.878	2.904	0.1498	0.9141	3.102	11.73	50001	5000
or[14,8]	0.4451	0.2371	0.007788	0.1358	0.3954	1.042	50001	5000
or[14,9]	0.5176	0.3545	0.0131	0.1322	0.4306	1.428	50001	5000
or[14,10]	0.7604	0.4965	0.01762	0.2127	0.6404	2.128	50001	5000
or[14,11]	0.8778	1.068	0.03709	0.09612	0.5728	3.446	50001	5000
or[14,12]	0.6302	0.5992	0.02359	0.07555	0.4671	2.198	50001	5000
or[14,13]	0.5553	0.322	0.01296	0.1495	0.4855	1.359	50001	5000
or[14,14]	1.0	0.0	1.414E-12	1.0	1.0	1.0	50001	5000