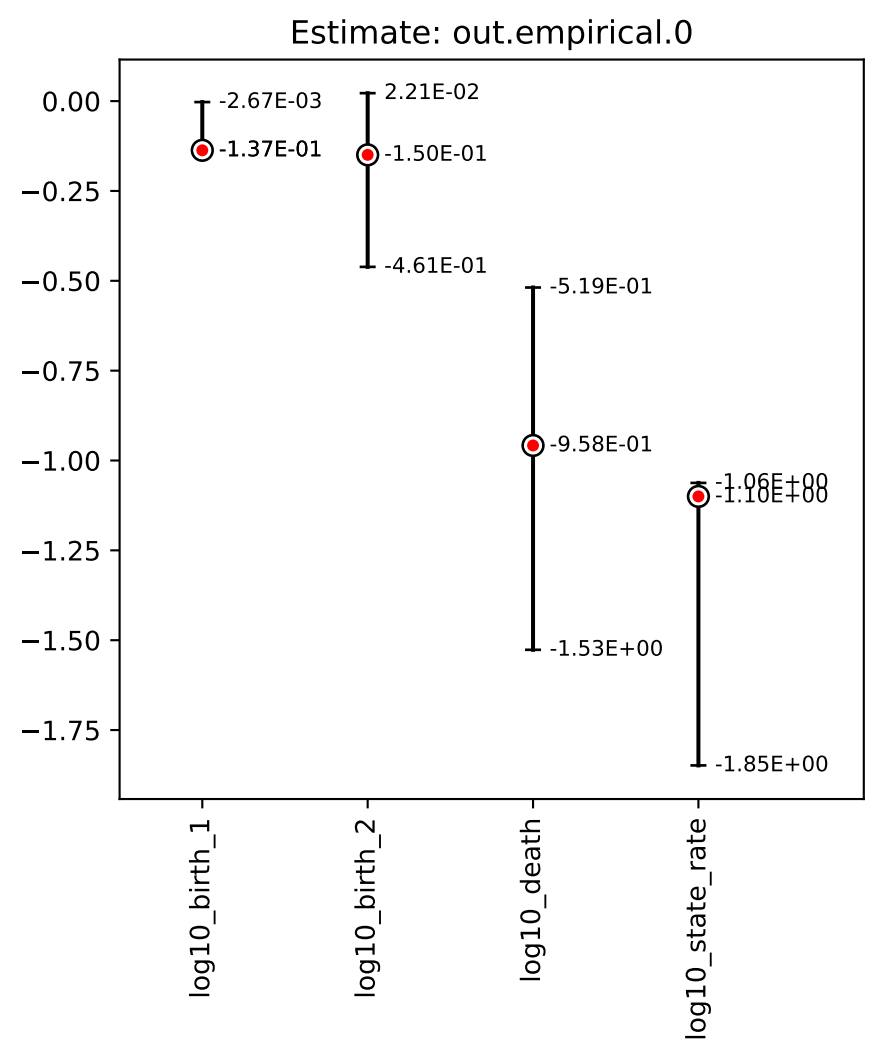
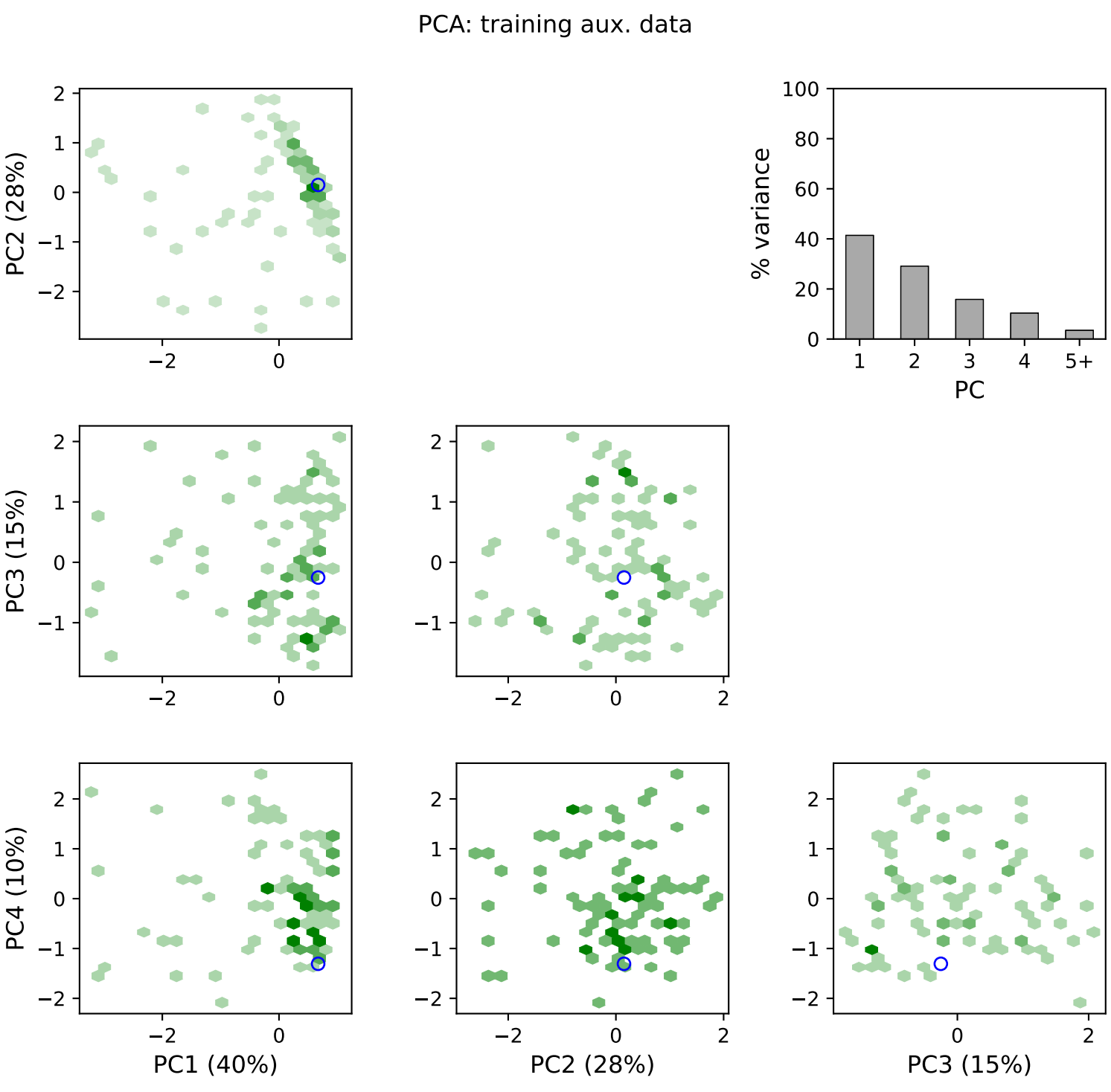
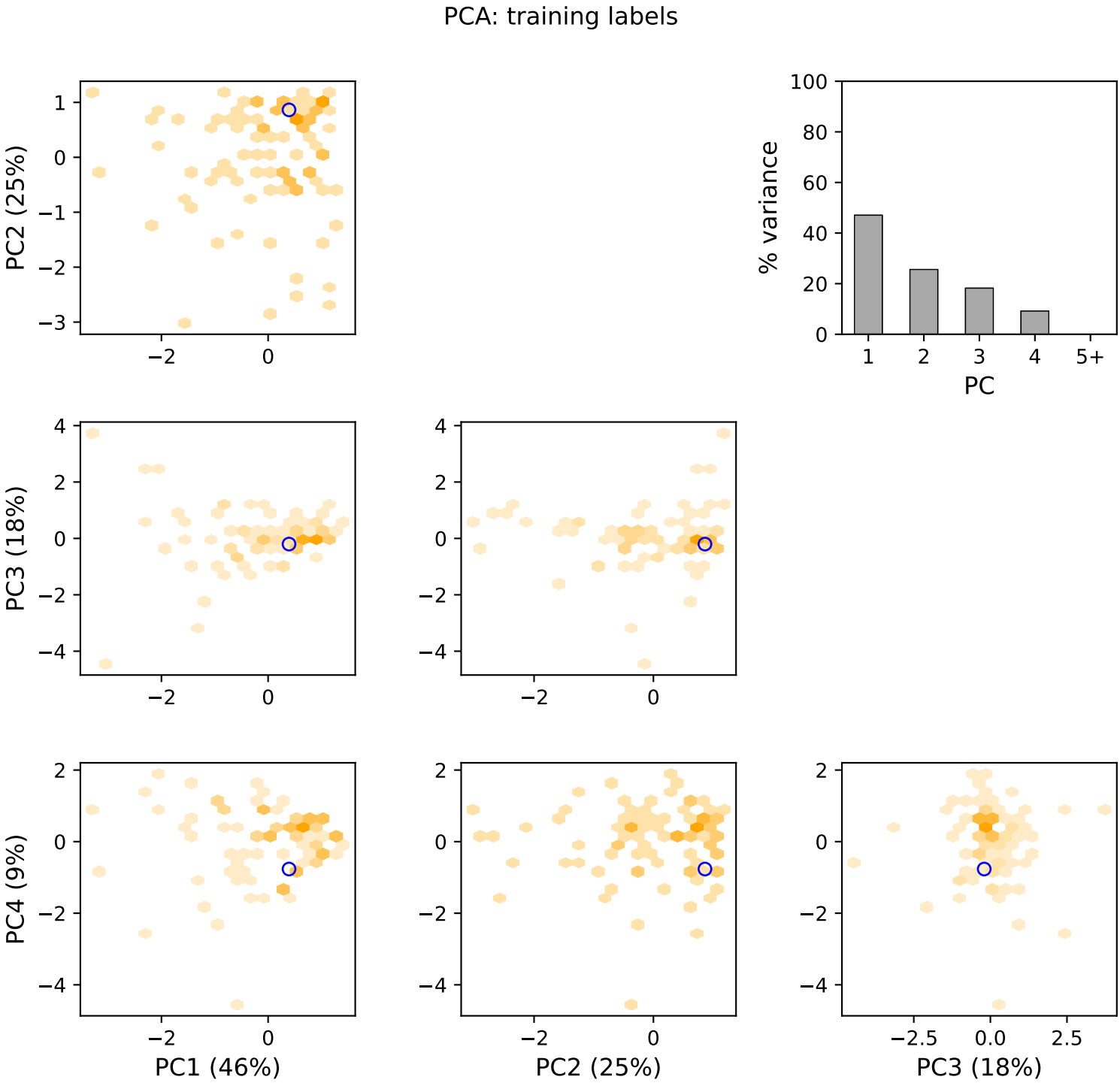
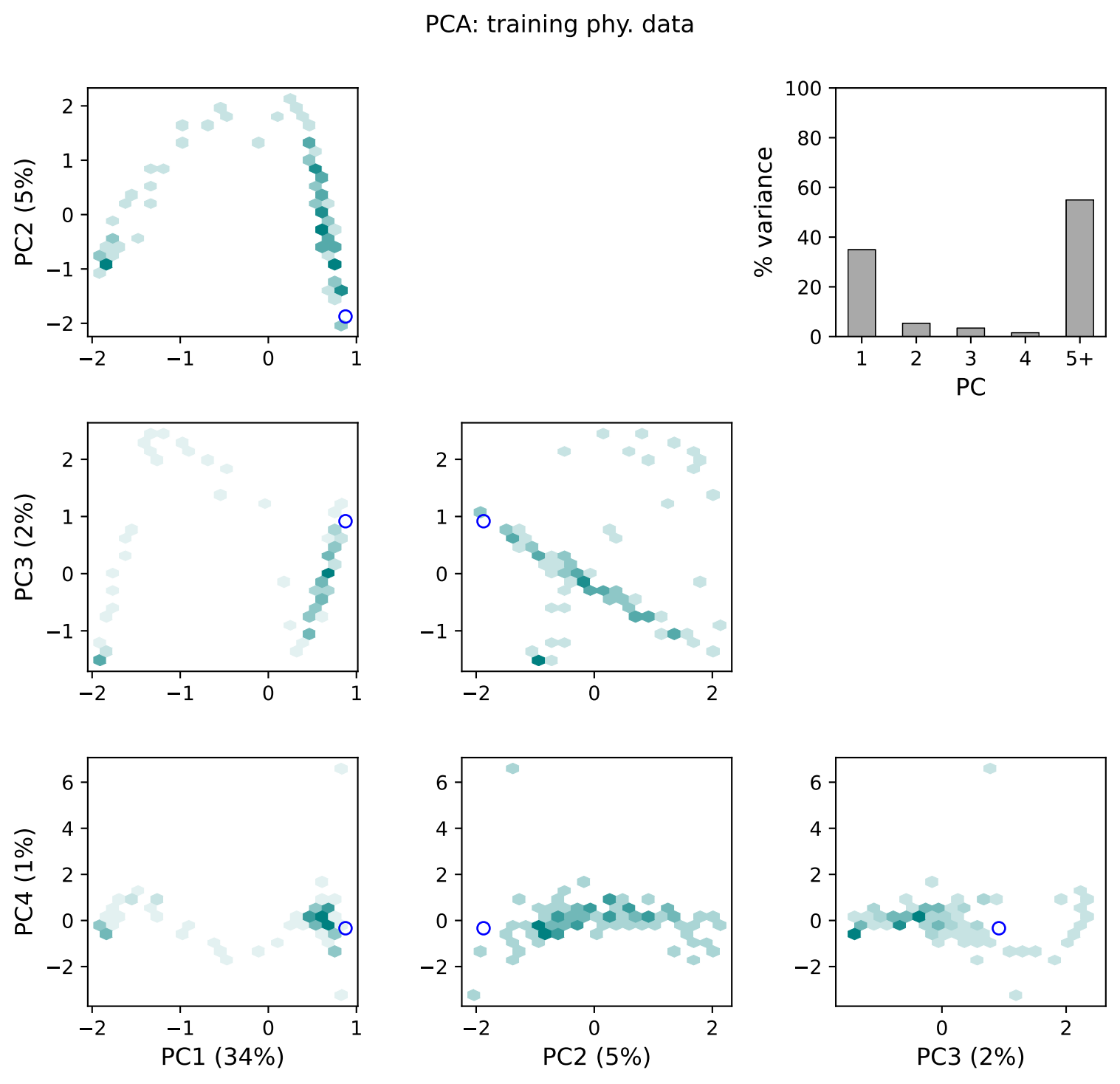
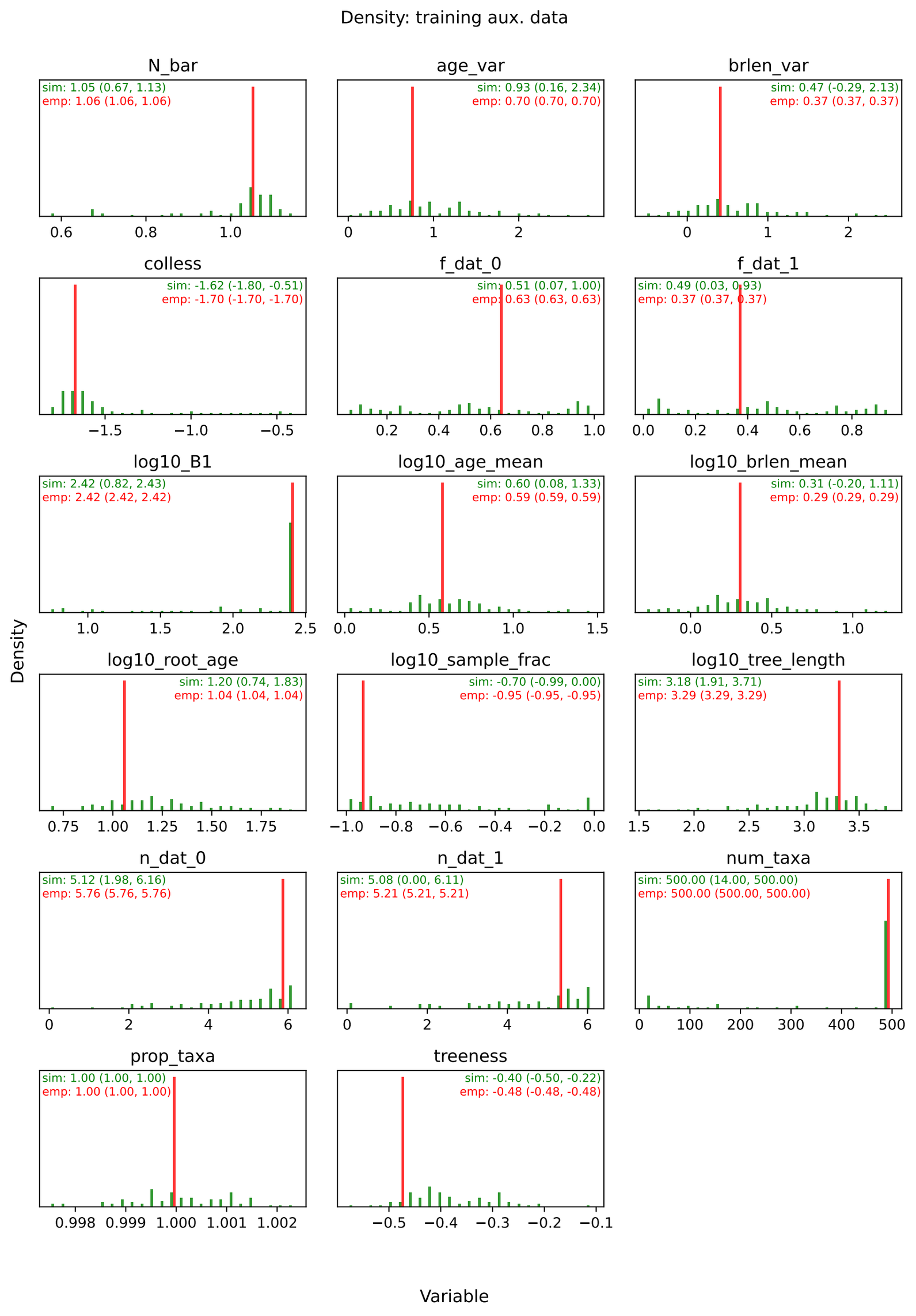
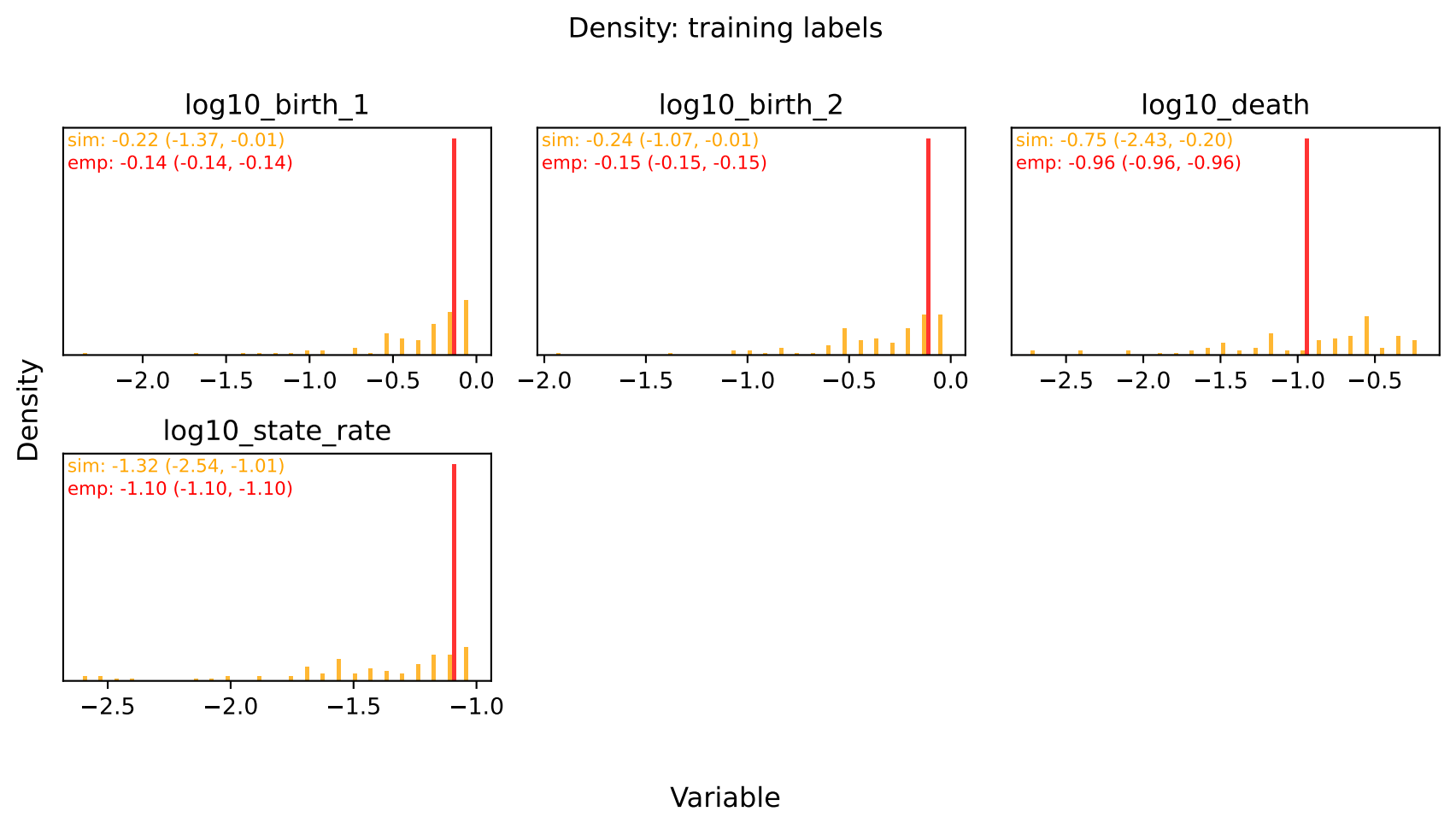

Estimate: out.empirical.0
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
−1.50
−1.75
-2.67E-03
-1.37E-01
2.21E-02
-1.50E-01
-4.61E-01
-5.19E-01
-9.58E-01
-1.53E+00
-1.06E+00
-1.10E+00
-1.85E+00
log10_birth_1
log10_birth_2
log10_death
log10_state_rate

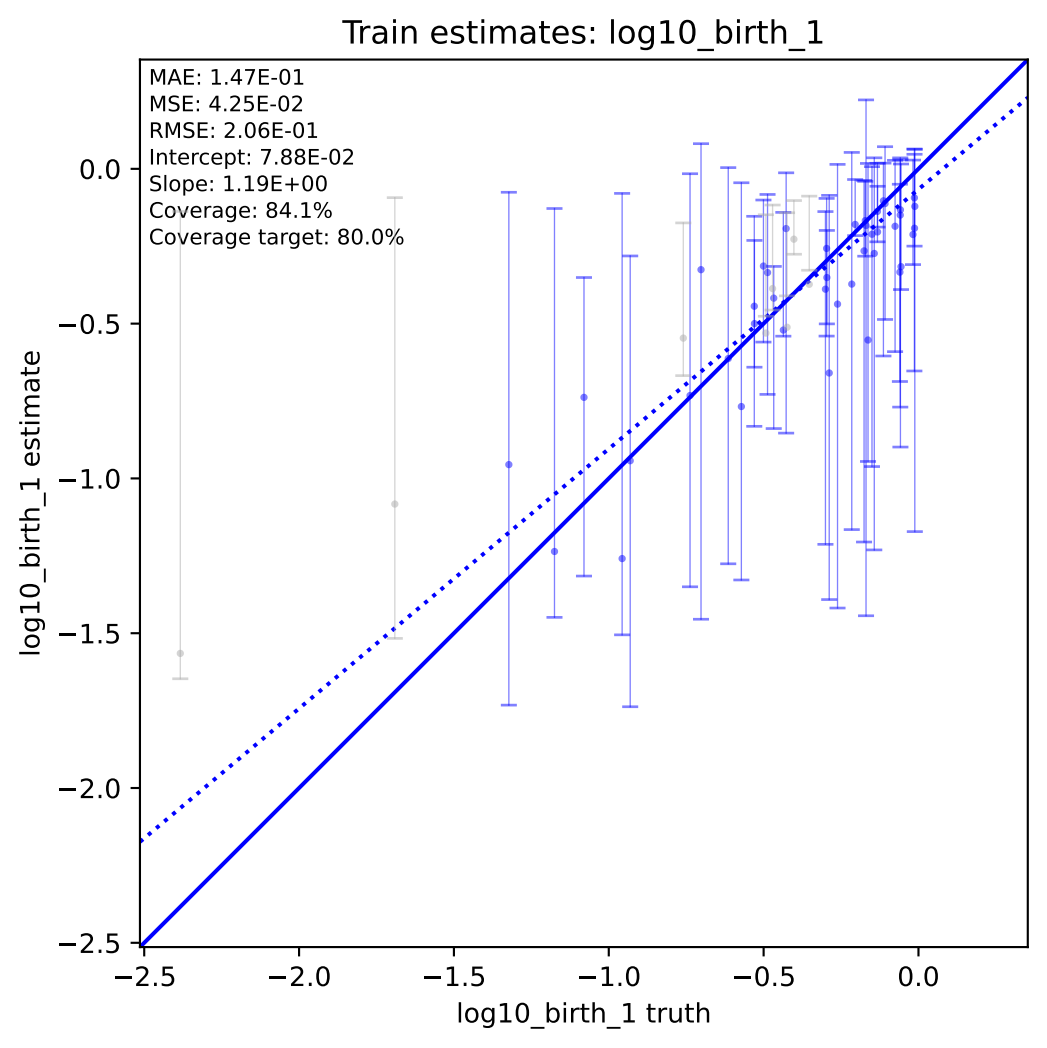

PCA: training aux. data
PC2 (28%)
% variance
PC
PC3 (15%)
PC4 (10%)
PC1 (40%)
PC2 (28%)
PC3 (15%)

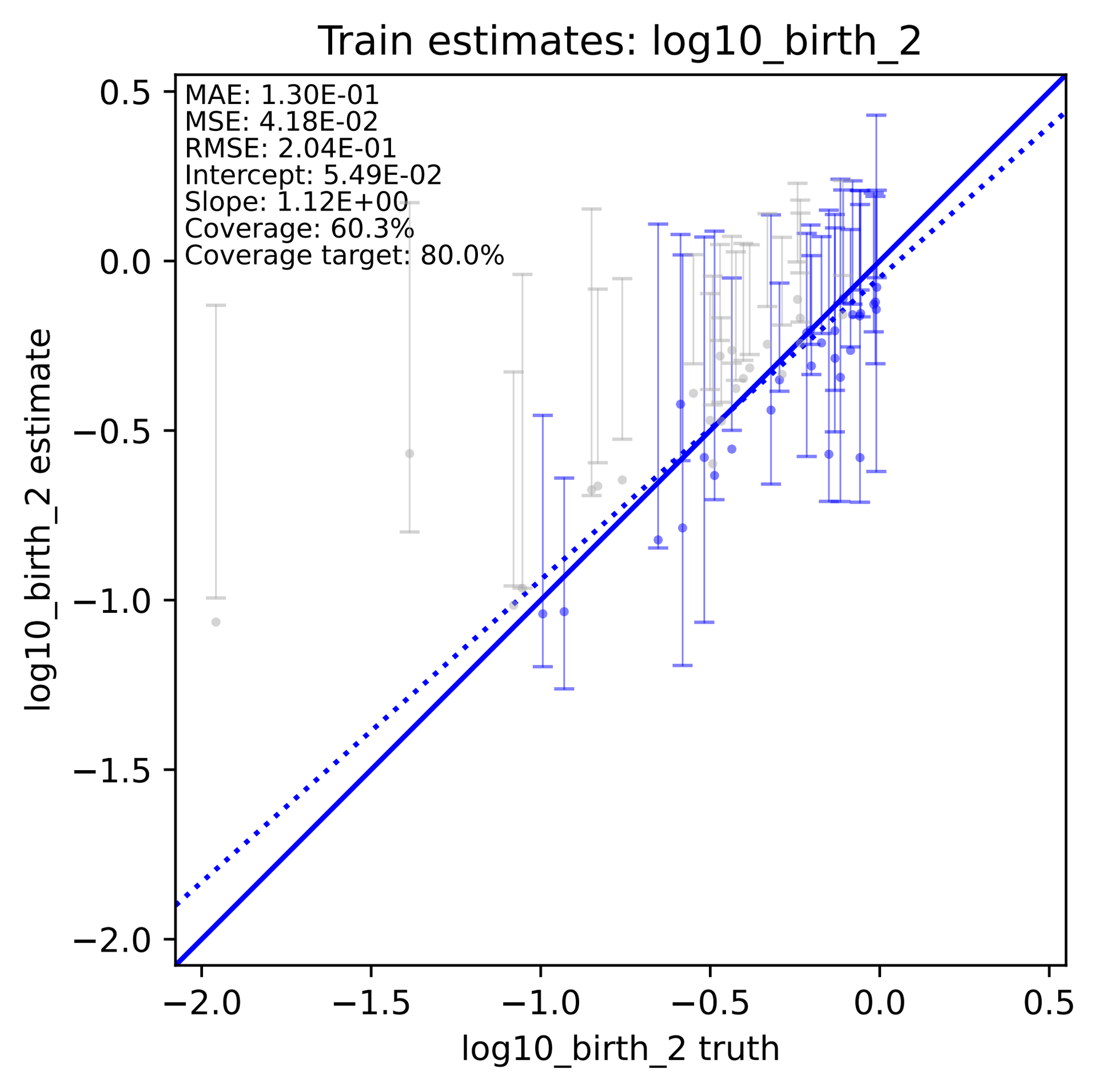

PCA: training labels
PC2 (25%)
% variance
PC
PC3 (18%)
PC4 (9%)
PC1 (46%)
PC2 (25%)
PC3 (18%)

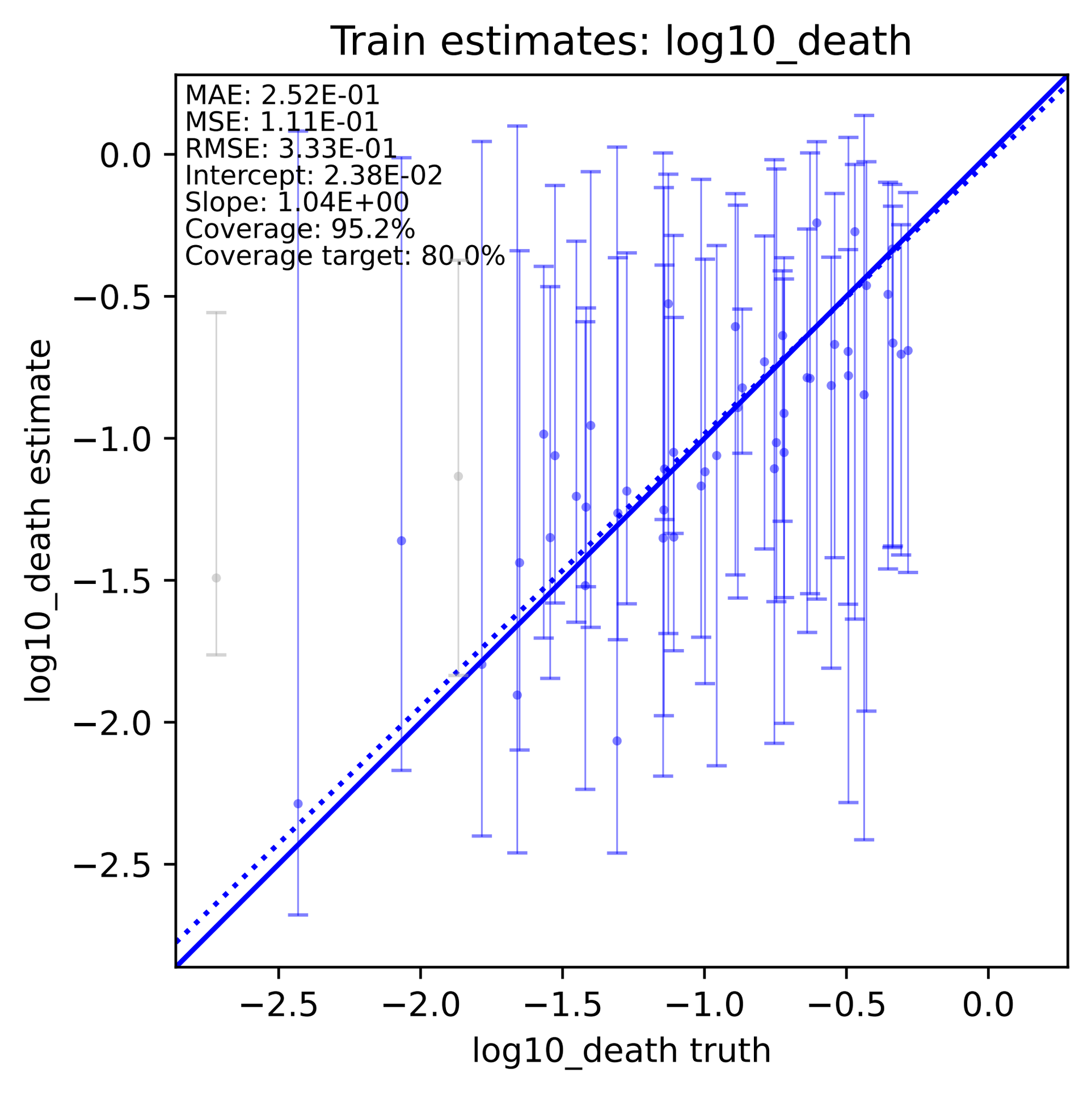

PCA: training phy. data
PC2 (5%)
% variance
PC
PC3 (2%)
PC4 (1%)
PC1 (34%)
PC2 (5%)
PC3 (2%)

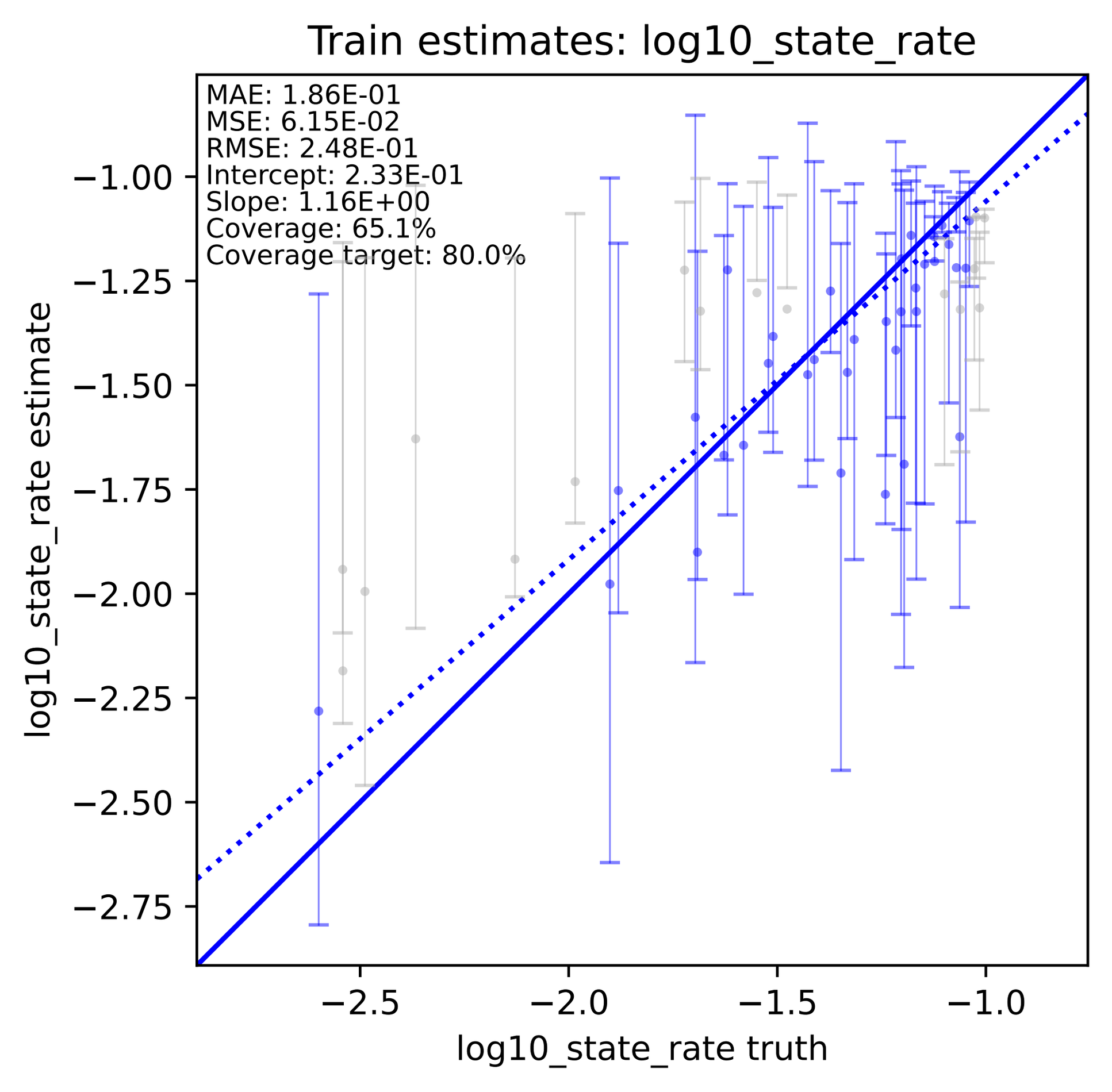

Density: training aux. data
N_bar
sim: 1.05 (0.67, 1.13)
emp: 1.06 (1.06, 1.06)
age_var
sim: 0.93 (0.16, 2.34)
emp: 0.70 (0.70, 0.70)
brlen_var
sim: 0.47 (-0.29, 2.13)
emp: 0.37 (0.37, 0.37)
colless
sim: -1.62 (-1.80, -0.51)
emp: -1.70 (-1.70, -1.70)
f_dat_0
sim: 0.51 (0.07, 1.00)
emp: 0.63 (0.63, 0.63)
f_dat_1
sim: 0.49 (0.03, 0.93)
emp: 0.37 (0.37, 0.37)
log10_B1
sim: 2.42 (0.82, 2.43)
emp: 2.42 (2.42, 2.42)
log10_age_mean
sim: 0.60 (0.08, 1.33)
emp: 0.59 (0.59, 0.59)
log10_brlen_mean
sim: 0.31 (-0.20, 1.11)
emp: 0.29 (0.29, 0.29)
log10_root_age
sim: 1.20 (0.74, 1.83)
emp: 1.04 (1.04, 1.04)
log10_sample_frac
sim: -0.70 (-0.99, 0.00)
emp: -0.95 (-0.95, -0.95)
log10_tree_length
sim: 3.18 (1.91, 3.71)
emp: 3.29 (3.29, 3.29)
n_dat_0
sim: 5.12 (1.98, 6.16)
emp: 5.76 (5.76, 5.76)
n_dat_1
sim: 5.08 (0.00, 6.11)
emp: 5.21 (5.21, 5.21)
num_taxa
sim: 500.00 (14.00, 500.00)
emp: 500.00 (500.00, 500.00)
prop_taxa
sim: 1.00 (1.00, 1.00)
emp: 1.00 (1.00, 1.00)
treeness
sim: -0.40 (-0.50, -0.22)
emp: -0.48 (-0.48, -0.48)
Density
Variable

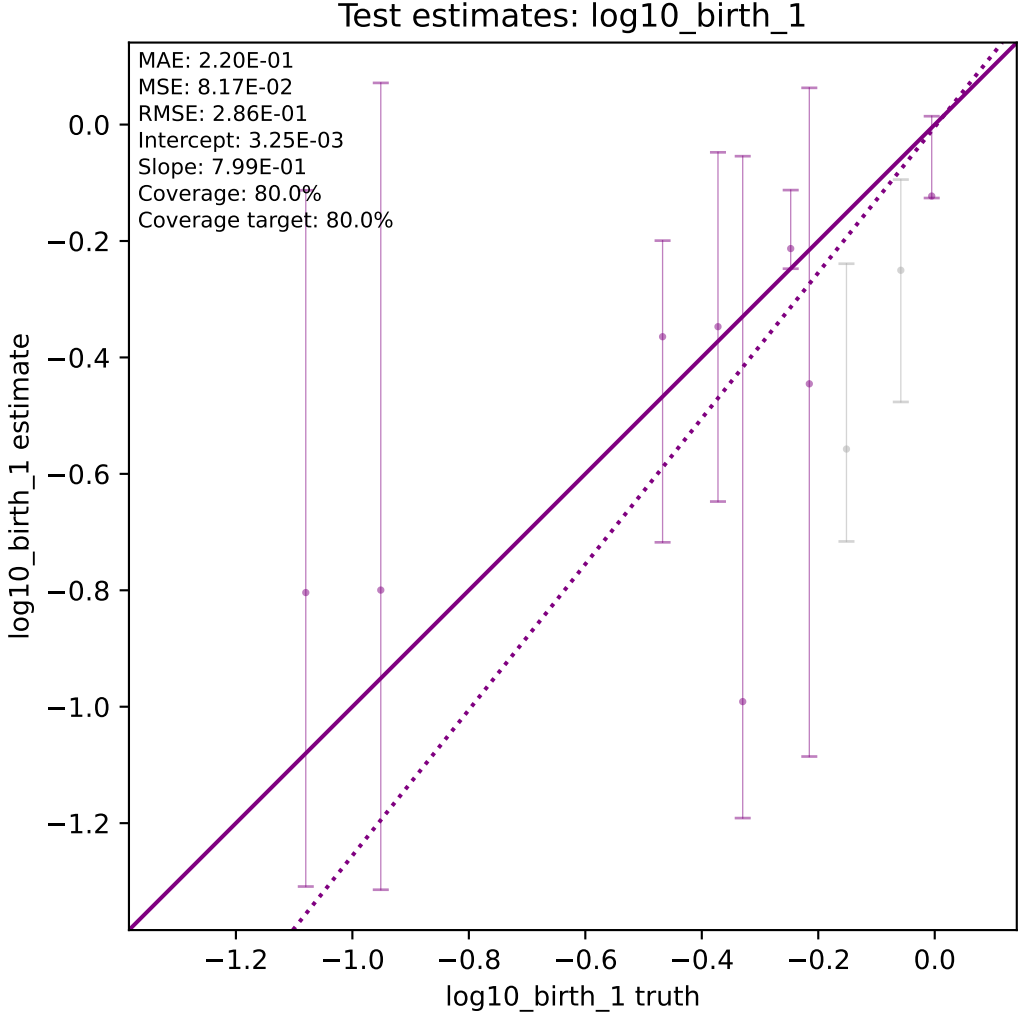

Density: training labels
log10_birth_1
sim: -0.22 (-1.37, -0.01)
emp: -0.14 (-0.14, -0.14)
log10_birth_2
sim: -0.24 (-1.07, -0.01)
emp: -0.15 (-0.15, -0.15)
log10_death
sim: -0.75 (-2.43, -0.20)
emp: -0.96 (-0.96, -0.96)
log10_state_rate
sim: -1.32 (-2.54, -1.01)
emp: -1.10 (-1.10, -1.10)
Density
Variable

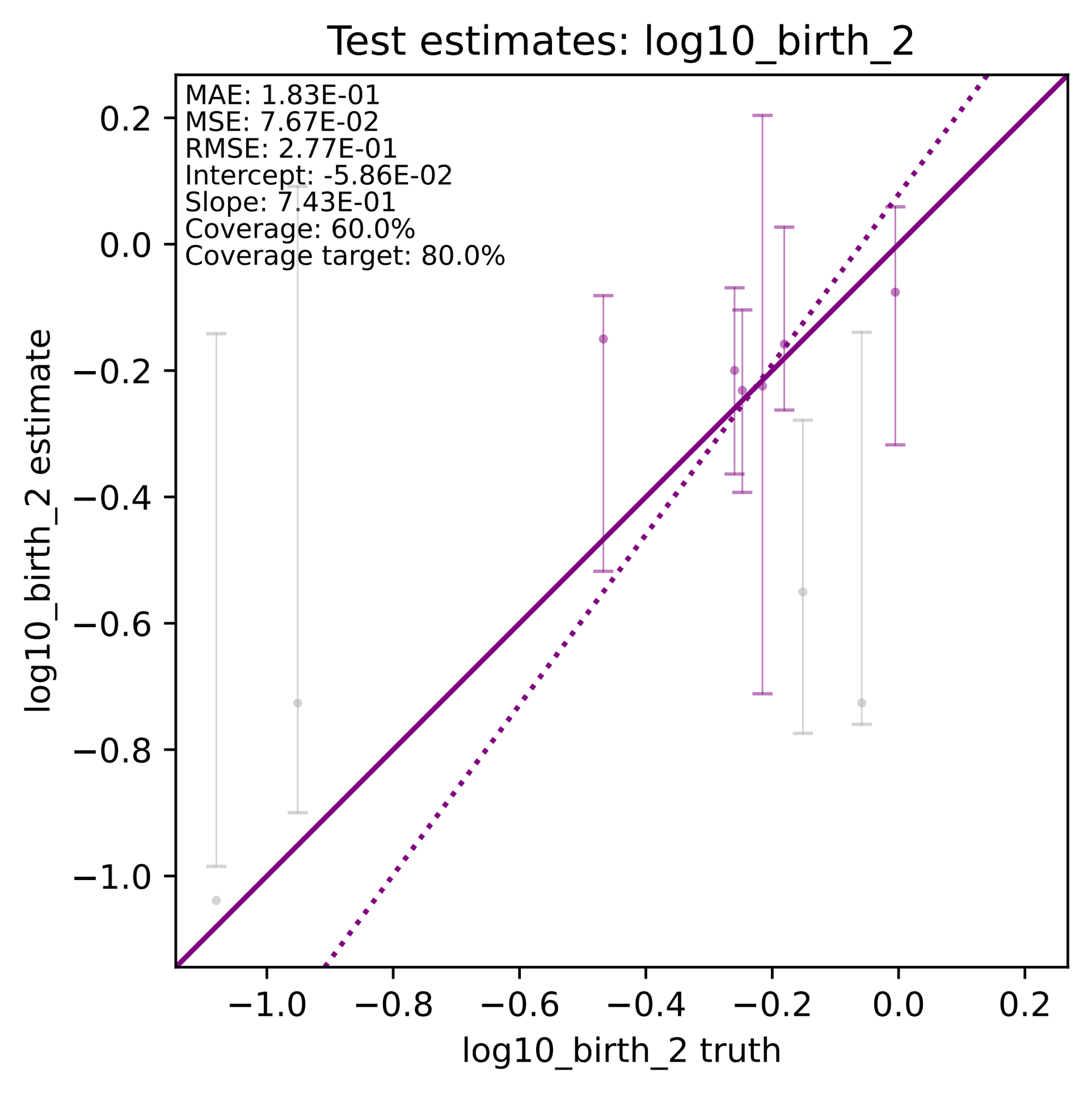

Train estimates: log10_birth_1
MAE: 1.47E-01
MSE: 4.25E-02
RMSE: 2.06E-01
Intercept: 7.88E-02
Slope: 1.19E+00
Coverage: 84.1%
Coverage target: 80.0%
log10_birth_1 estimate
log10_birth_1 truth
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
−2.5
−2.0
−1.5
−1.0
−0.5
0.0

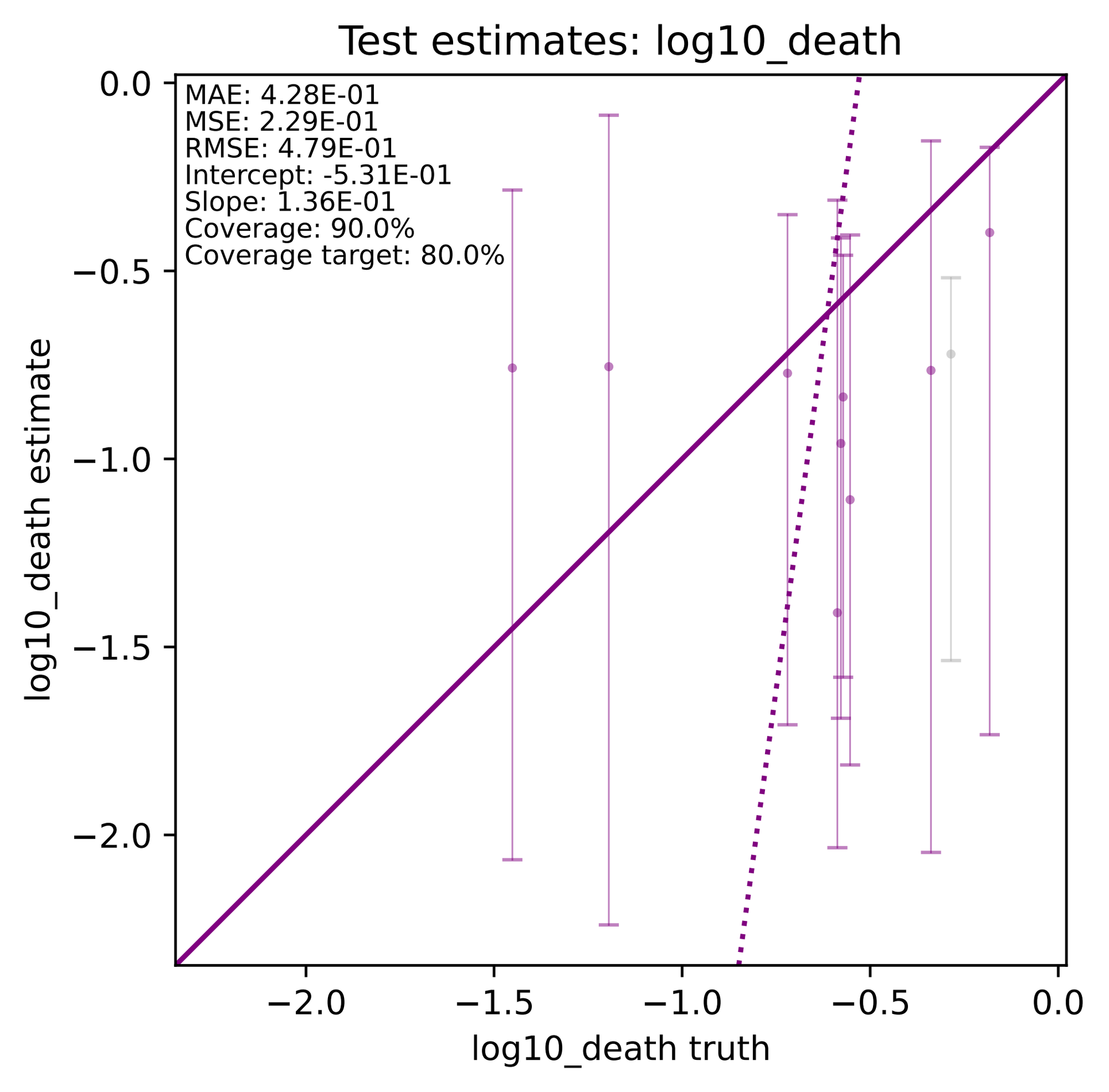

Train estimates: log10_birth_2
MAE: 1.30E-01
MSE: 4.18E-02
RMSE: 2.04E-01
Intercept: 5.49E-02
Slope: 1.12E+00
Coverage: 60.3%
Coverage target: 80.0%
log10_birth_2 estimate
log10_birth_2 truth
0.5
0.0
−0.5
−1.0
−1.5
−2.0
−2.0
−1.5
−1.0
−0.5
0.0
0.5

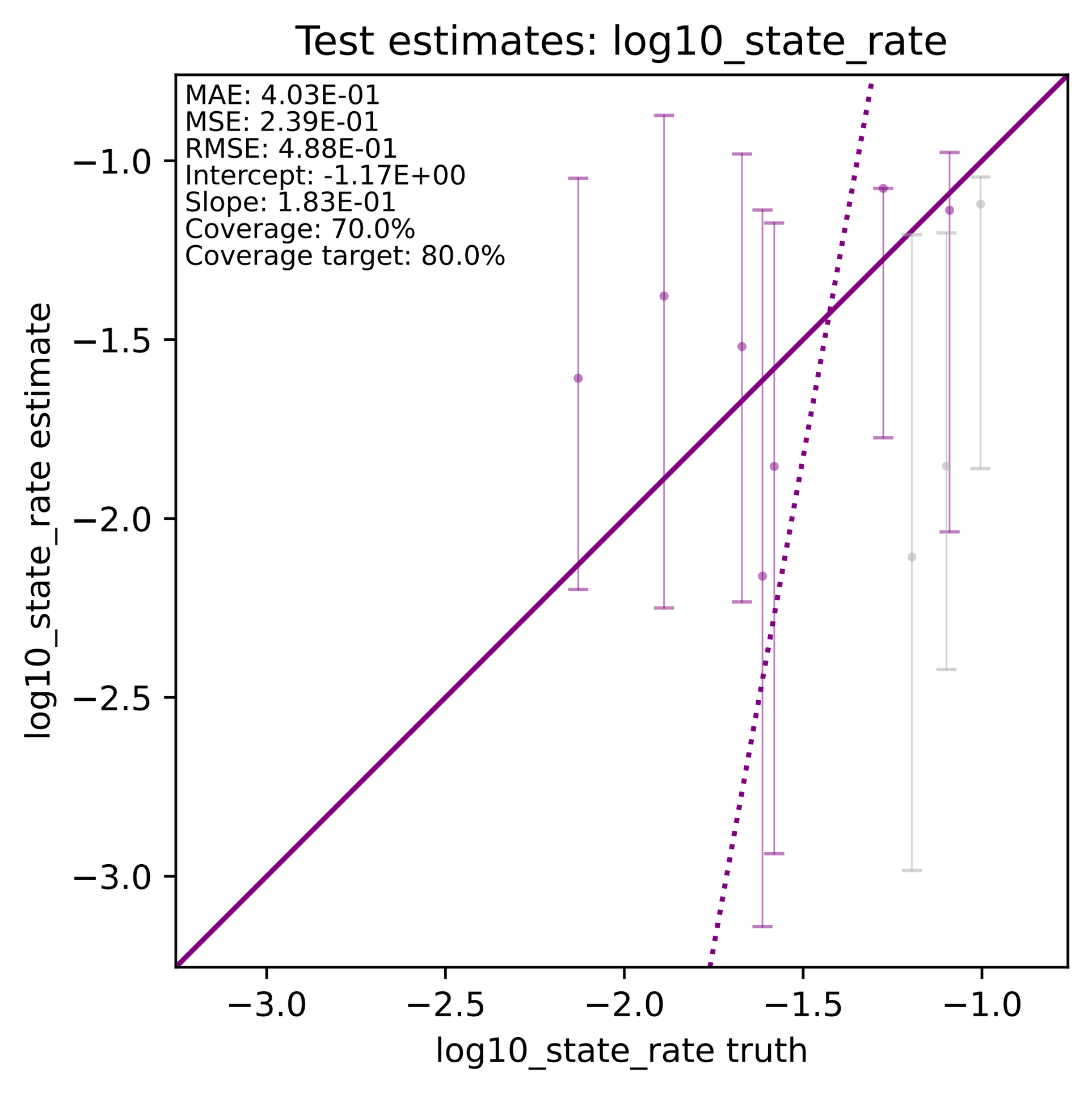

Train estimates: log10_death
MAE: 2.52E-01
MSE: 1.11E-01
RMSE: 3.33E-01
Intercept: 2.38E-02
Slope: 1.04E+00
Coverage: 95.2%
Coverage target: 80.0%
log10_death estimate
log10_death truth
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
−2.5
−2.0
−1.5
−1.0
−0.5
0.0

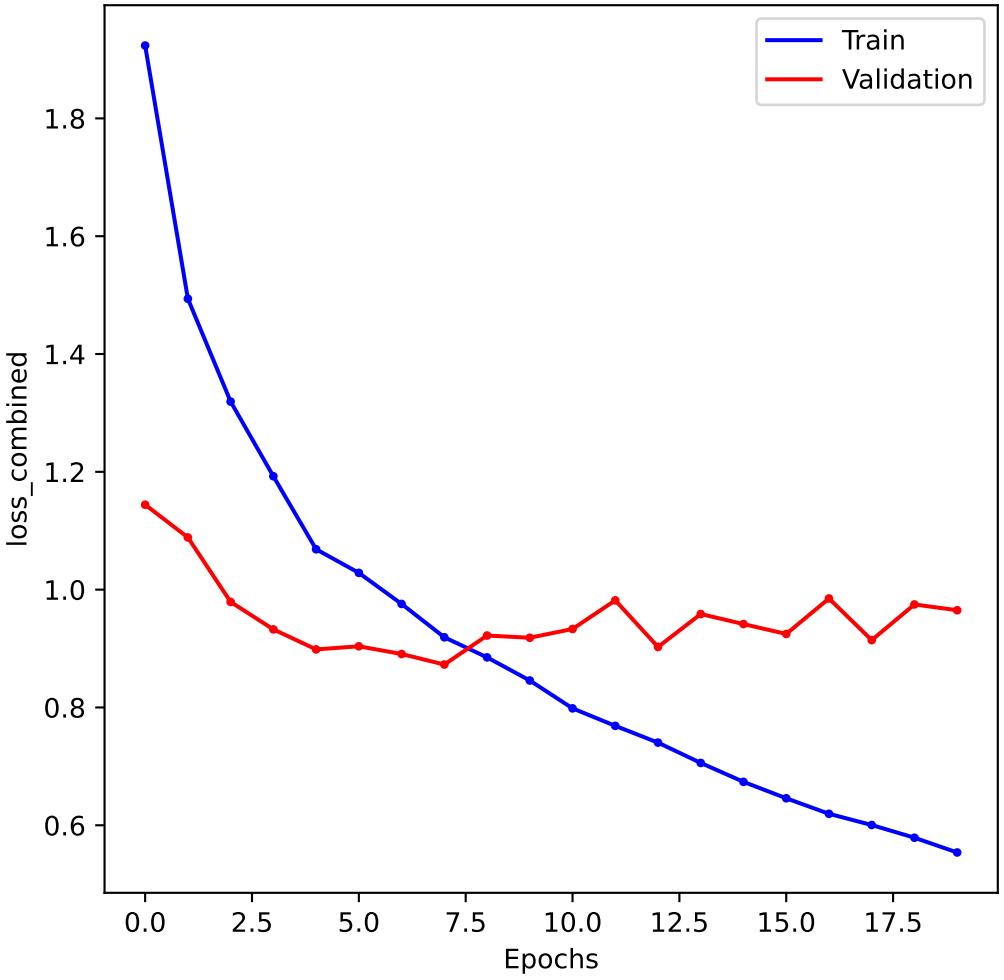

Train estimates: log10_state_rate
MAE: 1.86E-01
MSE: 6.15E-02
RMSE: 2.48E-01
Intercept: 2.33E-01
Slope: 1.16E+00
Coverage: 65.1%
Coverage target: 80.0%
log10_state_rate estimate
log10_state_rate truth
−1.00
−1.25
−1.50
−1.75
−2.00
−2.25
−2.50
−2.75
−2.5
−2.0
−1.5
−1.0

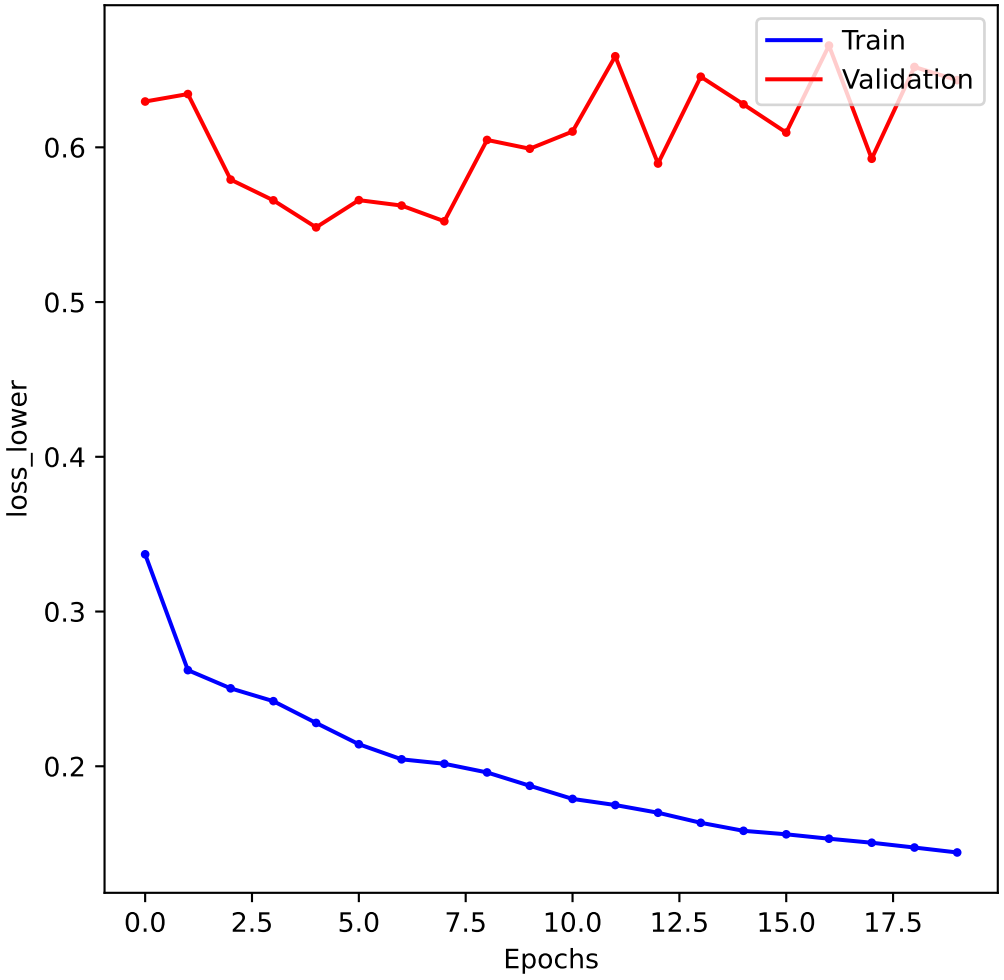

Test estimates: log10_birth_1
MAE: 2.20E-01
MSE: 8.17E-02
RMSE: 2.86E-01
Intercept: 3.25E-03
Slope: 7.99E-01
Coverage: 80.0%
Coverage target: 80.0%
log10_birth_1 estimate
log10_birth_1 truth
0.0
−0.2
−0.4
−0.6
−0.8
−1.0
−1.2

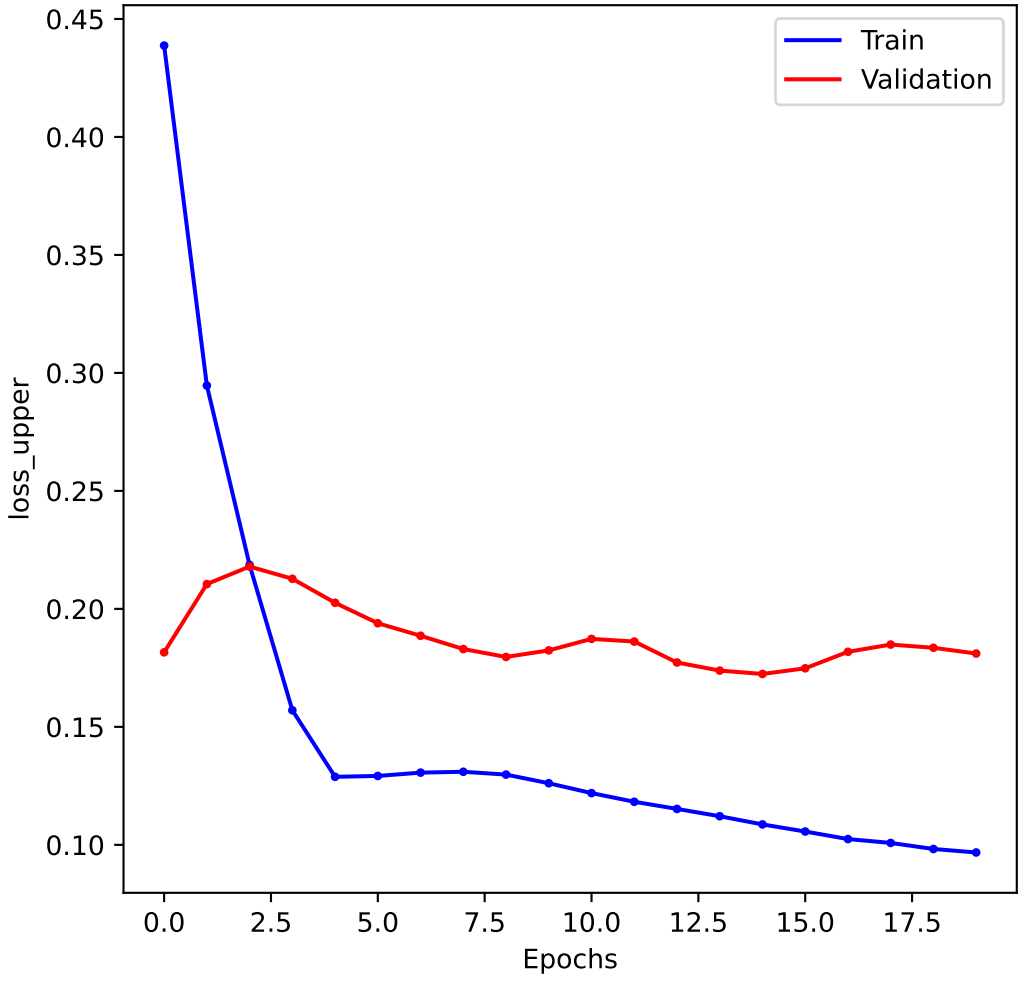

Test estimates: log10_birth_2
MAE: 1.83E-01
MSE: 7.67E-02
RMSE: 2.77E-01
Intercept: -5.86E-02
Slope: 7.43E-01
Coverage: 60.0%
Coverage target: 80.0%
log10_birth_2 estimate
log10_birth_2 truth
0.2
0.0
−0.2
−0.4
−0.6
−0.8
−1.0
−1.0
−0.8
−0.6
−0.4
−0.2
0.0
0.2

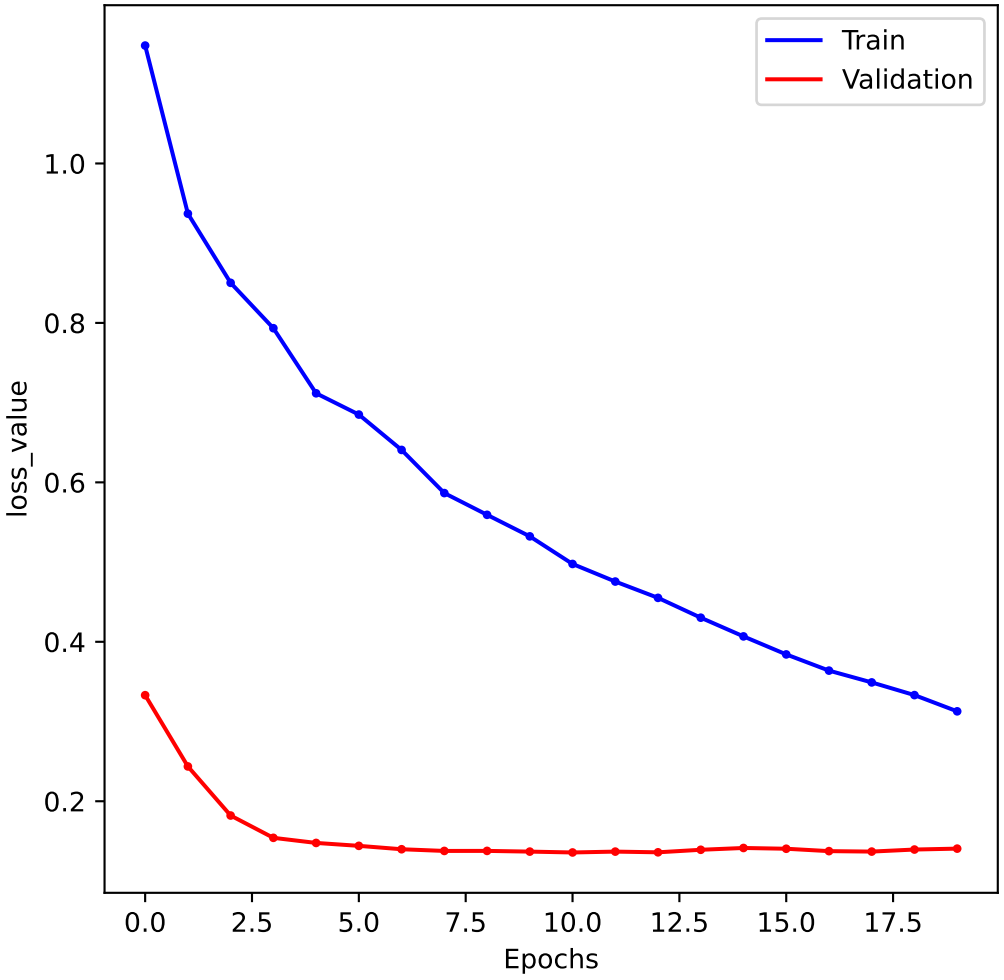

Test estimates: log10_death
MAE: 4.28E-01
MSE: 2.29E-01
RMSE: 4.79E-01
Intercept: -5.31E-01
Slope: 1.36E-01
Coverage: 90.0%
Coverage target: 80.0%
log10_death estimate
log10_death truth
0.0
−0.5
−1.0
−1.5
−2.0
−2.0
−1.5
−1.0
−0.5
0.0

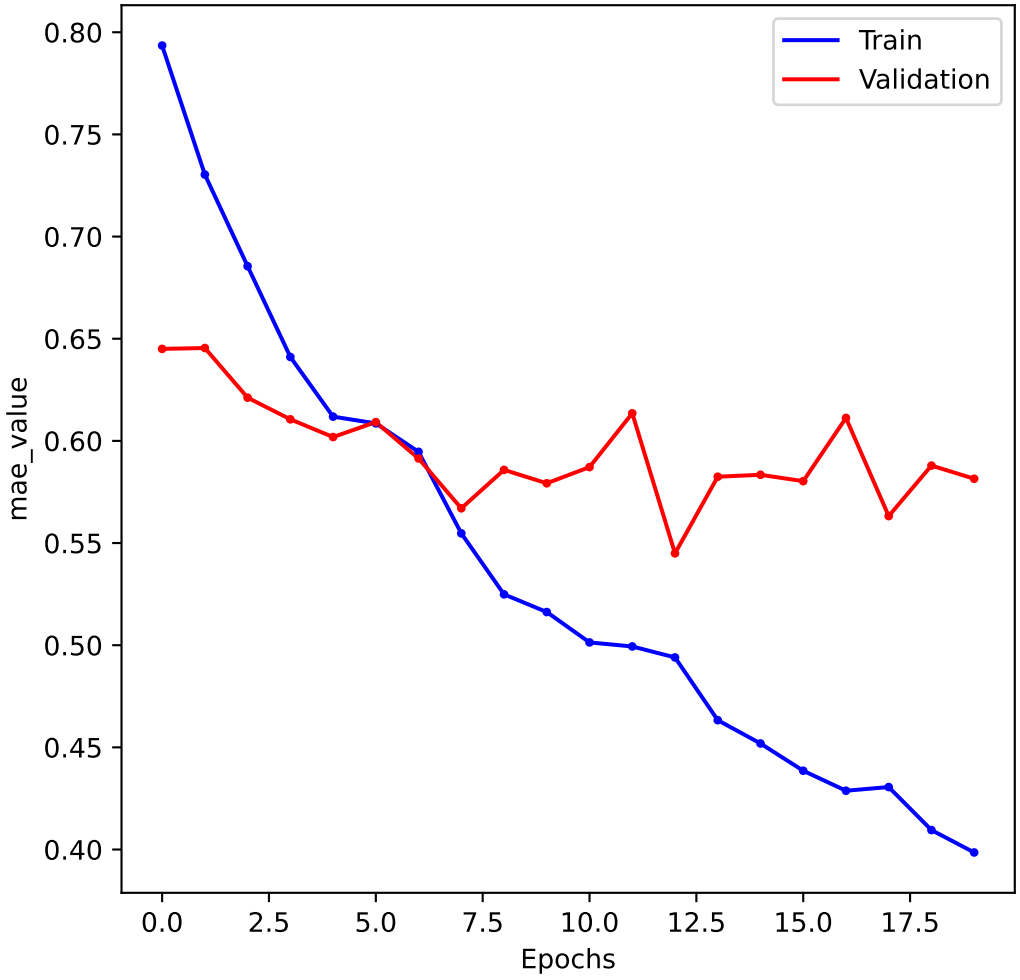

Test estimates: log10_state_rate
MAE: 4.03E-01
MSE: 2.39E-01
RMSE: 4.88E-01
Intercept: -1.17E+00
Slope: 1.83E-01
Coverage: 70.0%
Coverage target: 80.0%
log10_state_rate estimate
log10_state_rate truth
−1.0
−1.5
−2.0
−2.5
−3.0
−3.0
−2.5
−2.0
−1.5
−1.0

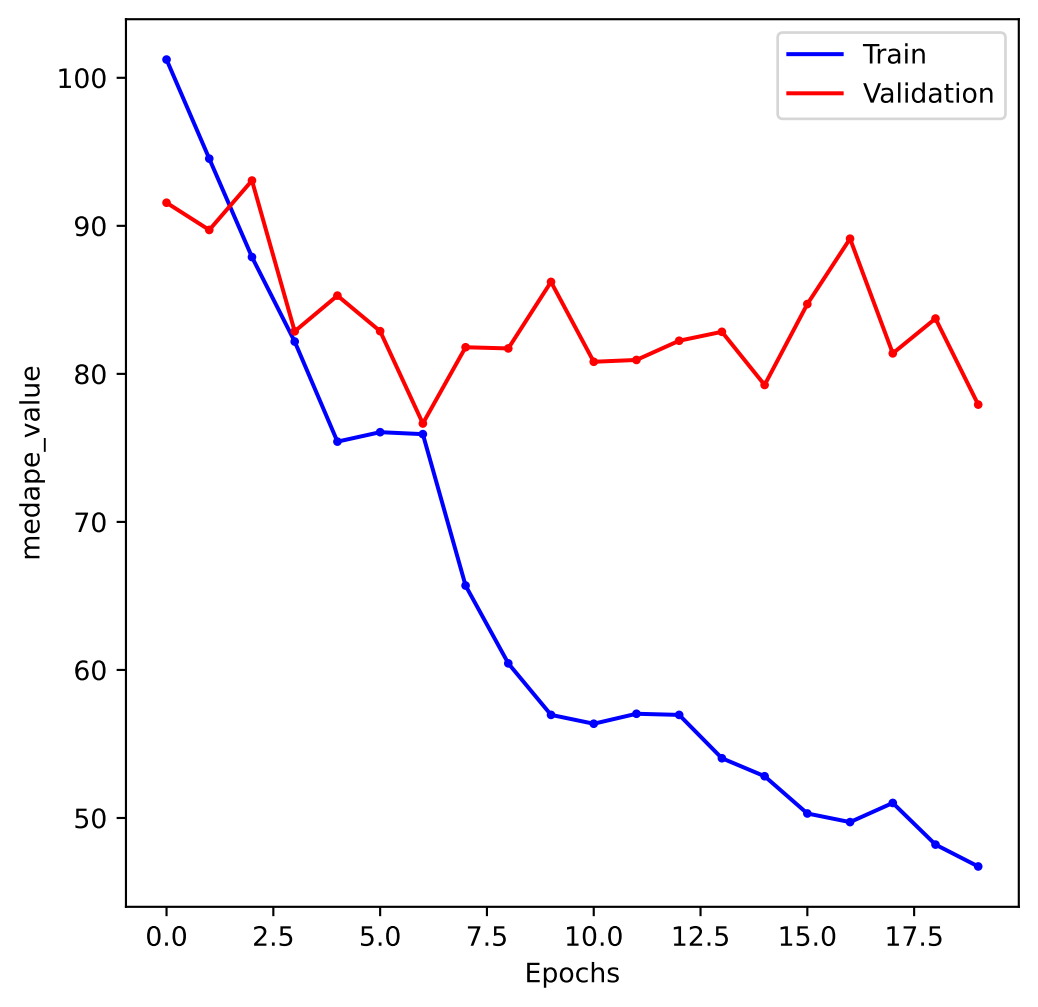

Train
Validation
loss_combined
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
Epochs

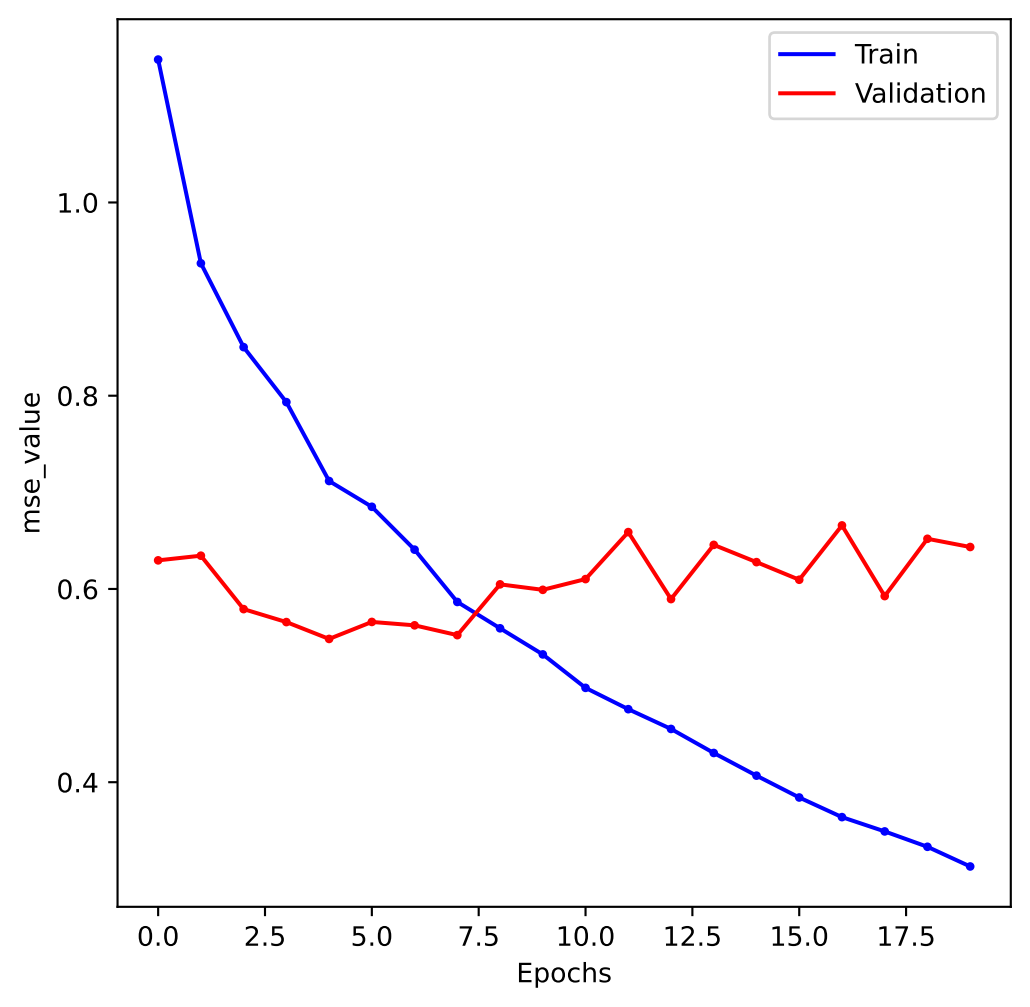

Train
Validation
loss_lower
0.6
0.5
0.4
0.3
0.2
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
Epochs

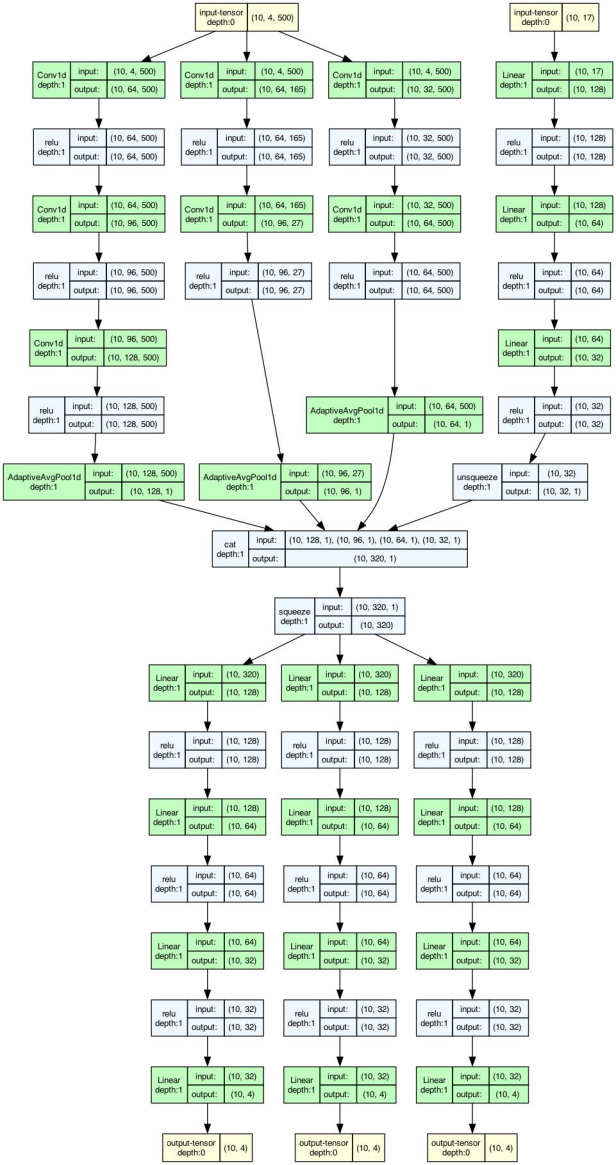

Train
Validation
loss_upper
Epochs
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5


Train
Validation
loss_value
1.0
0.8
0.6
0.4
0.2
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
Epochs


Train
Validation
mae_value
Epochs
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5


Train
Validation
medape_value
Epochs
100
90
80
70
60
50
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5


Train
Validation
mse_value
1.0
0.8
0.6
0.4
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
Epochs


input-tensor depth:0
(10, 4, 500)
input-tensor depth:0
(10, 17)
Conv1d depth:1
input: (10, 4, 500)
output: (10, 64, 500)
Conv1d depth:1
input: (10, 4, 500)
output: (10, 64, 165)
Conv1d depth:1
input: (10, 4, 500)
output: (10, 32, 500)
Linear depth:1
input: (10, 17)
output: (10, 128)
relu depth:1
input: (10, 64, 500)
output: (10, 64, 500)
relu depth:1
input: (10, 64, 165)
output: (10, 64, 165)
relu depth:1
input: (10, 32, 500)
output: (10, 32, 500)
relu depth:1
input: (10, 128)
output: (10, 128)
Conv1d depth:1
input: (10, 64, 500)
output: (10, 96, 500)
Conv1d depth:1
input: (10, 64, 165)
output: (10, 96, 27)
Conv1d depth:1
input: (10, 32, 500)
output: (10, 64, 500)
Linear depth:1
input: (10, 128)
output: (10, 64)
relu depth:1
input: (10, 96, 500)
output: (10, 96, 500)
relu depth:1
input: (10, 96, 27)
output: (10, 96, 27)
relu depth:1
input: (10, 64, 500)
output: (10, 64, 500)
relu depth:1
input: (10, 64)
output: (10, 64)
Conv1d depth:1
input: (10, 96, 500)
output: (10, 128, 500)
Linear depth:1
input: (10, 64)
output: (10, 32)
relu depth:1
input: (10, 128, 500)
output: (10, 128, 500)
AdaptiveAvgPool1d depth:1
input: (10, 64, 500)
output: (10, 64, 1)
relu depth:1
input: (10, 32)
output: (10, 32)
AdaptiveAvgPool1d depth:1
input: (10, 128, 500)
output: (10, 128, 1)
AdaptiveAvgPool1d depth:1
input: (10, 96, 27)
output: (10, 96, 1)
unsqueeze depth:1
input: (10, 32)
output: (10, 32, 1)
cat depth:1
input: (10, 128, 1), (10, 96, 1), (10, 64, 1), (10, 32, 1)
output: (10, 320, 1)
squeeze depth:1
input: (10, 320, 1)
output: (10, 320)
Linear depth:1
input: (10, 320)
output: (10, 128)
Linear depth:1
input: (10, 320)
output: (10, 128)
Linear depth:1
input: (10, 320)
output: (10, 128)
relu depth:1
input: (10, 128)
output: (10, 128)
relu depth:1
input: (10, 128)
output: (10, 128)
relu depth:1
input: (10, 128)
output: (10, 128)
Linear depth:1
input: (10, 128)
output: (10, 64)
Linear depth:1
input: (10, 128)
output: (10, 64)
Linear depth:1
input: (10, 128)
output: (10, 64)
relu depth:1
input: (10, 64)
output: (10, 64)
relu depth:1
input: (10, 64)
output: (10, 64)
relu depth:1
input: (10, 64)
output: (10, 64)
Linear depth:1
input: (10, 64)
output: (10, 32)
Linear depth:1
input: (10, 64)
output: (10, 32)
Linear depth:1
input: (10, 64)
output: (10, 32)
relu depth:1
input: (10, 32)
output: (10, 32)
relu depth:1
input: (10, 32)
output: (10, 32)
relu depth:1
input: (10, 32)
output: (10, 32)
Linear depth:1
input: (10, 32)
output: (10, 4)
Linear depth:1
input: (10, 32)
output: (10, 4)
Linear depth:1
input: (10, 32)
output: (10, 4)
output-tensor depth:0
(10, 4)
output-tensor depth:0
(10, 4)
output-tensor depth:0
(10, 4)