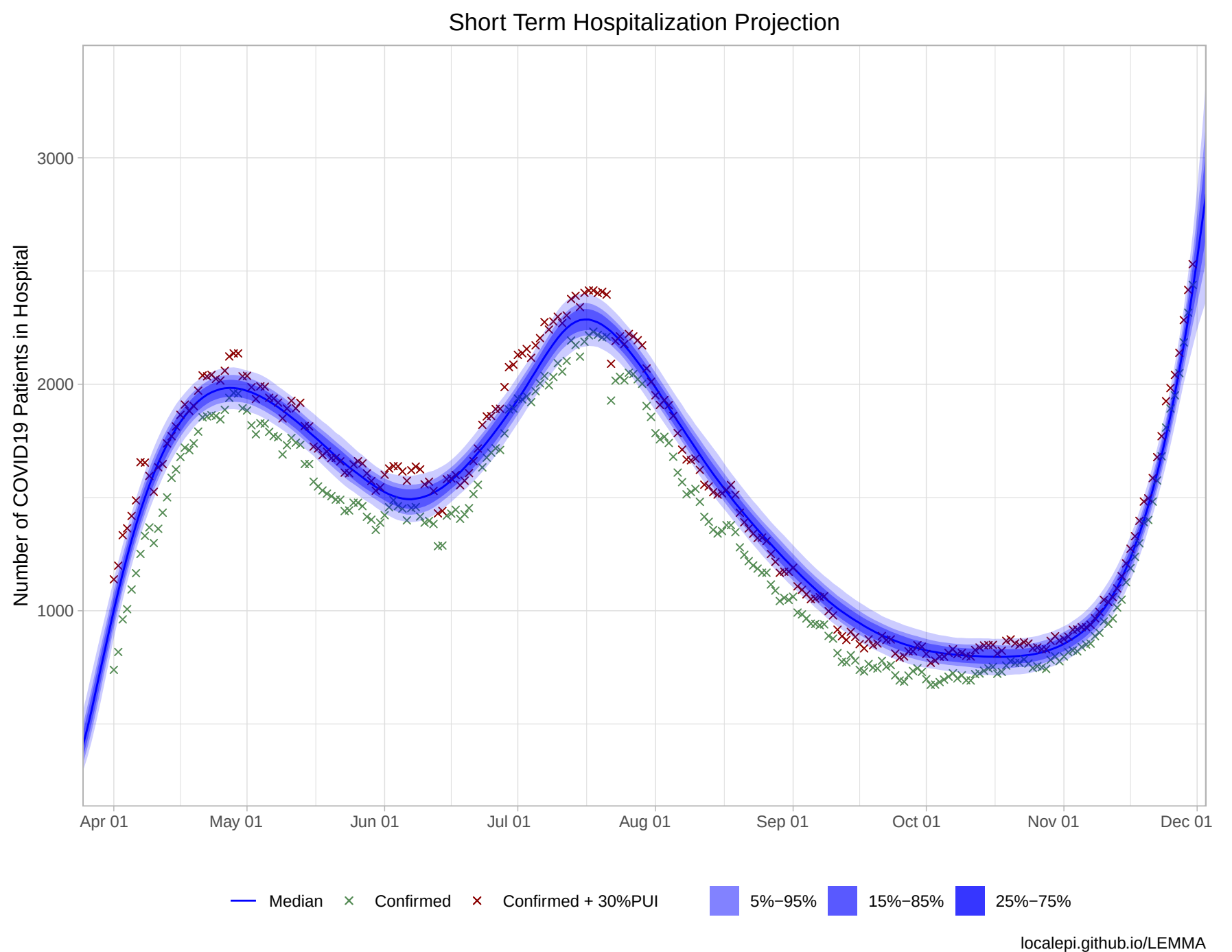
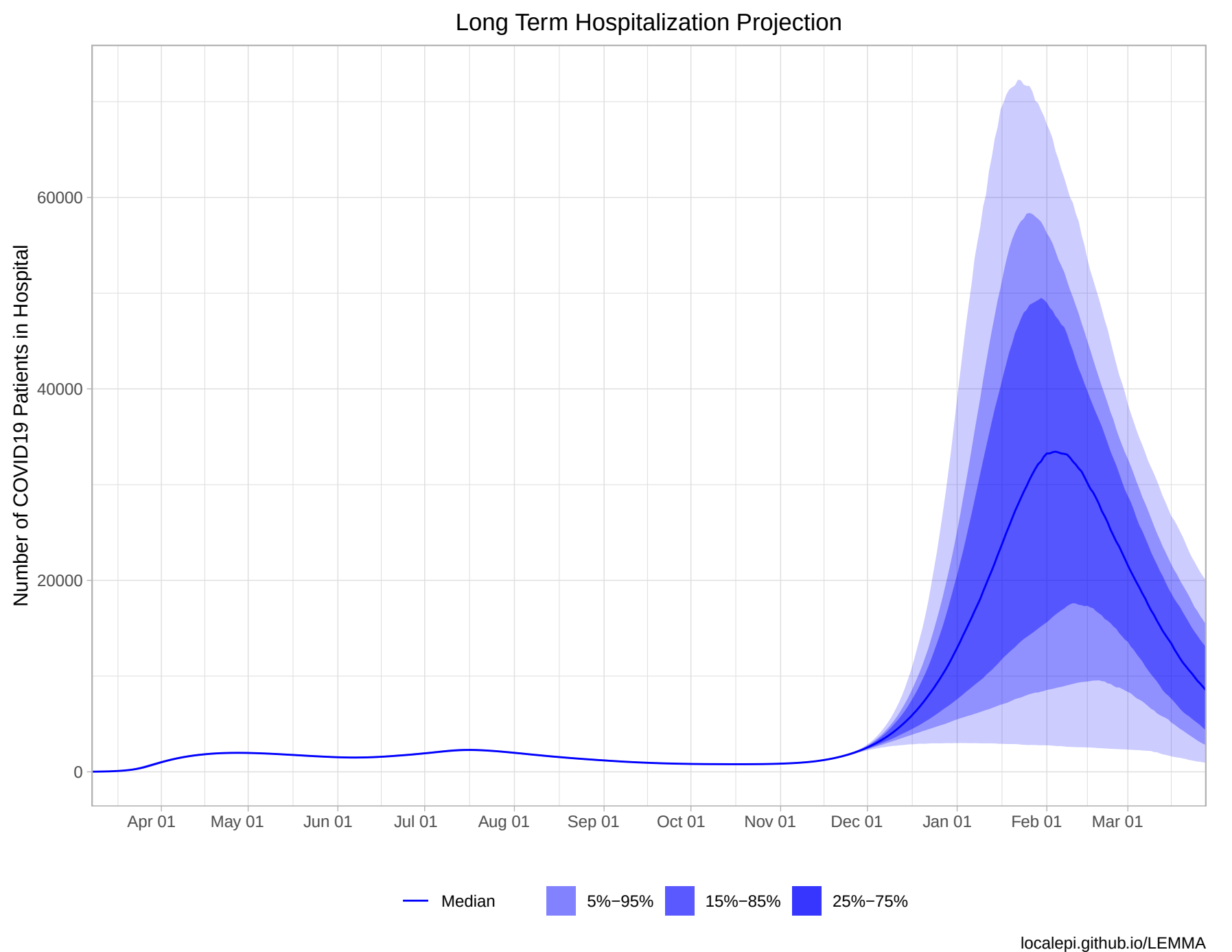
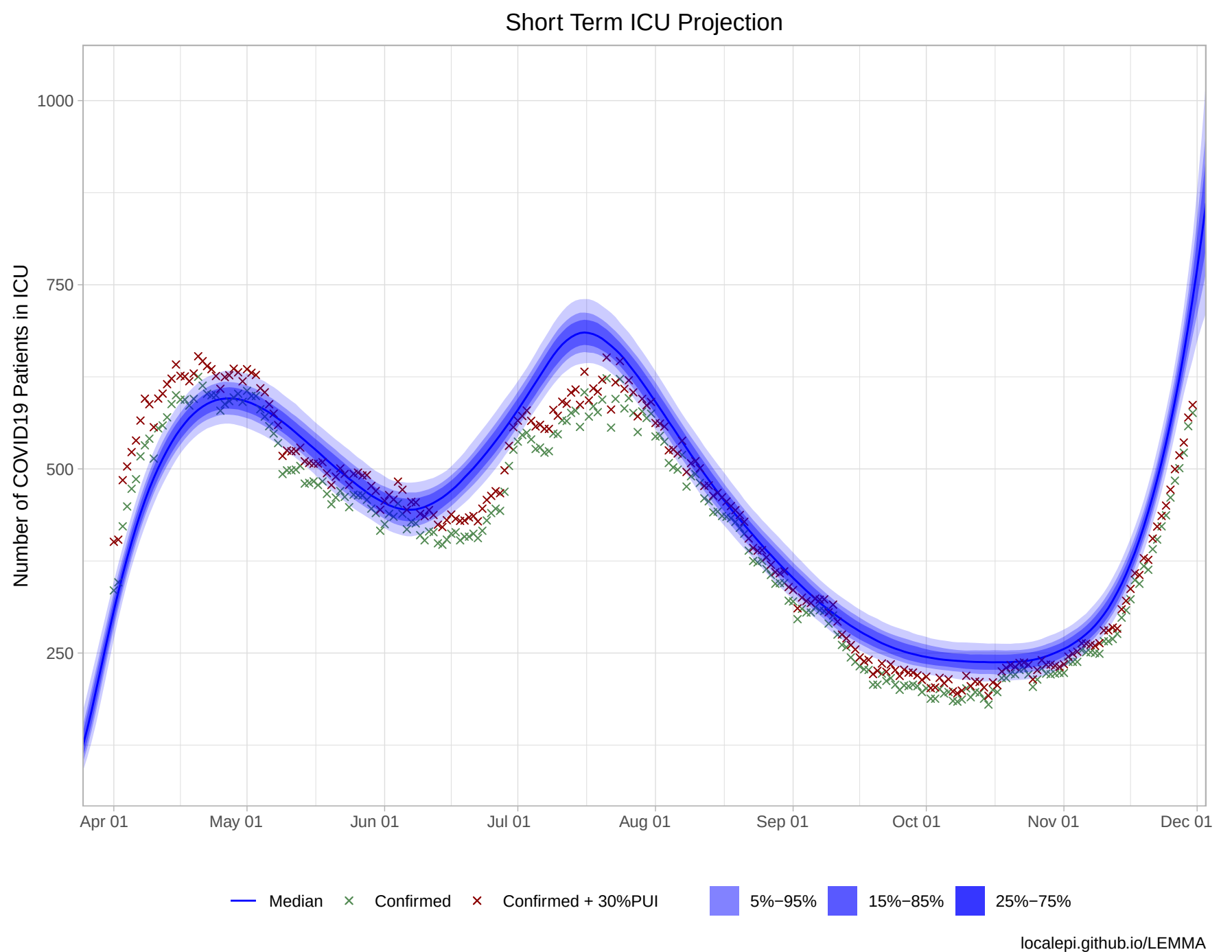
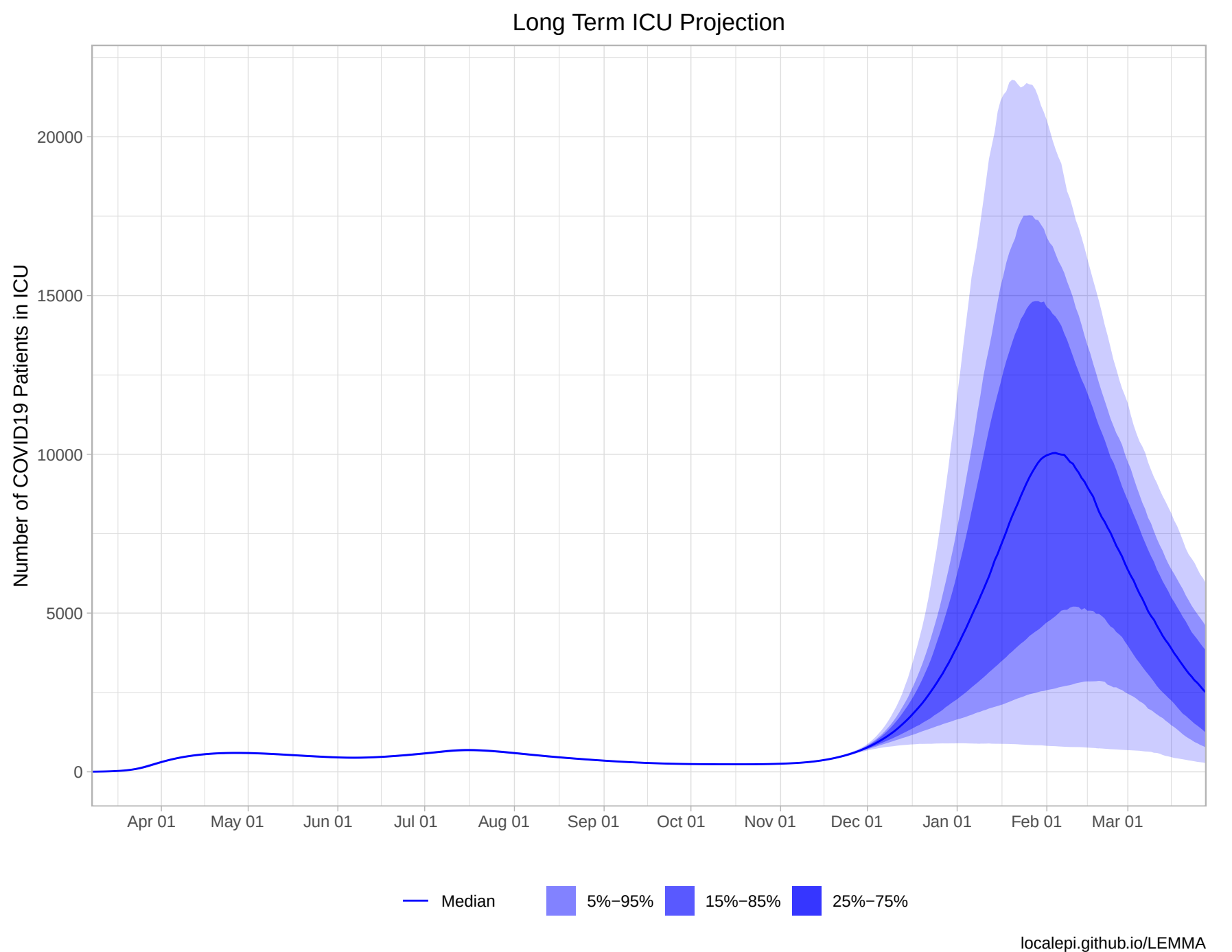
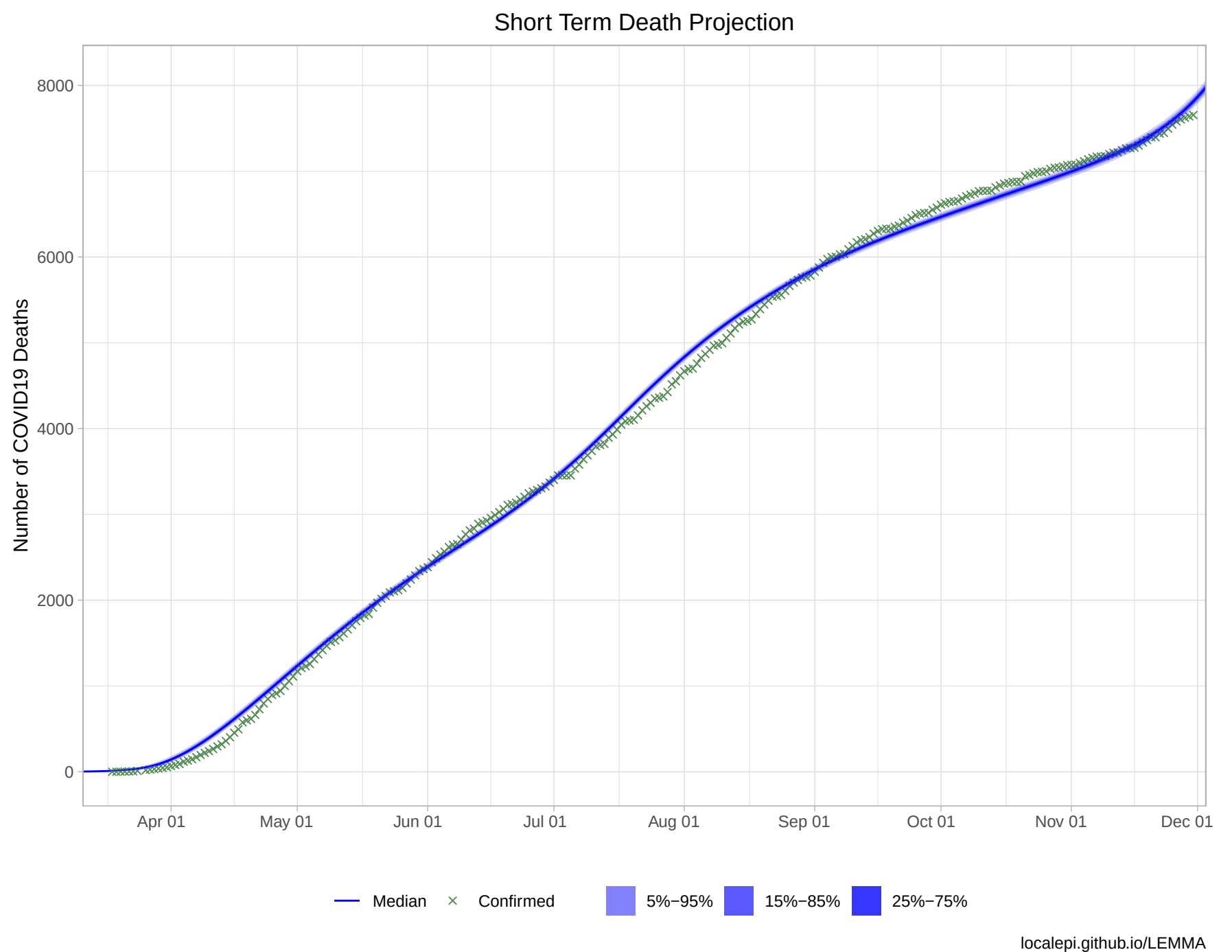
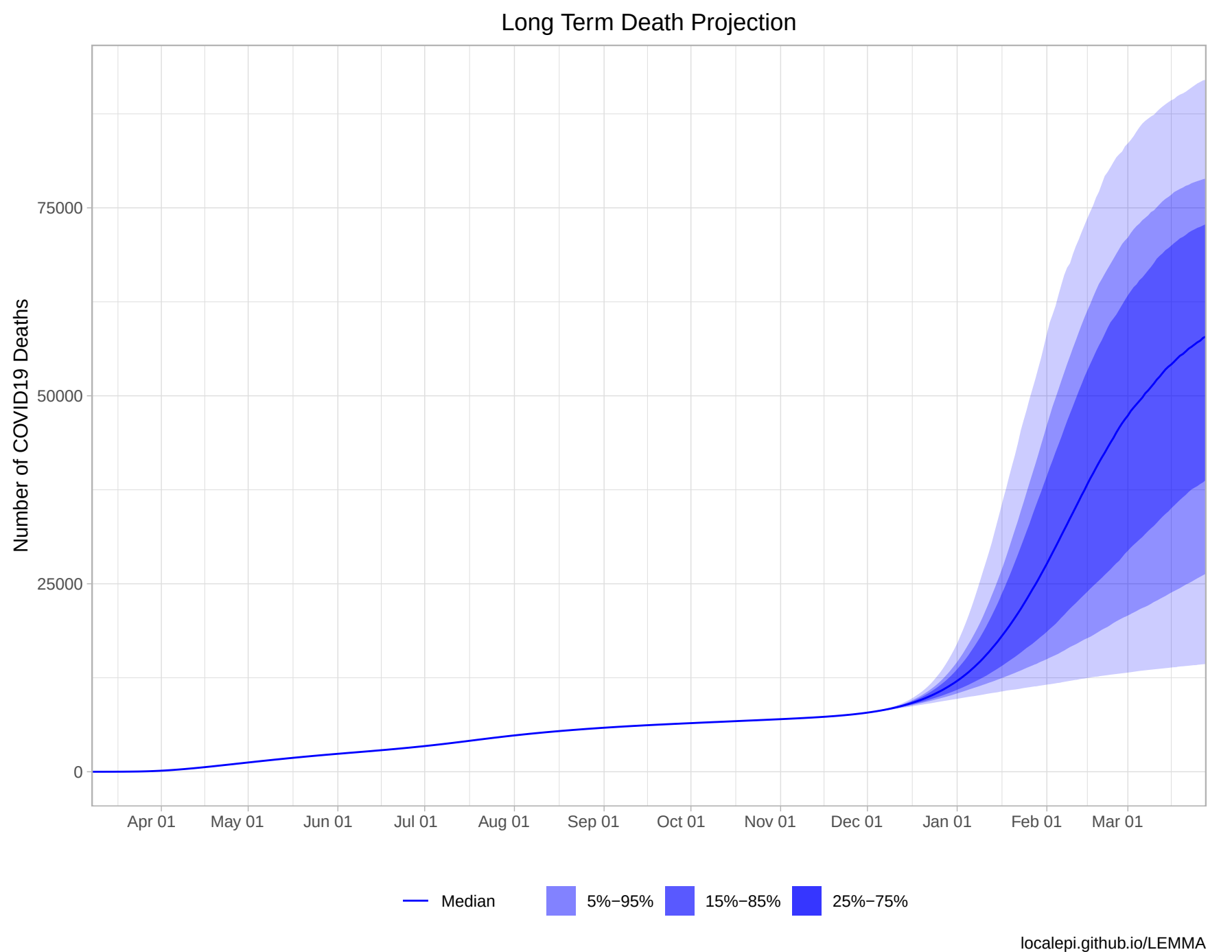

Short Term Hospitalization Projection
Number of COVID19 Patients in Hospital
3000
2000
1000
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sep 01
Oct 01
Nov 01
Dec 01
Median
Confirmed
Confirmed + 30%PUI
5%−95%
15%−85%
25%−75%
localepi.github.io/LEMMA

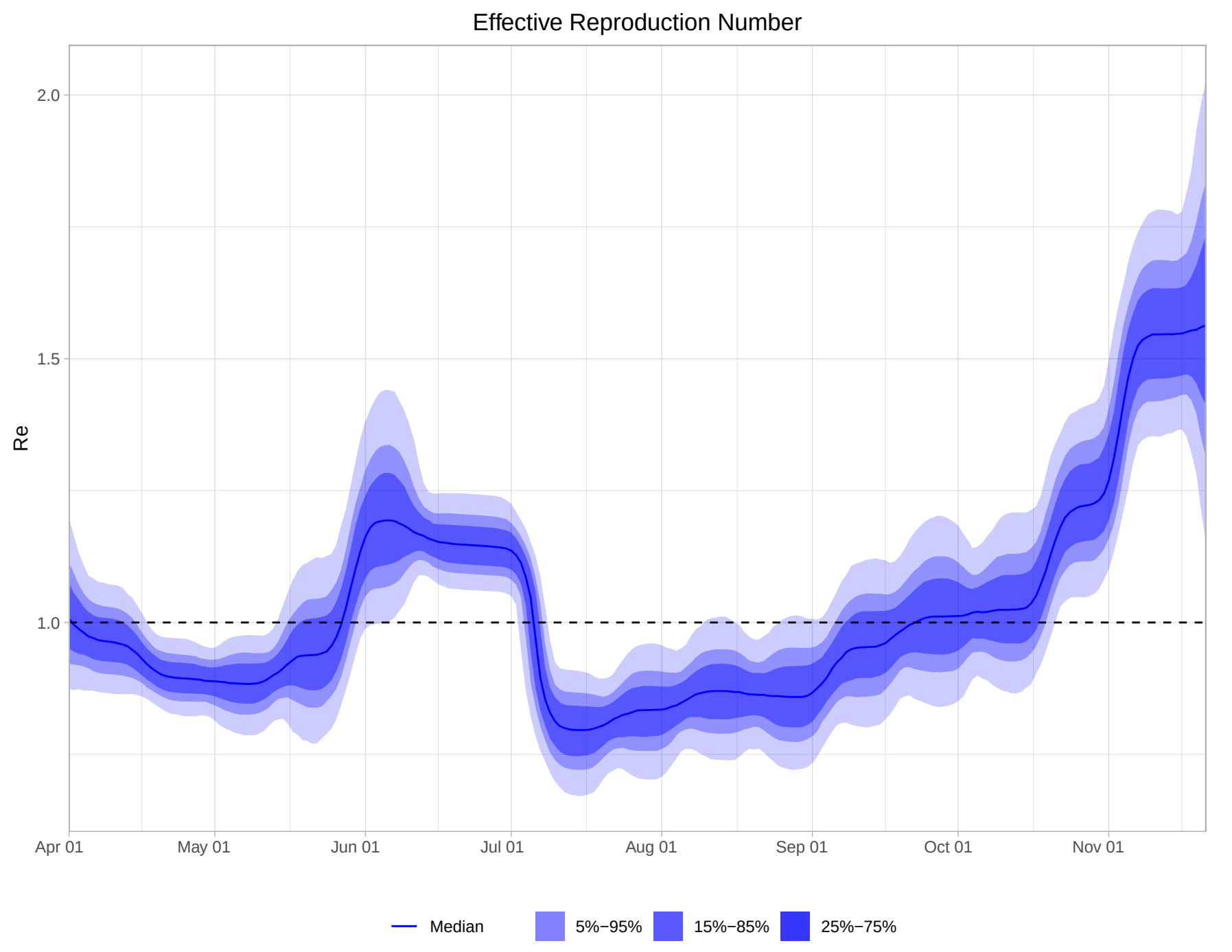

Long Term Hospitalization Projection
Number of COVID19 Patients in Hospital
60000
40000
20000
0
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sep 01
Oct 01
Nov 01
Dec 01
Jan 01
Feb 01
Mar 01
Median
5%−95%
15%−85%
25%−75%
localepi.github.io/LEMMA


Short Term ICU Projection
Number of COVID19 Patients in ICU
1000
750
500
250
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sep 01
Oct 01
Nov 01
Dec 01
Median
Confirmed
Confirmed + 30%PUI
5%−95%
15%−85%
25%−75%
localepi.github.io/LEMMA


Long Term ICU Projection
Number of COVID19 Patients in ICU
20000
15000
10000
5000
0
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sep 01
Oct 01
Nov 01
Dec 01
Jan 01
Feb 01
Mar 01
Median
5%−95%
15%−85%
25%−75%
localepi.github.io/LEMMA

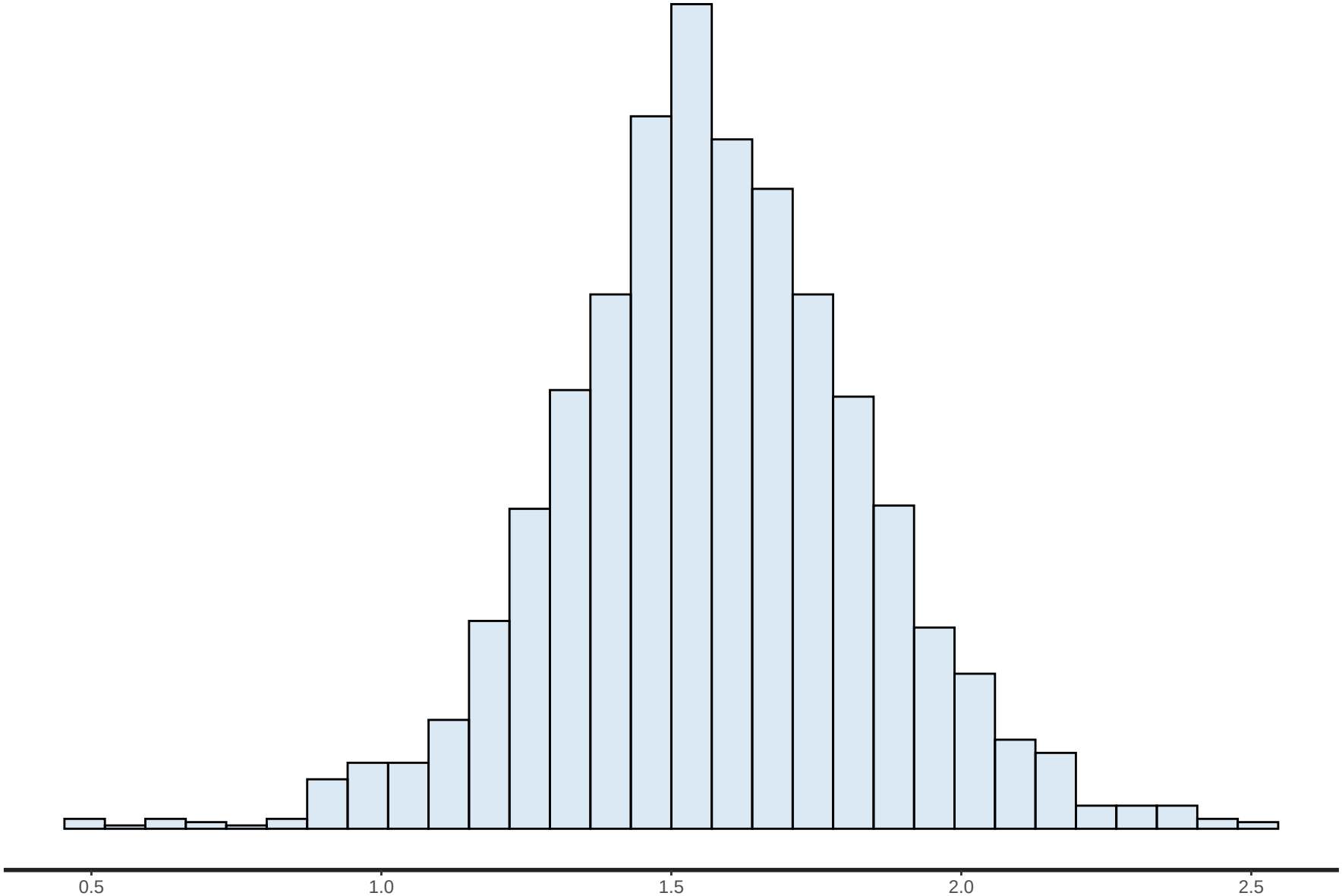

Short Term Death Projection
Number of COVID19 Deaths
8000
6000
4000
2000
0
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sep 01
Oct 01
Nov 01
Dec 01
Median
Confirmed
5%−95%
15%−85%
25%−75%
localepi.github.io/LEMMA

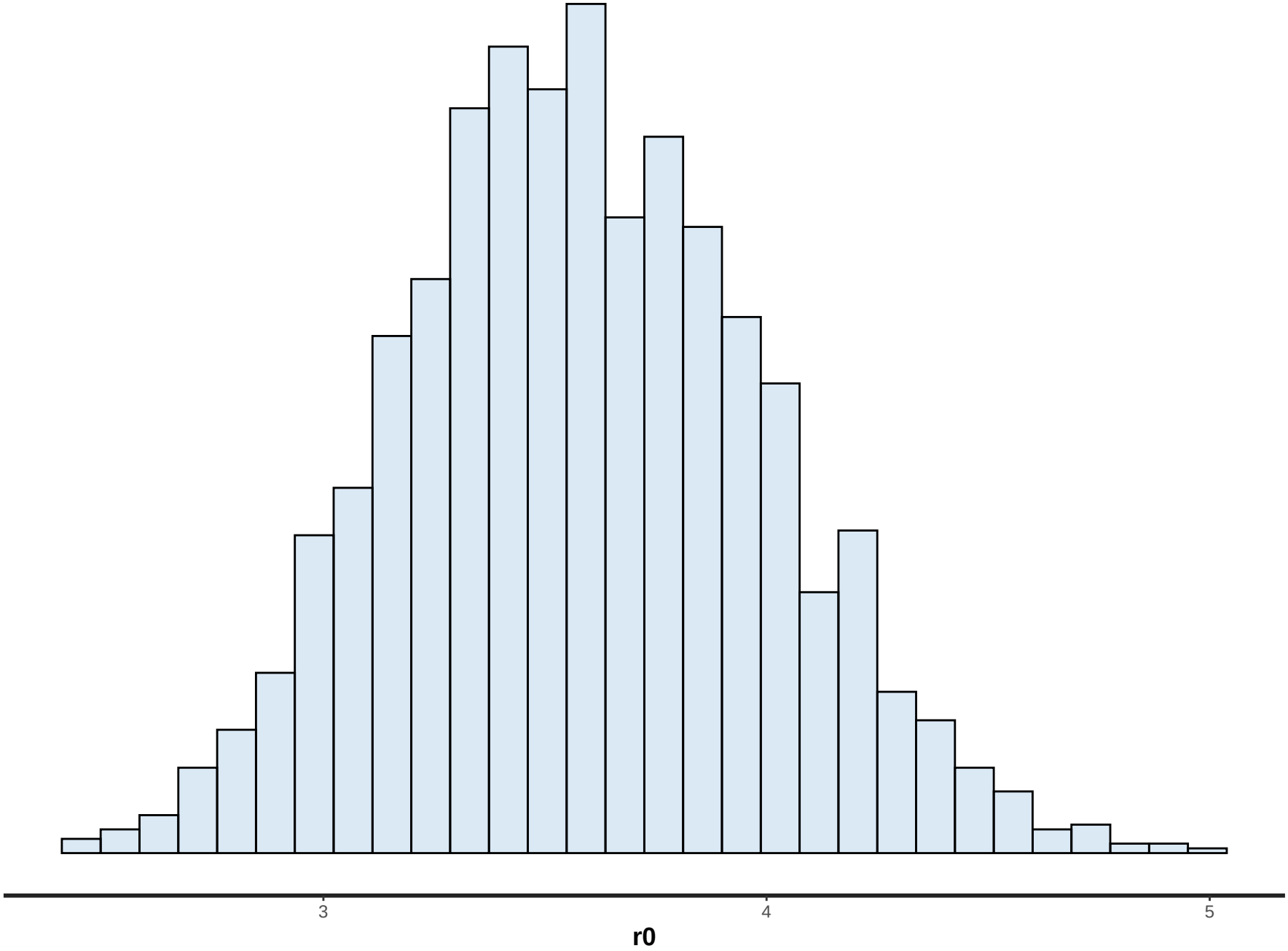

Long Term Death Projection
Number of COVID19 Deaths
75000
50000
25000
0
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sep 01
Oct 01
Nov 01
Dec 01
Jan 01
Feb 01
Mar 01
Median
5%−95%
15%−85%
25%−75%
localepi.github.io/LEMMA

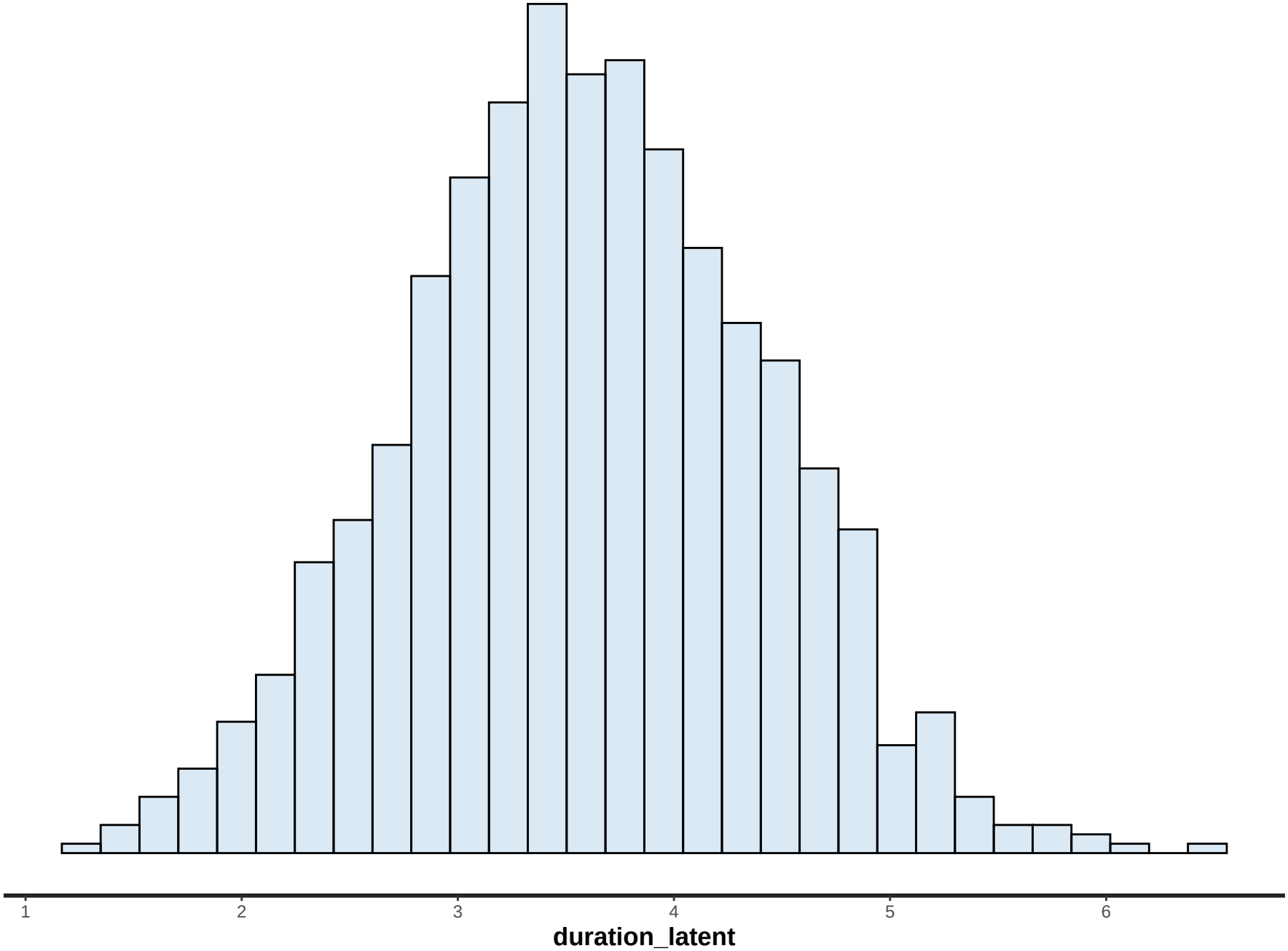

Effective Reproduction Number
Re
2.0
1.5
1.0
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sep 01
Oct 01
Nov 01
Median
5%−95%
15%−85%
25%−75%

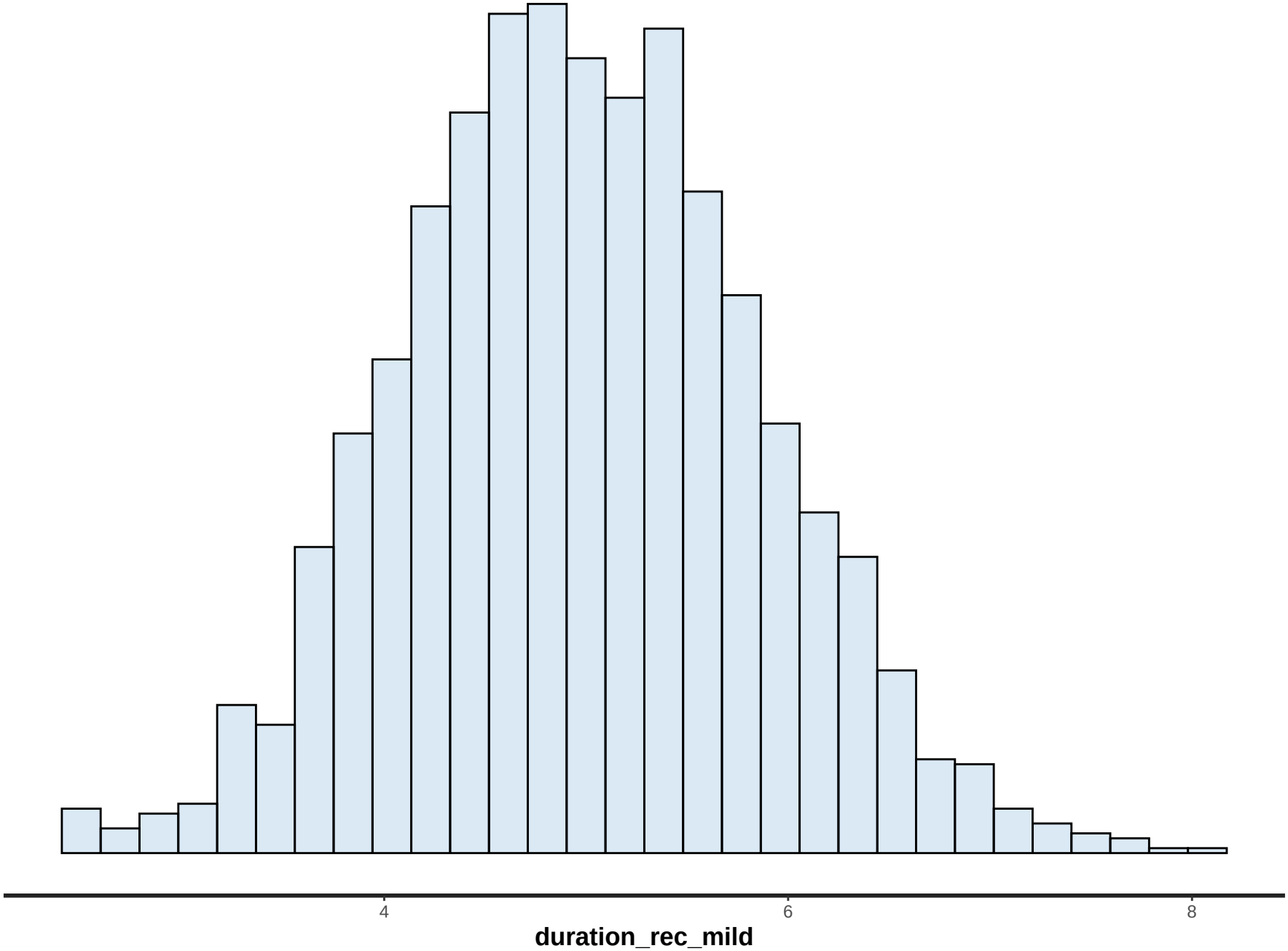
Rt as of 2020−11−21

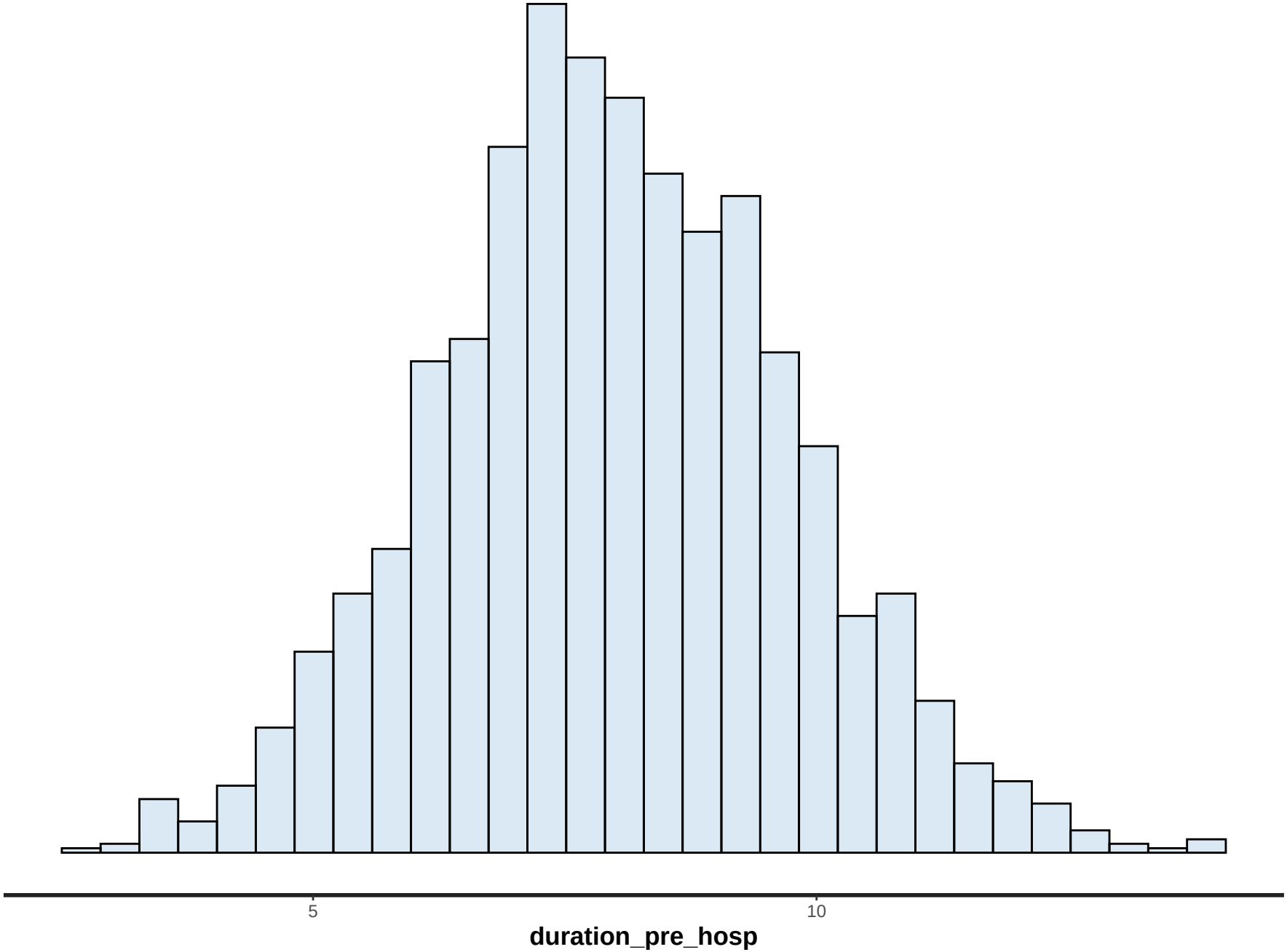
5%	10%	25%	50%	75%	90%	95%
1.15	1.24	1.41	1.56	1.73	1.91	2.03

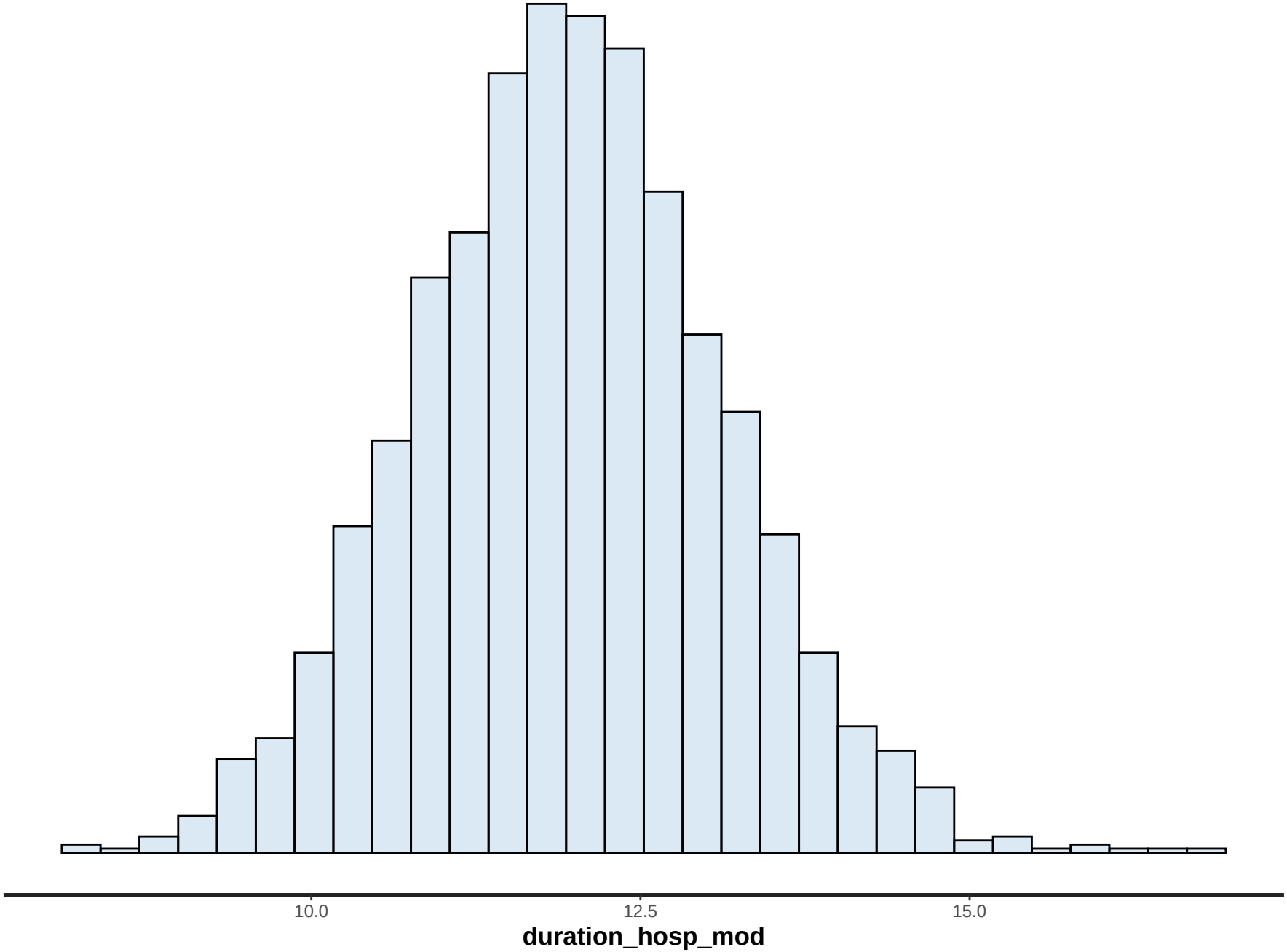


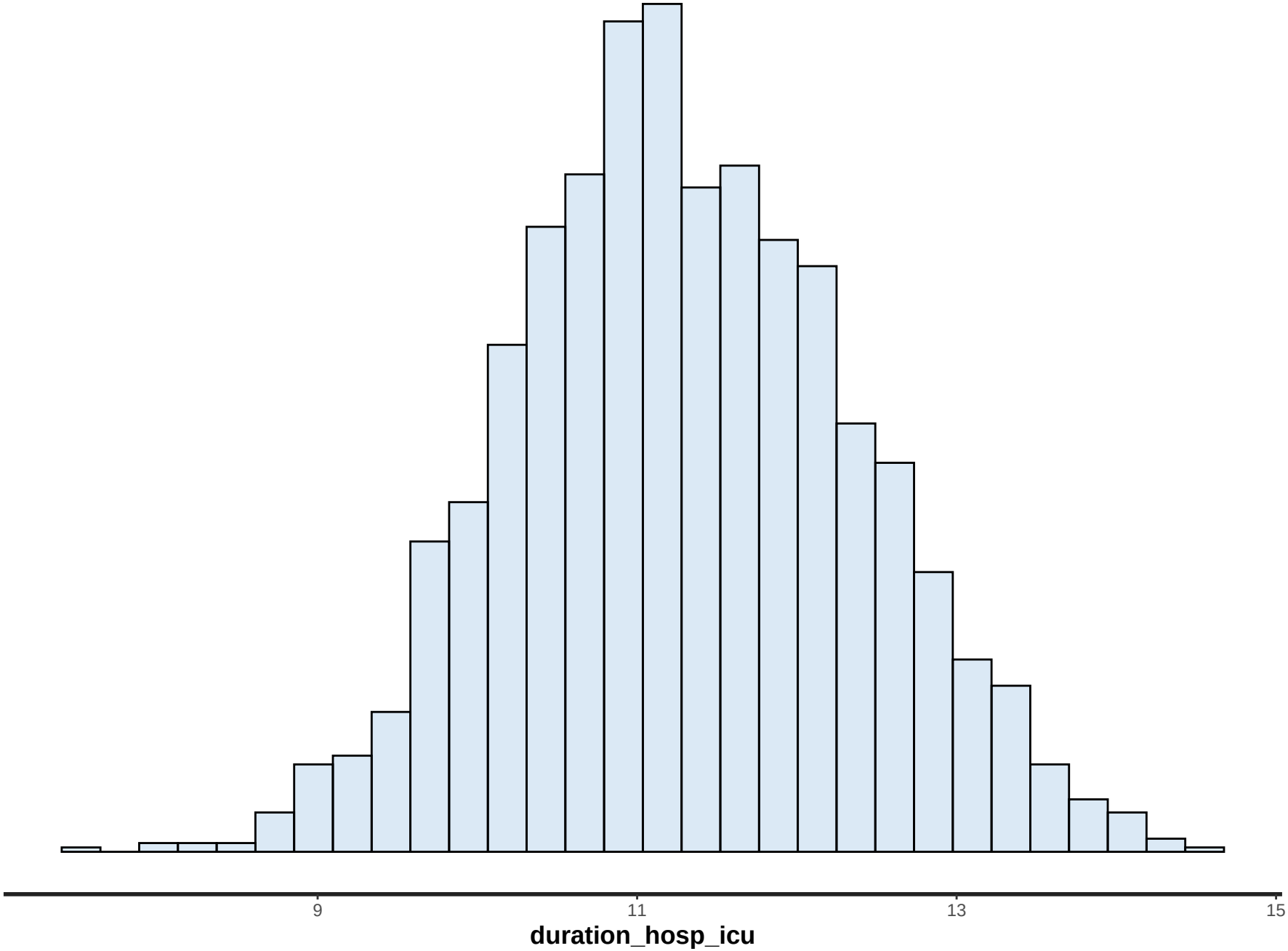

3
4
5
r0

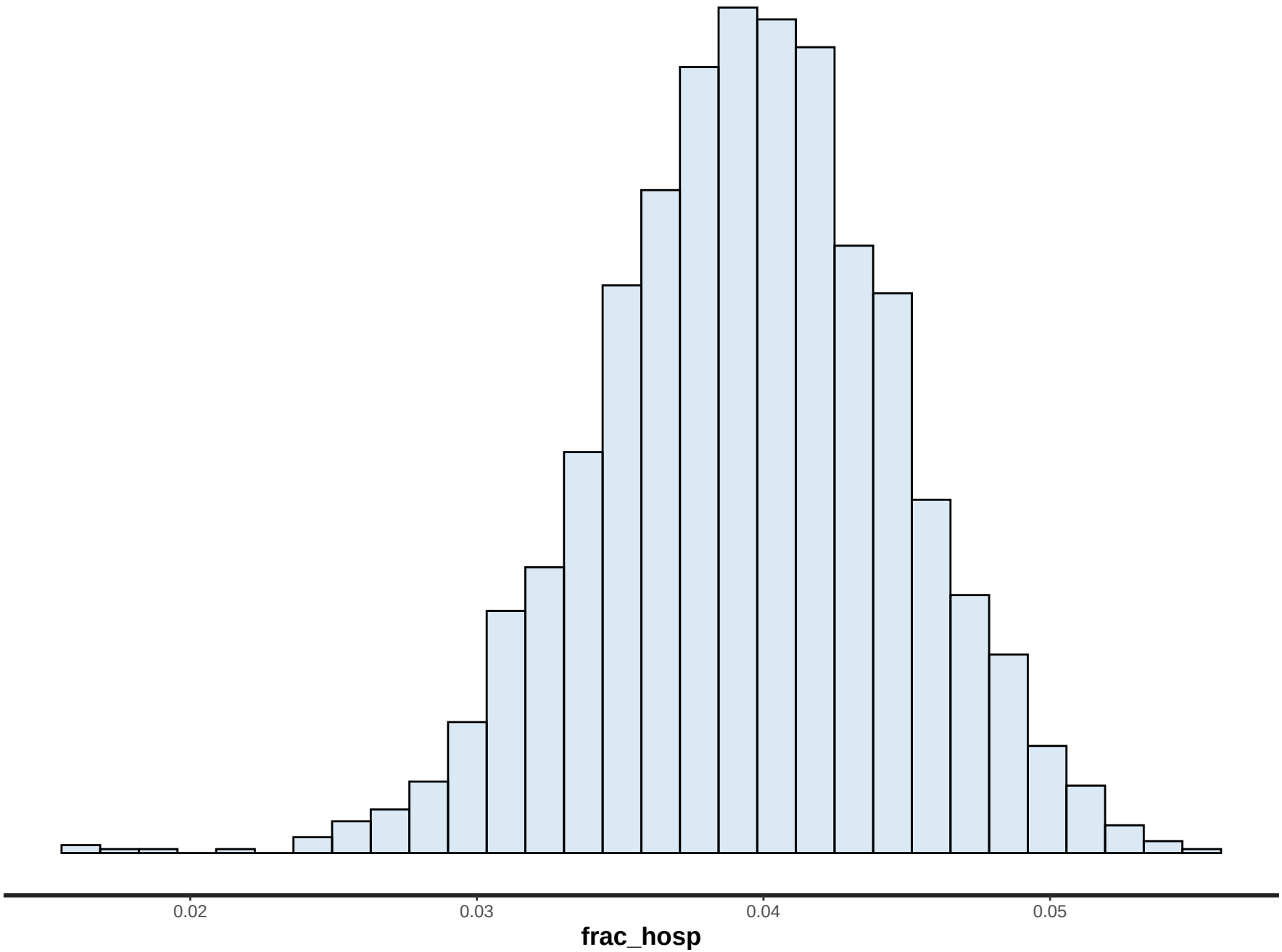

1
2
3
4
5
6
duration_latent

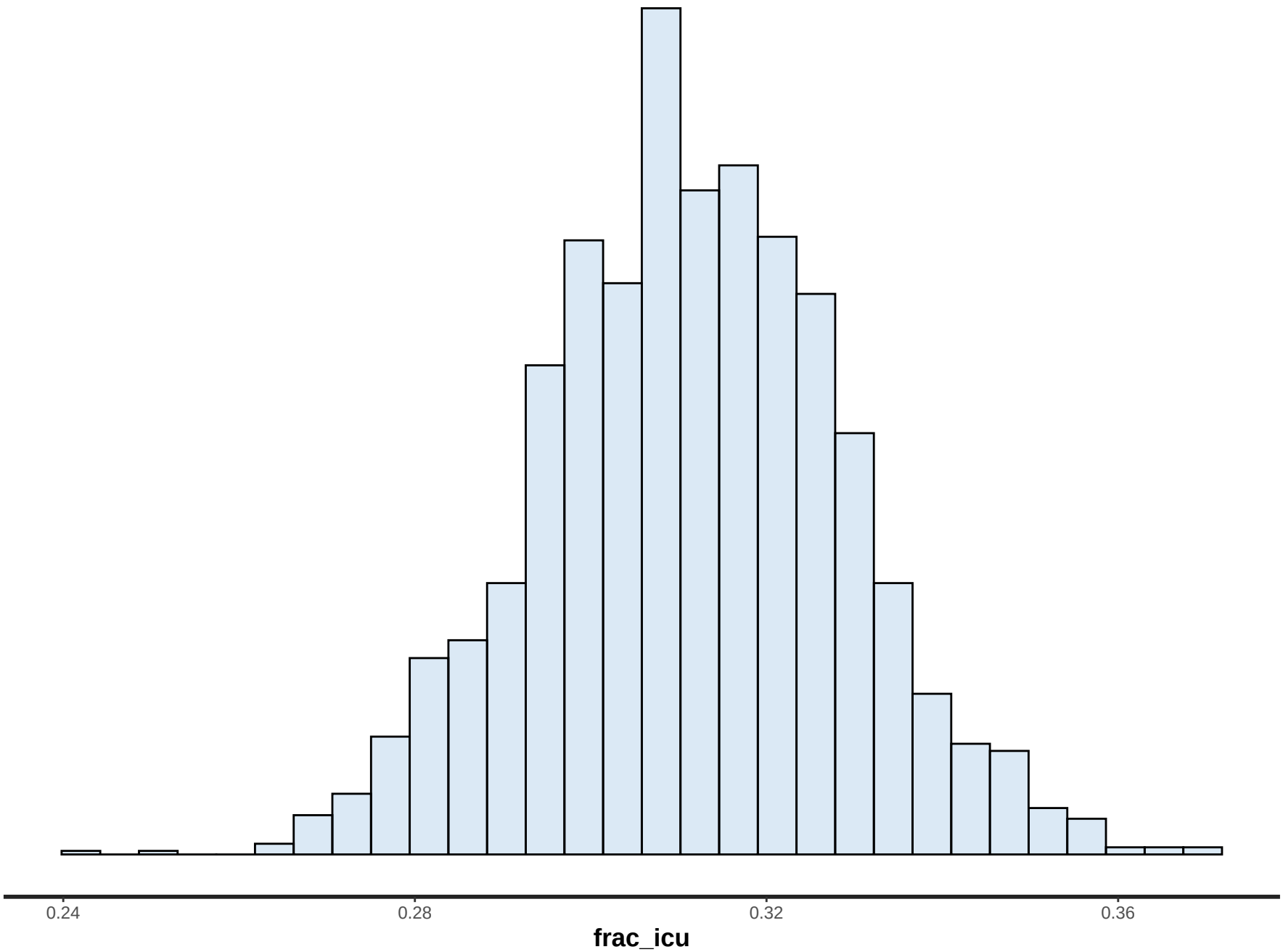

4
6
8
duration_rec_mild

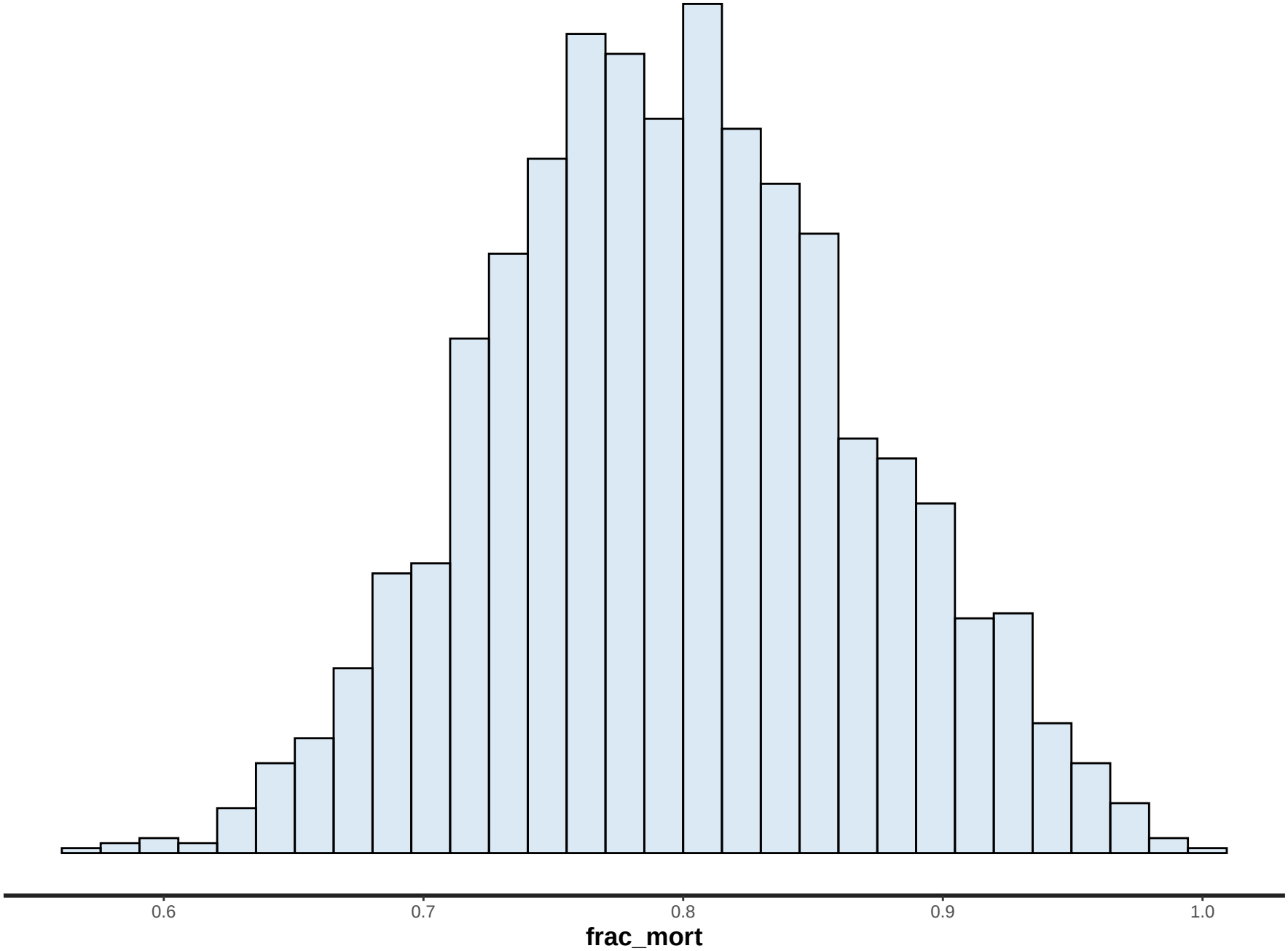

5
10
duration_pre_hosp

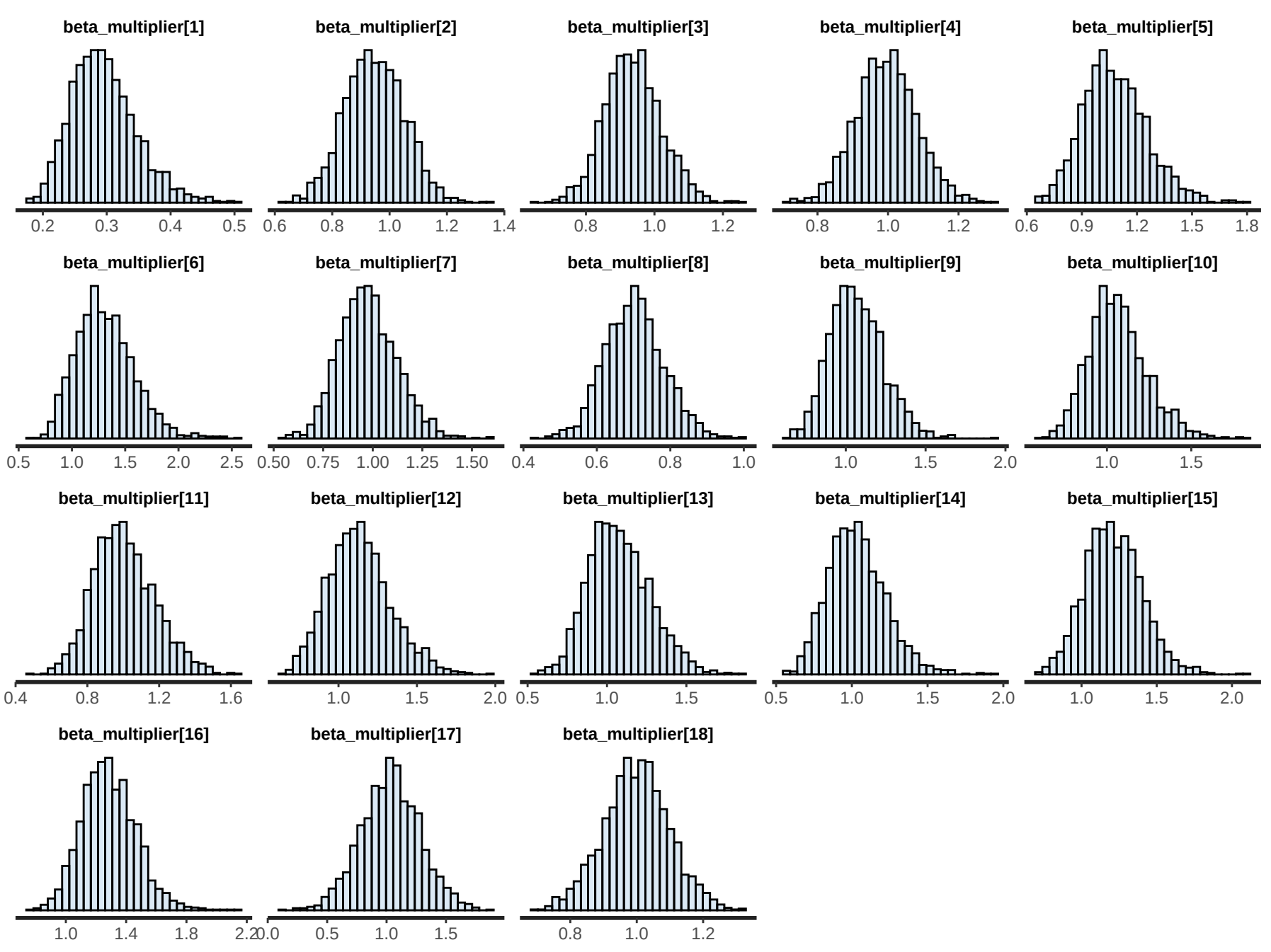

10.0
12.5
15.0
duration_hosp_mod

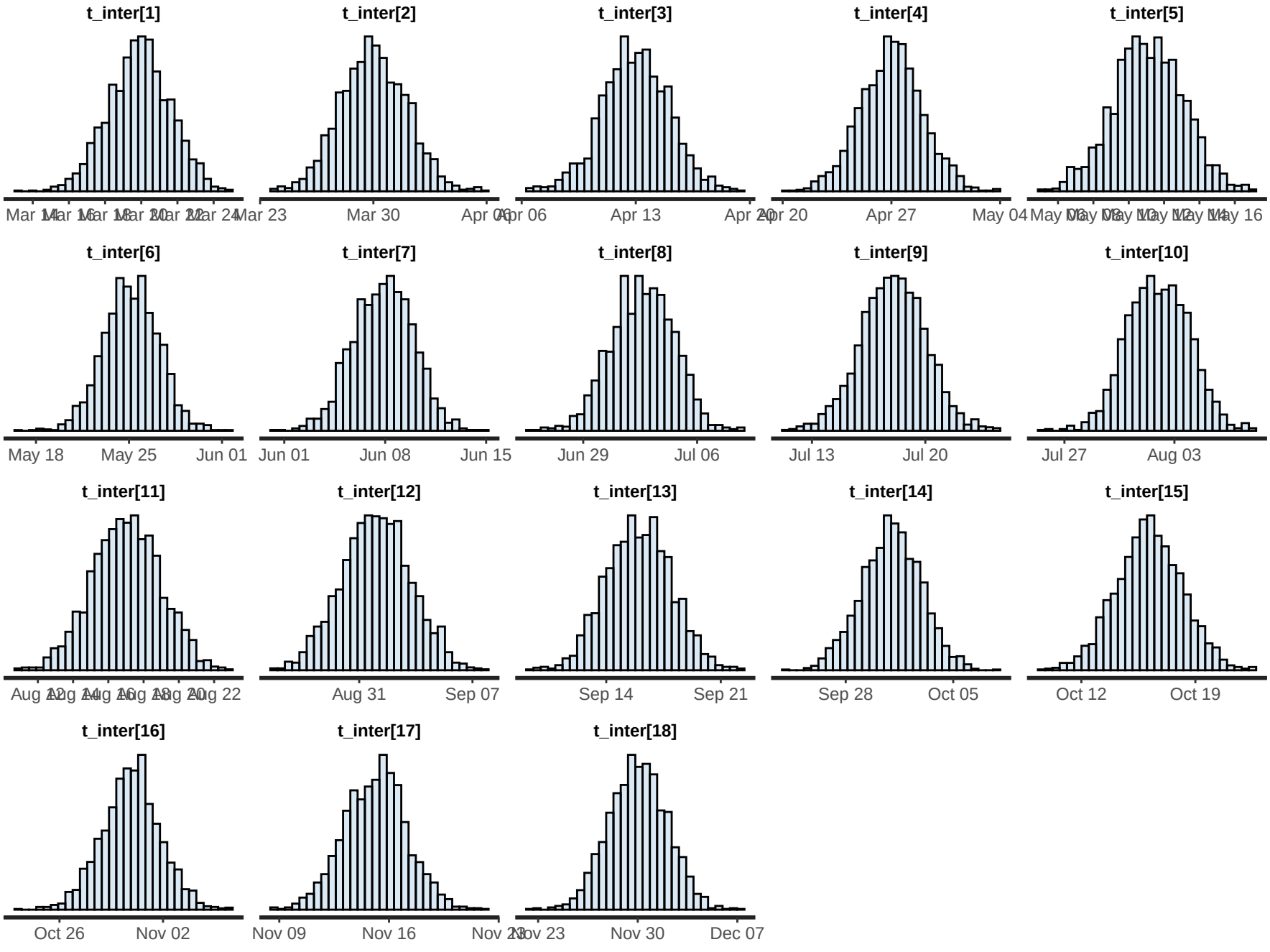

9
11
13
15
duration_hosp_icu

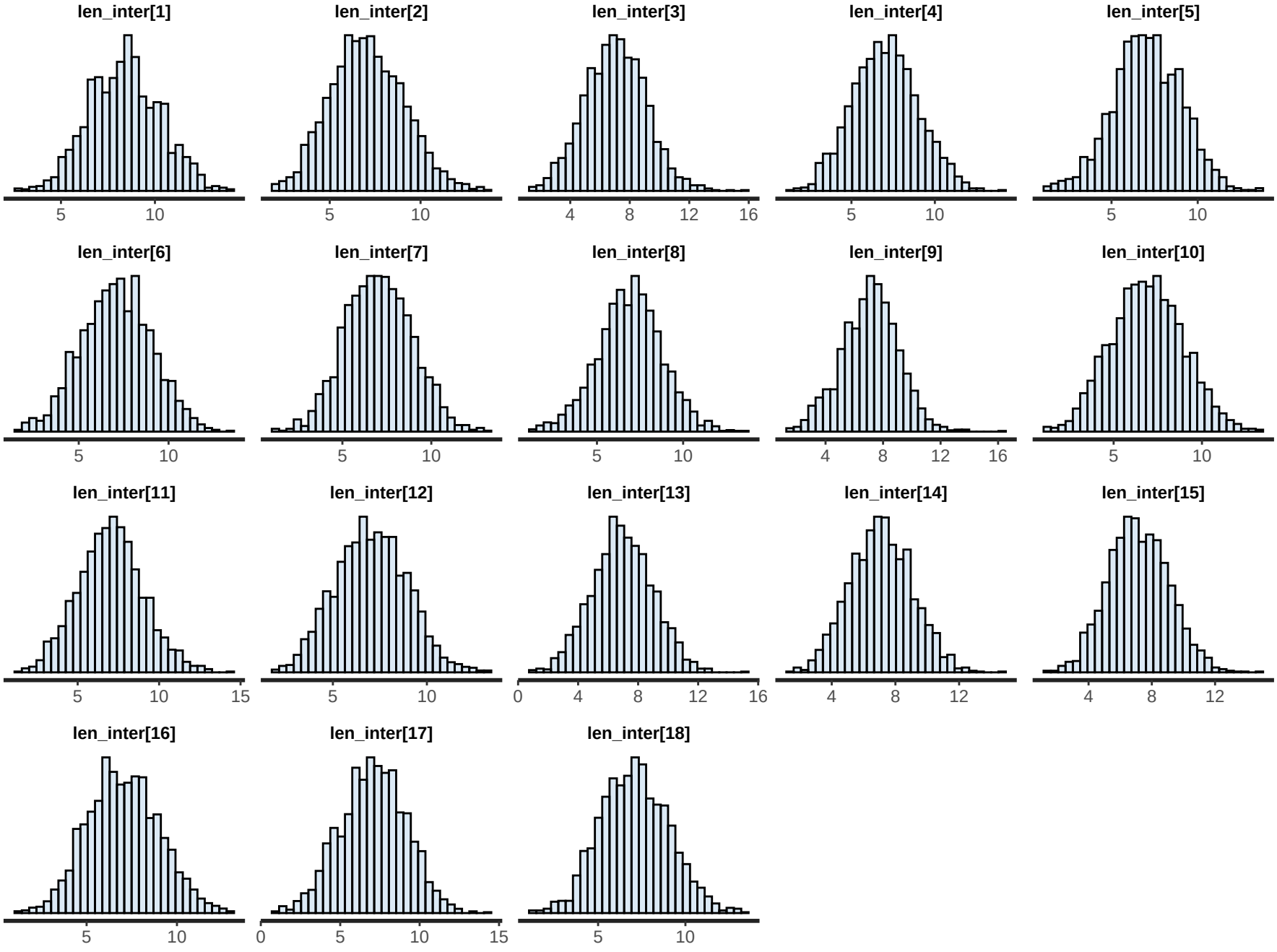

0.02
0.03
0.04
0.05
frac_hosp

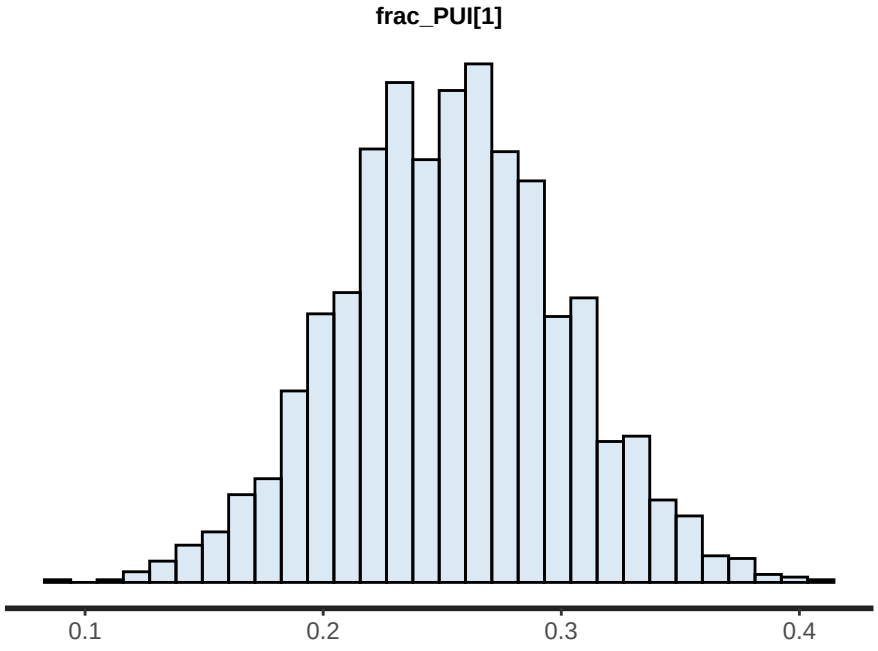

0.24
0.28
0.32
0.36
frac_icu

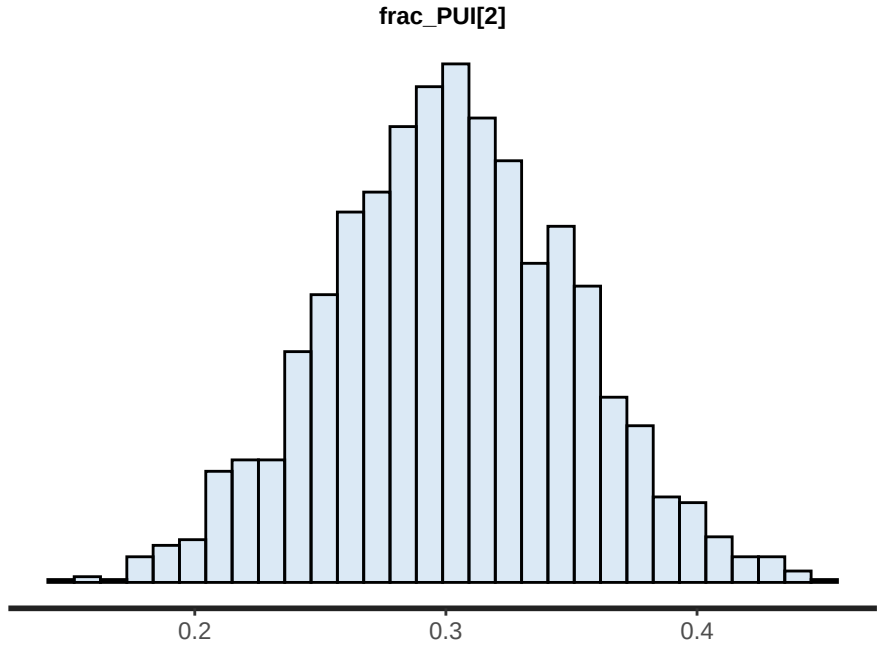

0.6
0.7
0.8
0.9
1.0
frac_mort

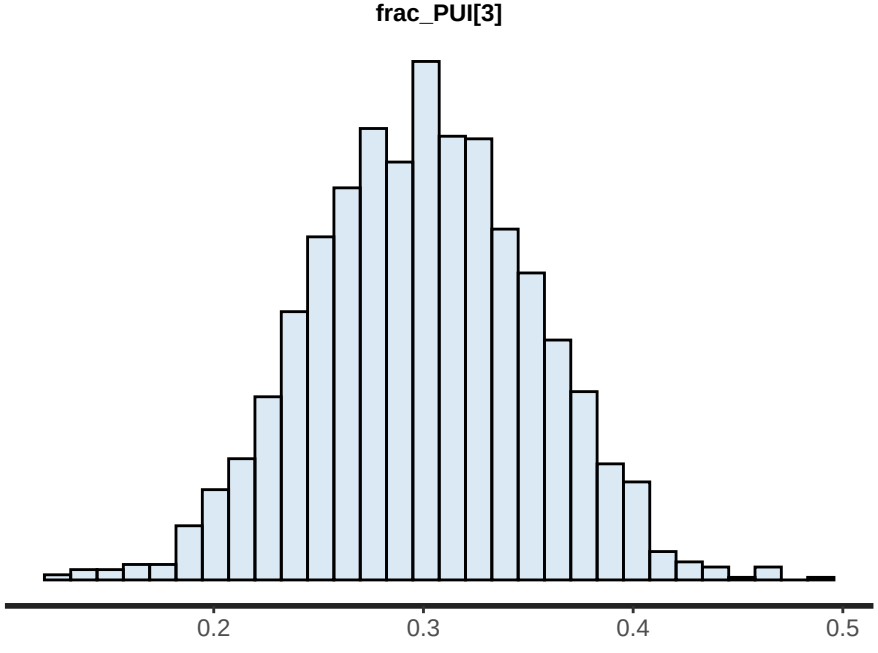

beta_multiplier[1]
0.2 0.3 0.4 0.5
beta_multiplier[2]
0.6 0.8 1.0 1.2 1.4
beta_multiplier[3]
0.8 1.0 1.2
beta_multiplier[4]
0.8 1.0 1.2
beta_multiplier[5]
0.6 0.9 1.2 1.5 1.8
beta_multiplier[6]
0.5 1.0 1.5 2.0 2.5
beta_multiplier[7]
0.50 0.75 1.00 1.25 1.50
beta_multiplier[8]
0.4 0.6 0.8 1.0
beta_multiplier[9]
1.0 1.5 2.0
beta_multiplier[10]
1.0 1.5
beta_multiplier[11]
0.4 0.8 1.2 1.6
beta_multiplier[12]
1.0 1.5 2.0
beta_multiplier[13]
0.5 1.0 1.5
beta_multiplier[14]
0.5 1.0 1.5 2.0
beta_multiplier[15]
1.0 1.5 2.0
beta_multiplier[16]
1.0 1.4 1.8 2.2
beta_multiplier[17]
0.0 0.5 1.0 1.5
beta_multiplier[18]
0.8 1.0 1.2

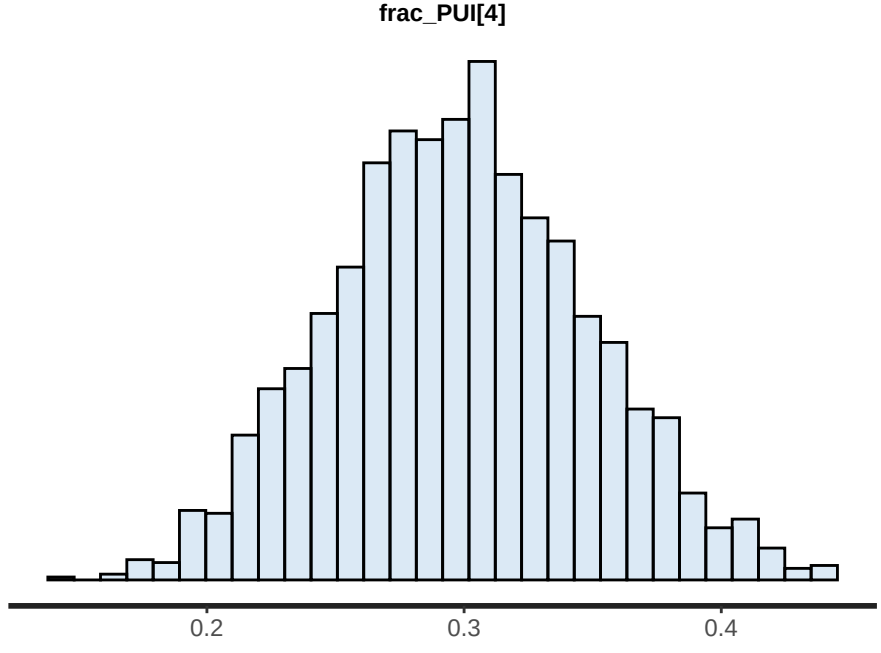

t_inter[1]
Mar 14
Mar 16
Mar 18
Mar 20
Mar 22
Mar 24
t_inter[2]
Mar 23
Mar 30
Apr 06
t_inter[3]
Apr 06
Apr 13
Apr 20
t_inter[4]
Apr 20
Apr 27
May 04
t_inter[5]
May 04
May 08
May 12
May 12
May 14
May 16
t_inter[6]
May 18
May 25
Jun 01
t_inter[7]
Jun 01
Jun 08
Jun 15
t_inter[8]
Jun 29
Jul 06
t_inter[9]
Jul 13
Jul 20
t_inter[10]
Jul 27
Aug 03
t_inter[11]
Aug 12
Aug 14
Aug 16
Aug 18
Aug 20
Aug 22
t_inter[12]
Aug 31
Sep 07
t_inter[13]
Sep 14
Sep 21
t_inter[14]
Sep 28
Oct 05
t_inter[15]
Oct 12
Oct 19
t_inter[16]
Oct 26
Nov 02
t_inter[17]
Nov 09
Nov 16
Nov 23
t_inter[18]
Nov 23
Nov 30
Dec 07

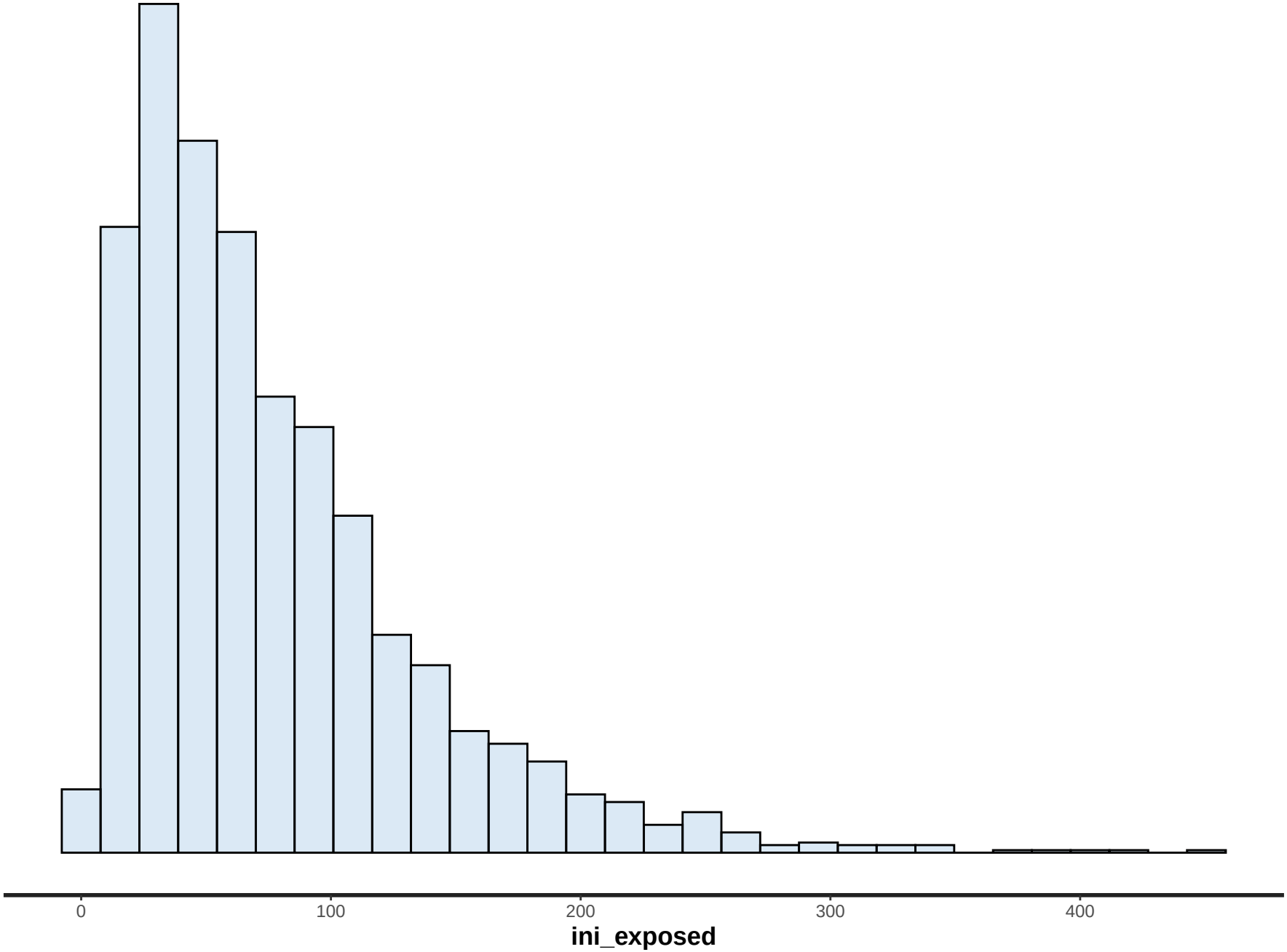

len_inter[1]
5
10
len_inter[2]
5
10
len_inter[3]
4
8
12
16
len_inter[4]
5
10
len_inter[5]
5
10
len_inter[6]
5
10
len_inter[7]
5
10
len_inter[8]
5
10
len_inter[9]
4
8
12
16
len_inter[10]
5
10
len_inter[11]
5
10
15
len_inter[12]
5
10
len_inter[13]
0
4
8
12
16
len_inter[14]
4
8
12
len_inter[15]
4
8
12
len_inter[16]
5
10
len_inter[17]
0
5
10
15
len_inter[18]
5
10

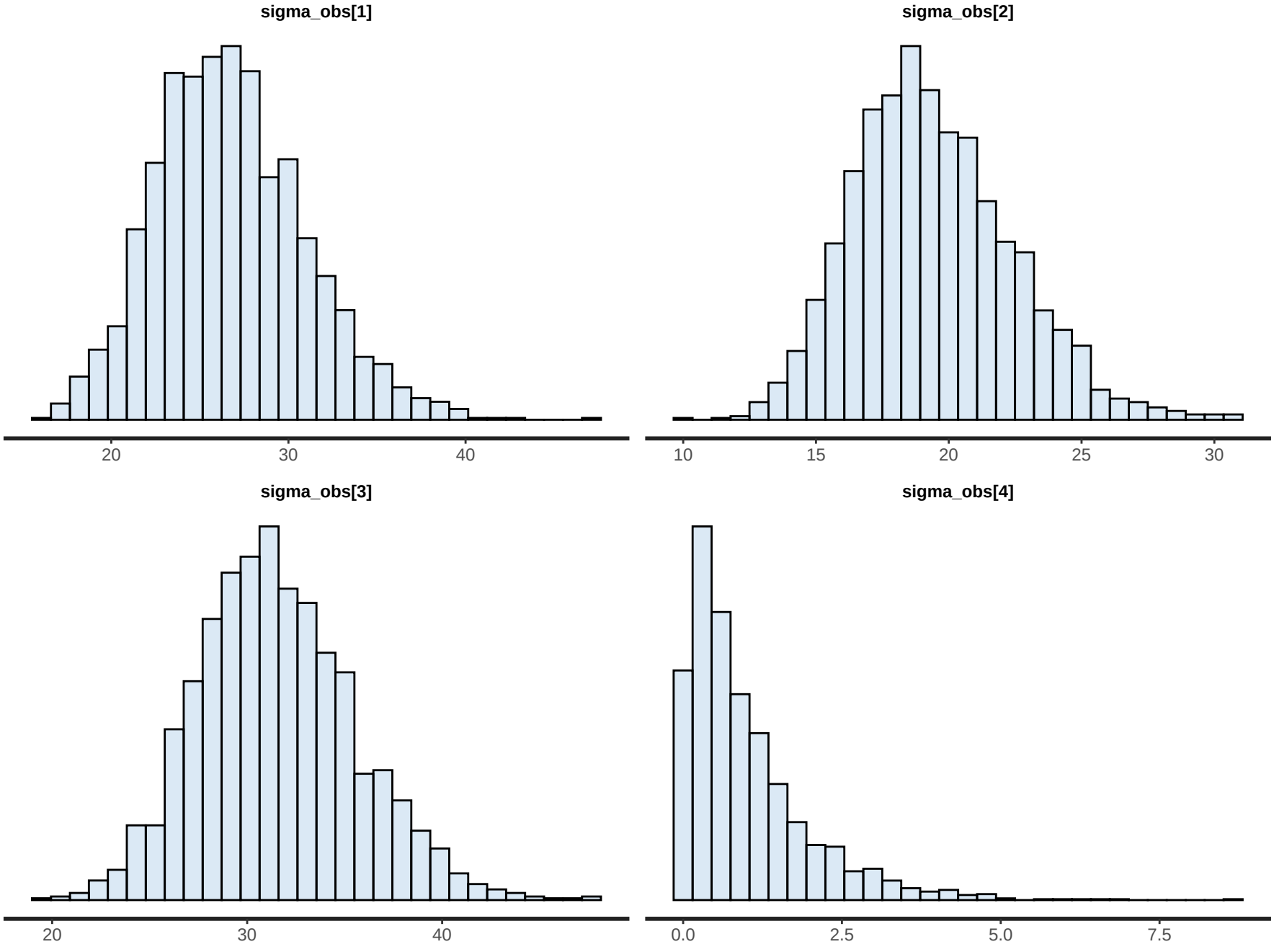

frac_PUI[1]
0.1
0.2
0.3
0.4


frac_PUI[2]
0.2
0.3
0.4


frac_PUI[3]
0.2
0.3
0.4
0.5


frac_PUI[4]
0.2
0.3
0.4


0
100
200
300
400
ini_exposed


sigma_obs[1]
20
30
40
sigma_obs[2]
10
15
20
25
30
sigma_obs[3]
20
30
40
sigma_obs[4]
0.0
2.5
5.0
7.5