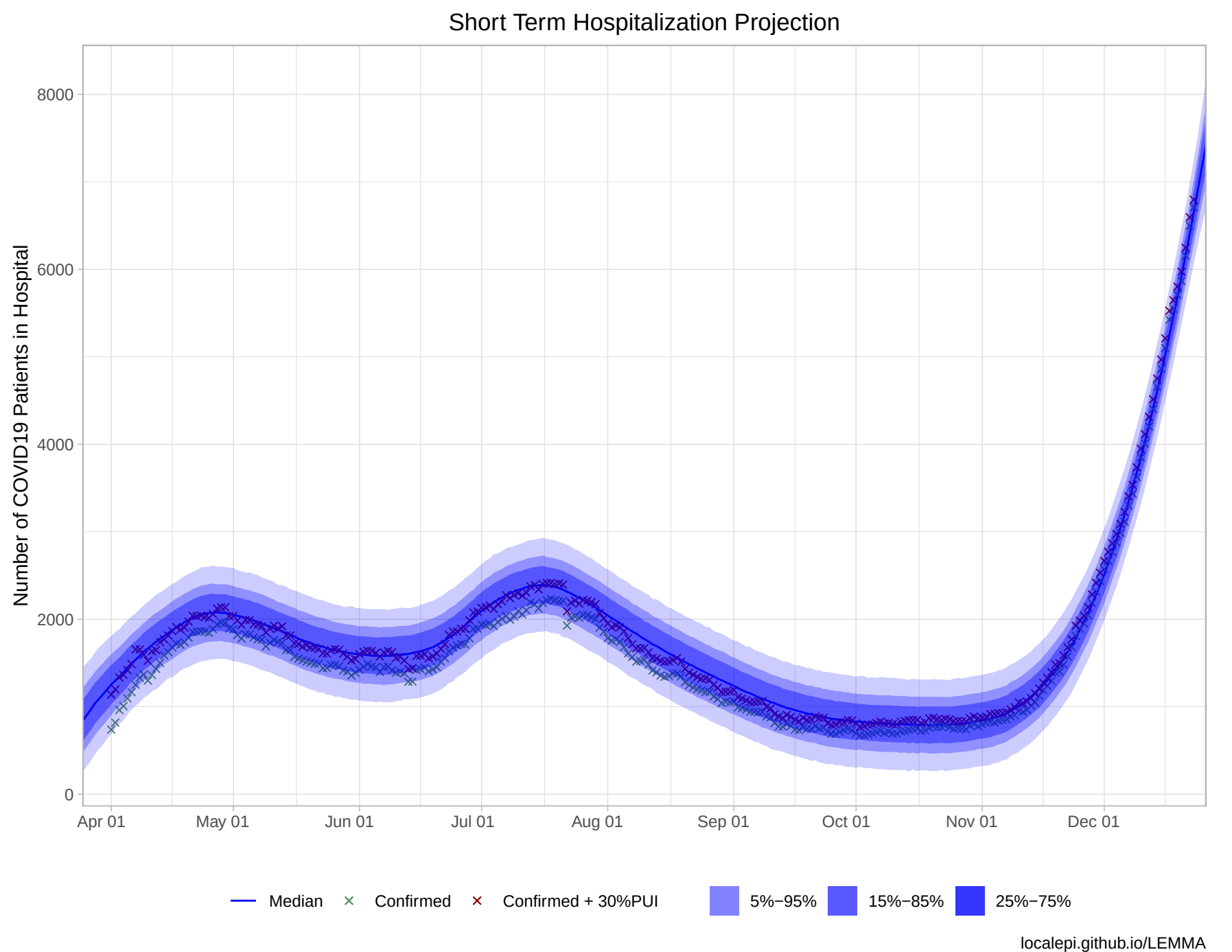
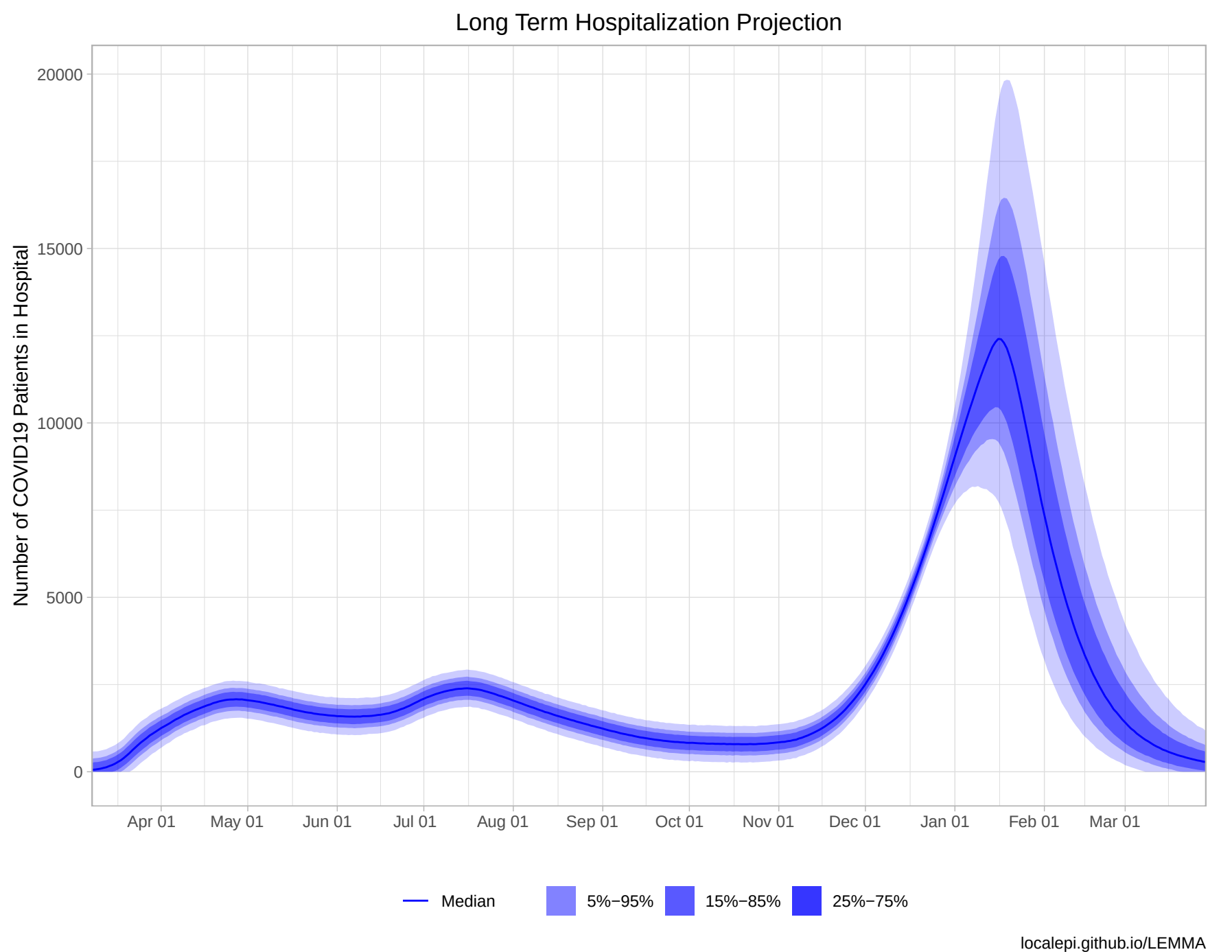
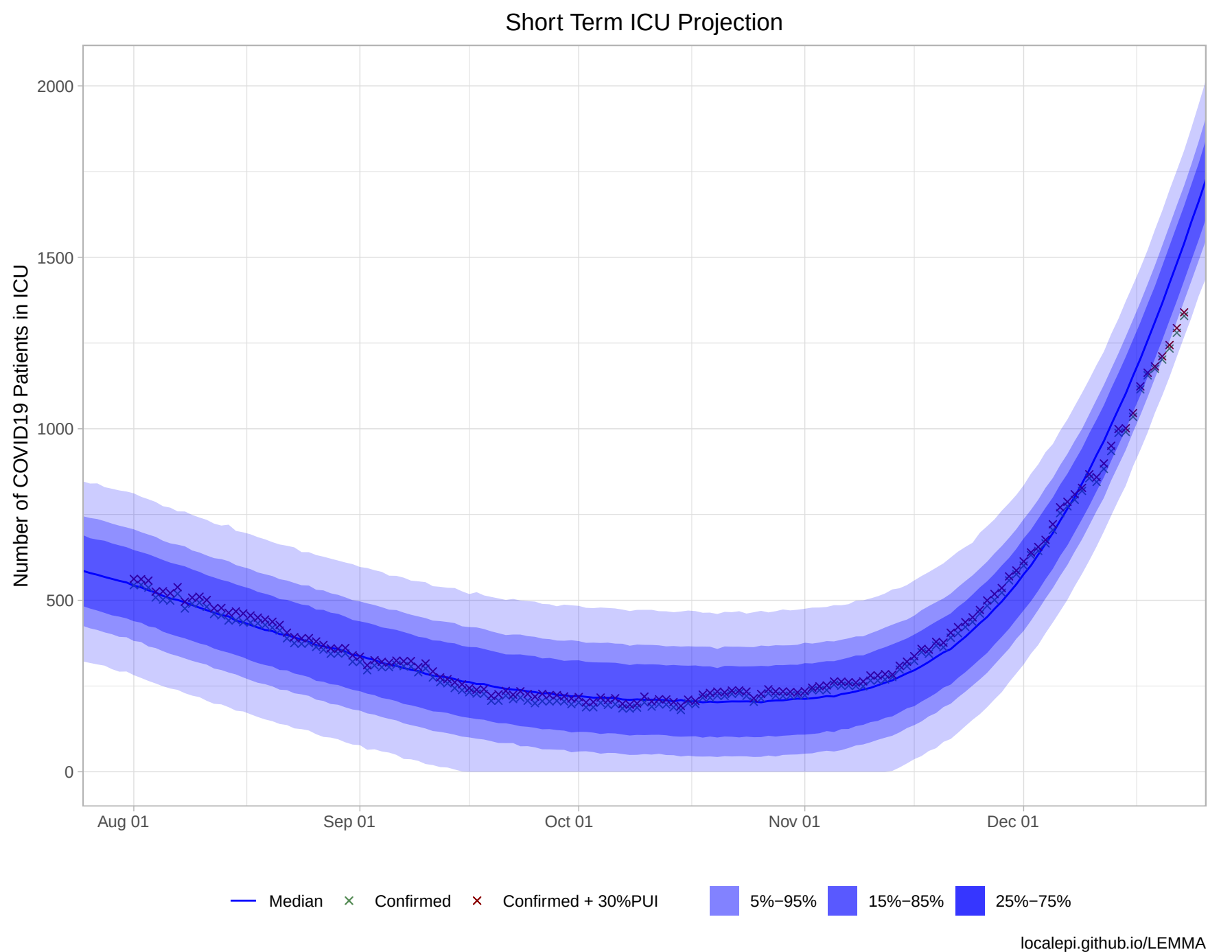
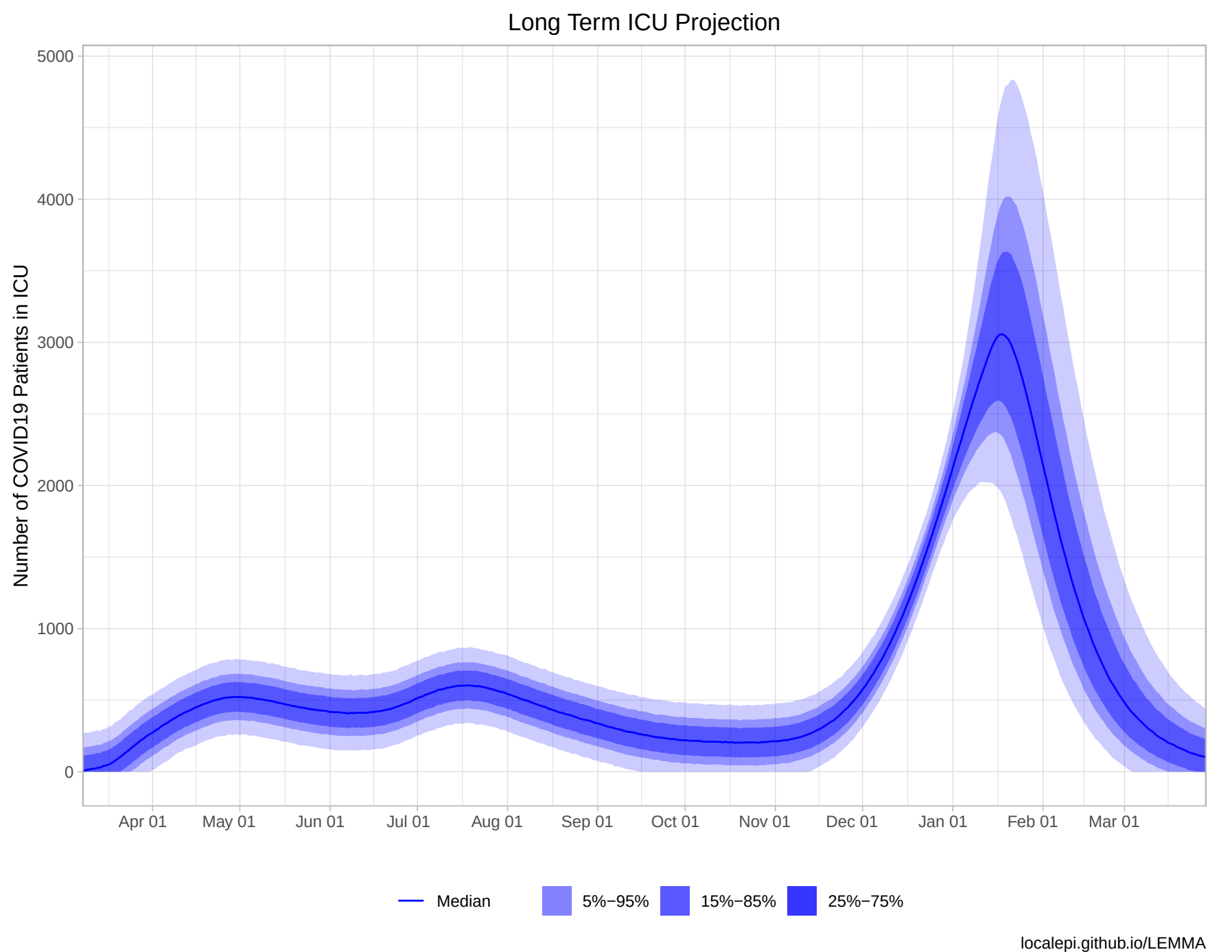
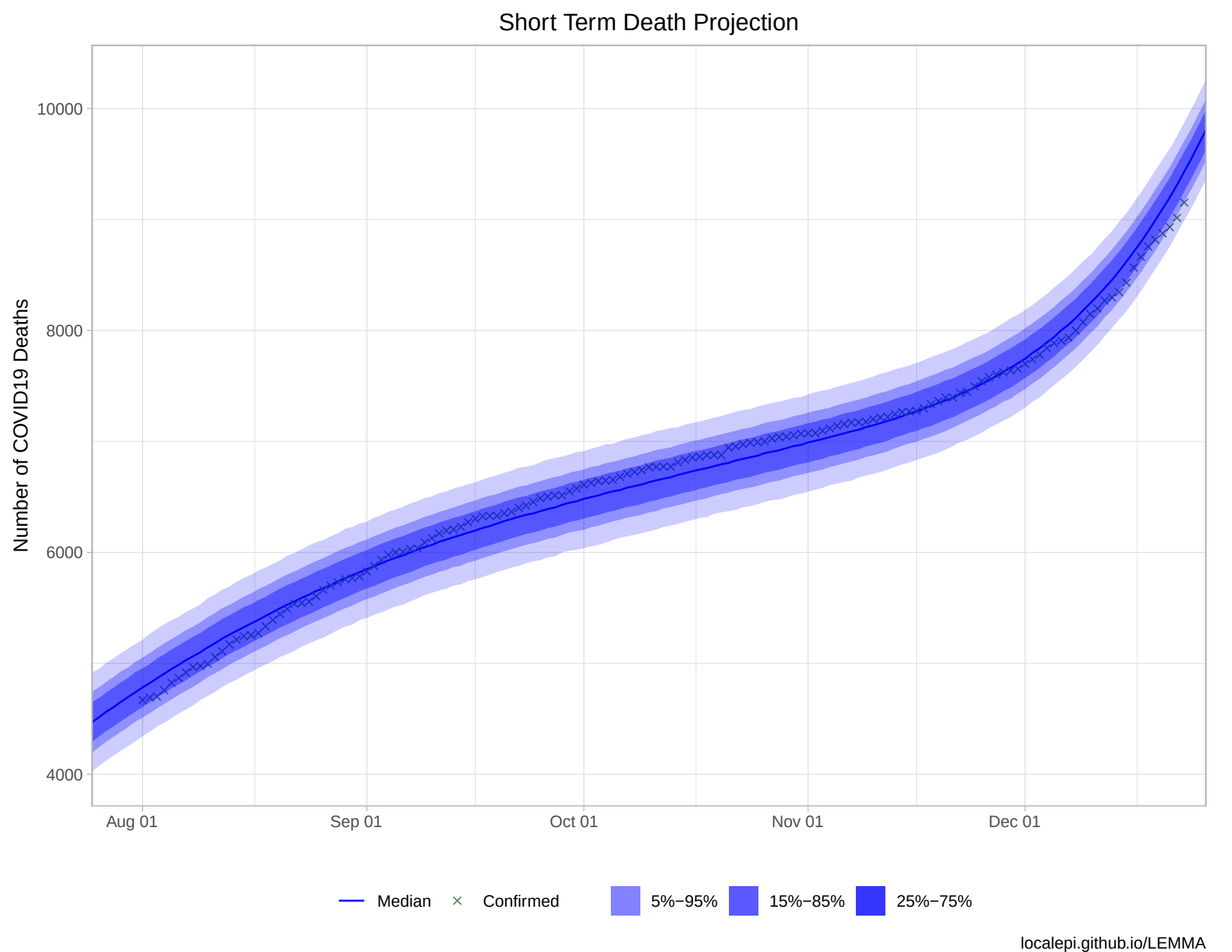
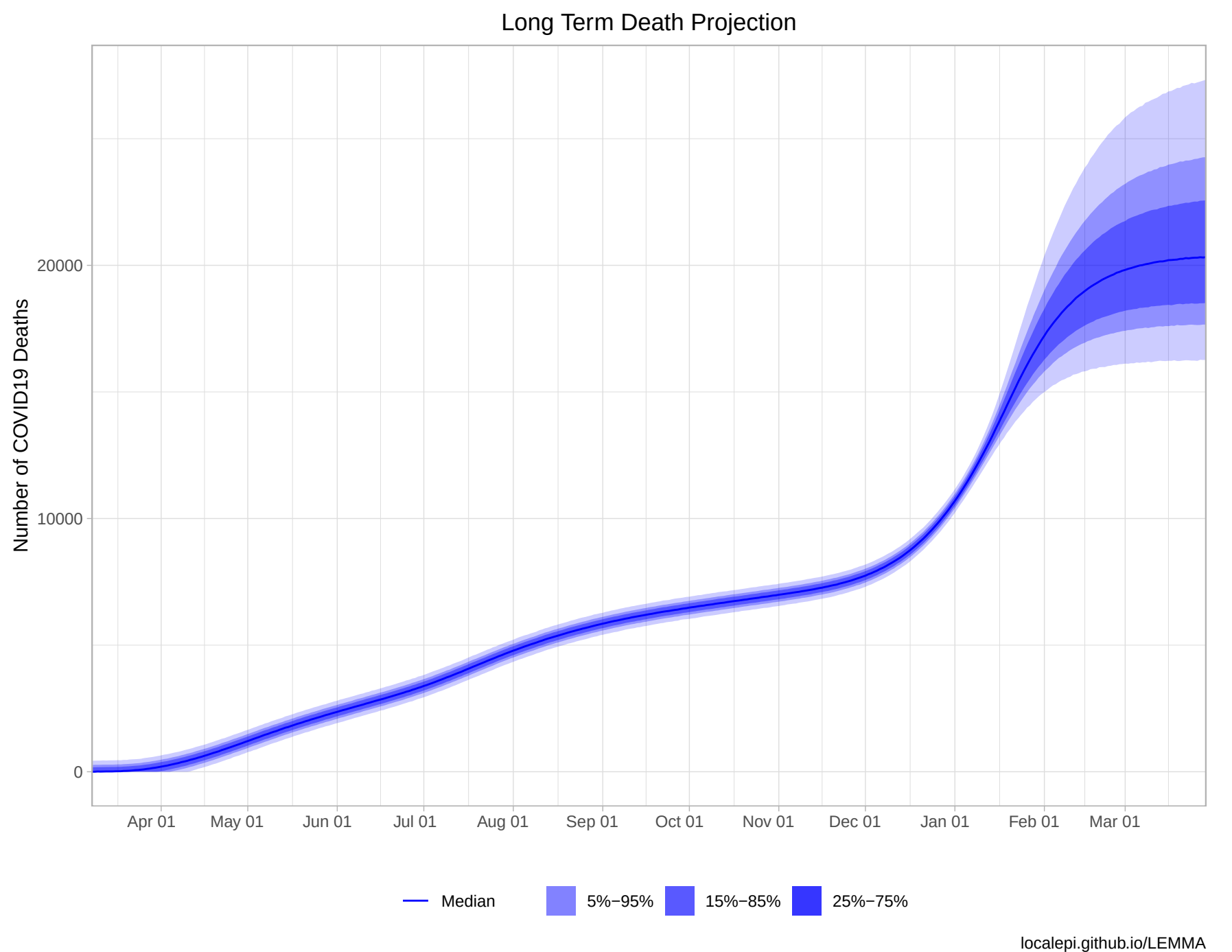

Short Term Hospitalization Projection
Number of COVID19 Patients in Hospital
8000
6000
4000
2000
0
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sep 01
Oct 01
Nov 01
Dec 01
Median
Confirmed
Confirmed + 30%PUI
5%−95%
15%−85%
25%−75%
localepi.github.io/LEMMA

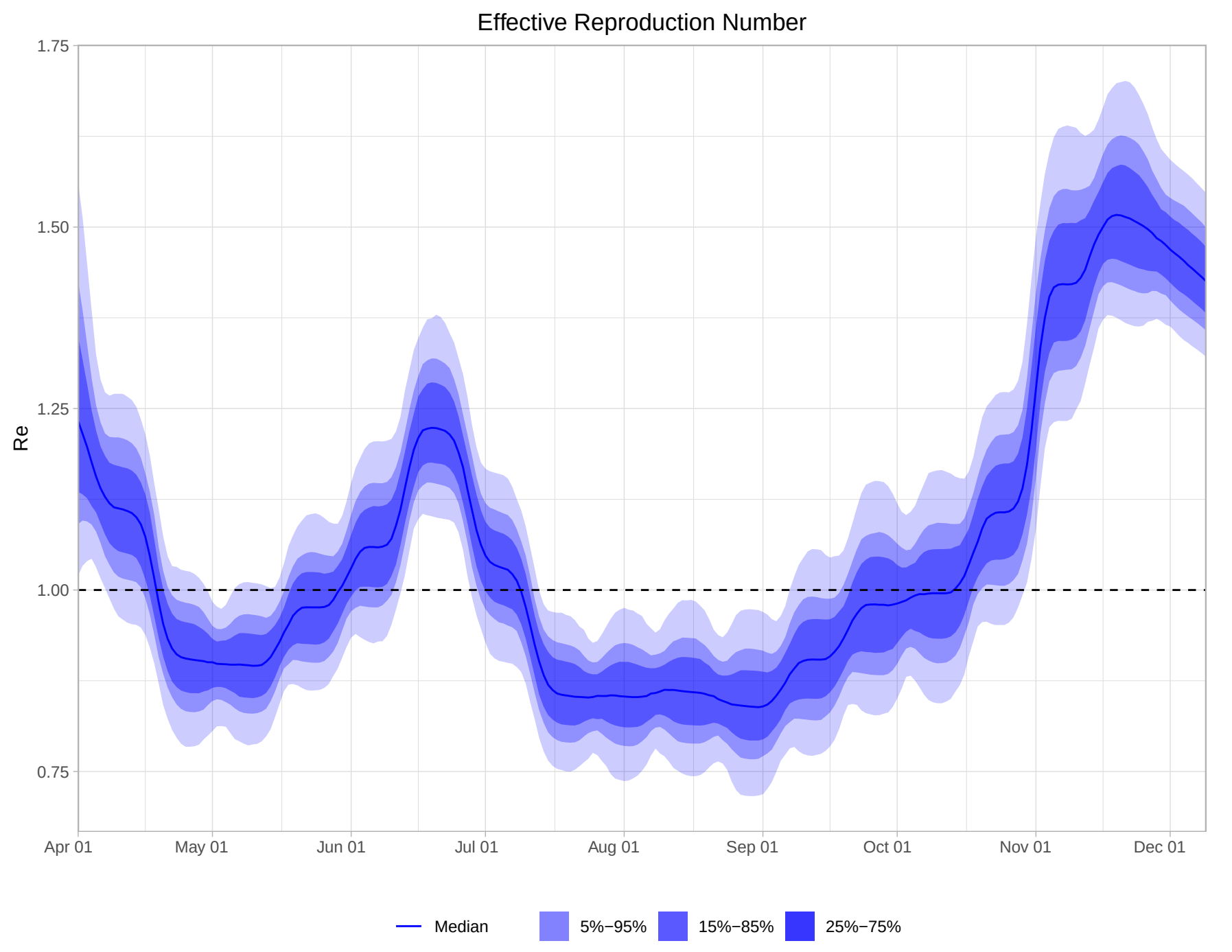

Long Term Hospitalization Projection
Number of COVID19 Patients in Hospital
20000
15000
10000
5000
0
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sep 01
Oct 01
Nov 01
Dec 01
Jan 01
Feb 01
Mar 01
Median
5%−95%
15%−85%
25%−75%
localepi.github.io/LEMMA


Short Term ICU Projection
Number of COVID19 Patients in ICU
2000
1500
1000
500
0
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
5000
4000
3000
2000
1000
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

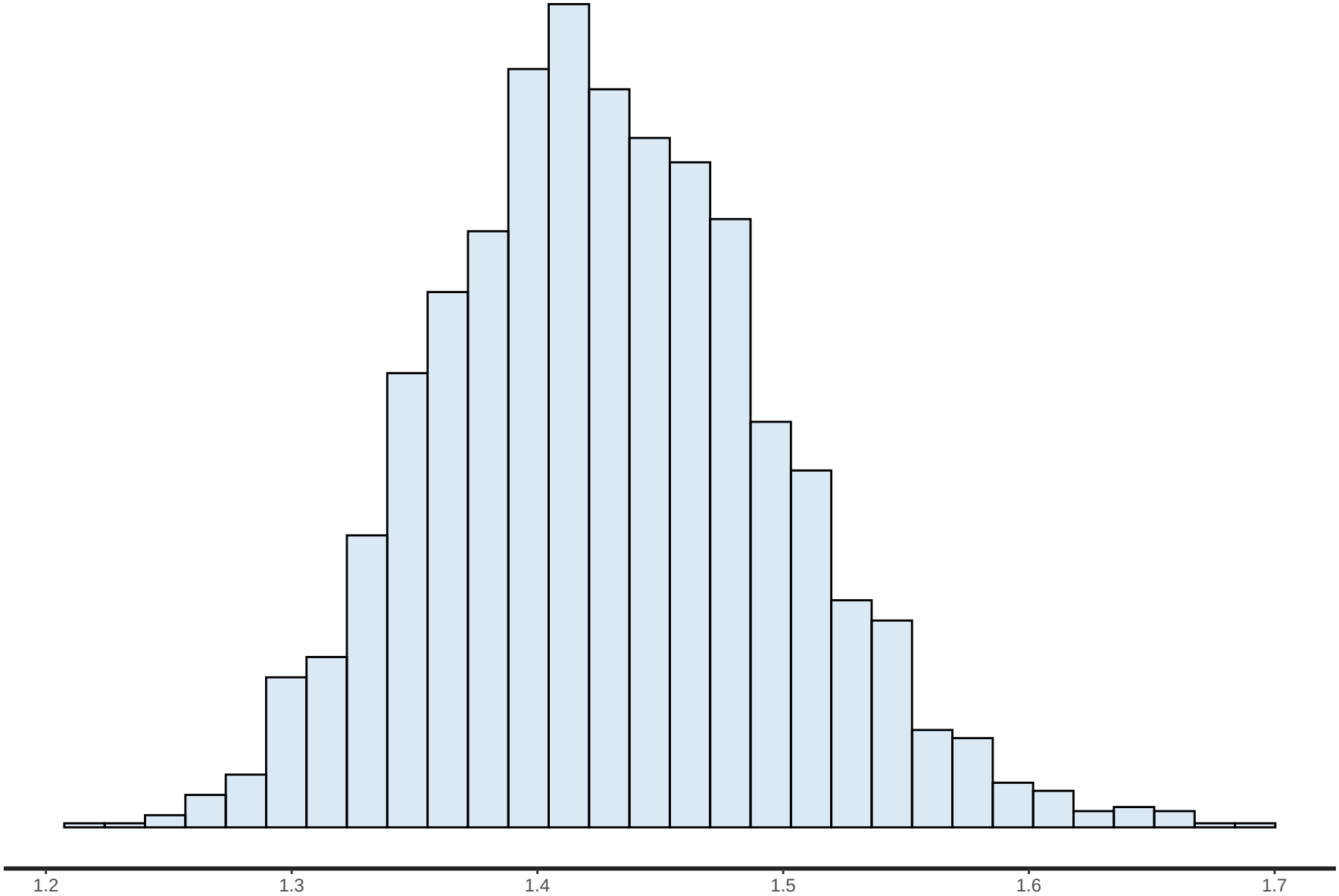

Short Term Death Projection
Number of COVID19 Deaths
10000
8000
6000
4000
Aug 01
Sep 01
Oct 01
Nov 01
Dec 01
Median
Confirmed
5%−95%
15%−85%
25%−75%
localepi.github.io/LEMMA

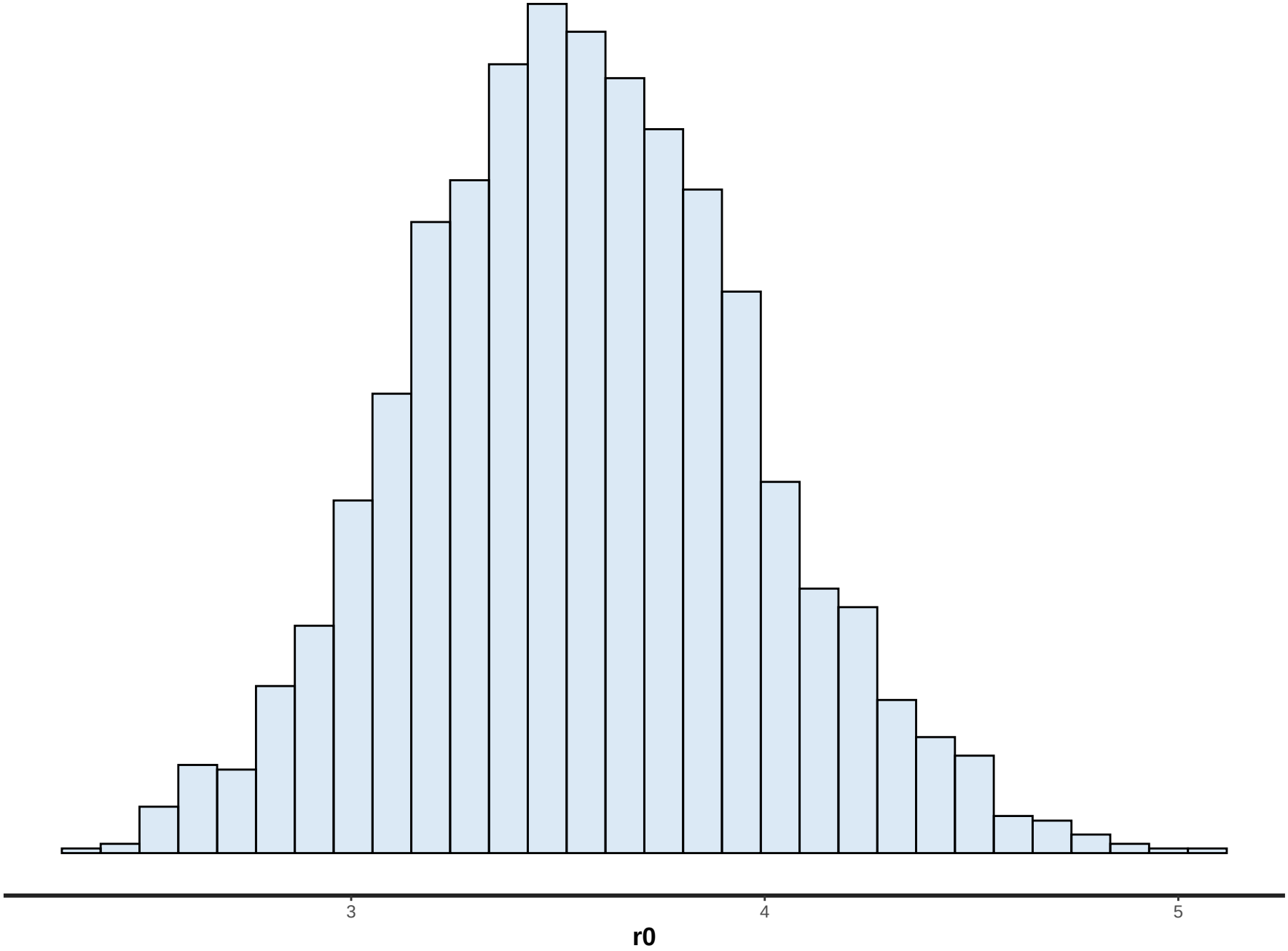

Long Term Death Projection
Number of COVID19 Deaths
20000
10000
0
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sep 01
Oct 01
Nov 01
Dec 01
Jan 01
Feb 01
Mar 01
Median
5%−95%
15%−85%
25%−75%
localepi.github.io/LEMMA

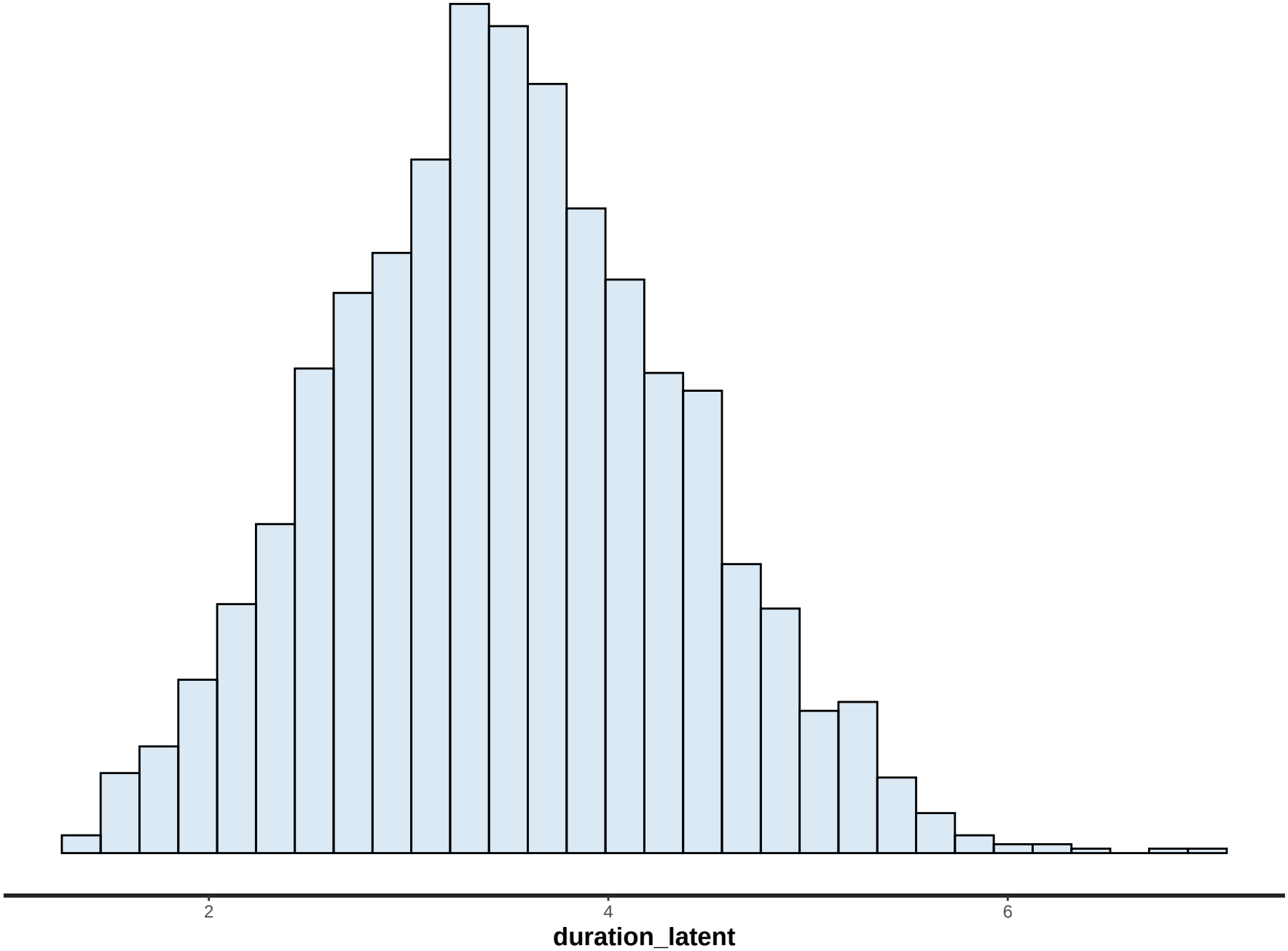

Effective Reproduction Number
Re
1.75
1.50
1.25
1.00
0.75
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sep 01
Oct 01
Nov 01
Dec 01
Median
5%−95%
15%−85%
25%−75%

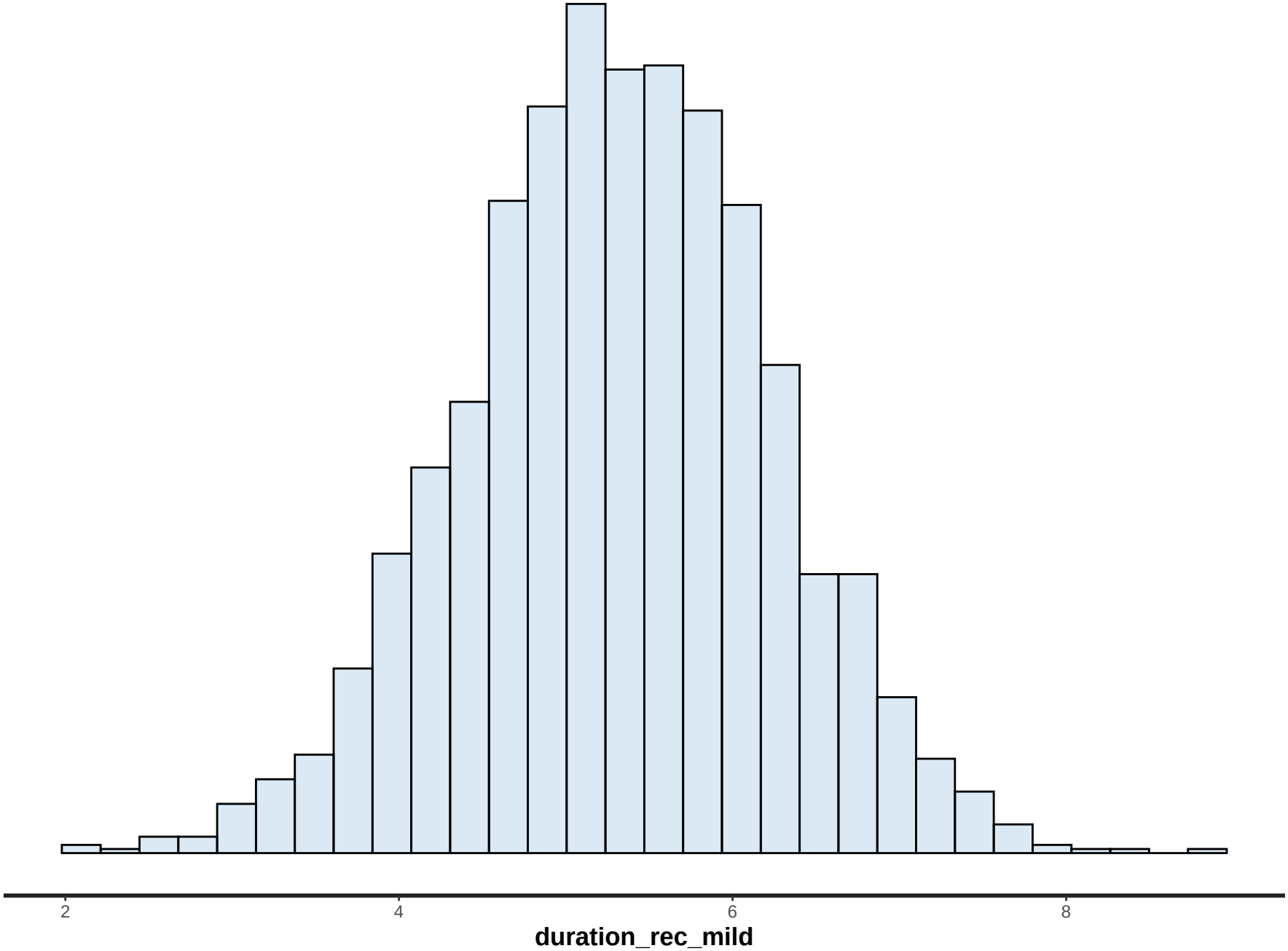
Rt as of 2020−12−09

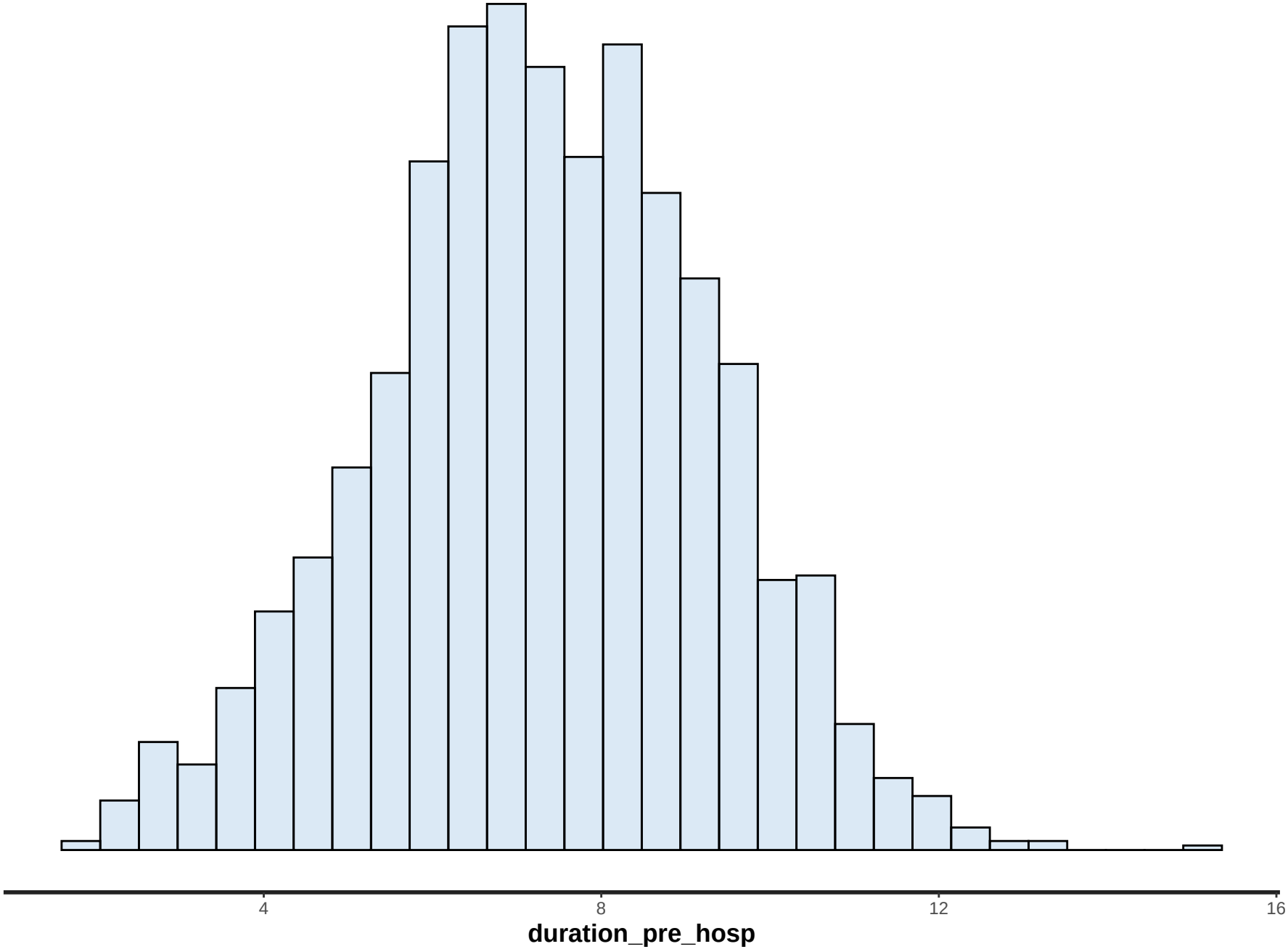
5%	10%	25%	50%	75%	90%	95%
1.32	1.34	1.38	1.43	1.47	1.52	1.55

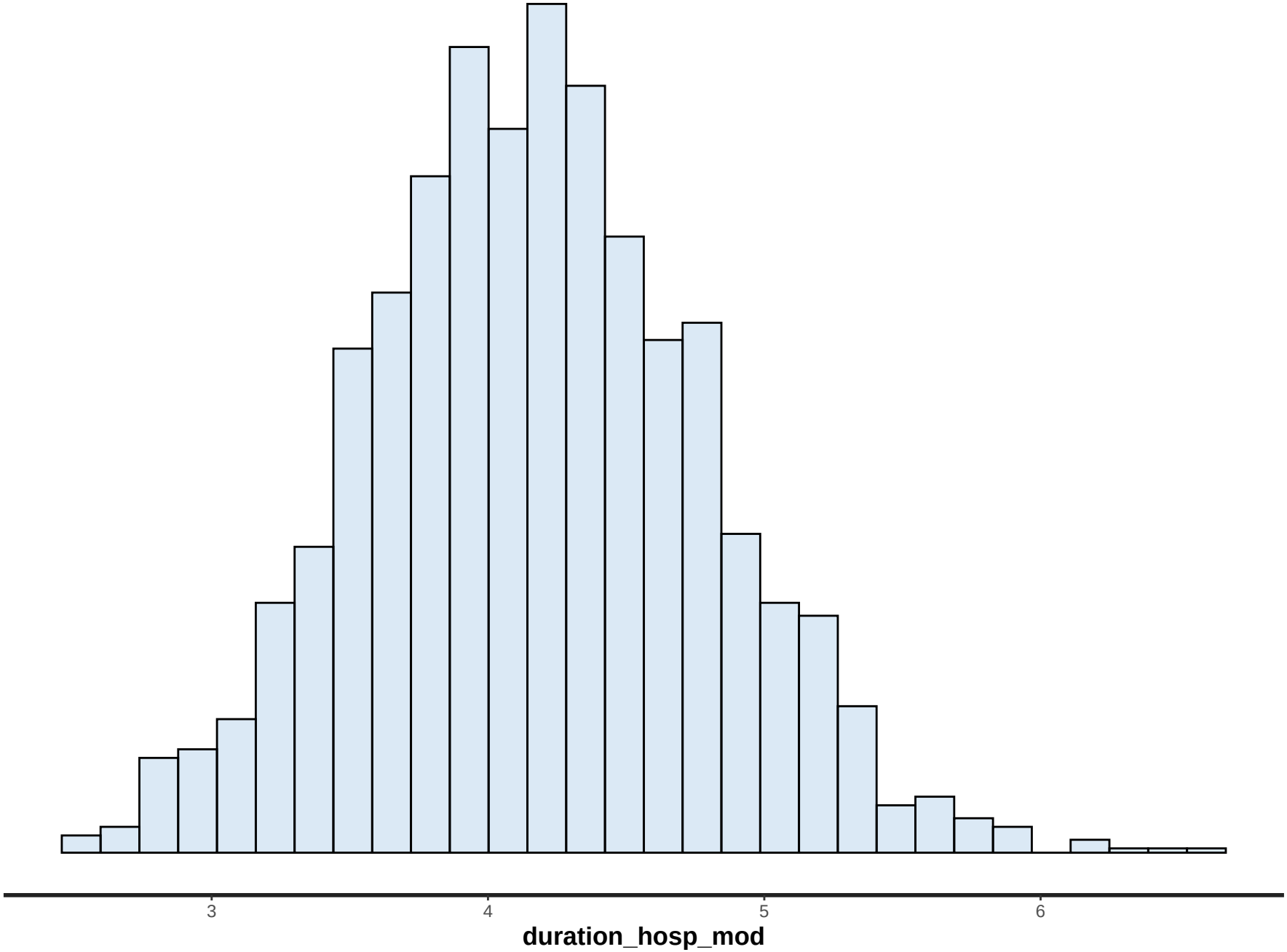


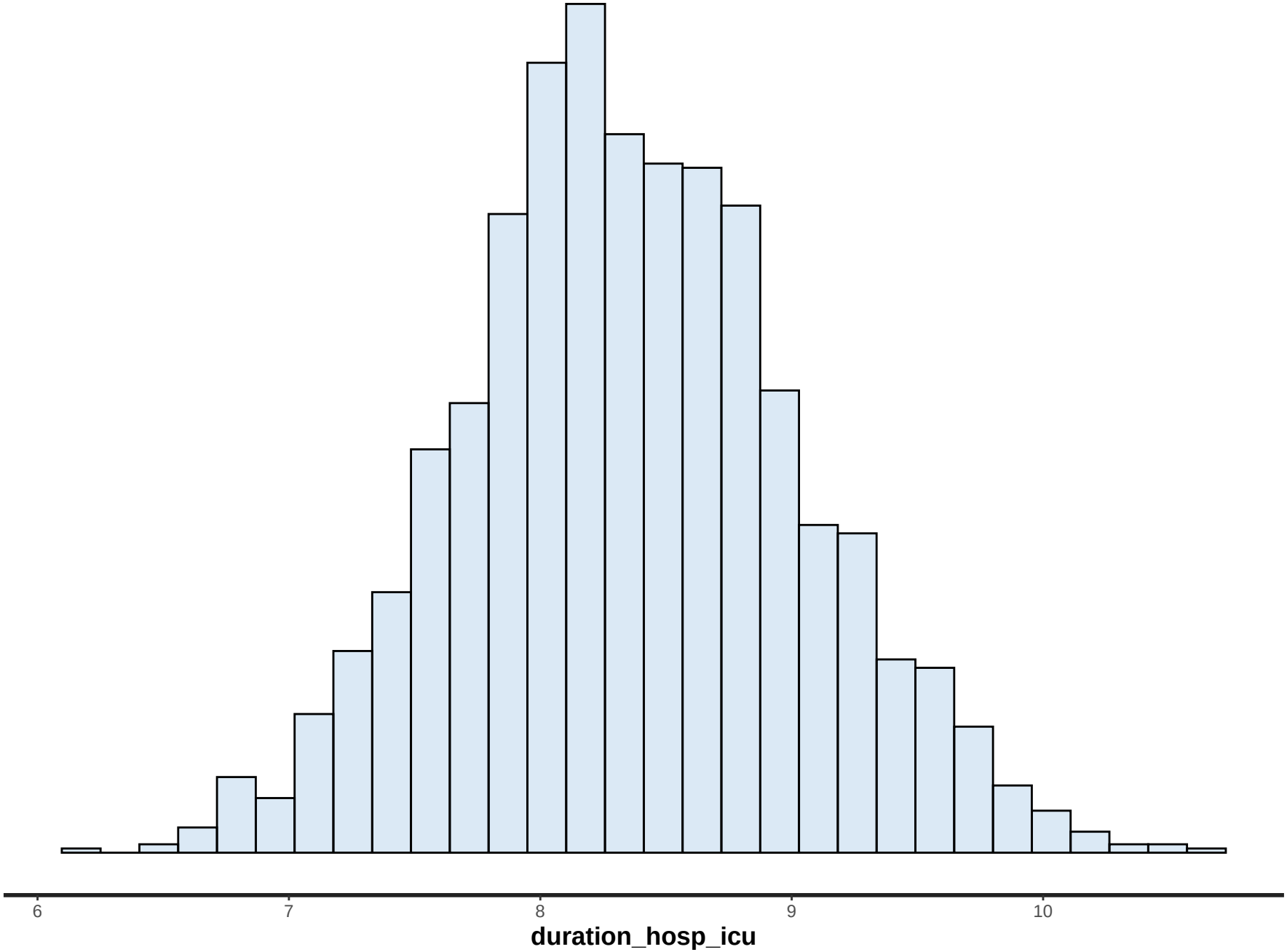

3
4
5
r0

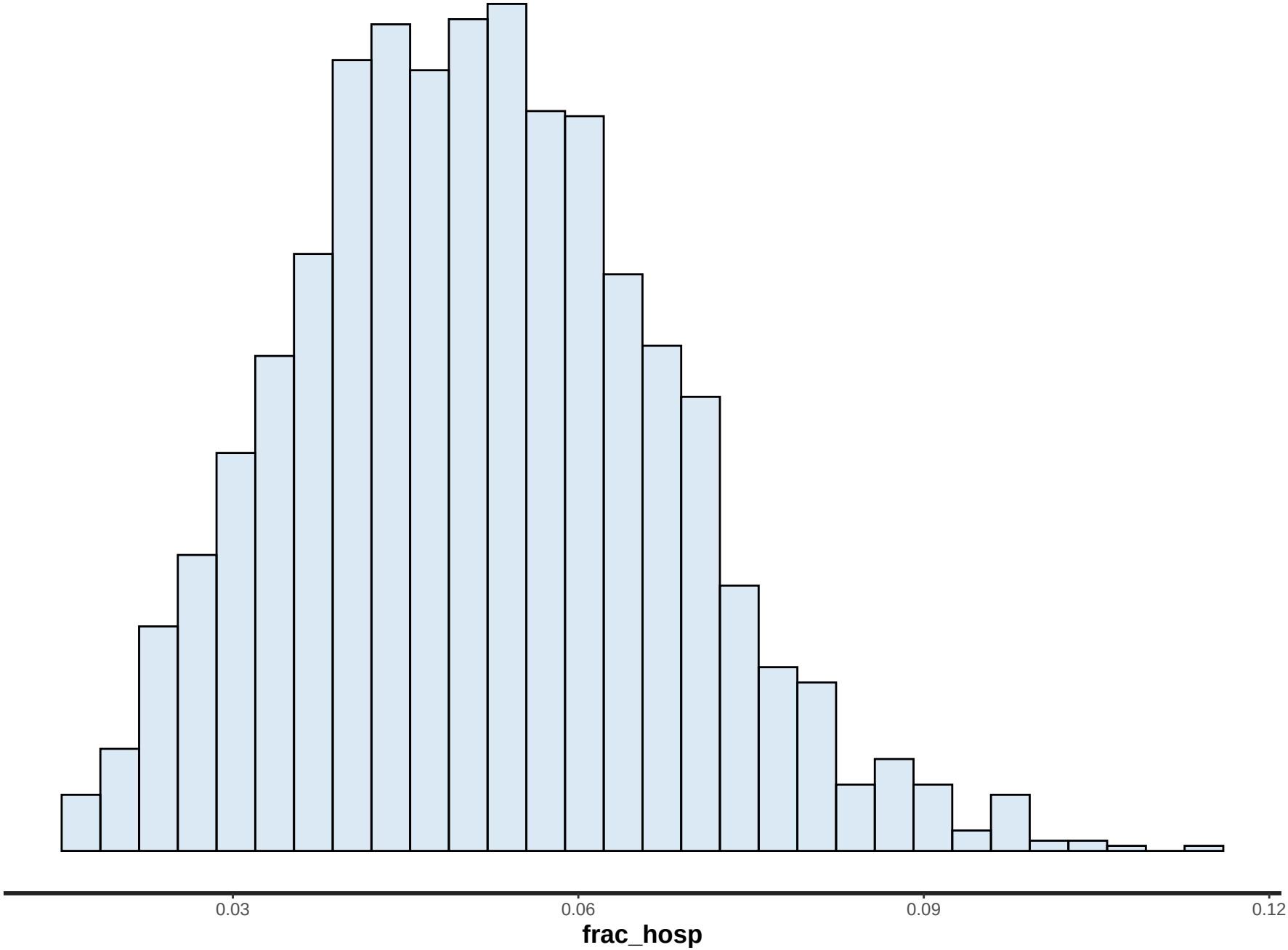

2
4
6
duration_latent

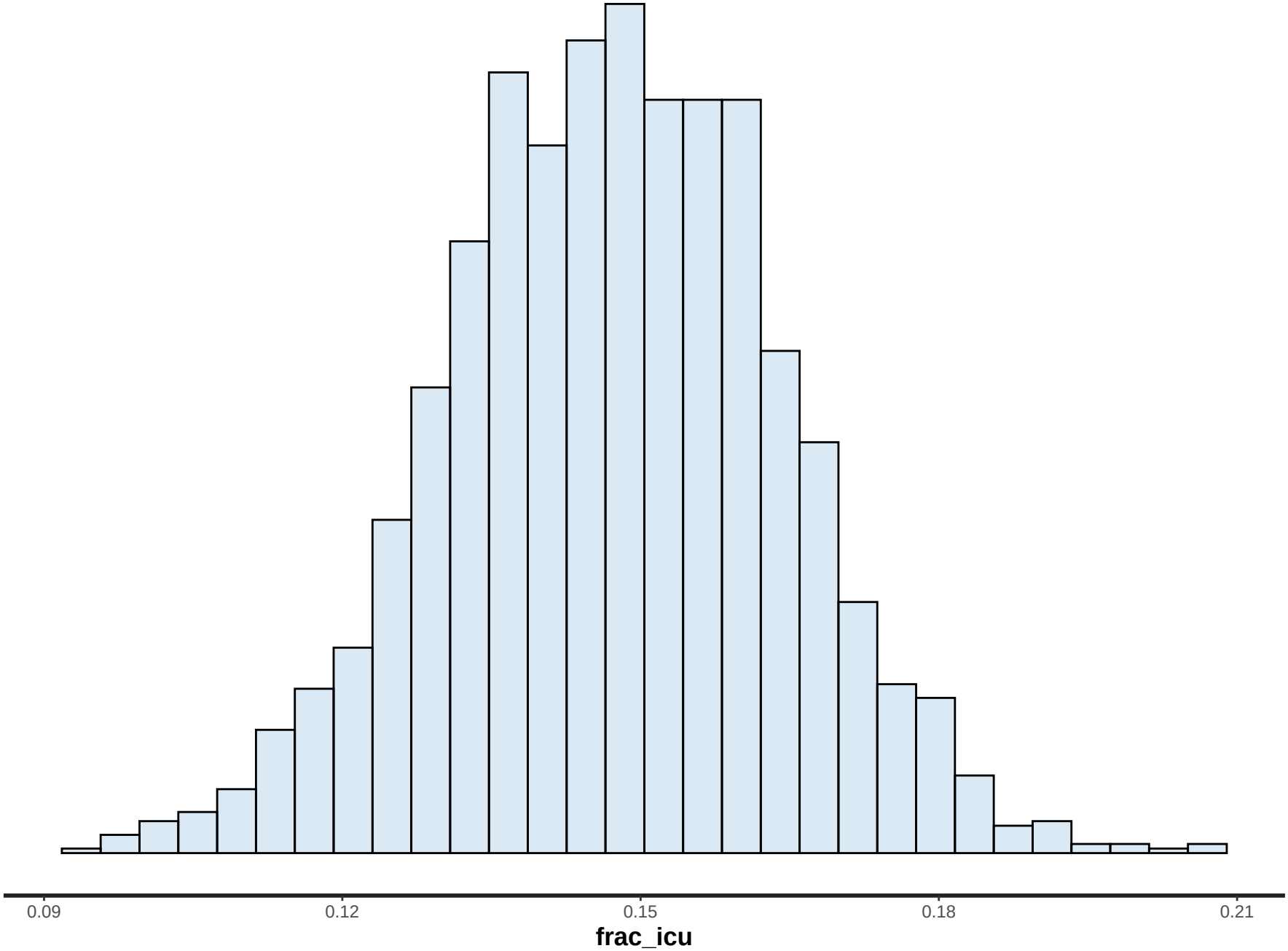

2
4
6
8
duration_rec_mild

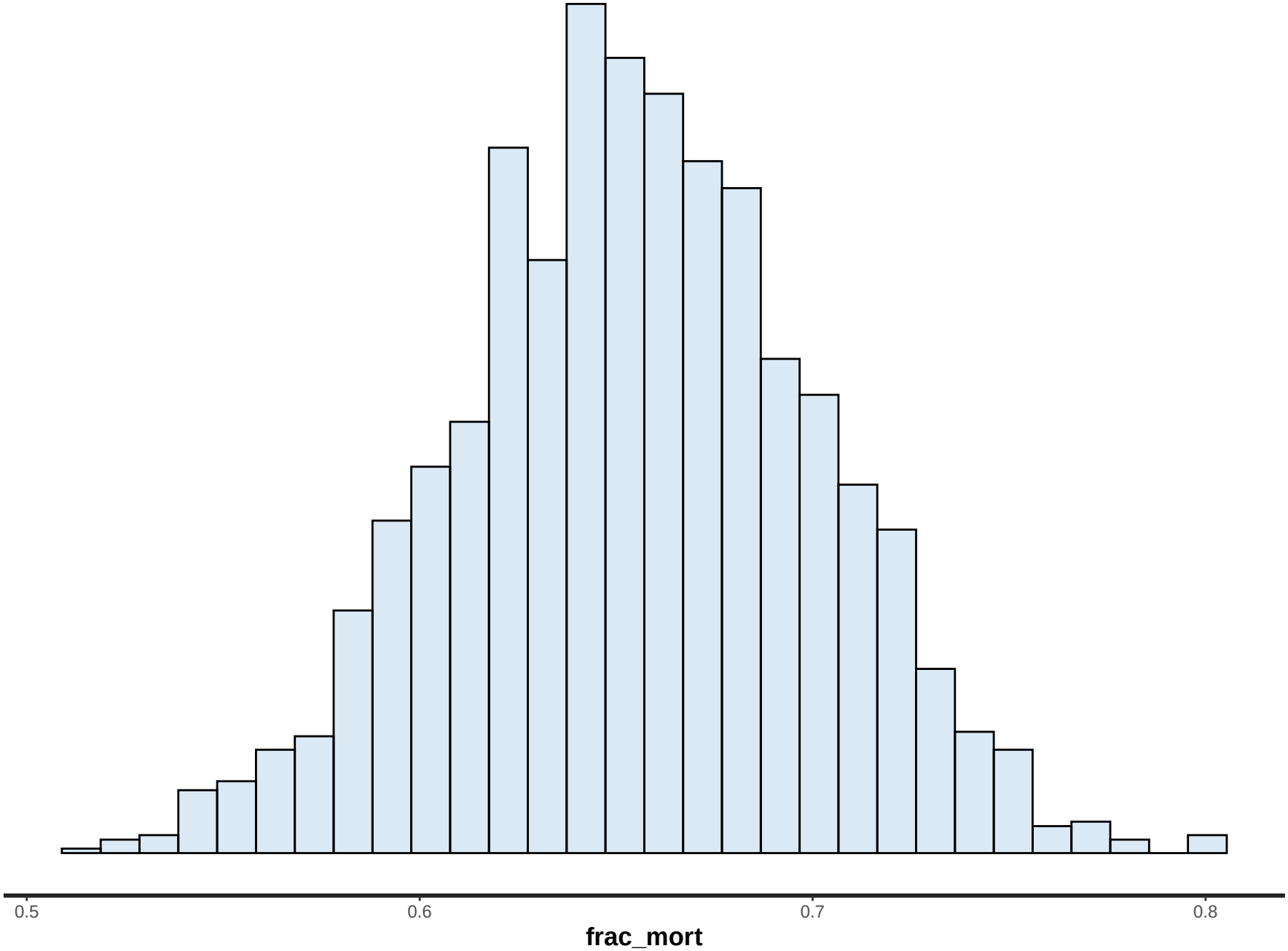

4
8
12
16
duration_pre_hosp

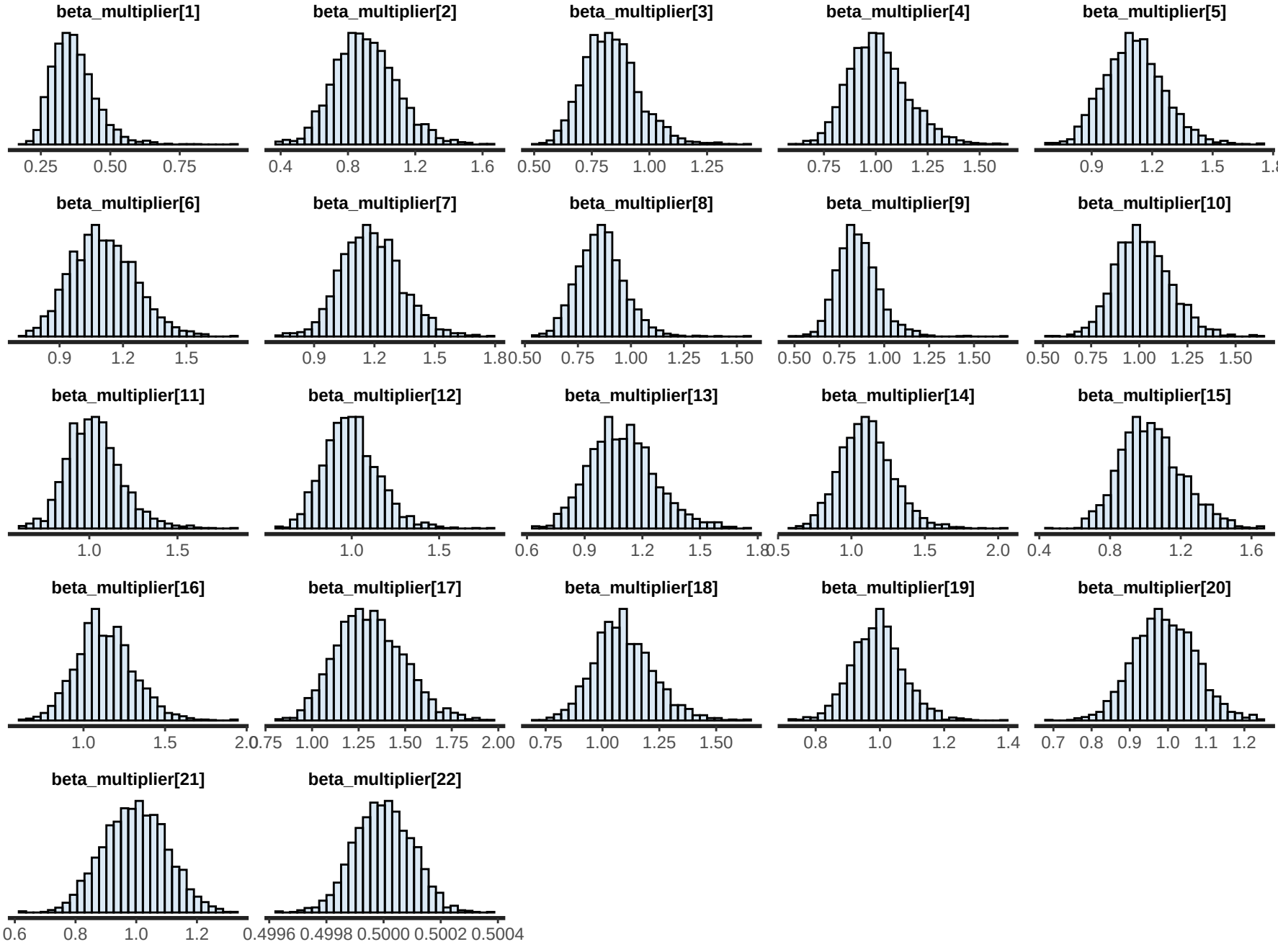

3
4
5
6
duration_hosp_mod


6
7
8
9
10
duration_hosp_icu


0.03
0.06
0.09
0.12
frac_hosp


0.09
0.12
0.15
0.18
0.21
frac_icu


0.5
0.6
0.7
0.8
frac_mort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0.25 0.50 0.75
beta_multiplier[2]
0.4 0.8 1.2 1.6
beta_multiplier[3]
0.50 0.75 1.00 1.25
beta_multiplier[4]
0.75 1.00 1.25 1.50
beta_multiplier[5]
0.9 1.2 1.5 1.8
beta_multiplier[6]
0.9 1.2 1.5
beta_multiplier[7]
0.9 1.2 1.5 1.8
beta_multiplier[8]
0.50 0.75 1.00 1.25 1.50
beta_multiplier[9]
0.50 0.75 1.00 1.25 1.50
beta_multiplier[10]
0.50 0.75 1.00 1.25 1.50
beta_multiplier[11]
1.0 1.5
beta_multiplier[12]
1.0 1.5
beta_multiplier[13]
0.6 0.9 1.2 1.5 1.8
beta_multiplier[14]
0.5 1.0 1.5 2.0
beta_multiplier[15]
0.4 0.8 1.2 1.6
beta_multiplier[16]
1.0 1.5 2.0
beta_multiplier[17]
0.75 1.00 1.25 1.50 1.75 2.00
beta_multiplier[18]
0.75 1.00 1.25 1.50
beta_multiplier[19]
0.8 1.0 1.2 1.4
beta_multiplier[20]
0.7 0.8 0.9 1.0 1.1 1.2
beta_multiplier[21]
0.6 0.8 1.0 1.2
beta_multiplier[22]
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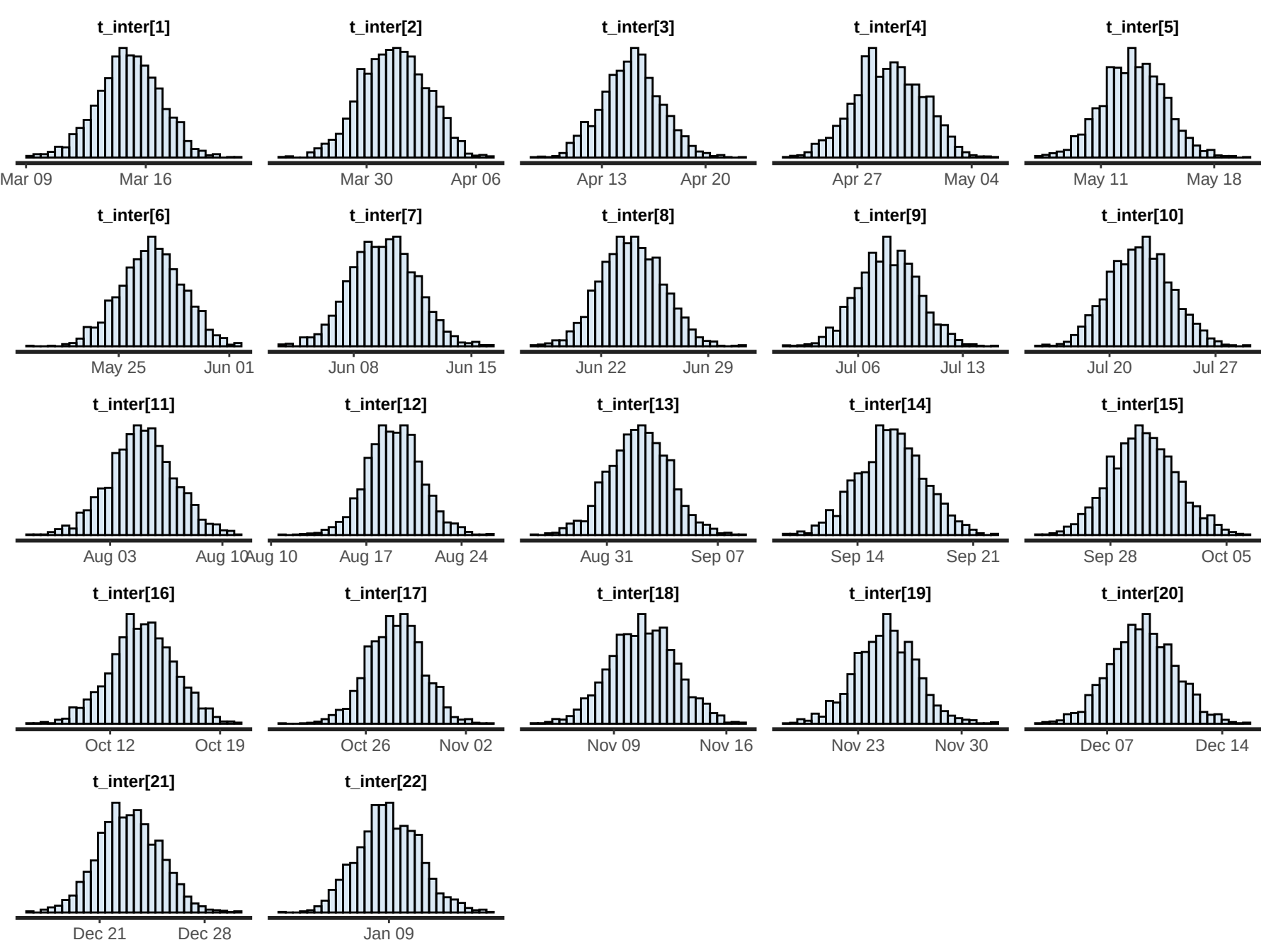
t_inter[1]
Mar 09
Mar 16
t_inter[2]
Mar 30
Apr 06
t_inter[3]
Apr 13
Apr 20
t_inter[4]
Apr 27
May 04
t_inter[5]
May 11
May 18
t_inter[6]
May 25
Jun 01
t_inter[7]
Jun 08
Jun 15
t_inter[8]
Jun 22
Jun 29
t_inter[9]
Jul 06
Jul 13
t_inter[10]
Jul 20
Jul 27
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Aug 03
Aug 10
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Aug 10
Aug 17
Aug 24
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Aug 31
Sep 07
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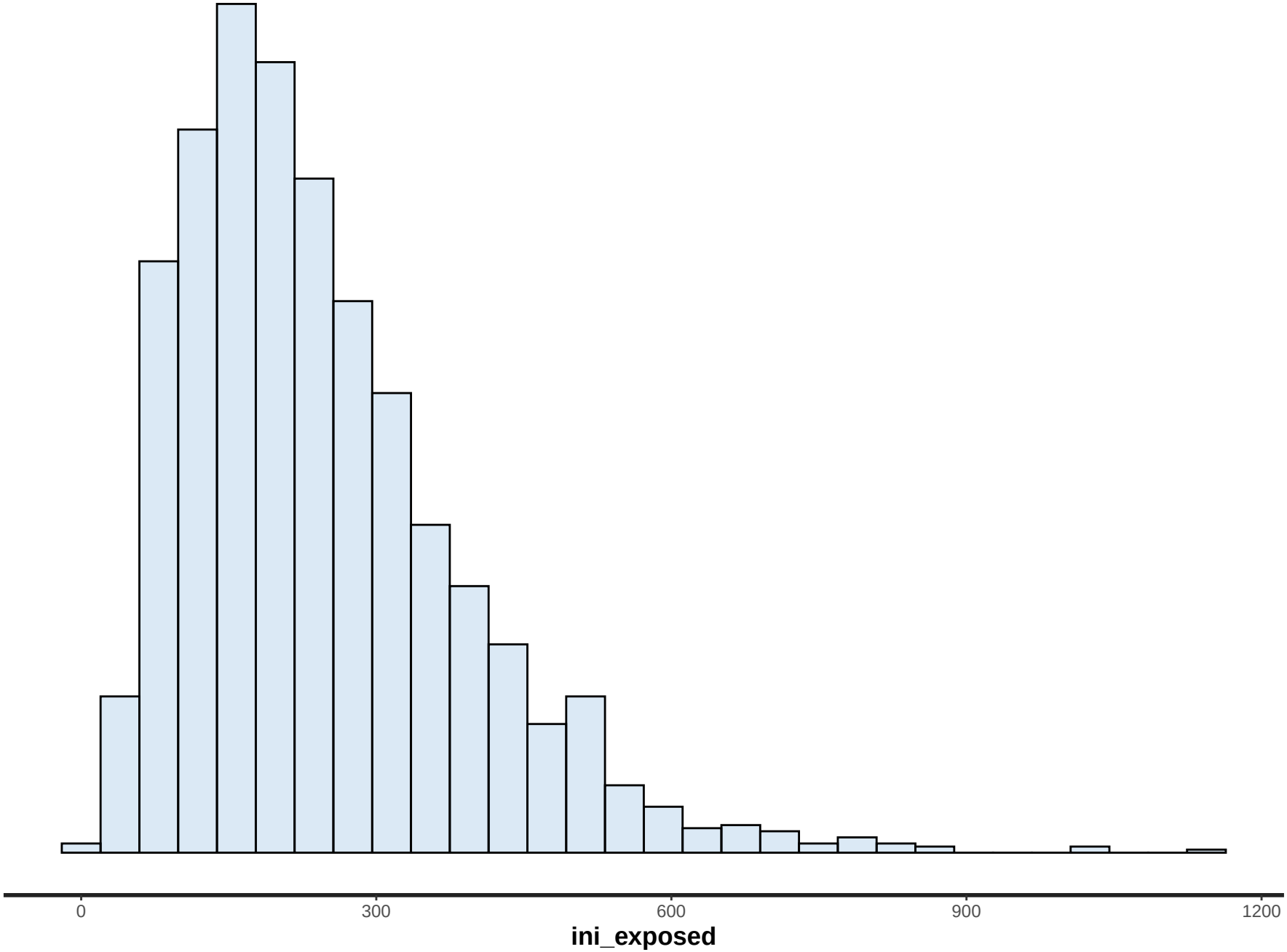
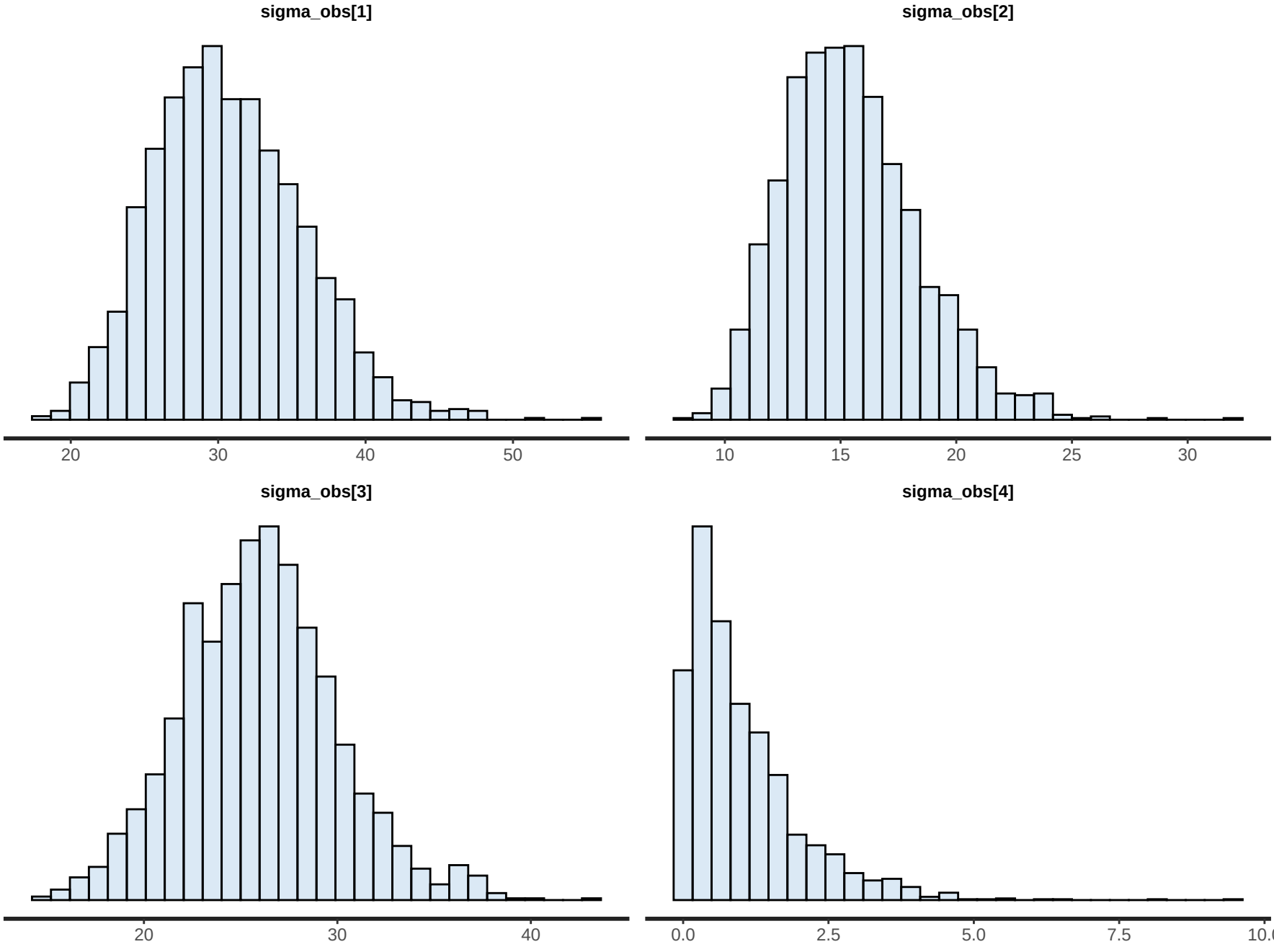
Sep 14
Sep 21
t_inter[15]
Sep 28
Oct 05
t_inter[16]
Oct 12
Oct 19
t_inter[17]
Oct 26
Nov 02
t_inter[18]
Nov 09
Nov 16
t_inter[19]
Nov 23
Nov 30
t_inter[20]
Dec 07
Dec 14
t_inter[21]
Dec 21
Dec 28
t_inter[22]
Jan 09


0
300
600
900
1200
ini_exposed


sigma_obs[1]
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30
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sigma_obs[2]
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30
sigma_obs[3]
20
30
40
sigma_obs[4]
0.0
2.5
5.0
7.5
10.0