

Descriptives of tract states

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```
library(kableExtra)
library(tidyverse)
library(jsonlite)
source(".././init.R")
source("load_and_preprocess.R")
```

Getting metadata

```
# get metadata from ~US root
metadata <- fromJSON("../metadata.json")
# extract required metadata (lists)
zip_states <- metadata$zip_states
tract_states <- metadata$tract_states
```

```
source("compute_descriptives.R")
```

TRACT states

```
print(tract_states)
```

```
[1] "OH" "PA" "CO" "MD" "MA" "MN" "NYC" "NC" "IN" "OR" "NH" "WI"
```

Ohio

```
oh_summary <- data_summary("OH", year = NULL)
```

```
[1] "Loading OH from processed_data"
```

```
Rows: 94292 Columns: 6
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (4): state, BLL_geq_5, BLL_geq_10, tested
```

```
dbl (2): tract, year
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

```
Warning in datasummary_skim_numeric(data, output = output, fmt = fmt, histogram  
= histogram, : The histogram argument is only supported for (a) output types  
"default", "html", or "kableExtra"; (b) writing to file paths with extensions  
".html", ".jpg", or ".png"; and (c) Rmarkdown or knitr documents compiled to  
PDF or HTML. Use `histogram=FALSE` to silence this warning.
```

year	n_obs	lead_cens_5	lead_nocens_5	lead_censR_5	lead_cens_10	lead_nocens_10	lead_censR_10	test_cens	test_censR	sup_threshold_5	sup_threshold_10	median_lead_5	q75_lead_5	max_lead_5	median_lead_10	q75_lead_10	max_lead_10
2005	4360	1990	2370	0.4564220	1502	2858	0.3444854	308	0.0796422	4	4	5	9	120	0	5	31
2006	4330	2084	2246	0.4812933	1426	2904	0.3293303	256	0.0591224	4	4	5	8	98	0	5	21
2007	4254	1904	2350	0.4475787	1474	2780	0.3464974	200	0.0470146	4	4	5	8	100	0	5	25
2008	4232	2004	2228	0.4735350	1344	2888	0.3175903	186	0.0489509	4	4	5	7	96	0	5	18
2009	4344	2114	2230	0.4866483	1408	2876	0.3379374	222	0.0511050	4	4	5	6	90	0	5	14
2010	4722	2334	2188	0.5366370	1350	3372	0.2858658	152	0.0331898	4	4	5	5	80	0	5	14
2011	4808	2402	2406	0.4995840	1182	3626	0.2458403	114	0.0237105	4	4	5	5	40	0	5	12
2012	4808	2348	2460	0.4883527	1142	3666	0.2375208	44	0.0091514	4	4	5	5	46	0	5	12
2013	4788	2406	2382	0.5025063	1084	3704	0.2263993	34	0.0071011	4	4	5	5	41	0	0	13
2014	4846	2096	2750	0.4325217	1024	3822	0.2113883	72	0.0148576	4	4	5	5	31	0	0	13
2015	4842	2160	2682	0.4460967	1260	3582	0.2692230	542	0.1119372	4	4	5	5	28	0	5	14

```
oh_summary[[1]] |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

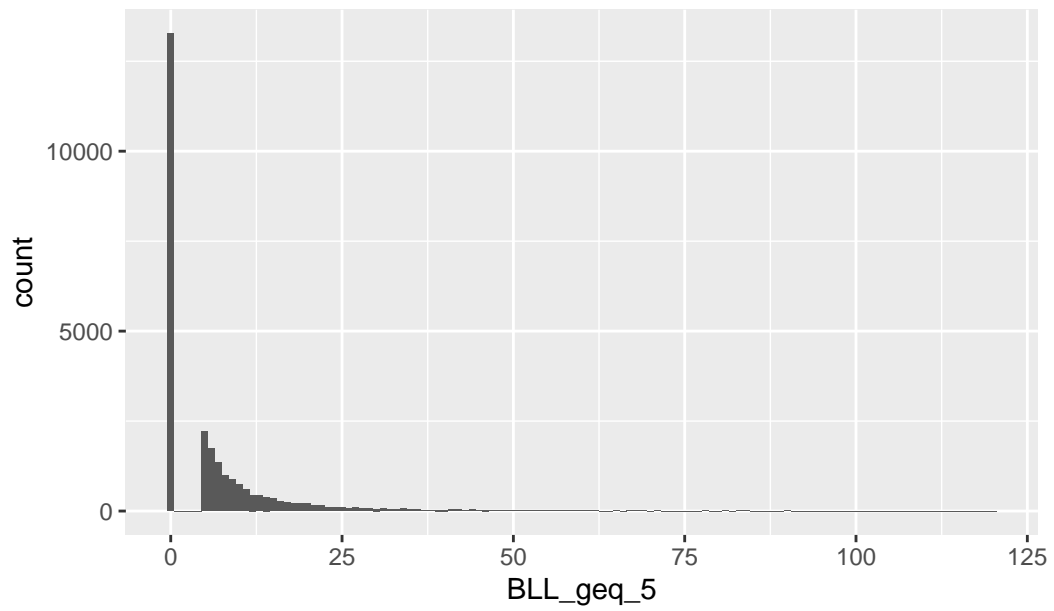
```
oh_summary[[2]]
```

	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
BLL_geq_5	87	0	5.6	7.1	0.0	5.0	120.0
BLL_geq_10	24	0	1.7	2.6	0.0	0.0	31.0
tested	251	0	40.5	32.5	5.0	33.0	520.0
year	11	0	2010.2	3.2	2005.0	2010.0	2015.0
tested_ell	1	0	5.0	0.0	5.0	5.0	5.0
ell_5	1	0	4.0	0.0	4.0	4.0	4.0
ell_10	1	0	4.0	0.0	4.0	4.0	4.0
median_annual_incomeE	2359	0	0.0	1.0	-2.5	-0.1	5.5
house_price_medianE	1503	0	0.0	1.0	-1.6	-0.2	6.2
poor_fam_propE	2403	0	-0.0	1.0	-1.1	-0.3	5.6
black_ppl_propE	2253	0	-0.0	1.0	-0.6	-0.5	3.5
bp_pre_1959E_prop	2455	0	0.0	1.0	-1.8	-0.1	2.0
svi_socioeconomic_pctile	2178	0	-0.0	1.0	-2.2	0.0	1.6
under_yo5_pplE	534	0	227.4	136.7	5.0	203.0	1263.0
ped_per_100k	69	0	89.4	67.6	0.0	70.7	243.7

```
oh_summary[[3]]
```

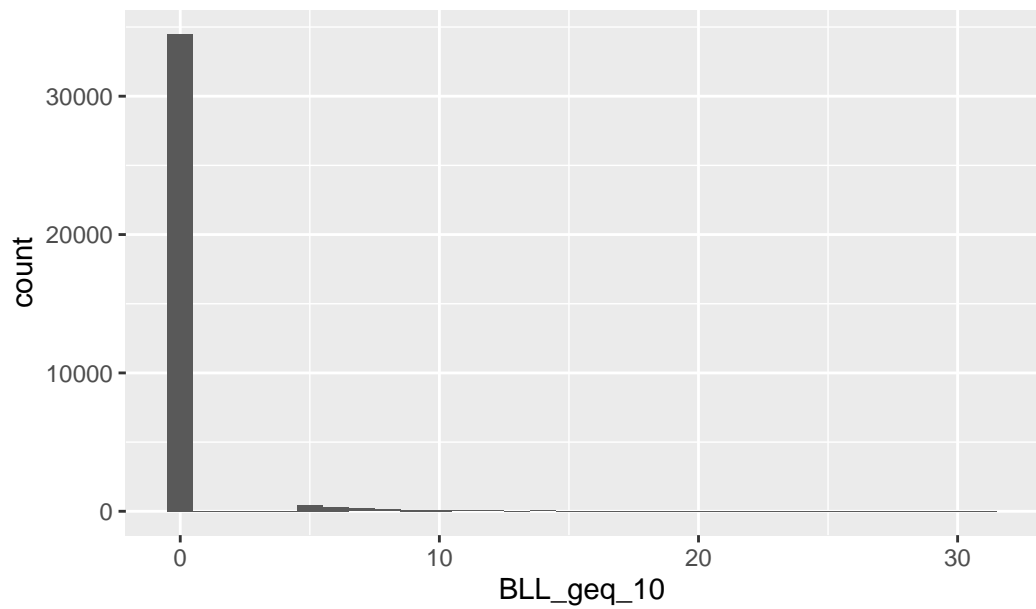
```
[[1]]
```

Distribution of non-censored BLL_geq_5 values

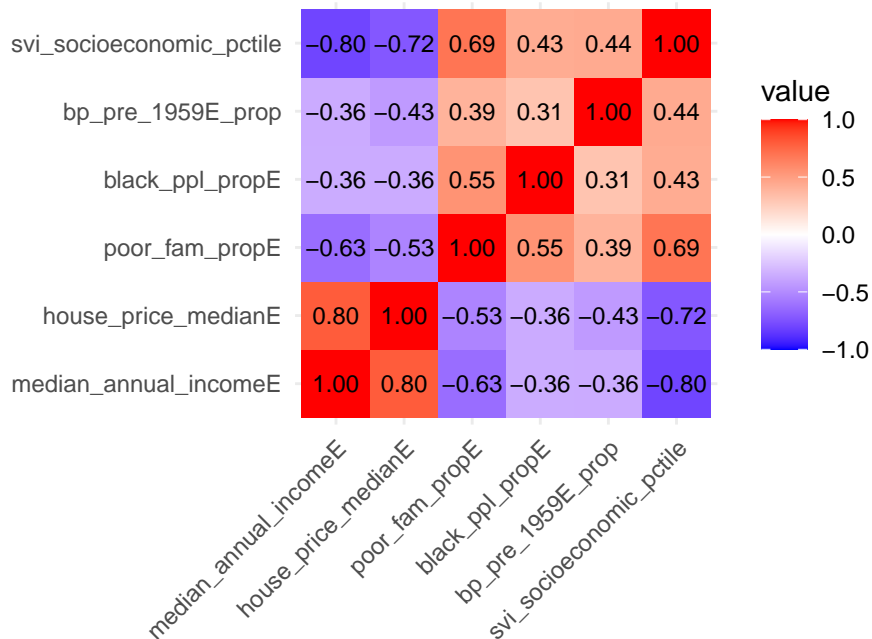


[[2]]

Distribution of non-censored BLL_geq_10 values



```
oh_summary[[4]]
```



```
oh_lead_model <- lead_count_model_summary("OH", year = 2010)
```

```
[1] "Loading OH from processed_data"
```

```
Rows: 94292 Columns: 6
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (4): state, BLL_geq_5, BLL_geq_10, tested
```

```
dbl (2): tract, year
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

Loading required package: cmdstanr

This is cmdstanr version 0.6.1

- CmdStanR documentation and vignettes: mc-stan.org/cmdstanr
- CmdStan path: /Users/lasse/.cmdstan/cmdstan-2.33.0
- CmdStan version: 2.33.0

A newer version of CmdStan is available. See `?install_cmdstan()` to install it.

To disable this check set option or environment variable `CMDSTANR_NO_VER_CHECK=TRUE`.

Loading required package: bayesplot

This is bayesplot version 1.10.0

- Online documentation and vignettes at mc-stan.org/bayesplot
- bayesplot theme set to `bayesplot::theme_default()`
 - * Does `_not_` affect other ggplot2 plots
 - * See `?bayesplot_theme_set` for details on theme setting

Warning in `readLines(stan_file)`: incomplete final line found on
'poisson_many_X_suppression.stan'

Chain 1 Initialization between (-2, 2) failed after 100 attempts.

Chain 1 Try specifying initial values, reducing ranges of constrained values, or reparameterizing the model.

Chain 1 Initialization failed.

Chain 2 Initialization between (-2, 2) failed after 100 attempts.

Chain 2 Try specifying initial values, reducing ranges of constrained values, or reparameterizing the model.

Chain 2 Initialization failed.

Chain 3 Initialization between (-2, 2) failed after 100 attempts.

Chain 3 Try specifying initial values, reducing ranges of constrained values, or reparameterizing the model.

Chain 3 Initialization failed.

Chain 4 Initialization between (-2, 2) failed after 100 attempts.

Chain 4 Try specifying initial values, reducing ranges of constrained values, or reparameterizing the model.

Chain 4 Initialization failed.

Warning: No chains finished successfully. Unable to retrieve the fit.

Error: No chains finished successfully. Unable to retrieve the draws.

```
oh_lead_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

Error in `knitr::kable(oh_lead_model$table)`: object 'oh_lead_model' not found

```
oh_lead_model$plot
```

Error in eval(expr, envir, enclos): object 'oh_lead_model' not found

```
oh_test_model <- test_count_model_summary("OH", year = 2012)
```

```
[1] "Loading OH from processed_data"
```

Rows: 94292 Columns: 6

-- Column specification -----

Delimiter: ","

chr (4): state, BLL_geq_5, BLL_geq_10, tested

dbl (2): tract, year

i Use `spec()` to retrieve the full column specification for this data.

i Specify the column types or set `show_col_types = FALSE` to quiet this message.

Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.

i Please use `if_any()` or `if_all()` instead.

```
[1] "Additional features added: "
```

Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'

Warning: Using an external vector in selections was deprecated in tidyselect 1.1.0.

i Please use `all_of()` or `any_of()` instead.

Was:

```
data %>% select(features_for_testing)
```

Now:

```
data %>% select(all_of(features_for_testing))
```

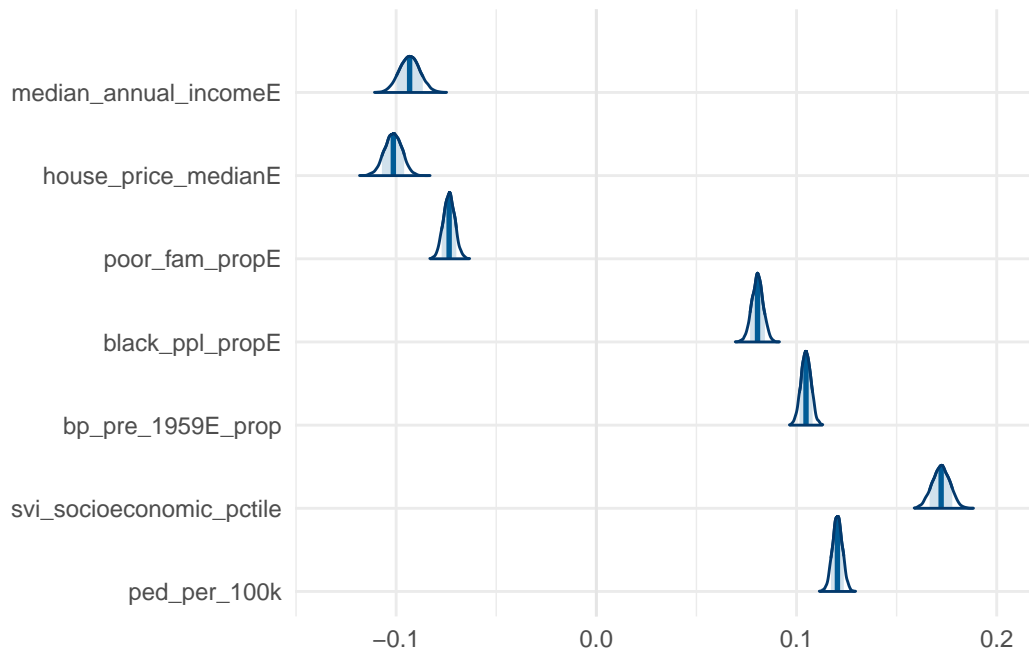
See <<https://tidyselect.r-lib.org/reference/faq-external-vector.html>>.

Warning: Dropping 'draws_df' class as required metadata was removed.

variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp_	6.194621e+05	6.194620e+05	2.0084826	1.4826000	6.194580e+05	6.194650e+05	1.0003455	1825.850	2376.038
alpha	-1.653653e+00	-1.653650e+00	0.0022564	0.0023129	-1.657341e+00	-1.649990e+00	1.0002532	5739.088	3031.486
median_annual_incomeE	-9.324160e-02	-9.326880e-02	0.0050949	0.0051476	-1.016279e-01	-8.470730e-02	1.0021192	2841.244	2713.768
house_price_medianE	-1.014833e-01	-1.014020e-01	0.0043789	0.0044027	-1.086894e-01	-9.444630e-02	1.0027754	3150.769	2735.240
poor_fam_propE	-7.355960e-02	-7.353430e-02	0.0028783	0.0028848	-7.825160e-02	-6.887050e-02	1.0005664	4460.810	2555.875
black_ppl_propE	8.048840e-02	8.051360e-02	0.0028866	0.0028182	7.572950e-02	8.524870e-02	1.0003886	3898.293	3116.932
bp_pre_1959E_prop	1.047400e-01	1.047240e-01	0.0025364	0.0025501	1.005944e-01	1.088871e-01	1.0004535	5260.721	3056.483
svi_socioeconomic_pctile	1.721708e-01	1.722305e-01	0.0043862	0.0044886	1.647628e-01	1.792631e-01	1.0007167	3345.303	2605.146
NA	1.204184e-01	1.204210e-01	0.0024939	0.0024759	1.163479e-01	1.244387e-01	0.9998035	4537.710	3178.368

```
oh_test_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
oh_test_model$plot
```



Pennsylvania

```
pa_summary <- data_summary("PA", year = NULL)
```

```
[1] "Loading PA from processed_data"
```


year	n_obs	lead_cens_5	lead_nocens_5	lead_censR_5	lead_cens_10	lead_nocens_10	lead_censR_10	test_cens	test_censR	sup_threshold_5	sup_threshold_10	median_lead_5	q75_lead_5	max_lead_5	median_lead_10	q75_lead_10	max_lead_10
2005	2153	1057	1096	0.4909429	965	1188	0.4482118	292	0.1356247	4	4	5	9	267	5	5	102
2006	2174	1049	1125	0.4825207	865	1309	0.3978841	197	0.0961664	4	4	5	8	198	5	5	65
2007	2171	1009	1102	0.4647628	817	1354	0.3763243	143	0.0658683	4	4	5	8	187	0	5	62
2008	2200	1096	1104	0.4981818	804	1396	0.3654545	191	0.0868182	4	4	5	6	160	0	5	45
2009	2124	1361	763	0.6407721	1094	1030	0.5150659	644	0.3032015	4	4	5	5	128	5	5	38
2010	2083	1402	661	0.6769628	1128	935	0.5407765	919	0.3969947	4	4	5	5	96	5	5	29
2011	1945	1387	558	0.7131105	1176	769	0.6946272	930	0.4781491	4	4	5	5	55	5	5	22
2012	1865	1385	480	0.7426273	1184	681	0.6348525	972	0.5211796	4	4	5	5	51	5	5	17
2013	1766	1396	370	0.7904870	1202	564	0.6806342	1012	0.5730464	4	4	5	5	32	5	5	9
2014	1722	1382	340	0.8025552	1196	526	0.6945412	1048	0.6055047	4	4	5	5	34	5	5	5
2015	799	760	39	0.9511890	718	81	0.8986233	696	0.8710889	4	4	5	5	5	5	5	5

Warning: One or more parsing issues, call `problems()` on your data frame for details, e.g.:

```
dat <- vroom(...)
problems(dat)
```

Rows: 43340 Columns: 6

-- Column specification -----

Delimiter: ","

chr (4): state, BLL_geq_5, BLL_geq_10, tested

dbl (2): tract, year

i Use `spec()` to retrieve the full column specification for this data.
i Specify the column types or set `show_col_types = FALSE` to quiet this message.

Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.

i Please use `if_any()` or `if_all()` instead.

[1] "Additional features added: "

Warning in datasummaryskim_numeric(data, output = output, fmt = fmt, histogram = histogram, : The histogram argument is only supported for (a) output types "default", "html", or "kableExtra"; (b) writing to file paths with extensions ".html", ".jpg", or ".png"; and (c) Rmarkdown or knitr documents compiled to PDF or HTML. Use `histogram=FALSE` to silence this warning.

```
pa_summary[[1]] |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

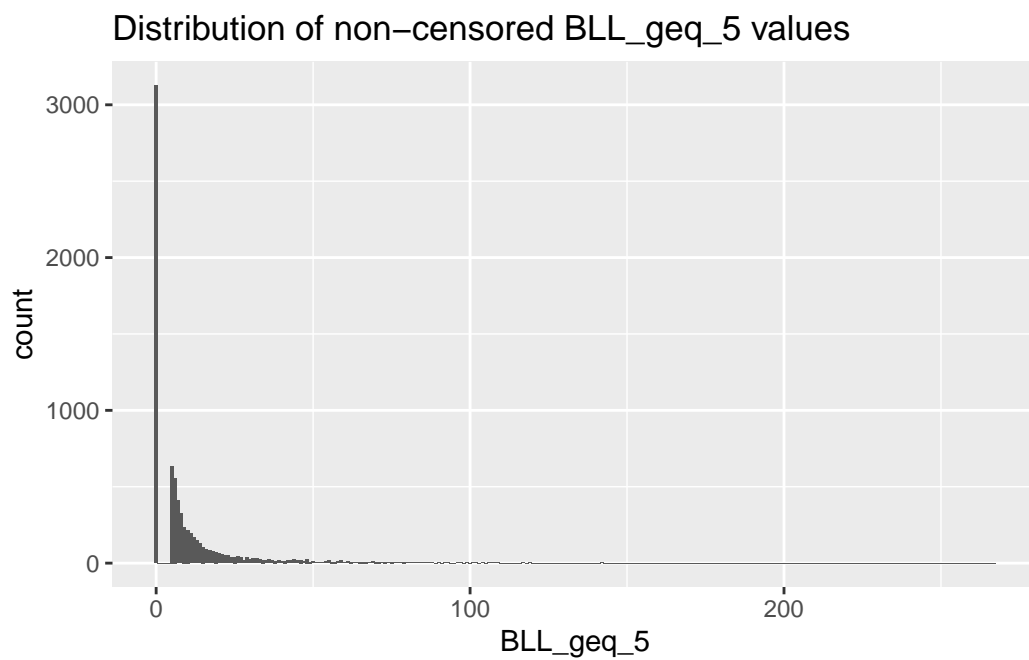
```
pa_summary[[2]]
```

	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
BLL_geq_5	120	0	7.0	10.7	0.0	5.0	267.0
BLL_geq_10	37	0	3.2	3.3	0.0	5.0	102.0

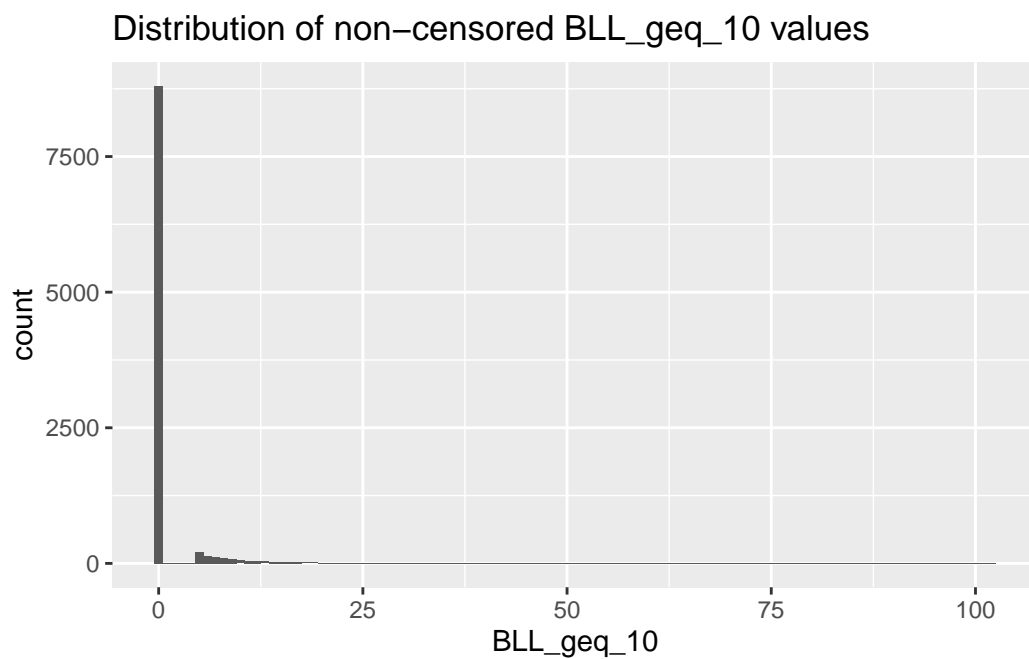
	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
tested	254	0	20.6	30.5	5.0	9.0	451.0
year	11	0	2009.5	3.0	2005.0	2009.0	2015.0
tested_ell	1	0	5.0	0.0	5.0	5.0	5.0
ell_5	1	0	4.0	0.0	4.0	4.0	4.0
ell_10	1	0	4.0	0.0	4.0	4.0	4.0
median_annual_incomeE	2166	0	-0.1	1.0	-2.5	-0.2	6.6
house_price_medianE	1568	0	-0.1	0.9	-1.4	-0.3	7.8
poor_fam_propE	2211	0	0.1	1.0	-1.0	-0.3	6.0
black_ppl_propE	2070	0	0.1	1.0	-0.6	-0.4	4.0
bp_pre_1959E_prop	2248	0	0.1	1.0	-2.2	0.2	1.9
svi_socioeconomic_pctile	2025	0	0.1	1.0	-1.9	0.1	1.8
under_yo5_pplE	514	0	220.2	137.6	7.0	191.0	1150.0
ped_per_100k	53	0	84.4	52.2	0.0	60.5	973.2

```
pa_summary[[3]]
```

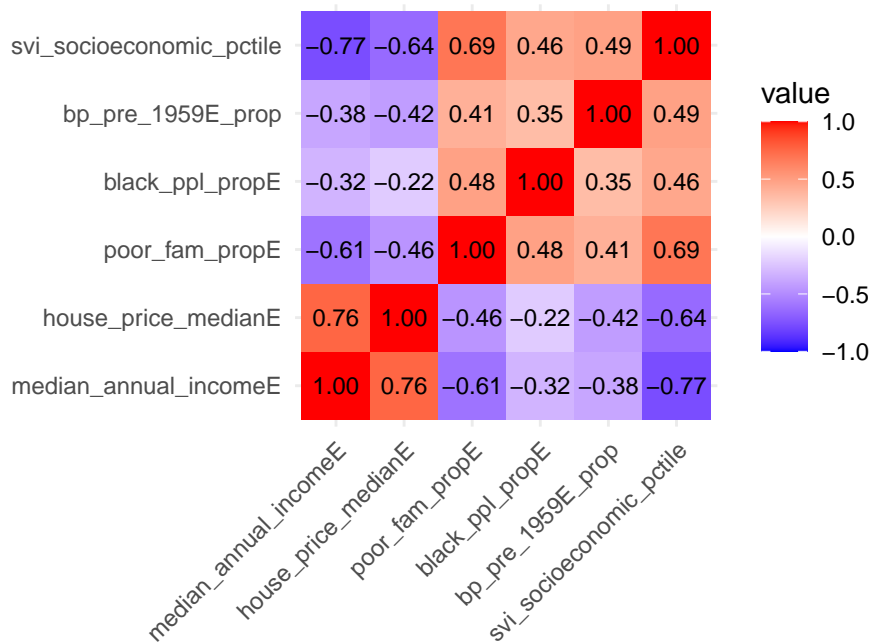
```
[[1]]
```



```
[[2]]
```



```
pa_summary[[4]]
```



```
pa_lead_model <- lead_count_model_summary("PA", year = 2007)
```

```
[1] "Loading PA from processed_data"
```

Warning: One or more parsing issues, call `problems()` on your data frame for details, e.g.:

```
dat <- vroom(...)
problems(dat)
```

Rows: 43340 Columns: 6

-- Column specification -----

Delimiter: ","

chr (4): state, BLL_geq_5, BLL_geq_10, tested

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i Use `spec()` to retrieve the full column specification for this data.

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Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.

i Please use `if_any()` or `if_all()` instead.

```
[1] "Additional features added: "
```

Warning in readLines(stan_file): incomplete final line found on

'poisson_many_X_suppression.stan'

Chain 1 Initialization between (-2, 2) failed after 100 attempts.

Chain 1 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.

Chain 1 Initialization failed.

Chain 2 Initialization between (-2, 2) failed after 100 attempts.

Chain 2 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.

Chain 2 Initialization failed.

Chain 4 Initialization between (-2, 2) failed after 100 attempts.

Chain 4 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.

Chain 4 Initialization failed.

Warning: Using an external vector in selections was deprecated in tidyselect 1.1.0.

i Please use `all_of()` or `any_of()` instead.

Was:

variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp__	35257.0140000	35257.4000000	1.9436311	1.7049900	35253.2000000	35259.5000000	1.0001842	430.0103	511.8687
alpha	-3.7306944	-3.7297750	0.0120594	0.0121647	-3.7508350	-3.7118260	1.0086244	1250.3692	842.7605
median_annual_incomeE	-0.1513797	-0.1513825	0.0178708	0.0172501	-0.1813049	-0.1221928	1.0045010	706.8704	576.2699
house_price_medianE	0.0003977	0.0003557	0.0171585	0.0171314	-0.0268372	0.0295100	1.0060569	691.9898	519.7427
poor_fam_propE	0.0329344	0.0330686	0.0075251	0.0076820	0.0207498	0.0455362	0.9997347	941.3845	643.0202
black_ppl_propE	0.1608820	0.1608300	0.0054936	0.0057021	0.1520536	0.1700905	0.9994794	1065.2261	743.6657
bp_pre_1959E_prop	0.3141247	0.3141120	0.0112814	0.0110735	0.2959321	0.3330031	0.9998343	878.8306	457.2806
svi_socioeconomic_pctile	0.5302099	0.5307375	0.0151655	0.0146036	0.5046672	0.5532668	1.0028860	795.2501	651.3333

```
data %>% select(features)
```

```
# Now:
```

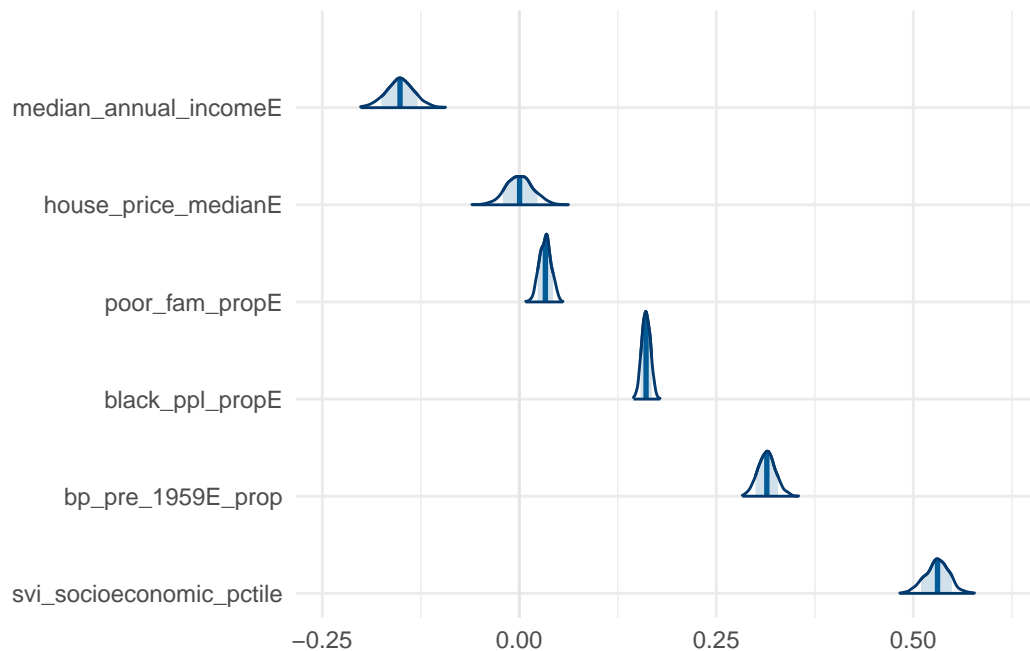
```
data %>% select(all_of(features))
```

See <https://tidyselect.r-lib.org/reference/faq-external-vector.html>.

Warning: Dropping 'draws_df' class as required metadata was removed.

```
pa_lead_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
pa_lead_model$plot
```



```
pa_test_model <- test_count_model_summary("PA", year = 2007)
```

```
[1] "Loading PA from processed_data"
```

Warning: One or more parsing issues, call ``problems()`` on your data frame for details, e.g.:

```
dat <- vroom(...)
problems(dat)
```

Rows: 43340 Columns: 6

-- Column specification -----

Delimiter: ","

chr (4): state, BLL_geq_5, BLL_geq_10, tested

dbl (2): tract, year

i Use ``spec()`` to retrieve the full column specification for this data.

i Specify the column types or set ``show_col_types = FALSE`` to quiet this message.

Warning: Using ``across()`` in ``filter()`` was deprecated in dplyr 1.0.8.

i Please use ``if_any()`` or ``if_all()`` instead.

```
[1] "Additional features added: "
```

Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'

Chain 3 Initialization between (-2, 2) failed after 100 attempts.

Chain 3 Try specifying initial values, reducing ranges of constrained values, or reparameterize.

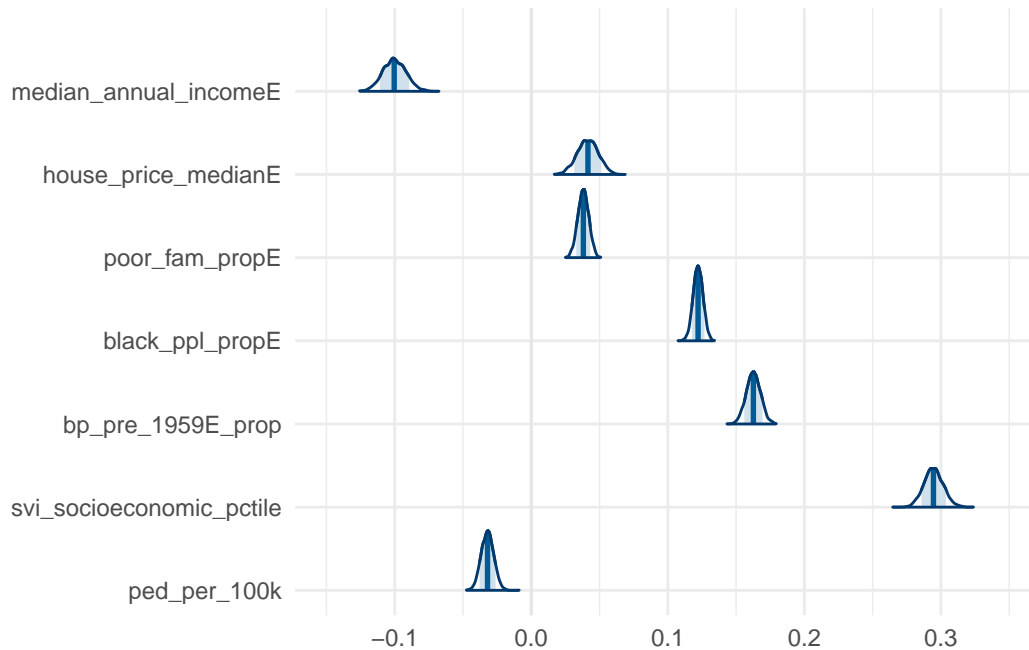
Chain 3 Initialization failed.

Warning: Dropping 'draws_df' class as required metadata was removed.

```
pa_test_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
pa_test_model$plot
```

variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp_	2.250390e+05	2.25039e+05	1.9731035	1.4826000	2.250350e+05	2.250420e+05	1.000472	1382.878	1804.743
alpha	-1.984625e+00	-1.98470e+00	0.0041864	0.0042106	-1.991410e+00	-1.977490e+00	1.000483	3878.821	2517.270
median_annual_incomeE	-1.001761e-01	-1.00376e-01	0.0084209	0.0086734	-1.140030e-01	-8.618330e-02	1.000487	2041.028	2055.236
house_price_medianE	4.138560e-02	4.14887e-02	0.0076503	0.0077931	2.833940e-02	5.381410e-02	1.000110	2255.138	2086.601
poor_fam_propE	3.808350e-02	3.81372e-02	0.0039739	0.0040144	3.145510e-02	4.459900e-02	1.000593	3785.979	2118.500
black_ppl_propE	1.221449e-01	1.22134e-01	0.0036026	0.0036168	1.162839e-01	1.280276e-01	1.001204	3224.109	2471.249
bp_pre_1959E_prop	1.626694e-01	1.62642e-01	0.0052372	0.0051735	1.539747e-01	1.712775e-01	1.001753	3735.688	2340.481
svi_socioeconomic_pctile	2.946210e-01	2.94505e-01	0.0070374	0.0069074	2.830388e-01	3.062831e-01	0.999954	2760.164	1973.626
NA	-3.206770e-02	-3.20557e-02	0.0045968	0.0046811	-3.951100e-02	-2.453990e-02	1.000550	3078.495	2249.454



Colorado

```
co_summary <- data_summary("CO", year = NULL)
```

```
[1] "Loading CO from processed_data"
```

```
Rows: 6245 Columns: 6
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (5): tract, tested, BLL_geq_5, BLL_geq_10, state
```

```
dbl (1): year
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

year	n_obs	lead_cens_5	lead_nocens_5	lead_censR_5	lead_cens_10	lead_nocens_10	lead_censR_10	test_cens	test_censR	sup_threshold_5	sup_threshold_10	median_lead_5	q75_lead_5	max_lead_5	median_lead_10	q75_lead_10	max_lead_10
2010	884	689	195	0.7794118	872	12	0.9864253	30	0.0339367	2	2	3	3	32	3	3	6
2011	884	689	195	0.7794118	872	12	0.9864253	30	0.0339367	2	2	3	3	32	3	3	6
2012	884	689	195	0.7794118	872	12	0.9864253	30	0.0339367	2	2	3	3	32	3	3	6
2013	884	689	195	0.7794118	872	12	0.9864253	30	0.0339367	2	2	3	3	32	3	3	6
2014	884	689	195	0.7794118	872	12	0.9864253	30	0.0339367	2	2	3	3	32	3	3	6

i Specify the column types or set `show_col_types = FALSE` to quiet this message.

Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.

i Please use `if_any()` or `if_all()` instead.

```
[1] "Additional features added: "
```

Warning in datasummary_skim_numeric(data, output = output, fmt = fmt, histogram = histogram, : The histogram argument is only supported for (a) output types "default", "html", or "kableExtra"; (b) writing to file paths with extensions ".html", ".jpg", or ".png"; and (c) Rmarkdown or knitr documents compiled to PDF or HTML. Use `histogram=FALSE` to silence this warning.

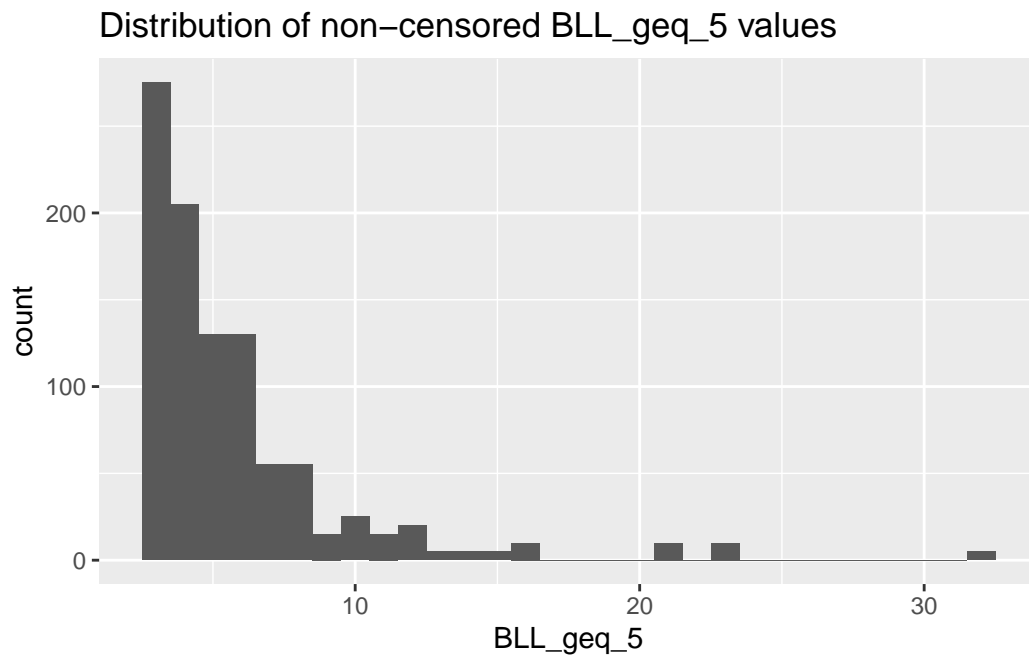
```
co_summary[[1]] |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
co_summary[[2]]
```

	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
tested	215	0	64.5	79.8	3.0	35.0	554.0
BLL_geq_5	17	0	3.6	2.2	3.0	3.0	32.0
BLL_geq_10	4	0	3.0	0.2	3.0	3.0	6.0
year	5	0	2012.0	1.4	2010.0	2012.0	2014.0
tested_ell	1	0	3.0	0.0	3.0	3.0	3.0
ell_5	1	0	2.0	0.0	2.0	2.0	2.0
ell_10	1	0	2.0	0.0	2.0	2.0	2.0
median_annual_incomeE	873	0	0.1	1.0	-2.7	-0.1	5.0
house_price_medianE	817	0	0.0	1.0	-1.8	-0.1	8.3
poor_fam_propE	871	0	-0.1	0.9	-1.1	-0.4	4.2
black_ppl_propE	727	0	-0.1	0.9	-0.6	-0.4	5.5
bp_pre_1959E_prop	810	0	-0.1	1.0	-0.9	-0.6	3.0
svi_socioeconomic_pctile	841	0	-0.1	0.9	-1.4	-0.2	2.0
under_yo5_pplE	440	0	248.9	167.1	6.0	215.0	1444.0
ped_per_100k	30	0	74.8	51.7	0.0	71.1	225.0

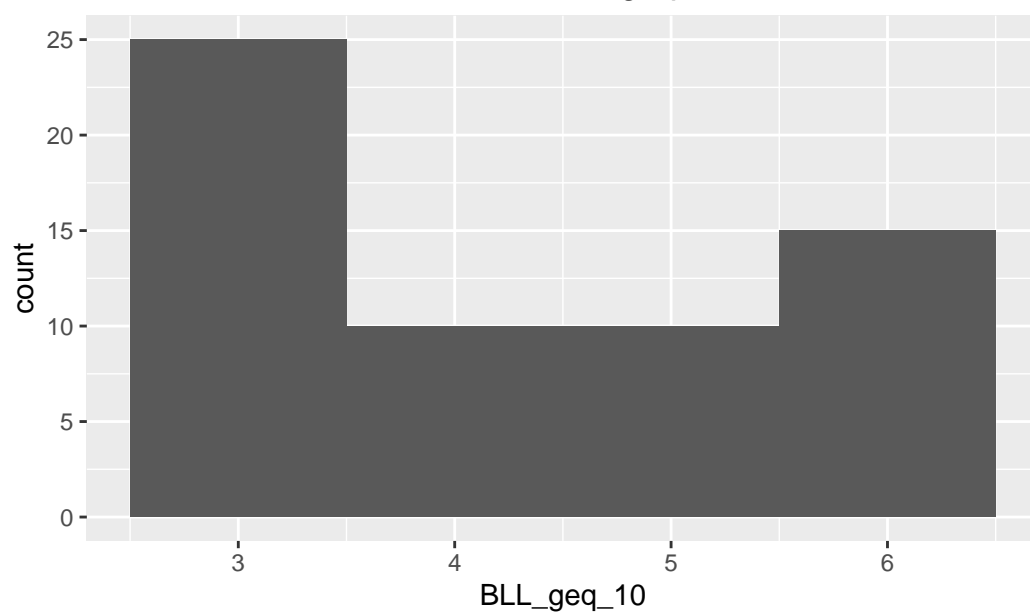

```
co_summary[[3]]
```

```
[[1]]
```

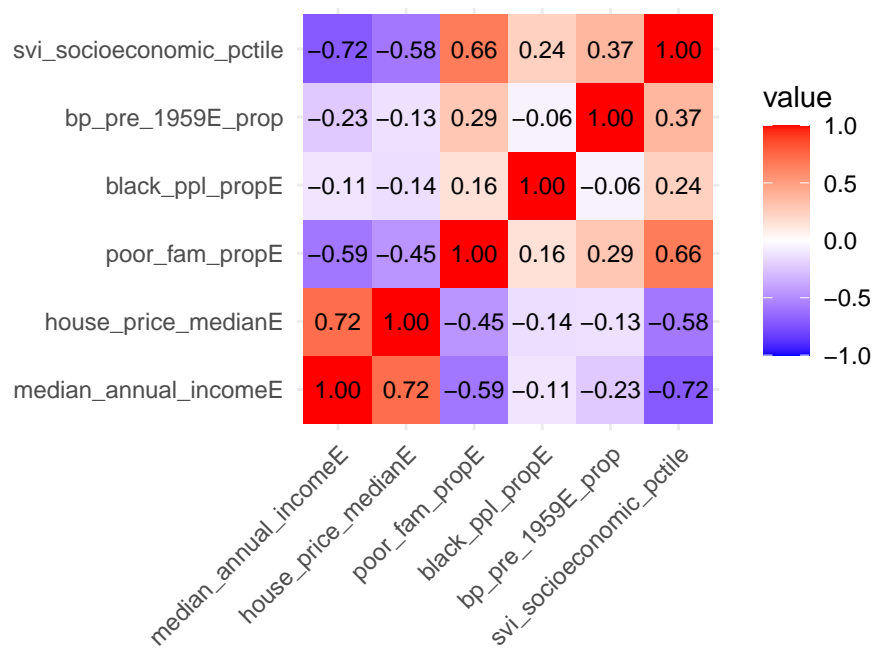


```
[[2]]
```

Distribution of non-censored BLL_geq_10 values



```
co_summary[[4]]
```



```
co_lead_model <- lead_count_model_summary("CO", year = 2014)
```

```
[1] "Loading CO from processed_data"
```

```
Rows: 6245 Columns: 6
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (5): tract, tested, BLL_geq_5, BLL_geq_10, state
```

```
dbl (1): year
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

```
Warning in readLines(stan_file): incomplete final line found on
```

```
'poisson_many_X_suppression.stan'
```

```
Chain 1 Initialization between (-2, 2) failed after 100 attempts.
```

```
Chain 1 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.
```

```
Chain 1 Initialization failed.
```

```
Chain 2 Initialization between (-2, 2) failed after 100 attempts.
```

```
Chain 2 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.
```

```
Chain 2 Initialization failed.
```

```
Chain 4 Initialization between (-2, 2) failed after 100 attempts.
```

```
Chain 4 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.
```

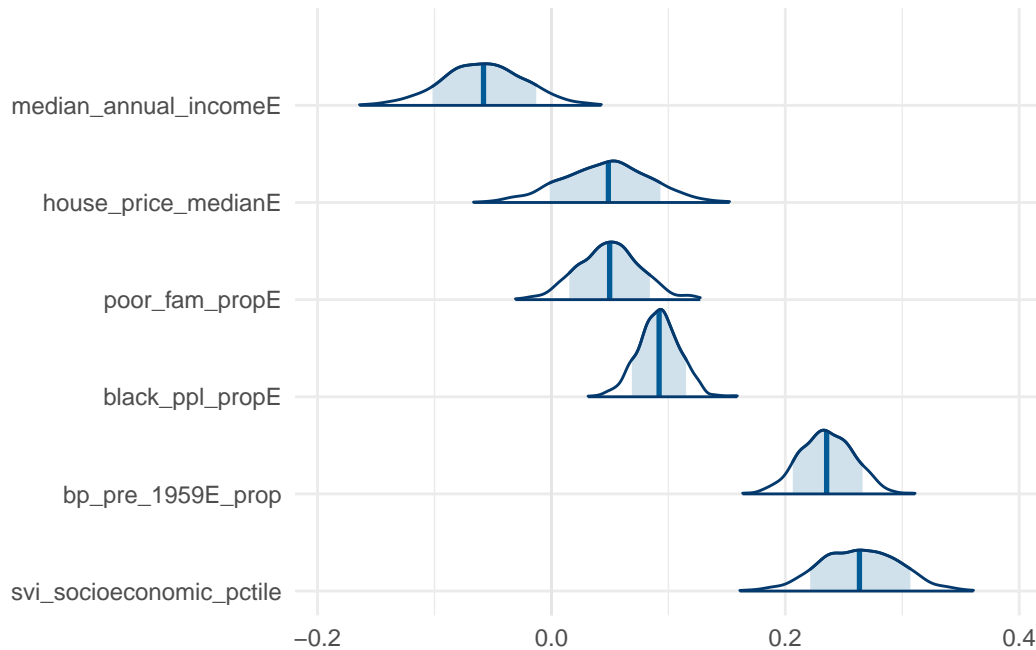
```
Chain 4 Initialization failed.
```

```
Warning: Dropping 'draws_df' class as required metadata was removed.
```

```
co_lead_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
co_lead_model$plot
```

variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp	446.4901490	446.7945000	1.8771663	1.8376827	442.9280500	449.0021500	0.9991157	408.4491	577.4492
alpha	-4.9126793	-4.9123350	0.0291331	0.0296372	-4.9616640	-4.8649400	1.0001573	936.1579	805.4218
median_annual_incomeE	-0.0581362	-0.0581259	0.0349540	0.0345487	-0.1164392	-0.0004449	1.0042648	883.4665	617.8326
house_price_medianE	0.0467355	0.0487096	0.0372993	0.0383601	-0.0149842	0.1073177	1.0020611	961.3042	531.8211
poor_fam_propE	0.0495782	0.0497379	0.0268526	0.0258176	0.0063848	0.0935094	1.0006977	930.4066	640.6201
black_ppl_propE	0.0919496	0.0920673	0.0180966	0.0172776	0.0632228	0.1217876	1.0025877	924.9925	640.4531
bp_pre_1959E_prop	0.2355851	0.2353325	0.0229657	0.0240522	0.1989706	0.2724313	0.9990917	1239.9742	832.1673
svi_socioeconomic_pctile	0.2636337	0.2633655	0.0336711	0.0359508	0.2091805	0.3172320	1.0008065	904.9246	773.1359



```
co_test_model <- test_count_model_summary("C0", year = 2014)
```

```
[1] "Loading C0 from processed_data"
```

```
Rows: 6245 Columns: 6
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (5): tract, tested, BLL_geq_5, BLL_geq_10, state
```

```
dbl (1): year
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp__	-1.389499e+06	2.012150e+05	2.755545e+06	2.9652000	-6.16653e+06	2.012180e+05	1.674609	6.532591	11.109733
alpha	-1.368820e+00	-1.493420e+00	2.196541e-01	0.0074278	-1.50279e+00	-9.884290e-01	1.595409	6.717752	12.837681
median_annual_incomeE	-2.831392e-01	-8.643970e-02	3.470821e-01	0.0134126	-8.84119e-01	-6.985190e-02	1.596188	6.718135	10.493444
house_price_medianE	-3.077511e-01	1.473505e-01	7.938499e-01	0.0112737	-1.68255e+00	1.616986e-01	1.593385	6.731976	7.744591
poor_fam_propE	-2.453285e-01	-3.713230e-02	3.648307e-01	0.0082687	-8.77115e-01	-2.692920e-02	1.592849	6.730220	11.250235
black_ppl_propE	4.950337e-01	1.004725e-01	6.861579e-01	0.0054908	9.36881e-02	1.683480e+00	1.596681	6.702482	12.439263
bp_pre_1959E_prop	2.067817e-01	1.020760e-01	1.846053e-01	0.0067736	9.37754e-02	5.264400e-01	1.593703	6.729309	11.828501
svi_socioeconomic_pctile	3.430037e-01	4.775365e-01	2.384618e-01	0.0117288	-6.98539e-02	4.916640e-01	1.596402	6.733031	11.421066
NA	-1.944288e-01	1.201265e-01	5.480388e-01	0.0066376	-1.14353e+00	1.282925e-01	1.559654	6.932685	8.960483

```
[1] "Additional features added: "
```

```
Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'
```

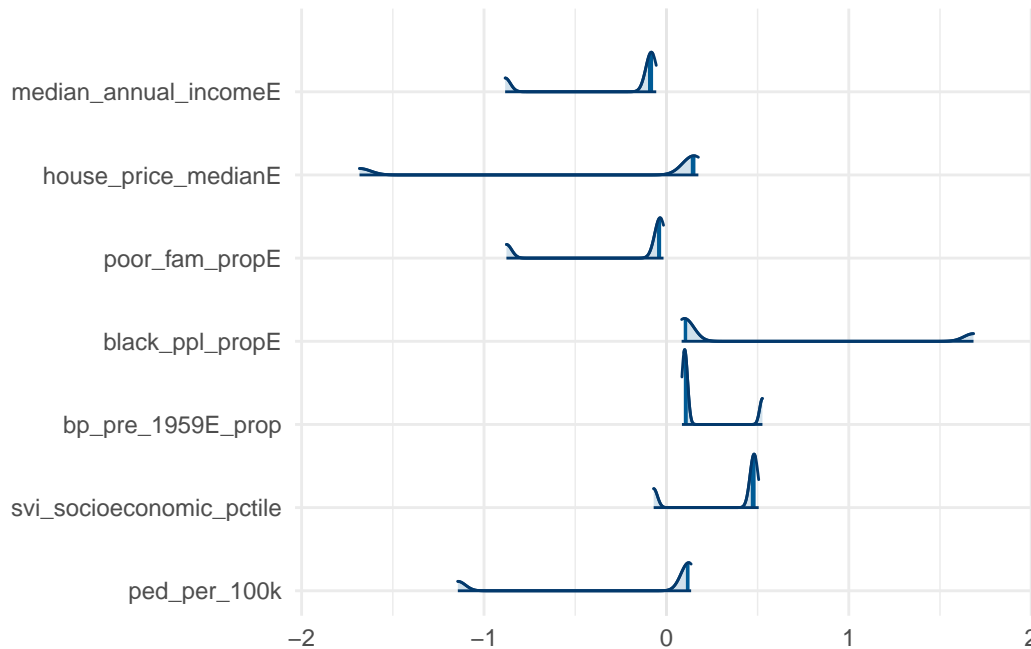
```
Warning: 810 of 4000 (20.0%) transitions ended with a divergence.
See https://mc-stan.org/misc/warnings for details.
```

```
Warning: 1 of 4 chains had an E-BFMI less than 0.2.
See https://mc-stan.org/misc/warnings for details.
```

```
Warning: Dropping 'draws_df' class as required metadata was removed.
```

```
co_test_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
co_test_model$plot
```



Maryland

```
md_summary <- data_summary("MD", year = NULL)
```

```
[1] "Loading MD from processed_data"
```

```
Rows: 13304 Columns: 7
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (2): state, county
```

```
dbl (5): year, tract, tested, BLL_geq_5, BLL_geq_10
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

year	n_obs	lead_cens_5	lead_nocens_5	lead_censR_5	lead_cens_10	lead_nocens_10	lead_censR_10	test_cens	test_censR	sup_threshold_5	sup_threshold_10	median_lead_5	q75_lead_5	max_lead_5	median_lead_10	q75_lead_10	max_lead_10
2005	798	0	798	0	0	798	0	0	0	0	0	3	7	99	0	1	28
2006	791	0	791	0	0	791	0	0	0	0	0	4	9	85	0	1	26
2007	793	0	793	0	0	793	0	0	0	0	0	3	7	98	0	1	22
2008	786	0	786	0	0	786	0	0	0	0	0	2	5	77	0	1	15
2009	789	0	789	0	0	789	0	0	0	0	0	2	4	72	0	0	12
2010	778	0	778	0	0	778	0	0	0	0	0	1	4	79	0	0	13
2011	804	0	804	0	0	804	0	0	0	0	0	1	3	66	0	0	11
2012	795	0	795	0	0	795	0	0	0	0	0	1	2	45	0	0	8
2013	792	0	792	0	0	792	0	0	0	0	0	1	2	44	0	0	7
2014	794	0	794	0	0	794	0	0	0	0	0	1	2	47	0	0	17
2015	798	0	798	0	0	798	0	0	0	0	0	1	2	64	0	0	23

Warning in `datasummary_skim_numeric(data, output = output, fmt = fmt, histogram = histogram, : The histogram argument is only supported for (a) output types "default", "html", or "kableExtra"; (b) writing to file paths with extensions ".html", ".jpg", or ".png"; and (c) Rmarkdown or knitr documents compiled to PDF or HTML. Use `histogram=FALSE` to silence this warning.`

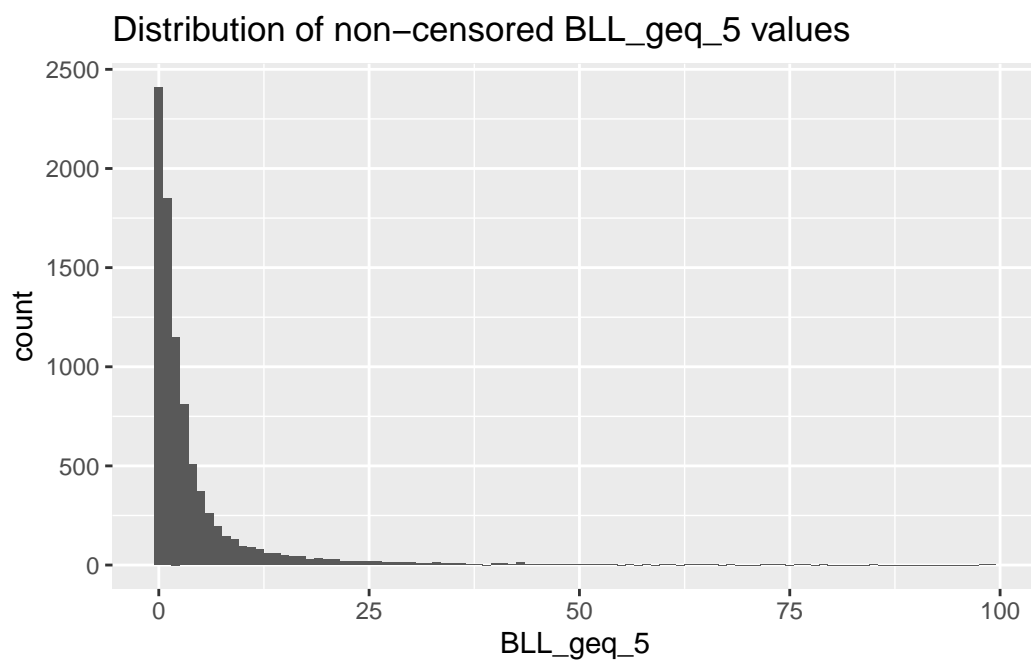
```
md_summary[[1]] |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
md_summary[[2]]
```

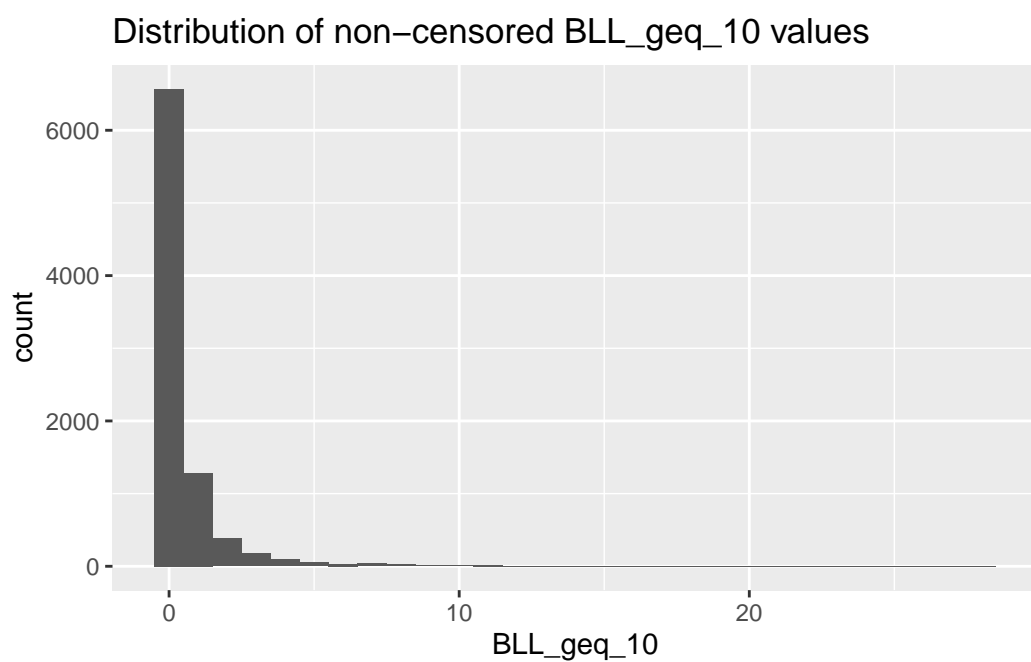
	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
year	11	0	2010.0	3.2	2005.0	2010.0	2015.0
tested	282	0	75.4	47.5	1.0	66.0	448.0
BLL_geq_5	72	0	3.9	7.3	0.0	2.0	99.0
BLL_geq_10	25	0	0.5	1.6	0.0	0.0	28.0
tested_ell	1	0	1.0	0.0	1.0	1.0	1.0
ell_5	1	0	0.0	0.0	0.0	0.0	0.0
ell_10	1	0	0.0	0.0	0.0	0.0	0.0
median_annual_incomeE	801	0	-0.1	1.0	-2.5	-0.2	5.3
house_price_medianE	744	0	-0.0	1.0	-1.6	-0.2	8.9
poor_fam_propE	802	0	0.1	1.0	-0.9	-0.3	7.7
black_ppl_propE	802	0	0.0	1.0	-1.0	-0.4	2.1
bp_pre_1959E_prop	807	0	0.2	1.0	-1.2	0.0	2.2
svi_socioeconomic_pctile	777	0	0.1	1.0	-1.3	-0.0	2.3
under_yo5_pplE	411	0	255.9	155.4	19.0	226.0	984.0
ped_per_100k	20	0	116.2	70.6	12.6	87.9	213.4

```
md_summary[[3]]
```

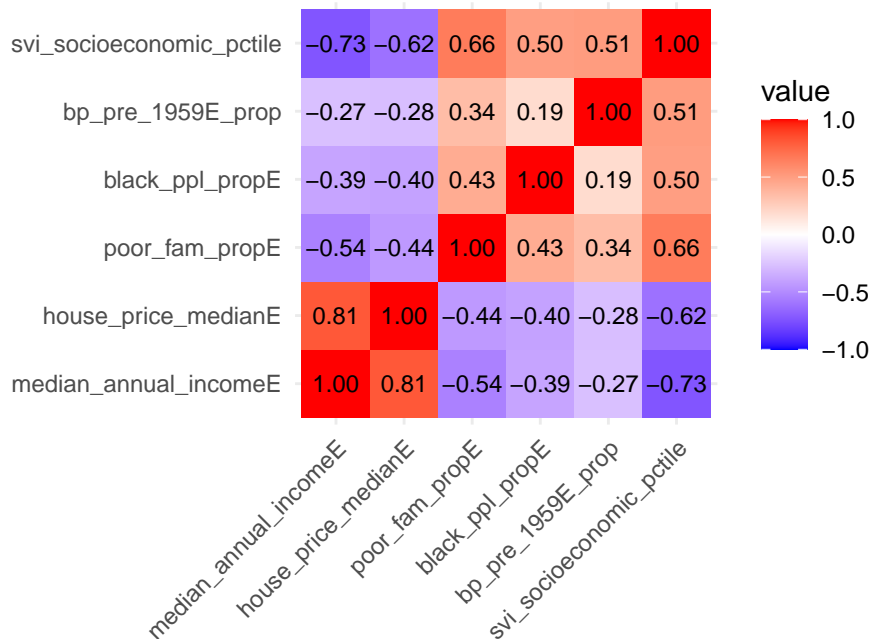
```
[[1]]
```



[[2]]




```
md_summary[[4]]
```



```
md_lead_model <- lead_count_model_summary("MD", year = 2011)
```

```
[1] "Loading MD from processed_data"
```

```
Rows: 13304 Columns: 7
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (2): state, county
```

```
dbl (5): year, tract, tested, BLL_geq_5, BLL_geq_10
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

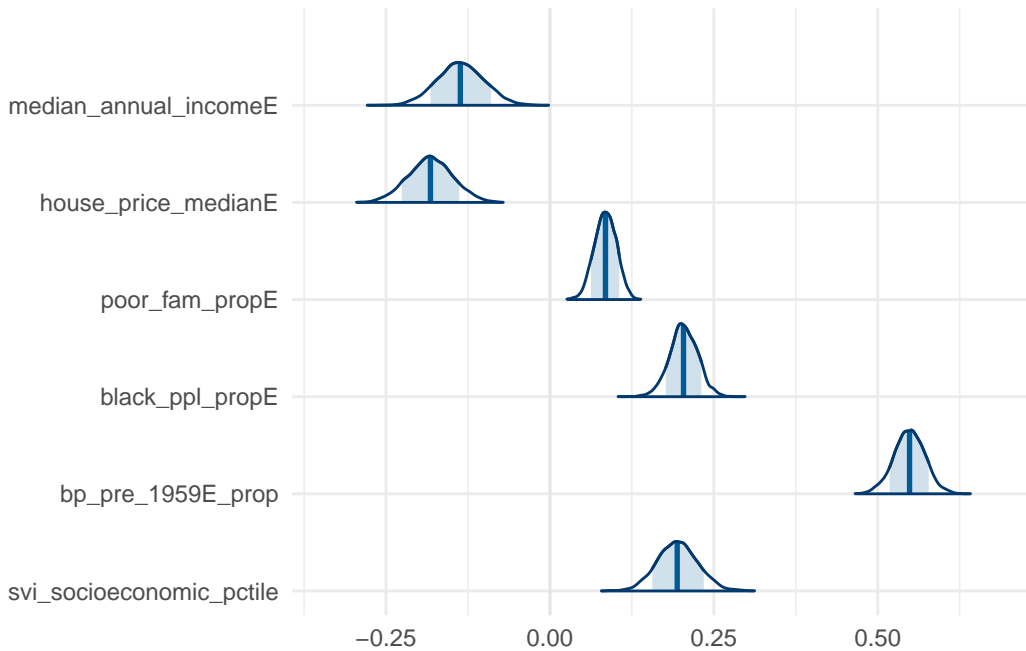
variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp	669.0672810	669.3650000	1.8906335	1.7546571	665.5325000	671.5492000	1.000992	1841.637	2363.269
alpha	-5.2338750	-5.2336450	0.0330202	0.0332770	-5.2887975	-5.1800030	1.002595	5422.436	2869.986
median_annual_incomeE	-0.1362481	-0.1365940	0.0356771	0.0356143	-0.1943974	-0.0782563	1.000879	5429.459	2637.739
house_price_medianE	-0.1821090	-0.1822330	0.0340467	0.0335512	-0.2384659	-0.1244956	1.003254	5096.199	2847.454
poor_fam_propE	0.0845397	0.0847003	0.0167427	0.0171112	0.0569020	0.1116220	1.000813	5369.122	2515.452
black_ppl_propE	0.2039557	0.2037400	0.0214703	0.0210203	0.1685318	0.2381062	0.999502	5434.263	2574.675
bp_pre_1959E_prop	0.5482337	0.5484955	0.0237217	0.0235696	0.5081432	0.5864123	1.001792	5384.718	2961.415
svi_socioeconomic_pctile	0.1948298	0.1941215	0.0312348	0.0304563	0.1439818	0.2468492	1.000737	4357.364	3040.581

```
Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'
```

```
Warning: Dropping 'draws_df' class as required metadata was removed.
```

```
md_lead_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
md_lead_model$plot
```



```
md_test_model <- test_count_model_summary("MD", year = 2011)
```

```
[1] "Loading MD from processed_data"
```

variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp_	2.049554e+05	2.049560e+05	2.0342390	1.4826000	2.049520e+05	2.049580e+05	1.0006585	2055.824	2845.270
alpha	-1.313074e+00	-1.313140e+00	0.0043626	0.0043292	-1.320191e+00	-1.305719e+00	1.0020787	5085.300	3113.036
median_annual_incomeE	-1.578953e-01	-1.576650e-01	0.0089931	0.0089705	-1.731526e-01	-1.432560e-01	1.0002060	3069.670	2796.057
house_price_medianE	1.112959e-01	1.112825e-01	0.0073689	0.0073063	9.899070e-02	1.235241e-01	1.0020810	3427.293	2939.544
poor_fam_propE	-5.688720e-02	-5.686050e-02	0.0049409	0.0049076	-6.513420e-02	-4.881470e-02	0.9995216	4297.203	2973.381
black_ppl_propE	7.697690e-02	7.694610e-02	0.0047551	0.0047172	6.916130e-02	8.481710e-02	1.0012867	4171.032	2923.885
bp_pre_1959E_prop	1.750156e-01	1.749615e-01	0.0052542	0.0051061	1.664756e-01	1.837402e-01	1.0004109	3690.620	2809.357
svi_socioeconomic_pctile	9.787550e-02	9.807380e-02	0.0074665	0.0073947	8.502880e-02	1.098104e-01	1.0012159	3505.271	2294.284
NA	3.068220e-02	3.073590e-02	0.0046365	0.0046389	2.300680e-02	3.811770e-02	1.0002854	4061.206	2993.228

Rows: 13304 Columns: 7

-- Column specification -----

Delimiter: ",",

chr (2): state, county

dbl (5): year, tract, tested, BLL_geq_5, BLL_geq_10

i Use `spec()` to retrieve the full column specification for this data.

i Specify the column types or set `show_col_types = FALSE` to quiet this message.

Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.

i Please use `if_any()` or `if_all()` instead.

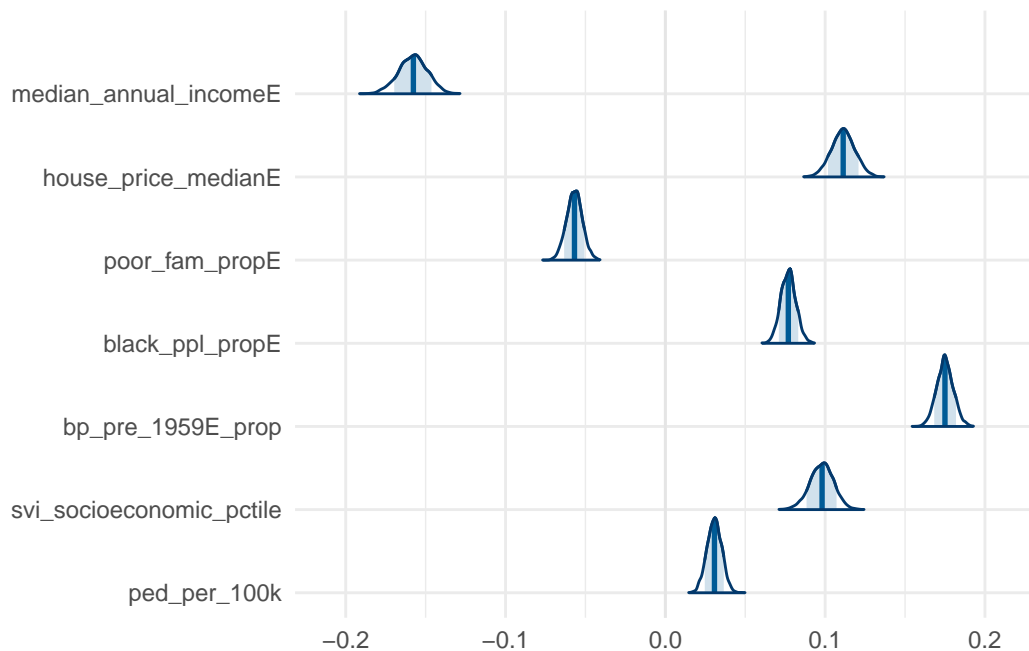
[1] "Additional features added: "

Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'

Warning: Dropping 'draws_df' class as required metadata was removed.

```
md_test_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
md_test_model$plot
```



Massachusetts

```
ma_summary <- data_summary("MA", year = NULL)
```

```
[1] "Loading MA from processed_data"
```

```
Rows: 16192 Columns: 6
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (3): state, town, BLL_geq_5
```

```
dbl (3): year, tested, tract
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

year	n_obs	lead_cens_5	lead_nocens_5	lead_censR_5	test_cens	test_censR	sup_threshold_5	median_lead_5	q75_lead_5	max_lead_5
2005	948	465	483	0.4905063	0	0	4	5	9	81
2006	964	518	446	0.5373444	0	0	4	5	9	77
2007	961	547	414	0.5691988	0	0	4	5	8	60
2008	955	550	405	0.5759162	0	0	4	5	6	53
2009	968	583	385	0.6022727	0	0	4	5	5	46
2010	966	567	399	0.5869565	0	0	4	5	5	37
2011	996	573	423	0.5753012	0	0	4	5	5	32
2012	1012	584	428	0.5770751	0	0	4	5	5	36
2013	1010	577	433	0.5712871	0	0	4	5	5	28
2014	1016	576	440	0.5669291	0	0	4	5	5	41
2015	1031	582	449	0.5645005	0	0	4	5	5	25

Warning in `datasummary_skim_numeric(data, output = output, fmt = fmt, histogram = histogram, : The histogram argument is only supported for (a) output types "default", "html", or "kableExtra"; (b) writing to file paths with extensions ".html", ".jpg", or ".png"; and (c) Rmarkdown or knitr documents compiled to PDF or HTML. Use `histogram=FALSE` to silence this warning.`

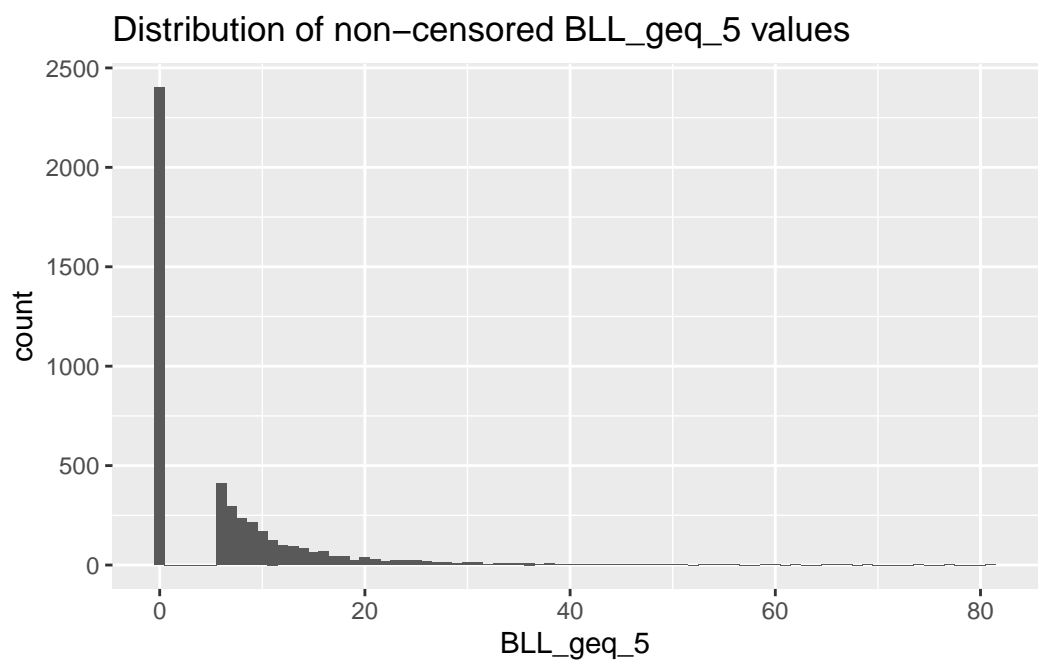
```
ma_summary[[1]] |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
ma_summary[[2]]
```

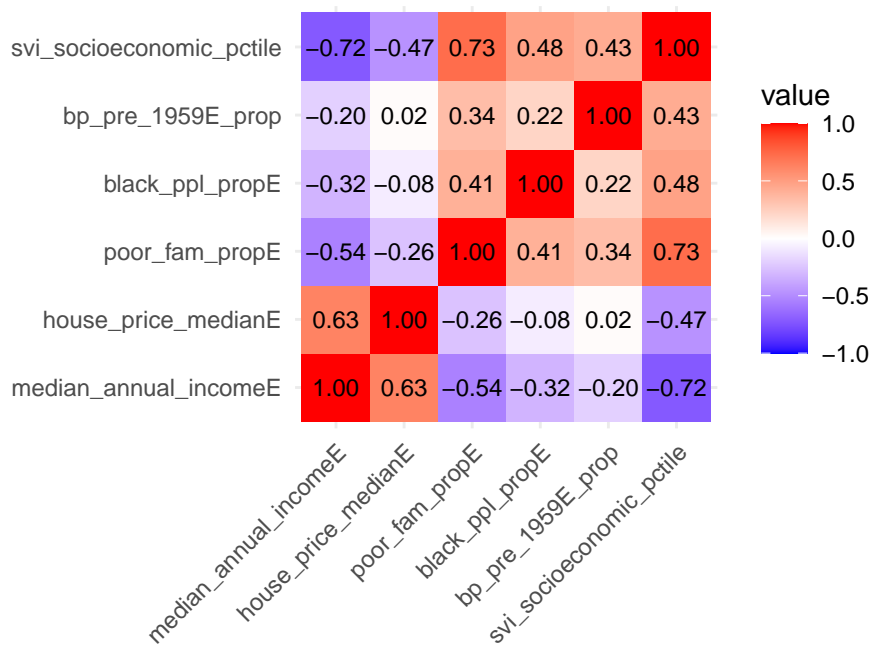
	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
year	11	0	2010.1	3.2	2005.0	2010.0	2015.0
BLL_geq_5	62	0	5.5	5.9	0.0	5.0	81.0
tested	395	0	138.6	68.4	1.0	130.0	454.0
tested_ell	1	0	1.0	0.0	1.0	1.0	1.0
ell_5	1	0	4.0	0.0	4.0	4.0	4.0
median_annual_incomeE	1057	0	0.1	1.0	-2.3	-0.0	5.0
house_price_medianE	978	0	0.0	1.0	-1.5	-0.2	6.6
poor_fam_propE	1062	0	-0.1	0.9	-0.9	-0.4	5.7
black_ppl_propE	1010	0	-0.0	1.0	-0.6	-0.4	5.8
bp_pre_1959E_prop	1069	0	-0.0	1.0	-2.3	-0.0	2.0
svi_socioeconomic_pctile	1005	0	-0.1	1.0	-1.3	-0.3	2.1
under_yo5_pplE	436	0	262.5	133.8	14.0	241.0	1057.0
ped_per_100k	14	0	139.6	92.7	0.0	101.1	386.2

```
ma_summary[[3]]
```

```
[[1]]
```



```
ma_summary[[4]]
```



```
ma_lead_model <- lead_count_model_summary("MA", year = 2014)
```

```
[1] "Loading MA from processed_data"
```

```
Rows: 16192 Columns: 6
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (3): state, town, BLL_geq_5
```

```
dbl (3): year, tested, tract
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

```
Warning in readLines(stan_file): incomplete final line found on  
'poisson_many_X_suppression.stan'
```

```
Chain 1 Initialization between (-2, 2) failed after 100 attempts.
```

```
Chain 1 Try specifying initial values, reducing ranges of constrained values, or reparameterizing the distribution.
```

```
Chain 1 Initialization failed.
```

```
Chain 2 Initialization between (-2, 2) failed after 100 attempts.
```

```
Chain 2 Try specifying initial values, reducing ranges of constrained values, or reparameterizing the distribution.
```

```
Chain 2 Initialization failed.
```

```
Chain 4 Initialization between (-2, 2) failed after 100 attempts.
```

```
Chain 4 Try specifying initial values, reducing ranges of constrained values, or reparameterizing the distribution.
```

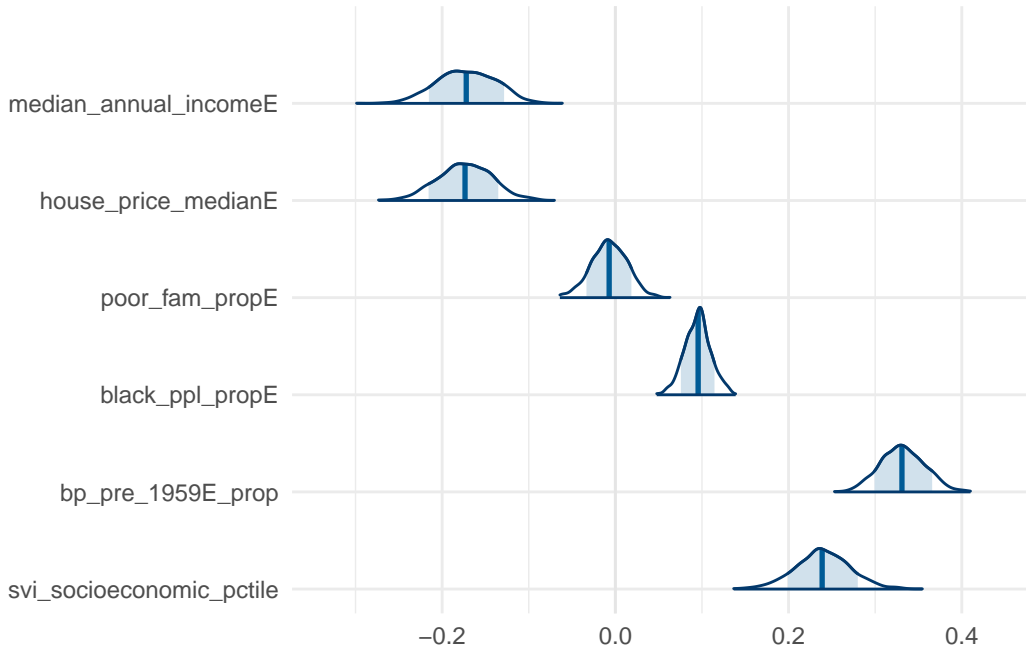
```
Chain 4 Initialization failed.
```

```
Warning: Dropping 'draws_df' class as required metadata was removed.
```

```
ma_lead_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
ma_lead_model$plot
```

variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp	692.5685180	692.8620000	1.7686317	1.6931292	689.1590000	694.9235500	0.9992707	483.0851	728.6396
alpha	-4.9360869	-4.9354050	0.0284862	0.0291924	-4.9815920	-4.8902455	0.9994375	1109.2350	743.4487
median_annual_incomeE	-0.1720881	-0.1721920	0.0337405	0.0360116	-0.2279329	-0.1196255	0.9999476	727.1812	506.3275
house_price_medianE	-0.1736767	-0.1735940	0.0314351	0.0318025	-0.2245106	-0.1247610	1.0000179	1023.0801	760.9912
poor_fam_propE	-0.0070729	-0.0071655	0.0207233	0.0206021	-0.0422340	0.0257498	0.9992670	874.4490	642.8424
black_ppl_propE	0.0950299	0.0955769	0.0151392	0.0146318	0.0701084	0.1212260	1.0010490	987.9177	603.8048
bp_pre_1959E_prop	0.3316254	0.3309110	0.0255900	0.0266001	0.2897277	0.3740966	1.0004720	957.3076	641.2952
svi_socioeconomic_pctile	0.2395163	0.2387470	0.0319592	0.0309826	0.1861374	0.2923843	0.9991668	855.9169	658.6775



```
ma_test_model <- test_count_model_summary("MA", year = 2014)
```

```
[1] "Loading MA from processed_data"
```

```
Rows: 16192 Columns: 6
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (3): state, town, BLL_geq_5
```

```
dbl (3): year, tested, tract
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```


variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp_	5.117398e+05	5.117400e+05	2.0334905	1.4826000	5.117360e+05	5.117420e+05	1.000595	2015.902	2704.381
alpha	-7.069573e-01	-7.069815e-01	0.0027911	0.0027317	-7.116351e-01	-7.023119e-01	1.000851	4734.116	2842.325
median_annual_incomeE	-9.405700e-03	-9.392200e-03	0.0052401	0.0052917	-1.818360e-02	-8.095000e-04	1.000219	2817.795	2580.237
house_price_medianE	-7.910600e-03	-7.945000e-03	0.0044732	0.0044815	-1.523750e-02	-5.797000e-04	1.000433	3120.439	2923.756
poor_fam_propE	-4.271200e-03	-4.330200e-03	0.0041528	0.0041540	-1.111580e-02	2.597000e-03	1.000827	3323.225	2943.117
black_ppl_propE	1.078900e-02	1.083200e-02	0.0031685	0.0031605	5.651600e-03	1.595540e-02	1.000631	3794.258	2655.693
bp_pre_1959E_prop	6.131020e-02	6.133360e-02	0.0033300	0.0033887	5.581130e-02	6.676400e-02	1.000639	4285.688	2984.515
svi_socioeconomic_pctile	6.575810e-02	6.572490e-02	0.0055889	0.0055254	5.647260e-02	7.484330e-02	1.003318	2817.739	2619.142
NA	6.964400e-03	7.038600e-03	0.0033774	0.0033804	1.228600e-03	1.235420e-02	1.000866	3608.807	2993.733

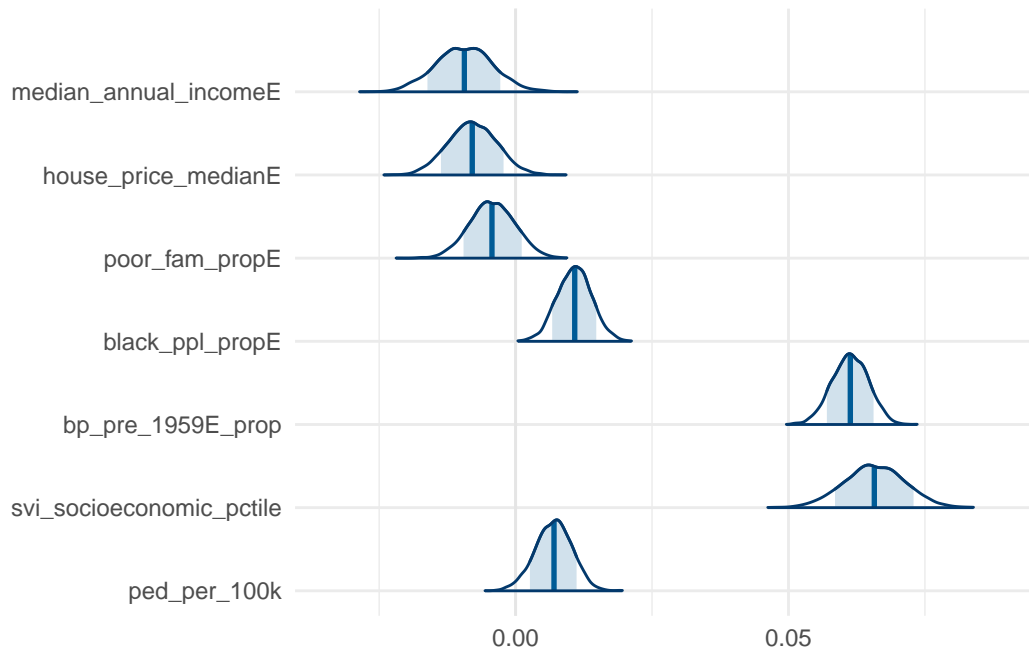
```
[1] "Additional features added: "
```

```
Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'
```

```
Warning: Dropping 'draws_df' class as required metadata was removed.
```

```
ma_test_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
ma_test_model$plot
```



year	n_obs	lead_cens_5	lead_nocens_5	lead_censR_5	lead_cens_10	lead_nocens_10	lead_censR_10	test_cens	test_censR	sup_threshold_5	sup_threshold_10	median_lead_5	q75_lead_5	max_lead_5	median_lead_10	q75_lead_10	max_lead_10
2011	1088	548	540	0.5036765	316	772	0.2904412	0	0	0.25	4	1.25	1.25	11.5	0	5	13
2012	1088	548	540	0.5036765	316	772	0.2904412	0	0	0.25	4	1.25	1.25	11.5	0	5	13
2013	1088	548	540	0.5036765	316	772	0.2904412	0	0	0.25	4	1.25	1.25	11.5	0	5	13
2014	1088	548	540	0.5036765	316	772	0.2904412	0	0	0.25	4	1.25	1.25	11.5	0	5	13
2015	1088	548	540	0.5036765	316	772	0.2904412	0	0	0.25	4	1.25	1.25	11.5	0	5	13

Minnesota

```
mn_summary <- data_summary("MN", year = NULL)
```

```
[1] "Loading MN from processed_data"
```

```
Rows: 15620 Columns: 8
```

```
-- Column specification -----
```

```
Delimiter: ",",
```

```
chr (3): state, BLL_geq_10, BLL_geq_5
```

```
dbl (5): tract, tested, start_year, end_year, year
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

```
Warning in datasummary_skim_numeric(data, output = output, fmt = fmt, histogram
= histogram, : The histogram argument is only supported for (a) output types
"default", "html", or "kableExtra"; (b) writing to file paths with extensions
".html", ".jpg", or ".png"; and (c) Rmarkdown or knitr documents compiled to
PDF or HTML. Use `histogram=FALSE` to silence this warning.
```

```
mn_summary[[1]] |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

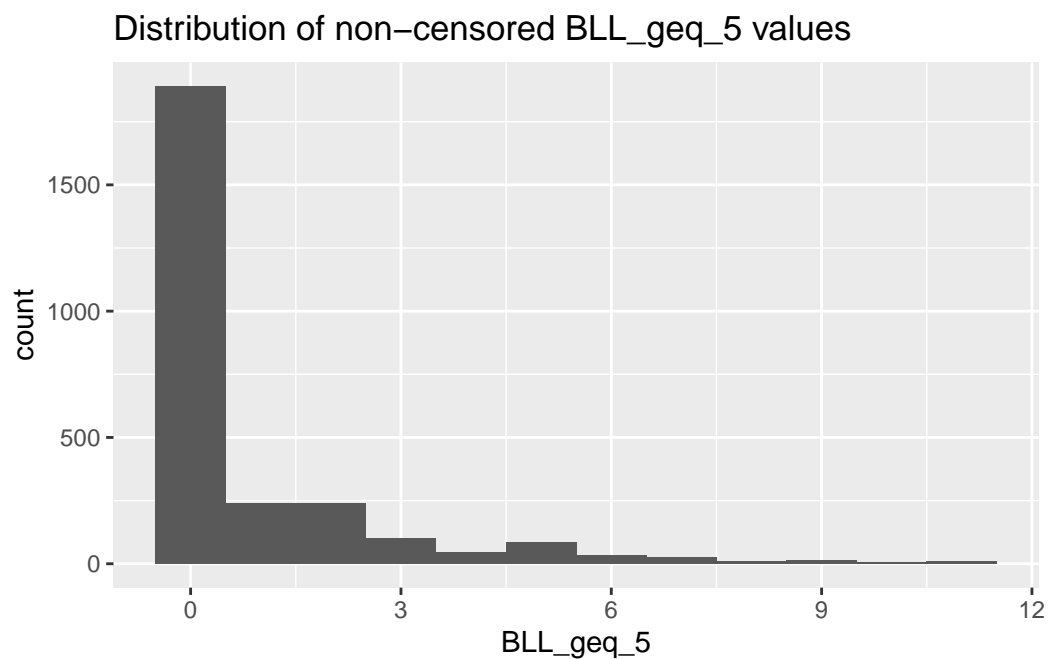
```
mn_summary[[2]]
```

	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
tested	419	0	53.2	33.2	2.5	45.0	249.2

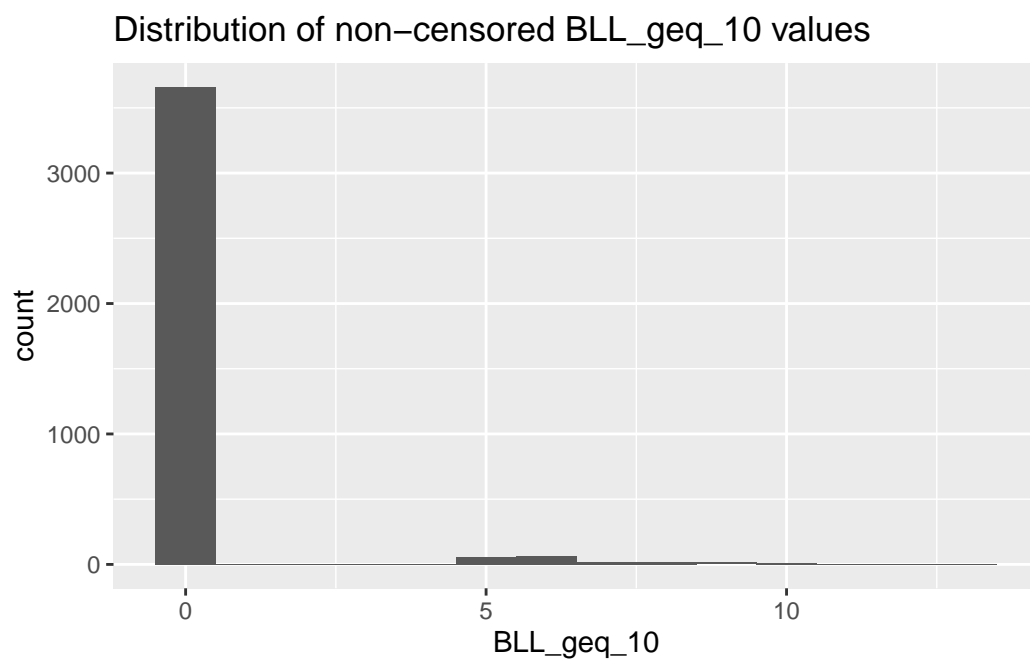
	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
BLL_geq_10	9	0	1.7	2.5	0.0	0.0	13.0
start_year	1	0	2011.0	0.0	2011.0	2011.0	2011.0
end_year	1	0	2015.0	0.0	2015.0	2015.0	2015.0
BLL_geq_5	32	0	1.1	1.3	0.0	1.2	11.5
year	5	0	2013.0	1.4	2011.0	2013.0	2015.0
ell_5	1	0	0.2	0.0	0.2	0.2	0.2
ell_10	1	0	4.0	0.0	4.0	4.0	4.0
median_annual_incomeE	1066	0	0.0	1.0	-2.9	-0.1	4.7
house_price_medianE	906	0	-0.0	0.9	-1.6	-0.2	7.1
poor_fam_propE	1069	0	-0.0	1.0	-0.9	-0.3	7.5
black_ppl_propE	980	0	-0.0	1.0	-0.6	-0.5	6.8
bp_pre_1959E_prop	1078	0	0.0	1.0	-1.5	-0.1	2.4
svi_socioeconomic_pctile	1016	0	-0.0	1.0	-1.5	-0.1	2.5
under_yo5_pplE	424	0	235.8	134.1	5.0	206.0	865.0
ped_per_100k	45	0	74.3	59.2	0.0	74.9	185.9

```
mn_summary[[3]]
```

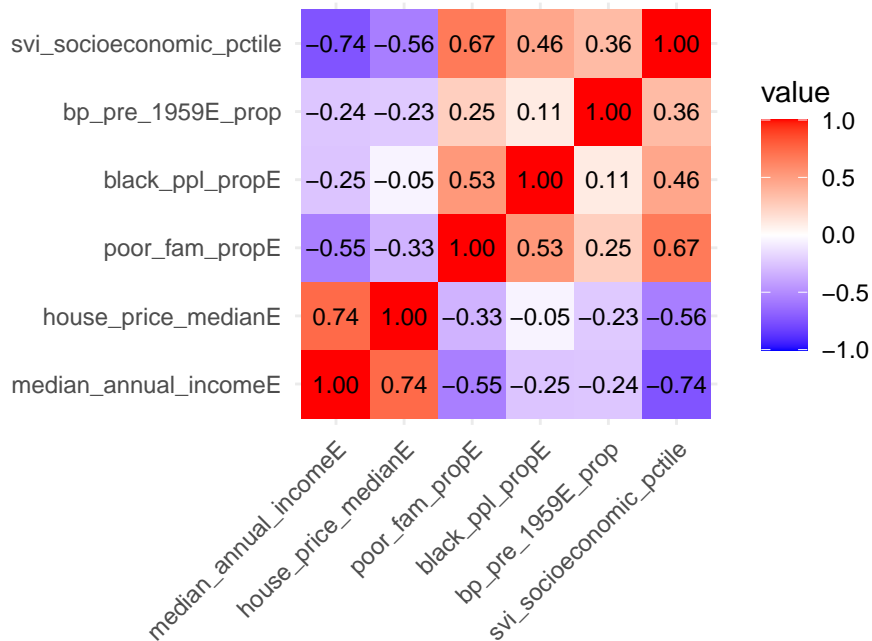
```
[[1]]
```



```
[[2]]
```



```
mn_summary[[4]]
```



```
mn_lead_model <- lead_count_model_summary("MN", year = 2014)
```

```
[1] "Loading MN from processed_data"
```

```
Rows: 15620 Columns: 8
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (3): state, BLL_geq_10, BLL_geq_5
```

```
dbl (5): tract, tested, start_year, end_year, year
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

```
Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'
```

```
Chain 1 Initialization between (-2, 2) failed after 100 attempts.
Chain 1 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.
Chain 1 Initialization failed.
Chain 2 Initialization between (-2, 2) failed after 100 attempts.
Chain 2 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.
Chain 2 Initialization failed.
Chain 3 Initialization between (-2, 2) failed after 100 attempts.
Chain 3 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.
Chain 3 Initialization failed.
Chain 4 Initialization between (-2, 2) failed after 100 attempts.
Chain 4 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.
Chain 4 Initialization failed.
```

Warning: No chains finished successfully. Unable to retrieve the fit.

Error: No chains finished successfully. Unable to retrieve the draws.

```
mn_lead_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

Error in knitr::kable(mn_lead_model\$table): object 'mn_lead_model' not found

```
mn_lead_model$plot
```

Error in eval(expr, envir, enclos): object 'mn_lead_model' not found

```
mn_test_model <- test_count_model_summary("MN", year = 2014)
```

```
[1] "Loading MN from processed_data"
```

```
Rows: 15620 Columns: 8
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (3): state, BLL_geq_10, BLL_geq_5
```

```
dbl (5): tract, tested, start_year, end_year, year
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
i Please use `if_any()` or `if_all()` instead.

```
[1] "Additional features added: "
```

Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'

Warning: Unknown or uninitialised column: `tested_ell`.

Warning in max(state_data\$tested_ell, na.rm = TRUE): no non-missing arguments
to max; returning -Inf

Warning in test_count_model_summary("MN", year = 2014): NAs introduced by
coercion to integer range

Error: Variable 'ell' has NA values.

```
mn_test_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

Error in knitr::kable(mn_test_model\$table): object 'mn_test_model' not found

```
mn_test_model$plot
```

Error in eval(expr, envir, enclos): object 'mn_test_model' not found

NYC is not available.

North Carolina

```
nc_summary <- data_summary("NC", year = NULL)
```

```
[1] "Loading NC from processed_data"
```

year	n_obs	lead_cens_5	lead_nocens_5	lead_censR_5	lead_cens_10	lead_nocens_10	lead_censR_10	test_cens	test_censR	sup_threshold_5	sup_threshold_10	median_lead_5	q75_lead_5	max_lead_5	median_lead_10	q75_lead_10	max_lead_10
2005	14	14	0	1.0000000	14	0	1.0000000	14	1.0000000	4	4	5	5	5	5	5	5
2006	82	82	0	1.0000000	82	0	1.0000000	82	1.0000000	4	4	5	5	5	5	5	5
2007	106	106	0	1.0000000	106	0	1.0000000	106	1.0000000	4	4	5	5	5	5	5	5
2008	204	204	0	1.0000000	204	0	1.0000000	204	1.0000000	4	4	5	5	5	5	5	5
2009	500	500	8	0.9842520	500	8	0.9842520	500	0.9842520	4	4	5	5	5	5	5	5
2010	1480	942	538	0.6364865	229	1252	0.1540541	66	0.0445946	4	4	5	5	17	0	0	5
2011	1504	982	522	0.6529255	230	1268	0.1569149	88	0.0585106	4	4	5	5	17	0	0	5
2012	1506	848	658	0.5630810	206	1300	0.1367862	80	0.0531208	4	4	5	5	23	0	0	5
2013	1478	714	764	0.4830853	202	1276	0.1366712	68	0.0460081	4	4	0	5	9	0	0	5
2014	1540	688	852	0.4467532	214	1326	0.1338610	118	0.0766234	4	4	0	5	19	0	0	5
2015	1698	782	916	0.4605418	402	1296	0.2367491	274	0.1613663	4	4	0	5	12	0	0	5

Warning: One or more parsing issues, call `problems()` on your data frame for details, e.g.:

```
dat <- vroom(...)
problems(dat)
```

Rows: 64328 Columns: 6

```
-- Column specification -----
Delimiter: ","
chr (4): state, BLL_geq_5, BLL_geq_10, tested
dbl (2): tract, year
```

i Use `spec()` to retrieve the full column specification for this data.
i Specify the column types or set `show_col_types = FALSE` to quiet this message.

Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
i Please use `if_any()` or `if_all()` instead.

[1] "Additional features added: "

Warning in datasummary_skim_numeric(data, output = output, fmt = fmt, histogram = histogram, : The histogram argument is only supported for (a) output types "default", "html", or "kableExtra"; (b) writing to file paths with extensions ".html", ".jpg", or ".png"; and (c) Rmarkdown or knitr documents compiled to PDF or HTML. Use `histogram=FALSE` to silence this warning.

```
nc_summary[[1]] |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

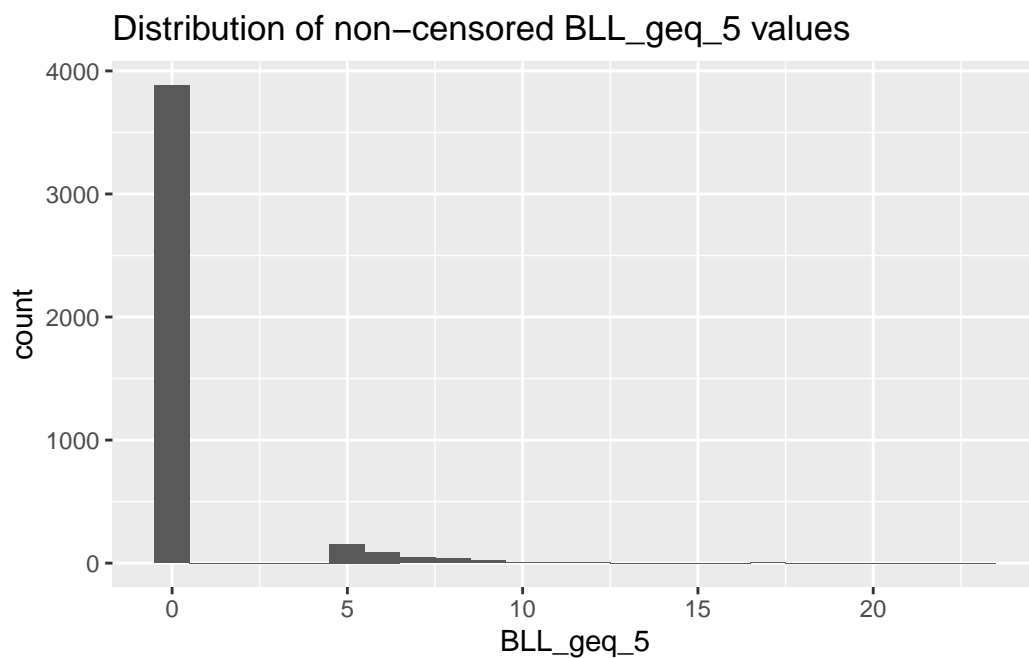
```
nc_summary[[2]]
```

	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
BLL_geq_5	13	0	3.1	2.5	0.0	5.0	23.0
BLL_geq_10	2	0	1.2	2.1	0.0	0.0	5.0

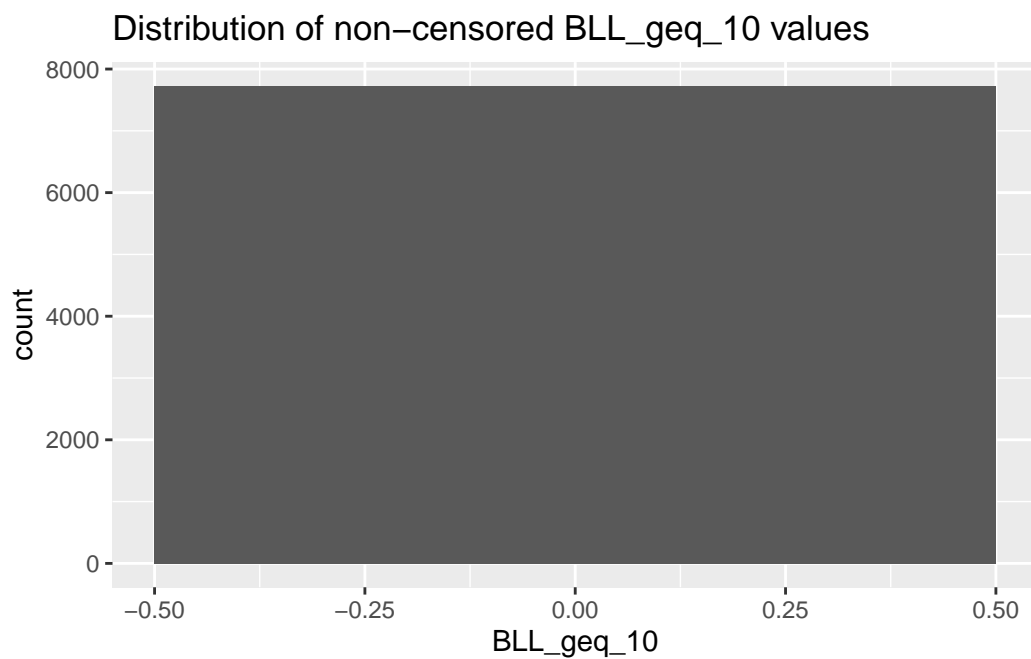
	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
tested	167	0	39.1	30.9	5.0	33.0	248.0
year	11	0	2012.2	2.1	2005.0	2012.0	2015.0
tested_ell	1	0	5.0	0.0	5.0	5.0	5.0
ell_5	1	0	4.0	0.0	4.0	4.0	4.0
ell_10	1	0	4.0	0.0	4.0	4.0	4.0
median_annual_incomeE	903	0	-0.2	0.9	-2.3	-0.4	6.8
house_price_medianE	758	0	-0.2	1.0	-1.3	-0.4	7.2
poor_fam_propE	910	0	0.3	1.1	-1.2	0.0	5.8
black_ppl_propE	904	0	0.3	1.1	-1.0	0.0	3.4
bp_pre_1959E_prop	916	0	0.4	1.1	-1.1	0.2	3.8
svi_socioeconomic_pctile	880	0	0.3	0.9	-2.3	0.5	1.8
under_yo5_pplE	443	0	250.1	150.2	7.0	222.0	1552.0
ped_per_100k	76	0	81.4	76.6	0.0	54.0	461.7

```
nc_summary[[3]]
```

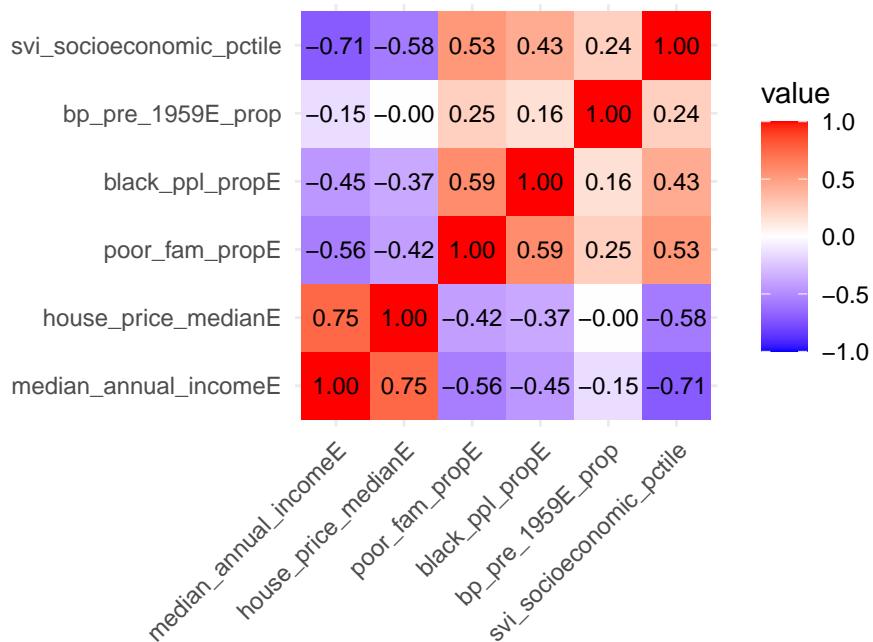
```
[[1]]
```



```
[[2]]
```



```
nc_summary[[4]]
```



```
nc_lead_model <- lead_count_model_summary("NC", year = 2014)
```

```
[1] "Loading NC from processed_data"
```

Warning: One or more parsing issues, call `problems()` on your data frame for details, e.g.:

```
dat <- vroom(...)
problems(dat)
```

Rows: 64328 Columns: 6

-- Column specification -----

Delimiter: ","

chr (4): state, BLL_geq_5, BLL_geq_10, tested

dbl (2): tract, year

i Use `spec()` to retrieve the full column specification for this data.

i Specify the column types or set `show_col_types = FALSE` to quiet this message.

Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.

i Please use `if_any()` or `if_all()` instead.

```
[1] "Additional features added: "
```

Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'

Chain 1 Initialization between (-2, 2) failed after 100 attempts.

Chain 1 Try specifying initial values, reducing ranges of constrained values, or reparameterizing the distribution.

Chain 1 Initialization failed.

Chain 2 Initialization between (-2, 2) failed after 100 attempts.

Chain 2 Try specifying initial values, reducing ranges of constrained values, or reparameterizing the distribution.

Chain 2 Initialization failed.

Chain 4 Initialization between (-2, 2) failed after 100 attempts.

Chain 4 Try specifying initial values, reducing ranges of constrained values, or reparameterizing the distribution.

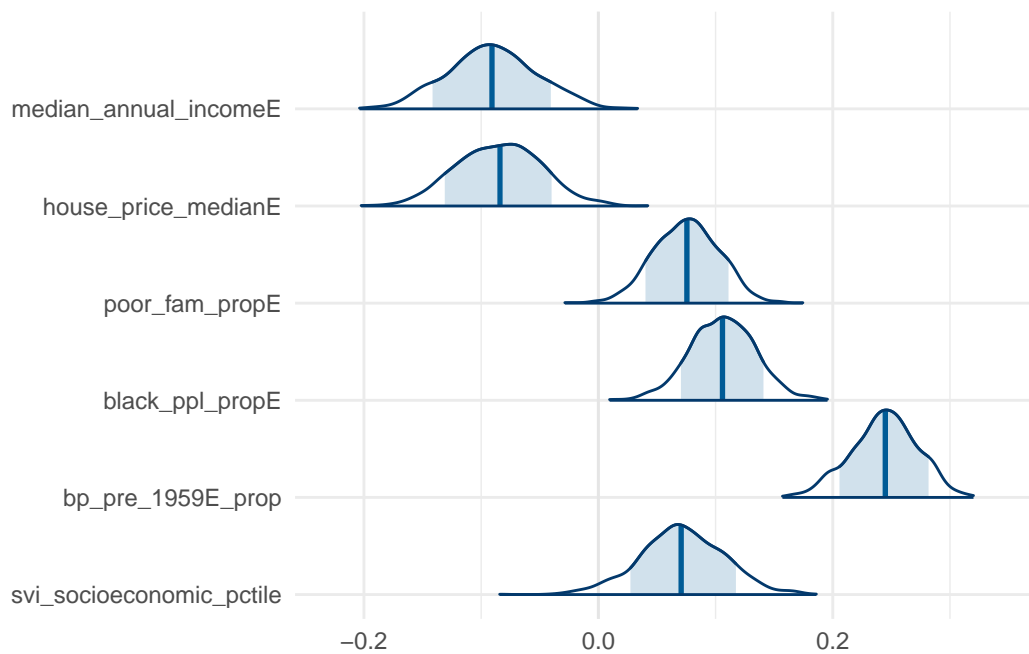
Chain 4 Initialization failed.

Warning: Dropping 'draws_df' class as required metadata was removed.

variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp_	-1056.7309200	-1056.3850000	1.9630440	1.7568810	-1060.2720000	-1054.2800000	1.0016270	491.0098	655.6997
alpha	-6.0644260	-6.0632950	0.0442408	0.0442037	-6.1416855	-5.9901235	1.0065063	1188.4371	788.5790
median_annual_incomeE	-0.0907564	-0.0907990	0.0380035	0.0366051	-0.1525830	-0.0252841	0.9991500	1063.0890	706.1234
house_price_medianE	-0.0847363	-0.0838954	0.0360402	0.0374918	-0.1424488	-0.0267501	1.0037126	1037.4556	718.9306
poor_fam_propE	0.0752234	0.0754878	0.0278320	0.0289647	0.0305249	0.1184543	0.9995887	978.9511	838.4276
black_ppl_propE	0.1060598	0.1058715	0.0281016	0.0280469	0.0593578	0.1512295	1.0006804	995.0789	572.0184
bp_pre_1959E_prop	0.2440509	0.2447915	0.0282252	0.0276431	0.1952945	0.2874945	0.9993354	1344.6481	766.6262
svi_socioeconomic_pctile	0.0714624	0.0706108	0.0362371	0.0358390	0.0104916	0.1303889	1.0021107	984.3666	843.5914

```
nc_lead_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
nc_lead_model$plot
```



```
nc_test_model <- test_count_model_summary("NC", year = 2014)
```

```
[1] "Loading NC from processed_data"
```

Warning: One or more parsing issues, call `problems()` on your data frame for details, e.g.:

```
dat <- vroom(...)
problems(dat)
```

variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp_	1.944911e+05	1.944910e+05	1.9995287	1.4826000	1.944870e+05	1.944940e+05	1.002858	1032.392	1440.231
alpha	-1.809827e+00	-1.809895e+00	0.0044955	0.0043218	-1.816991e+00	-1.802380e+00	1.000702	2247.769	1409.140
median_annual_incomeE	-1.335752e-01	-1.335190e-01	0.0088119	0.0084716	-1.482923e-01	-1.188819e-01	1.002359	1736.091	1461.719
house_price_medianE	-3.701060e-02	-3.681260e-02	0.0075920	0.0075329	-4.958390e-02	-2.448750e-02	1.003654	1857.302	1454.721
poor_fam_propE	-1.066690e-02	-1.065740e-02	0.0043471	0.0044452	-1.763650e-02	-3.631800e-03	0.999543	2320.858	1358.934
black_ppl_propE	7.499590e-02	7.510740e-02	0.0043151	0.0043629	6.770270e-02	8.185040e-02	1.001007	2162.885	1637.202
bp_pre_1959E_prop	1.580041e-01	1.578945e-01	0.0038125	0.0036665	1.518966e-01	1.643791e-01	1.000808	2478.550	1372.124
svi_socioeconomic_pctile	-7.123580e-02	-7.134840e-02	0.0067933	0.0067678	-8.233030e-02	-6.013090e-02	0.999666	1945.958	1414.509
NA	2.564150e-02	2.553560e-02	0.0041700	0.0043078	1.873440e-02	3.243640e-02	1.001571	2501.396	1689.288

Rows: 64328 Columns: 6

-- Column specification -----

Delimiter: ",",

chr (4): state, BLL_geq_5, BLL_geq_10, tested

dbl (2): tract, year

i Use `spec()` to retrieve the full column specification for this data.

i Specify the column types or set `show_col_types = FALSE` to quiet this message.

Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.

i Please use `if_any()` or `if_all()` instead.

[1] "Additional features added: "

Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'

Chain 2 Initialization between (-2, 2) failed after 100 attempts.

Chain 2 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.

Chain 2 Initialization failed.

Chain 3 Initialization between (-2, 2) failed after 100 attempts.

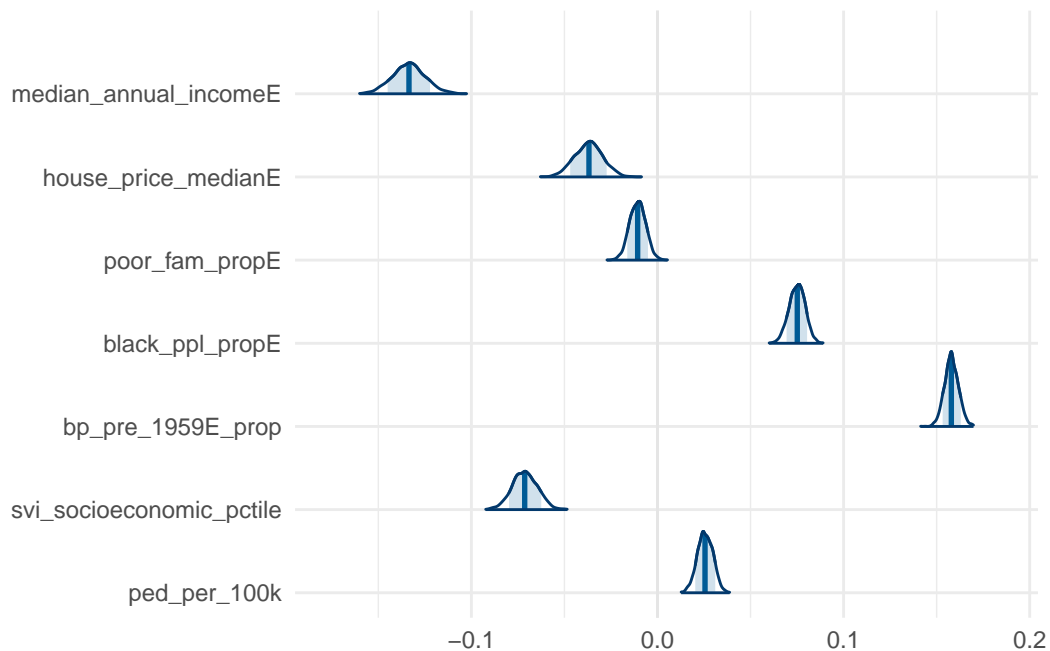
Chain 3 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.

Chain 3 Initialization failed.

Warning: Dropping 'draws_df' class as required metadata was removed.

```
nc_test_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
nc_test_model$plot
```



Indiana

```
in_summary <- data_summary("IN", year = NULL)
```

```
[1] "Loading IN from processed_data"
```

```
Rows: 16577 Columns: 5
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (1): state
```

```
dbl (4): tract, year, tested, BLL_geq_5
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

year	n_obs	lead_cens_5	lead_nocens_5	lead_censR_5	test_cens	test_censR	sup_threshold_5	median_lead_5	q75_lead_5	max_lead_5
2005	1186	0	1186	0	0	0	0	1	3	30
2006	1194	0	1194	0	0	0	0	1	3	32
2007	1192	0	1192	0	0	0	0	2	4	39
2008	1196	0	1196	0	0	0	0	1	3	66
2009	1198	0	1198	0	0	0	0	1	3	71
2010	1196	0	1196	0	0	0	0	1	3	39
2011	1196	0	1196	0	0	0	0	1	2	52
2012	1201	0	1201	0	0	0	0	1	2	36
2013	1203	0	1203	0	0	0	0	1	2	22
2014	1173	0	1173	0	0	0	0	0	1	18
2015	1200	0	1200	0	0	0	0	0	1	18

Warning in `datasummary_skim_numeric(data, output = output, fmt = fmt, histogram = histogram, : The histogram argument is only supported for (a) output types "default", "html", or "kableExtra"; (b) writing to file paths with extensions ".html", ".jpg", or ".png"; and (c) Rmarkdown or knitr documents compiled to PDF or HTML. Use `histogram=FALSE` to silence this warning.`

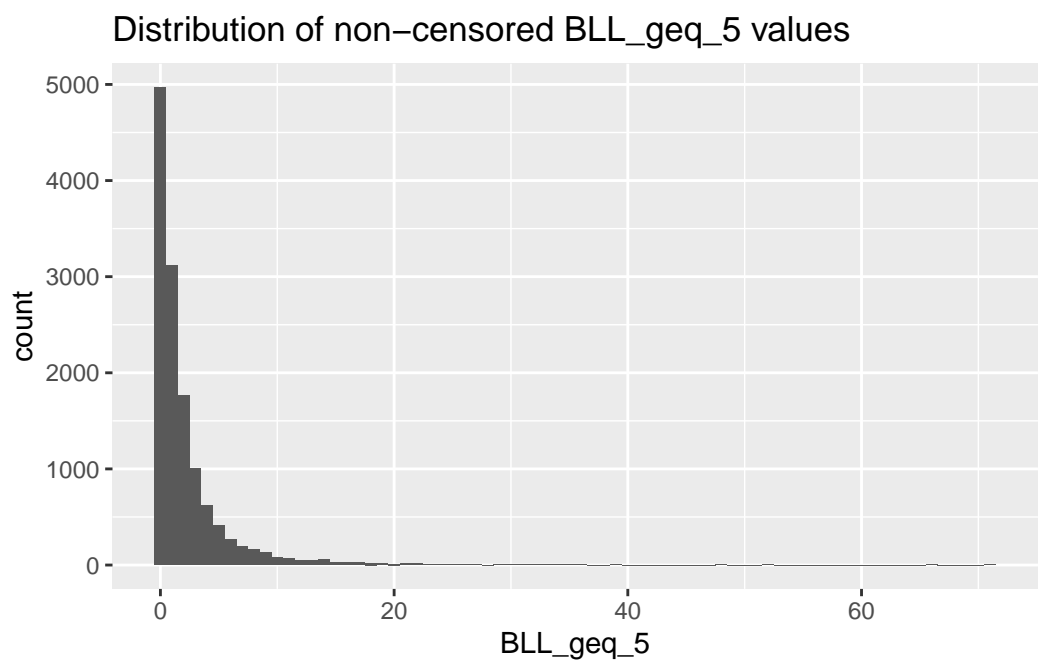
```
in_summary[[1]] |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
in_summary[[2]]
```

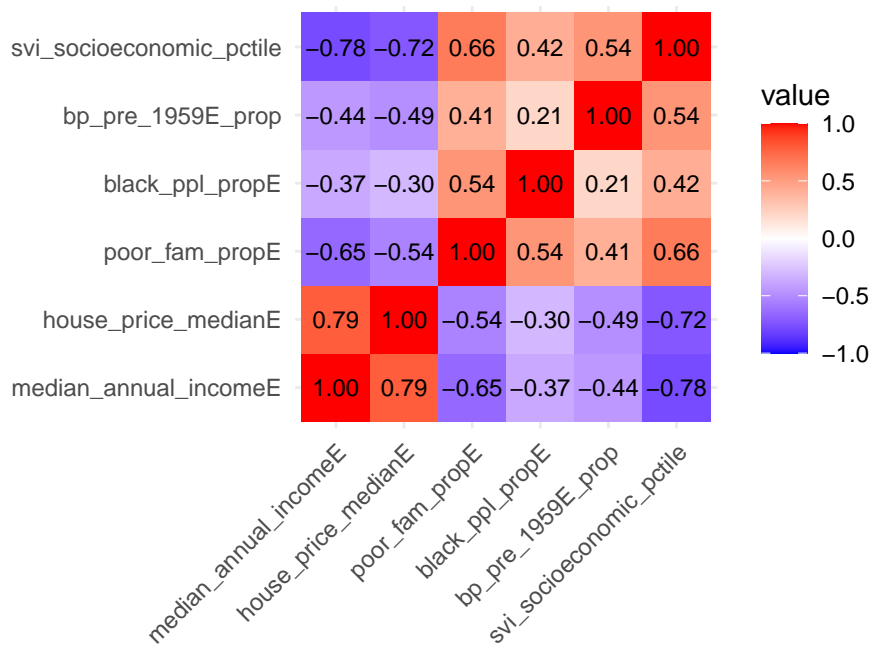
	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
year	11	0	2010.0	3.2	2005.0	2010.0	2015.0
tested	169	0	28.6	23.6	1.0	22.0	306.0
BLL_geq_5	41	0	2.1	3.7	0.0	1.0	71.0
tested_ell	1	0	1.0	0.0	1.0	1.0	1.0
ell_5	1	0	0.0	0.0	0.0	0.0	0.0
median_annual_incomeE	1177	0	0.0	1.0	-2.6	-0.0	4.9
house_price_medianE	898	0	-0.0	1.0	-1.8	-0.2	6.9
poor_fam_propE	1185	0	0.0	1.0	-1.1	-0.3	5.6
black_ppl_propE	1040	0	0.0	1.0	-0.6	-0.5	4.3
bp_pre_1959E_prop	1208	0	0.0	1.0	-1.7	-0.1	2.1
svi_socioeconomic_pctile	1135	0	0.0	1.0	-2.2	0.1	1.6
under_yo5_pplE	456	0	249.0	141.9	7.0	216.0	981.0
ped_per_100k	60	0	52.5	44.4	0.0	43.0	238.7

```
in_summary[[3]]
```

```
[[1]]
```



```
in_summary[[4]]
```



variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp	-920.7486605	-920.4135000	1.8936512	1.7531745	-924.2862500	-918.3389500	1.0029736	1805.360	2782.742
alpha	-5.5756826	-5.5754600	0.0324851	0.0319649	-5.6296155	-5.5229095	1.0010439	4271.521	2919.398
median_annual_incomeE	-0.1762380	-0.1767025	0.0353082	0.0341925	-0.2359692	-0.1173766	1.0011085	3545.672	2639.398
house_price_medianE	-0.0911790	-0.0907848	0.0363116	0.0365729	-0.1512320	-0.0324058	0.9996919	3958.235	3230.498
poor_fam_propE	0.1009921	0.1006005	0.0267200	0.0268331	0.0566051	0.1442012	1.0016488	3771.867	2896.109
black_ppl_propE	-0.0090796	-0.0091134	0.0234120	0.0228170	-0.0476347	0.0299099	1.0008185	4071.678	2835.975
bp_pre_1959E_prop	0.4007293	0.4009285	0.0264286	0.0261597	0.3571037	0.4424780	1.0002236	3989.973	2876.769
svi_socioeconomic_pctile	0.2591629	0.2593435	0.0349023	0.0344705	0.2015098	0.3163060	1.0024315	4547.727	2786.491

```
in_lead_model <- lead_count_model_summary("IN", year = 2013)
```

```
[1] "Loading IN from processed_data"
```

```
Rows: 16577 Columns: 5
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (1): state
```

```
dbl (4): tract, year, tested, BLL_geq_5
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

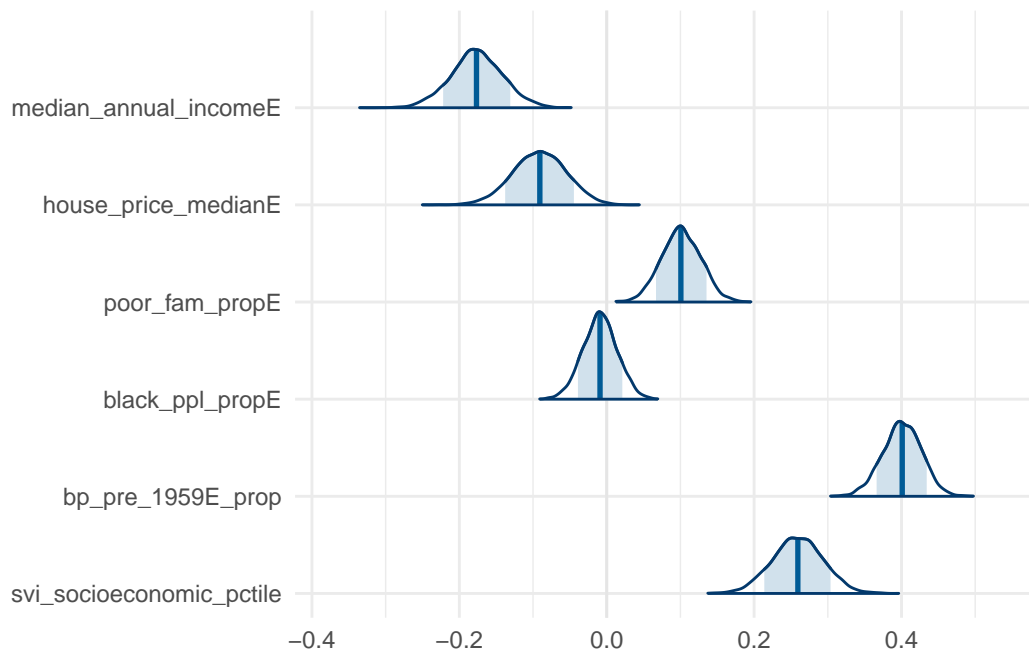
```
Warning in readLines(stan_file): incomplete final line found on
```

```
'poisson_many_X_suppression.stan'
```

```
Warning: Dropping 'draws_df' class as required metadata was removed.
```

```
in_lead_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
in_lead_model$plot
```



```
in_test_model <- test_count_model_summary("IN", year = 2013)
```

```
[1] "Loading IN from processed_data"
```

```
Rows: 16577 Columns: 5
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (1): state
```

```
dbl (4): tract, year, tested, BLL_geq_5
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

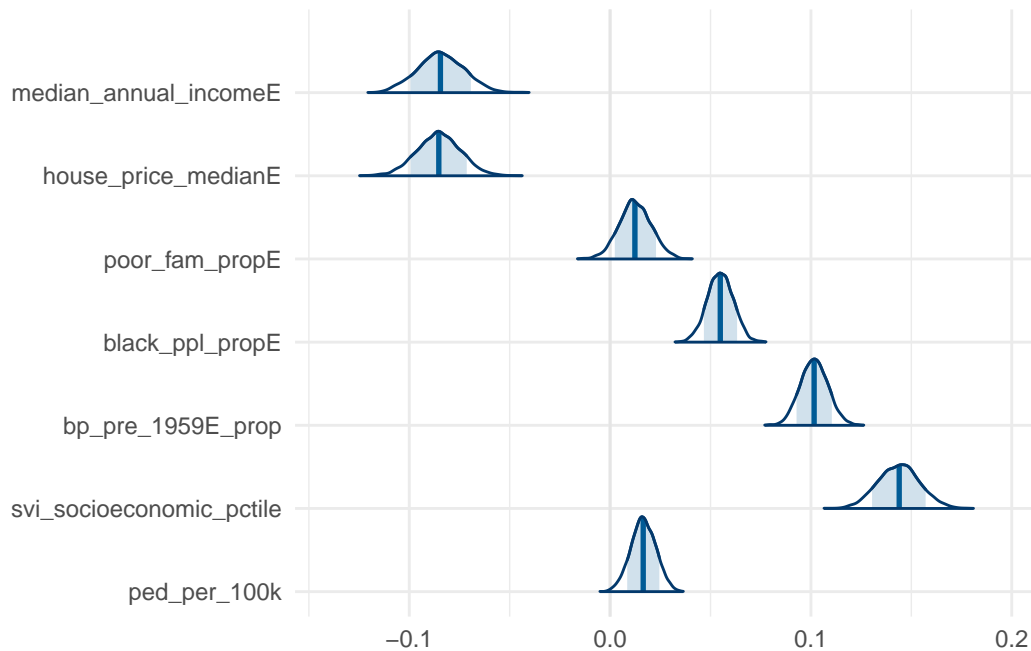
```
Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'
```

variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp_	71600.4676750	7.16008e+04	1.9574717	1.7791200	71596.8000000	71603.1000000	1.0010688	1923.204	1981.153
alpha	-2.2923106	-2.29233e+00	0.0057969	0.0057228	-2.3018405	-2.2827295	1.0002682	6394.111	3265.527
median_annual_incomeE	-0.0842286	-8.44814e-02	0.0116535	0.0115799	-0.1035803	-0.0647502	1.0009438	3276.440	2497.083
house_price_medianE	-0.0852980	-8.52874e-02	0.0109718	0.0106771	-0.1033398	-0.0673914	1.0009019	4708.501	2817.451
poor_fam_propE	0.0125246	1.23481e-02	0.0080279	0.0078343	-0.0003839	0.0258525	1.0008418	4700.149	2565.269
black_ppl_propE	0.0549022	5.48606e-02	0.0064835	0.0064807	0.0442019	0.0656018	1.0003012	4829.716	3325.028
bp_pre_1959E_prop	0.1016228	1.01598e-01	0.0068925	0.0069432	0.0904053	0.1129562	0.9997609	4973.221	2497.066
svi_socioeconomic_pctile	0.1438074	1.43963e-01	0.0103914	0.0103211	0.1268401	0.1609430	1.0023377	4529.941	2701.261
NA	0.0165704	1.64934e-02	0.0062171	0.0062856	0.0063213	0.0268026	1.0002728	5524.789	3257.074

Warning: Dropping 'draws_df' class as required metadata was removed.

```
in_test_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
in_test_model$plot
```



Oregon

```
or_summary <- data_summary("OR", year = NULL)
```

```
[1] "Loading OR from processed_data"
```

year	n_obs	lead_cens_5	lead_nocens_5	lead_censR_5	test_cens	test_censR	sup_threshold_5	median_lead_5	q75_lead_5	max_lead_5
2004	1000	1000	0	1	400	0.400	4	5	5	5
2005	1000	1000	0	1	372	0.372	4	5	5	5
2006	1000	1000	0	1	376	0.376	4	5	5	5
2007	1000	1000	0	1	364	0.364	4	5	5	5
2008	1000	1000	0	1	340	0.340	4	5	5	5
2009	1000	1000	0	1	292	0.292	4	5	5	5
2010	1000	1000	0	1	300	0.300	4	5	5	5
2011	1000	1000	0	1	324	0.324	4	5	5	5
2012	1000	1000	0	1	308	0.308	4	5	5	5
2013	1000	1000	0	1	356	0.356	4	5	5	5
2014	1000	1000	0	1	300	0.300	4	5	5	5
2015	1000	1000	0	1	300	0.300	4	5	5	5

Rows: 15504 Columns: 5

-- Column specification -----

Delimiter: ","

chr (3): tested, BLL_geq_5, state

dbl (2): tract, year

i Use `spec()` to retrieve the full column specification for this data.

i Specify the column types or set `show_col_types = FALSE` to quiet this message.

Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.

i Please use `if_any()` or `if_all()` instead.

[1] "Additional features added: "

Warning in datasummary_skim_numeric(data, output = output, fmt = fmt, histogram = histogram, : The histogram argument is only supported for (a) output types "default", "html", or "kableExtra"; (b) writing to file paths with extensions ".html", ".jpg", or ".png"; and (c) Rmarkdown or knitr documents compiled to PDF or HTML. Use `histogram=FALSE` to silence this warning.

```
or_summary[[1]] |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
or_summary[[2]]
```

	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
year	12	0	2009.5	3.5	2004.0	2009.5	2015.0
tested	85	0	14.3	14.2	5.0	8.0	112.0
BLL_geq_5	1	0	5.0	0.0	5.0	5.0	5.0
tested_ell	1	0	5.0	0.0	5.0	5.0	5.0

	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
ell_5	1	0	4.0	0.0	4.0	4.0	4.0
median_annual_incomeE	250	0	0.0	1.1	-2.6	-0.1	6.7
house_price_medianE	245	0	0.1	1.1	-2.2	0.0	4.2
poor_fam_propE	248	0	0.1	1.1	-1.3	-0.2	4.0
black_ppl_propE	216	0	0.3	1.3	-0.6	-0.2	6.2
bp_pre_1959E_prop	250	0	0.3	1.2	-1.3	0.1	3.2
svi_socioeconomic_pctile	247	0	0.1	1.0	-2.0	0.3	2.1
under_yo5_pplE	206	0	262.7	153.0	24.0	226.0	905.0
ped_per_100k	23	0	94.5	55.7	0.0	88.8	157.9

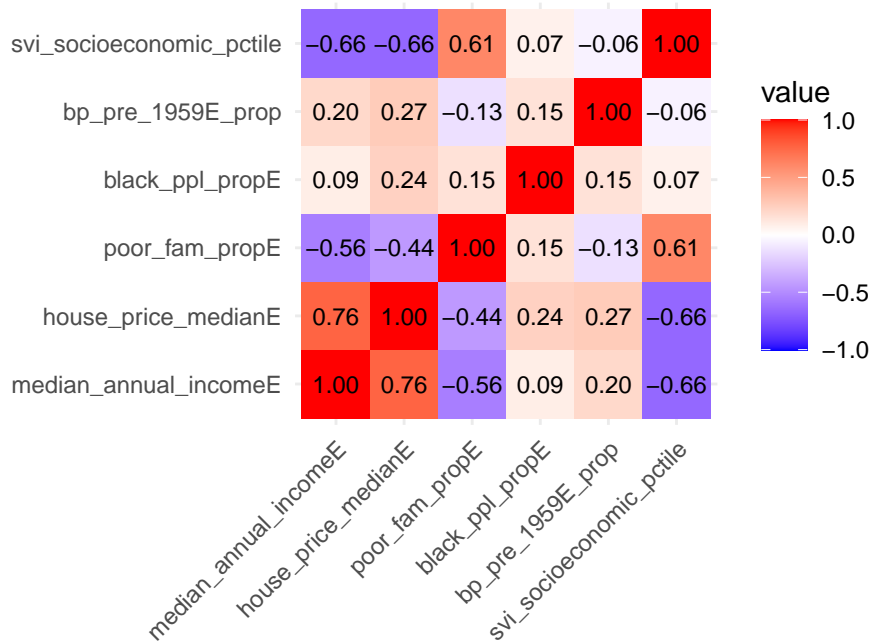
```
or_summary[[3]]
```

```
[[1]]
```

Distribution of non-censored BLL_geq_5 values



```
or_summary[[4]]
```



```
or_lead_model <- lead_count_model_summary("OR", year = 2010)
```

```
[1] "Loading OR from processed_data"
```

```
Rows: 15504 Columns: 5
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (3): tested, BLL_geq_5, state
```

```
dbl (2): tract, year
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

```
Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'
```

```
Chain 1 Initialization between (-2, 2) failed after 100 attempts.
Chain 1 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.
Chain 1 Initialization failed.
Chain 2 Initialization between (-2, 2) failed after 100 attempts.
Chain 2 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.
Chain 2 Initialization failed.
Chain 3 Initialization between (-2, 2) failed after 100 attempts.
Chain 3 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.
Chain 3 Initialization failed.
Chain 4 Initialization between (-2, 2) failed after 100 attempts.
Chain 4 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.
Chain 4 Initialization failed.
```

Warning: No chains finished successfully. Unable to retrieve the fit.

Error: No chains finished successfully. Unable to retrieve the draws.

```
or_lead_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

Error in knitr::kable(or_lead_model\$table): object 'or_lead_model' not found

```
or_lead_model$plot
```

Error in eval(expr, envir, enclos): object 'or_lead_model' not found

```
or_test_model <- test_count_model_summary("OR", year = 2010)
```

```
[1] "Loading OR from processed_data"
```

```
Rows: 15504 Columns: 5
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (3): tested, BLL_geq_5, state
```

```
dbl (2): tract, year
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp_	30446.4451000	30446.8000000	2.0474684	1.9273800	30442.6000000	30449.2000000	1.005519	1436.334	1905.210
alpha	-3.1937940	-3.1937200	0.0118508	0.0117496	-3.2133000	-3.1741795	1.000754	2988.567	1984.323
median_annual_incomeE	-0.0238274	-0.0238687	0.0144407	0.0141934	-0.0472720	0.0000748	1.002651	2510.599	2009.372
house_price_medianE	-0.0789780	-0.0792080	0.0162205	0.0158839	-0.1048591	-0.0526393	1.000564	2896.293	2190.349
poor_fam_propE	-0.0248595	-0.0249283	0.0096931	0.0098717	-0.0407139	-0.0091226	1.002163	3441.149	2081.064
black_ppl_propE	0.1035334	0.1033345	0.0061176	0.0061913	0.0937962	0.1135561	1.000138	3124.534	2084.848
bp_pre_1959E_prop	0.1065819	0.1064620	0.0078169	0.0078370	0.0936291	0.1195894	1.002434	3516.452	2269.664
svi_socioeconomic_pctile	0.2880797	0.2879655	0.0135172	0.0132100	0.2662111	0.3109891	1.000235	3225.545	1942.515
NA	0.6332615	0.6330950	0.0116730	0.0118475	0.6140341	0.6528636	1.002716	3324.379	2283.500

Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
i Please use `if_any()` or `if_all()` instead.

```
[1] "Additional features added: "
```

Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'

Chain 2 Initialization between (-2, 2) failed after 100 attempts.

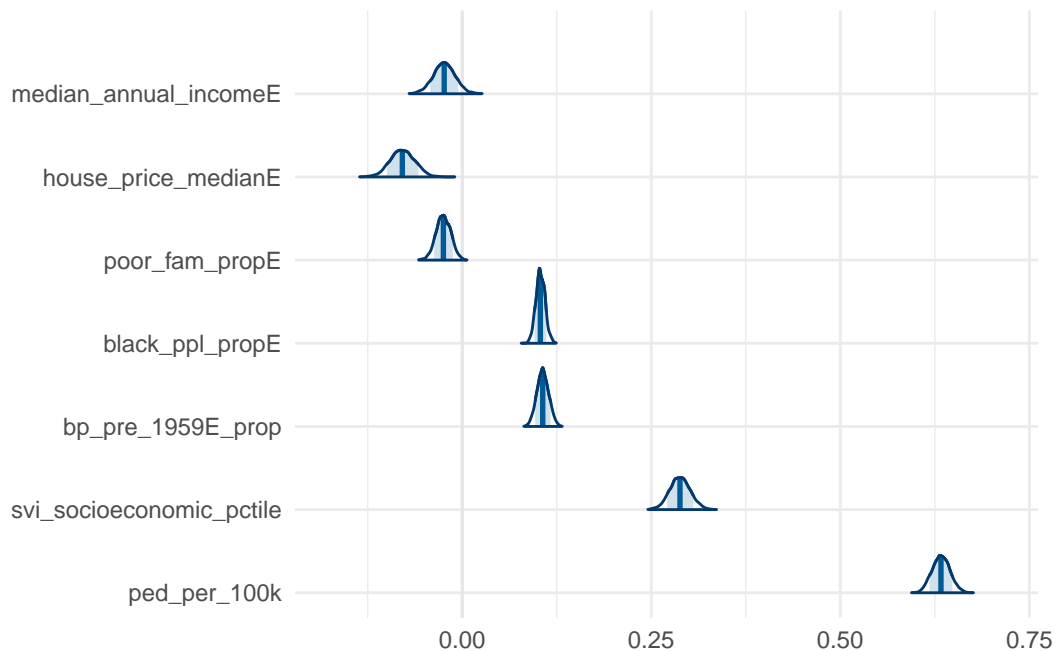
Chain 2 Try specifying initial values, reducing ranges of constrained values, or reparameterizing.

Chain 2 Initialization failed.

Warning: Dropping 'draws_df' class as required metadata was removed.

```
or_test_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
or_test_model$plot
```

New Hampshire

```
nh_summary <- data_summary("NH", year = NULL)
```

```
[1] "Loading NH from processed_data"
```

```
Rows: 3223 Columns: 6
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (2): state, tract
```

```
dbl (4): year, tested, BLL_geq_5, BLL_geq_10
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

year	n_obs	lead_cens_5	lead_nocens_5	lead_censR_5	lead_cens_10	lead_nocens_10	lead_censR_10	test_cens	test_censR	sup_threshold_5	sup_threshold_10	median_lead_5	q75_lead_5	max_lead_5	median_lead_10	q75_lead_10	max_lead_10
2005	212	0	212	0	0	212	0	0	0	0	0	4	7	48	1	1	13
2006	212	0	212	0	0	212	0	0	0	0	0	3	5	62	0	1	29
2007	211	0	211	0	0	211	0	0	0	0	0	2	5	57	0	1	18
2008	211	0	211	0	0	211	0	0	0	0	0	2	4	47	0	1	14
2009	210	0	210	0	0	210	0	0	0	0	0	1	3	42	0	1	15
2010	210	0	210	0	0	210	0	0	0	0	0	1	3	46	0	1	13
2011	211	0	211	0	0	211	0	0	0	0	0	1	3	38	0	0	14
2012	211	0	211	0	0	211	0	0	0	0	0	1	2	34	0	0	11
2013	210	0	210	0	0	210	0	0	0	0	0	1	2	24	0	1	8
2014	210	0	210	0	0	210	0	0	0	0	0	1	2	15	0	1	6
2015	211	0	211	0	0	211	0	0	0	0	0	1	2	10	0	0	4

Warning in `datasummary_skim_numeric(data, output = output, fmt = fmt, histogram = histogram, : The histogram argument is only supported for (a) output types "default", "html", or "kableExtra"; (b) writing to file paths with extensions ".html", ".jpg", or ".png"; and (c) Rmarkdown or knitr documents compiled to PDF or HTML. Use `histogram=FALSE` to silence this warning.`

```
nh_summary[[1]] |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

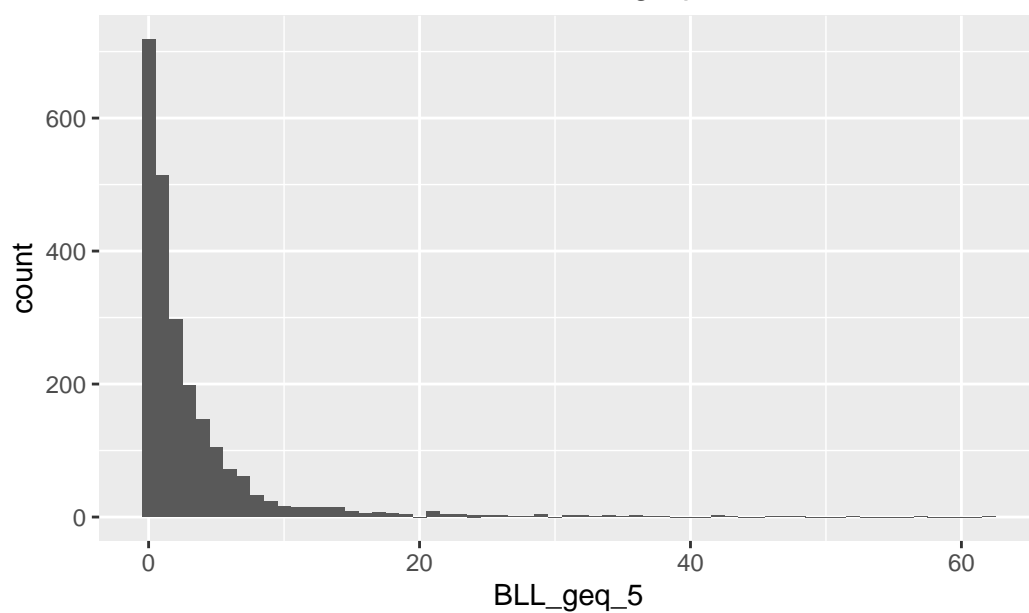
```
nh_summary[[2]]
```

	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
year	11	0	2010.0	3.2	2005.0	2010.0	2015.0
tested	151	0	42.8	27.5	1.0	39.0	190.0
BLL_geq_5	45	0	3.0	5.4	0.0	1.0	62.0
BLL_geq_10	19	0	0.7	1.8	0.0	0.0	29.0
ell_5	1	0	0.0	0.0	0.0	0.0	0.0
ell_10	1	0	0.0	0.0	0.0	0.0	0.0
median_annual_incomeE	212	0	0.0	1.0	-3.5	-0.1	3.4
house_price_medianE	204	0	0.0	1.0	-2.0	-0.0	5.1
poor_fam_propE	214	0	-0.0	1.0	-1.0	-0.3	5.7
black_ppl_propE	165	0	-0.0	1.0	-0.6	-0.4	4.7
bp_pre_1959E_prop	214	0	-0.0	1.0	-1.6	-0.2	2.5
svi_socioeconomic_pctile	211	0	-0.0	1.0	-1.3	-0.3	3.0
under_yo5_pplE	170	0	210.0	119.9	9.0	197.0	579.0
ped_per_100k	10	0	86.5	42.7	25.6	86.7	248.2

```
nh_summary[[3]]
```

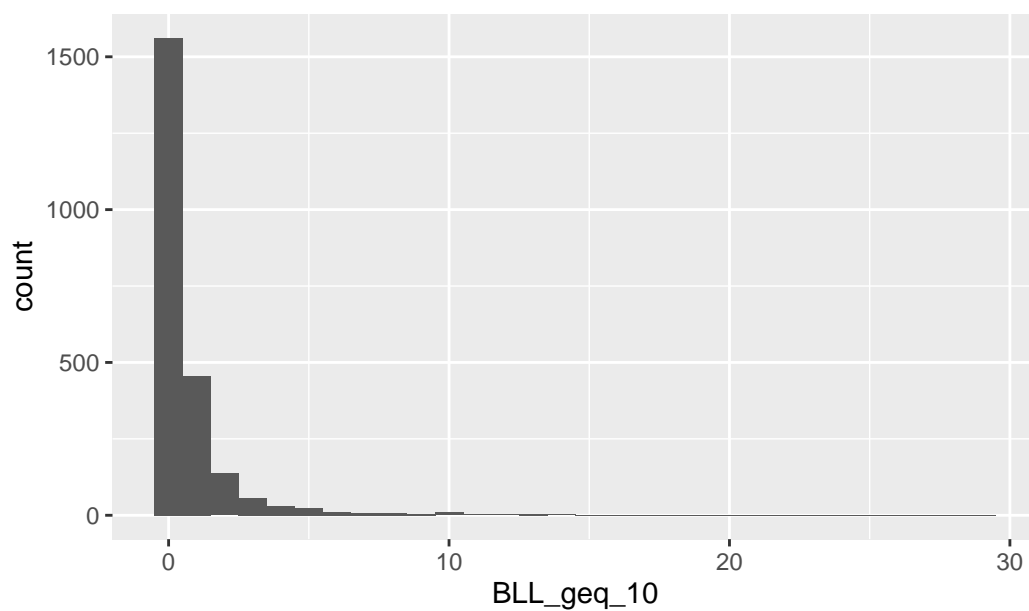
```
[[1]]
```

Distribution of non-censored BLL_geq_5 values

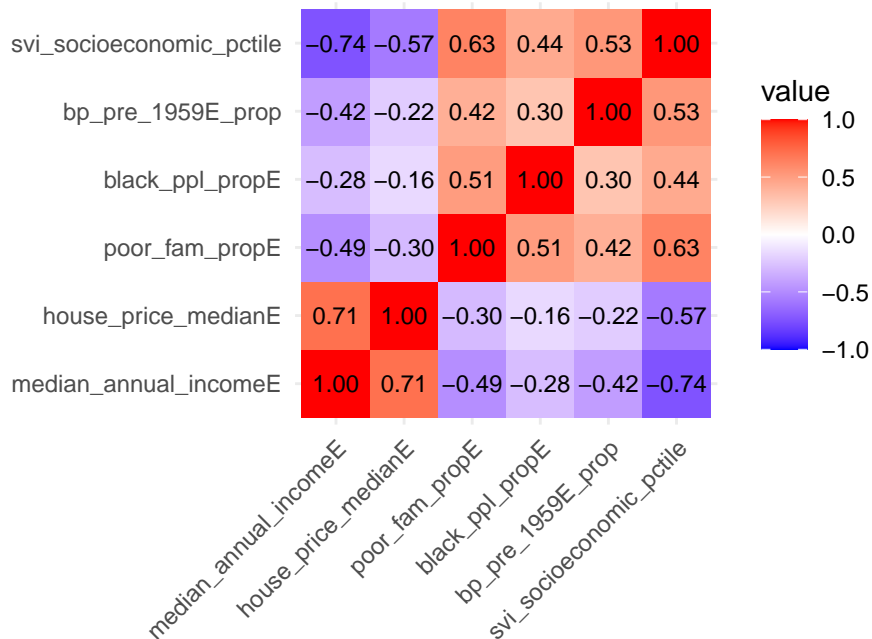


[[2]]

Distribution of non-censored BLL_geq_10 values



```
nh_summary[[4]]
```



```
nh_lead_model <- lead_count_model_summary("NH", year = 2010)
```

```
[1] "Loading NH from processed_data"
```

```
Rows: 3223 Columns: 6
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (2): state, tract
```

```
dbl (4): year, tested, BLL_geq_5, BLL_geq_10
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

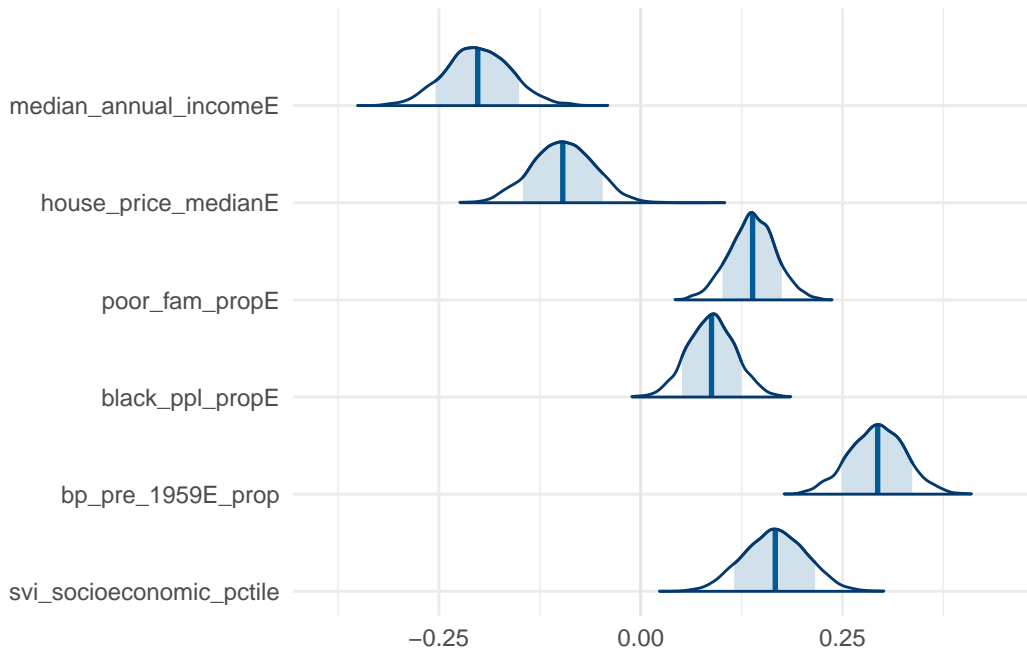
variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp	218.5018932	218.8065000	1.8730793	1.7220399	215.0256000	220.9040000	1.0021171	1648.670	2524.108
alpha	-4.6166046	-4.6155300	0.0515019	0.0512461	-4.7010275	-4.5325515	0.9997968	4735.507	2894.211
median_annual_incomeE	-0.2014504	-0.2019720	0.0407577	0.0404513	-0.2683996	-0.1342259	1.0001260	3967.133	2900.566
house_price_medianE	-0.0965624	-0.0965307	0.0385531	0.0388868	-0.1610957	-0.0349091	1.0008220	4438.003	3263.105
poor_fam_propE	0.1384546	0.1386645	0.0286642	0.0283369	0.0904604	0.1857238	1.0014104	3534.359	2768.275
black_ppl_propE	0.0877564	0.0877447	0.0293006	0.0294747	0.0394138	0.1370309	1.0012221	3576.502	2913.742
bp_pre_1959E_prop	0.2932938	0.2936720	0.0345469	0.0350865	0.2348116	0.3493947	1.0001110	4583.130	2713.455
svi_socioeconomic_pctile	0.1665177	0.1668050	0.0386598	0.0393667	0.1029606	0.2294757	1.0024284	3710.609	2647.995

```
Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'
```

```
Warning: Dropping 'draws_df' class as required metadata was removed.
```

```
nh_lead_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
nh_lead_model$plot
```



```
nh_test_model <- test_count_model_summary("NH", year = 2010)
```

```
[1] "Loading NH from processed_data"
```

```

Rows: 3223 Columns: 6
-- Column specification -----
Delimiter: ","
chr (2): state, tract
dbl (4): year, tested, BLL_geq_5, BLL_geq_10

i Use `spec()` to retrieve the full column specification for this data.
i Specify the column types or set `show_col_types = FALSE` to quiet this message.

Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
i Please use `if_any()` or `if_all()` instead.

[1] "Additional features added: "

Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'

Warning: Unknown or uninitialised column: `tested_ell`.

Warning in max(state_data$tested_ell, na.rm = TRUE): no non-missing arguments
to max; returning -Inf

Warning in test_count_model_summary("NH", year = 2010): NAs introduced by
coercion to integer range

Warning: Unknown or uninitialised column: `zero_sup_tested`.

Error: Variable 'ell' has NA values.

nh_test_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")

Error in knitr::kable(nh_test_model$table): object 'nh_test_model' not found

nh_test_model$plot

Error in eval(expr, envir, enclos): object 'nh_test_model' not found

```

Wisconsin

```
wi_summary <- data_summary("WI", year = NULL)
```

```
[1] "Loading WI from processed_data"
```

```
Rows: 36564 Columns: 8
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (2): state, county
```

```
dbl (6): tract, start_year, end_year, tested, BLL_geq_5, year
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

```
Warning in datasummary_skim_numeric(data, output = output, fmt = fmt, histogram
= histogram, : The histogram argument is only supported for (a) output types
"default", "html", or "kableExtra"; (b) writing to file paths with extensions
".html", ".jpg", or ".png"; and (c) Rmarkdown or knitr documents compiled to
PDF or HTML. Use `histogram=FALSE` to silence this warning.
```

```
wi_summary[[1]] |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

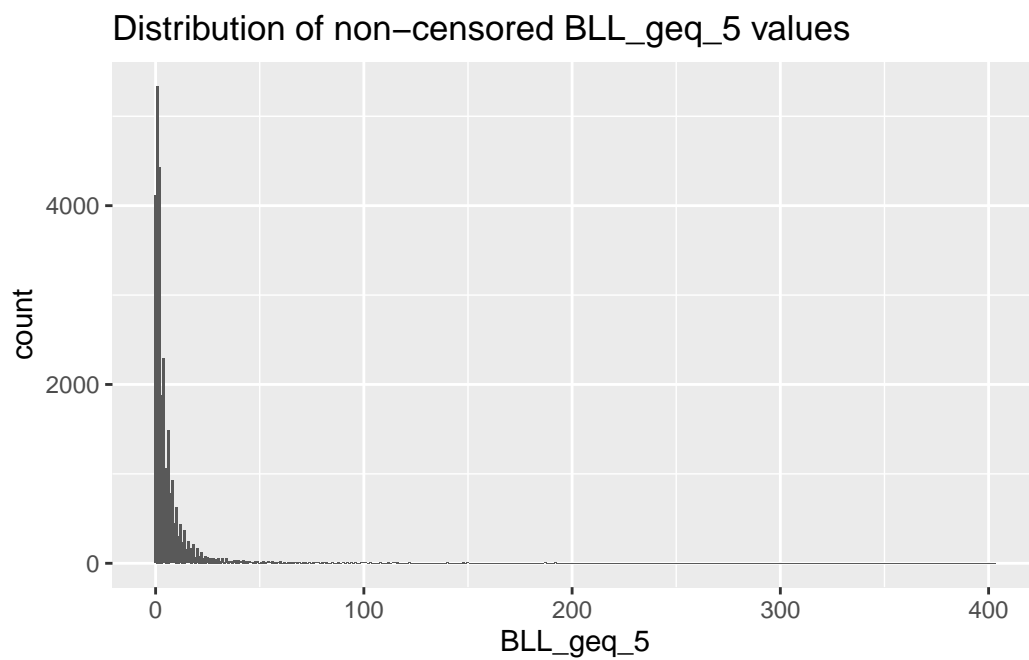
```
wi_summary[[2]]
```

	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
start_year	6	0	2008.0	6.9	1998.0	2006.0	2018.0
end_year	6	0	2011.0	6.9	2001.0	2009.0	2021.0
tested	287	0	60.0	49.1	1.0	47.0	576.0
BLL_geq_5	137	0	7.5	17.9	0.0	2.0	403.0
year	24	0	2009.5	7.0	1998.0	2009.0	2021.0
tested_ell	1	0	1.0	0.0	1.0	1.0	1.0
ell_5	1	0	0.0	0.0	0.0	0.0	0.0

	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
median_annual_incomeE	1157	0	0.1	1.0	-3.1	-0.0	4.8
house_price_medianE	936	0	0.0	1.0	-1.8	-0.2	6.5
poor_fam_propE	1182	0	-0.1	0.9	-0.9	-0.4	5.1
black_ppl_propE	1043	0	-0.1	0.9	-0.4	-0.4	4.5
bp_pre_1959E_prop	1191	0	-0.0	1.0	-1.7	-0.2	2.3
svi_socioeconomic_pctile	1123	0	-0.1	1.0	-1.6	-0.2	2.2
under_yo5_pplE	432	0	232.3	127.3	10.0	213.0	944.0
ped_per_100k	47	0	68.5	51.0	0.0	49.9	192.8

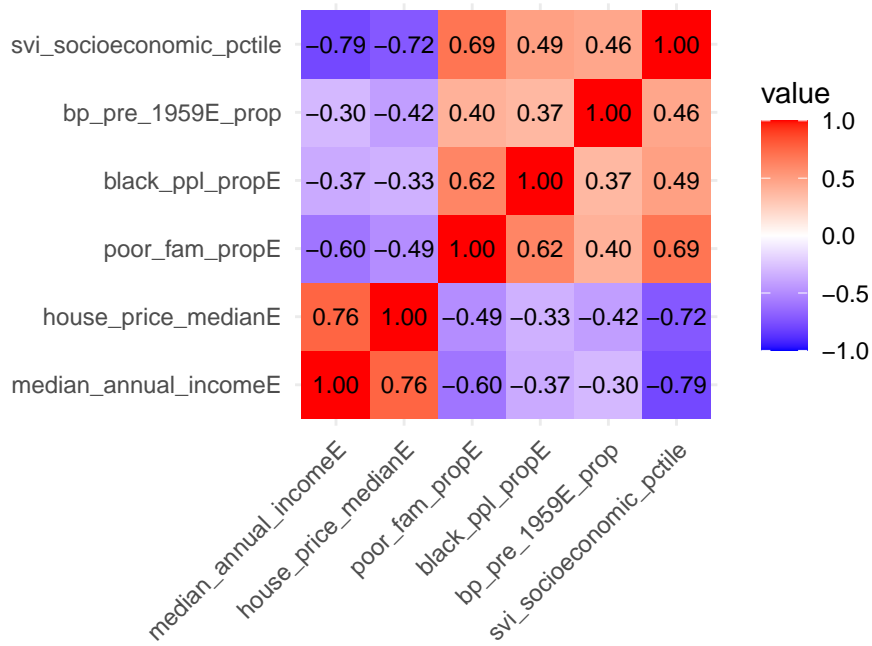
```
wi_summary[[3]]
```

```
[[1]]
```



```
wi_summary[[4]]
```


year	n_obs	lead_cens_5	lead_nocens_5	lead_censR_5	test_cens	test_censR	sup_threshold_5	median_lead_5	q75_lead_5	max_lead_5
1998	1166	0	1166	0	0	0	0	8	15	403
1999	1166	0	1166	0	0	0	0	8	15	403
2000	1166	0	1166	0	0	0	0	8	15	403
2001	1166	0	1166	0	0	0	0	8	15	403
2002	1152	0	1152	0	0	0	0	6	11	253
2003	1152	0	1152	0	0	0	0	6	11	253
2004	1152	0	1152	0	0	0	0	6	11	253
2005	1152	0	1152	0	0	0	0	6	11	253
2006	1145	0	1145	0	0	0	0	3	7	112
2007	1145	0	1145	0	0	0	0	3	7	112
2008	1145	0	1145	0	0	0	0	3	7	112
2009	1145	0	1145	0	0	0	0	3	7	112
2010	1121	0	1121	0	0	0	0	2	4	67
2011	1121	0	1121	0	0	0	0	2	4	67
2012	1121	0	1121	0	0	0	0	2	4	67
2013	1121	0	1121	0	0	0	0	2	4	67
2014	1153	0	1153	0	0	0	0	1	2	56
2015	1153	0	1153	0	0	0	0	1	2	56
2016	1153	0	1153	0	0	0	0	1	2	56
2017	1153	0	1153	0	0	0	0	1	2	56
2018	1184	0	1184	0	0	0	0	1	2	40
2019	1184	0	1184	0	0	0	0	1	2	40
2020	1184	0	1184	0	0	0	0	1	2	40
2021	1184	0	1184	0	0	0	0	1	2	40



```
wi_lead_model <- lead_count_model_summary("WI", year = 2007)
```

```
[1] "Loading WI from processed_data"
```

```
Rows: 36564 Columns: 8
```

```
-- Column specification -----
```

variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp_	10596.4919000	10596.8000000	1.8476019	1.7791200	10593.1000000	10598.9000000	1.000647	1809.147	2660.126
alpha	-3.9273395	-3.9274100	0.0154785	0.0155451	-3.9532100	-3.9026240	1.000417	4497.687	2967.195
median_annual_incomeE	-0.1716864	-0.1717365	0.0223478	0.0228187	-0.2073936	-0.1342624	1.000332	3576.447	2800.173
house_price_medianE	-0.0447430	-0.0446631	0.0229277	0.0227691	-0.0829975	-0.0063676	1.001971	3971.652	2686.891
poor_fam_propE	0.0559037	0.0560879	0.0128362	0.0131066	0.0343999	0.0765845	1.000434	4023.494	2821.676
black_ppl_propE	0.0884210	0.0884630	0.0091743	0.0093310	0.0738000	0.1034534	1.001905	4616.706	2077.768
bp_pre_1959E_prop	0.3821958	0.3820255	0.0138159	0.0137963	0.3597890	0.4049664	1.000297	4365.982	3128.252
svi_socioeconomic_pctile	0.3494664	0.3492265	0.0218980	0.0217853	0.3140651	0.3860613	1.000647	3510.030	2850.289

Delimiter: ","

chr (2): state, county

dbl (6): tract, start_year, end_year, tested, BLL_geq_5, year

i Use `spec()` to retrieve the full column specification for this data.

i Specify the column types or set `show_col_types = FALSE` to quiet this message.

Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.

i Please use `if_any()` or `if_all()` instead.

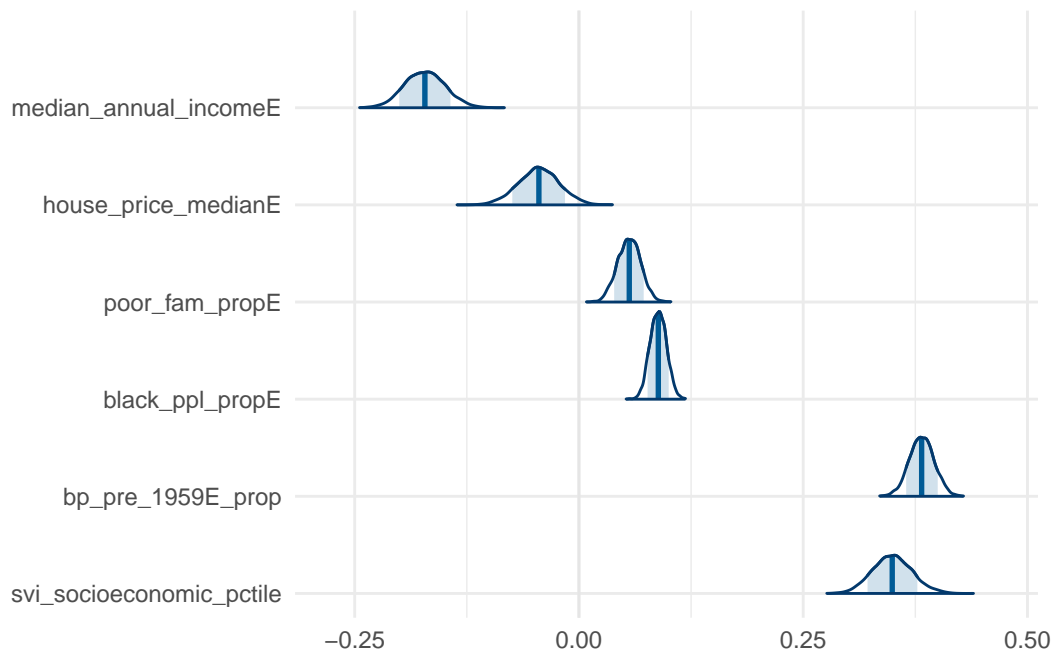
[1] "Additional features added: "

Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'

Warning: Dropping 'draws_df' class as required metadata was removed.

```
wi_lead_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
wi_lead_model$plot
```



```
wi_test_model <- test_count_model_summary("WI", year = 2007)
```

```
[1] "Loading WI from processed_data"
```

```
Rows: 36564 Columns: 8
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (2): state, county
```

```
dbl (6): tract, start_year, end_year, tested, BLL_geq_5, year
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
Warning: Using `across()` in `filter()` was deprecated in dplyr 1.0.8.
```

```
i Please use `if_any()` or `if_all()` instead.
```

```
[1] "Additional features added: "
```

```
Warning in readLines(stan_file): incomplete final line found on
'poisson_many_X_suppression.stan'
```

variable	mean	median	sd	mad	q5	q95	rhat	ess_bulk	ess_tail
lp_	2.451461e+05	2.451470e+05	2.0951442	1.4826000	2.451420e+05	2.451490e+05	0.9996833	1653.851	2305.312
alpha	-1.321028e+00	-1.321100e+00	0.0038521	0.0038177	-1.327241e+00	-1.314679e+00	1.0018675	5693.524	2563.556
median_annual_incomeE	-1.120389e-01	-1.120110e-01	0.0078789	0.0079408	-1.246795e-01	-9.887430e-02	1.0007341	3814.171	2912.154
house_price_medianE	-6.087290e-02	-6.091000e-02	0.0075586	0.0076862	-7.321330e-02	-4.847710e-02	1.0009511	3624.233	3001.570
poor_fam_propE	-1.217000e-03	-1.120000e-03	0.0052623	0.0051443	-9.734700e-03	7.453100e-03	1.0004761	4251.305	2853.410
black_ppl_propE	6.361800e-03	6.327500e-03	0.0039781	0.0039713	-3.840000e-05	1.290080e-02	1.0010955	5992.616	3008.966
bp_pre_1959E_prop	1.018047e-01	1.017995e-01	0.0046201	0.0045864	9.416940e-02	1.094475e-01	0.9995260	5163.463	3071.079
svi_socioeconomic_pctile	1.957755e-01	1.957985e-01	0.0076567	0.0077132	1.832635e-01	2.082972e-01	1.0003553	3737.190	2958.171
NA	3.974070e-02	3.971040e-02	0.0046438	0.0045446	3.219930e-02	4.738150e-02	0.9999722	4535.988	2869.076

Warning: Dropping 'draws_df' class as required metadata was removed.

```
wi_test_model$table |> knitr::kable() |> kable_styling(latex_options = "scale_down")
```

```
wi_test_model$plot
```

