Data Generating Mechanism Testing

Below are graphs of the distributions of parameters, to be adjusted to fit with reality.

```
source("HSR_simulation_fn.R", local = knitr::knit_global())
```

```
## Warning: package 'tidyverse' was built under R version 3.6.2
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.5     v purrr   0.3.4
## v tibble  3.1.6     v dplyr   1.0.7
## v tidyr   1.1.3     v stringr 1.4.0
## v readr   2.1.2     v forcats 0.5.1
```

```
## Warning: package 'ggplot2' was built under R version 3.6.2
```

```
## Warning: package 'tibble' was built under R version 3.6.2
```

```
## Warning: package 'tidyr' was built under R version 3.6.2
```

```
## Warning: package 'readr' was built under R version 3.6.2
```

```
## Warning: package 'purrr' was built under R version 3.6.2
```

```
## Warning: package 'dplyr' was built under R version 3.6.2
```

```
## Warning: package 'forcats' was built under R version 3.6.2
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::count()  masks Rlab::count()
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## x tibble::view()  masks Rlab::view()
```

```
df <- make_regions(global_params)
head(df)
```

```
##   region_id          b W      U.pre    U.post     delta treated     Yb.pre
## 1         1 0.04654443 4 0.15834890 0.3413768 0.3980558       1 137.917445
## 2         1 0.06163022 1 0.11093793 0.4035214 0.1885006       1   5.546897
## 3         2 0.09589041 2 0.03296939 0.1983994 0.2964500       1  61.648470
## 4         2 0.11956522 3 0.21631503 0.2186157 0.3265863       1  80.815752
## 5         3 0.06296296 3 0.26876768 0.2302206 0.3011075       1  83.438384
## 6         3 0.10469314 1 0.16137379 0.2969464 0.1943657       1   8.068689
##     Yb.post  Yb.post0  Yb.post1
## 1 147.46690 147.06884 147.46690
## 2  20.36457  20.17607  20.36457
## 3  70.21642  69.91997  70.21642
## 4  81.25737  80.93079  81.25737
## 5  81.81214  81.51103  81.81214
## 6  15.04169  14.84732  15.04169
```

```
length(df)
```

```
## [1] 11
```

```r
# lognormal
#a <- rlnorm(100, 1,0)
# hist(a, breaks = 100, xlim = c(1,4))
curve(dlnorm(x, meanlog=5, sdlog=1), from=0, to=1000)
```