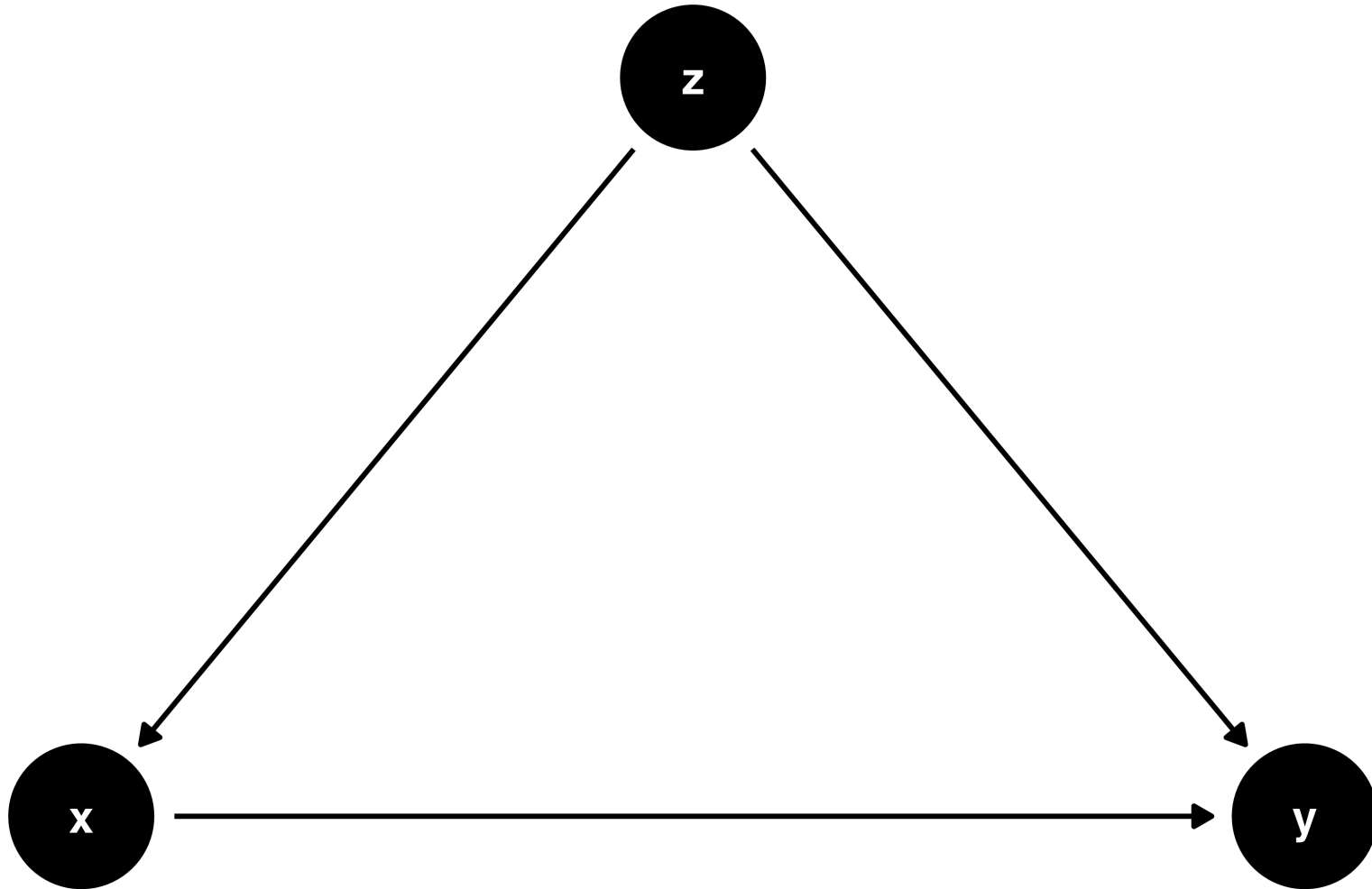


Bonus: Colliders, selection bias, and loss to follow-up

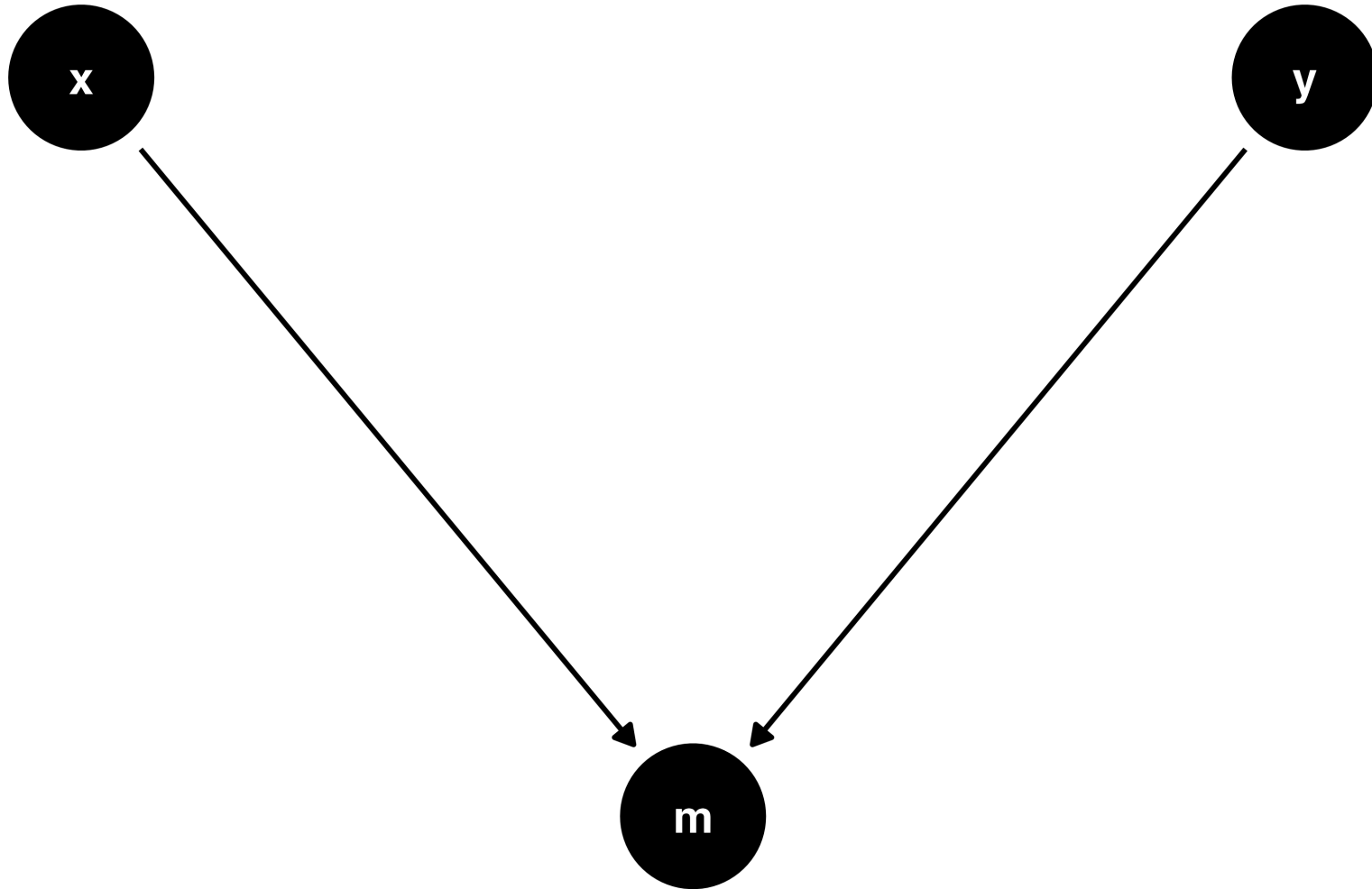
Malcolm Barrett

Stanford University

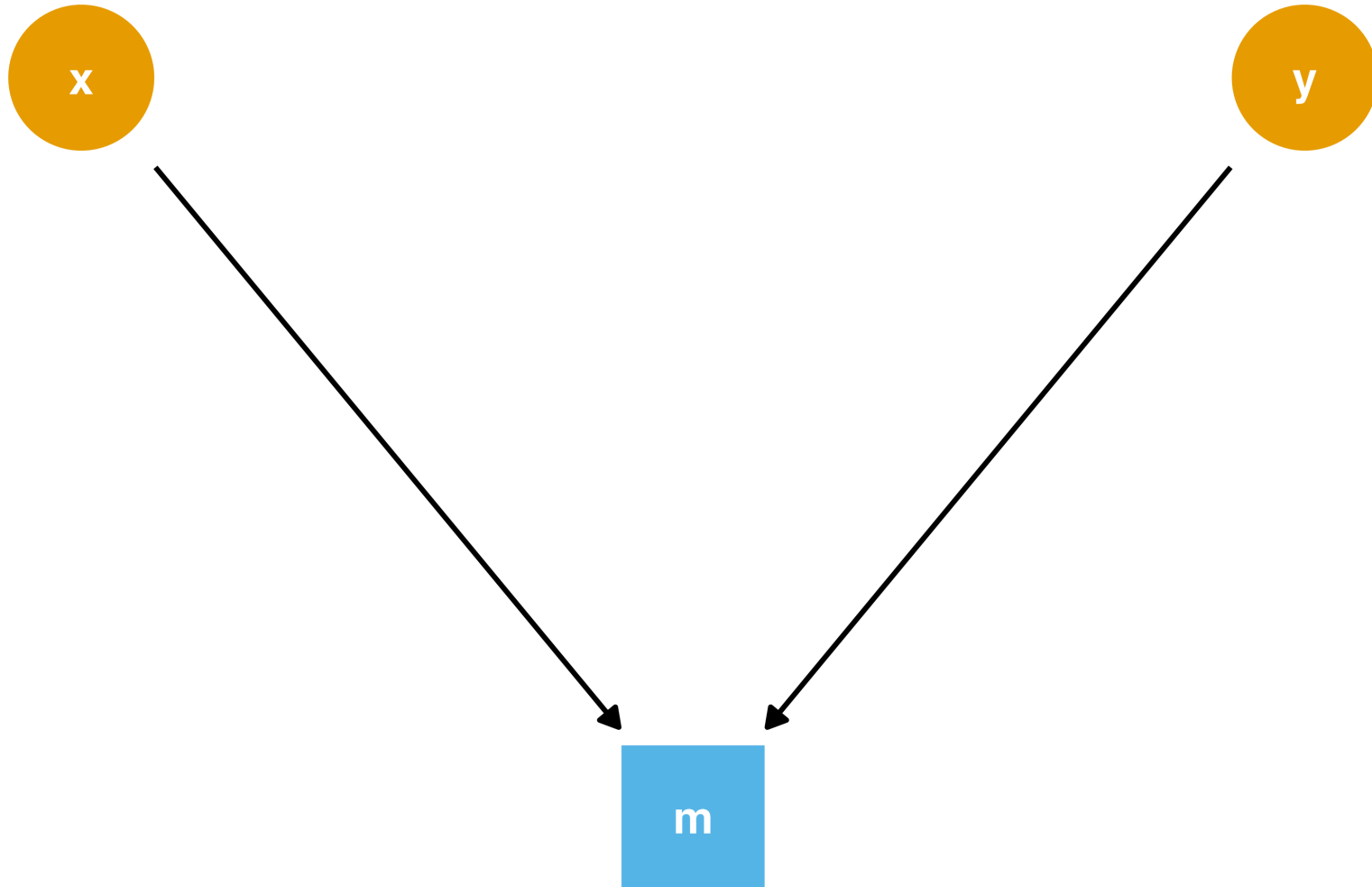
Confounders and chains



Colliders



Colliders



Let's prove it!

```
1 set.seed(1234)
2 collider_data <- collider_triangle() |>
3   simulate_data(-.6)
```

Let's prove it!

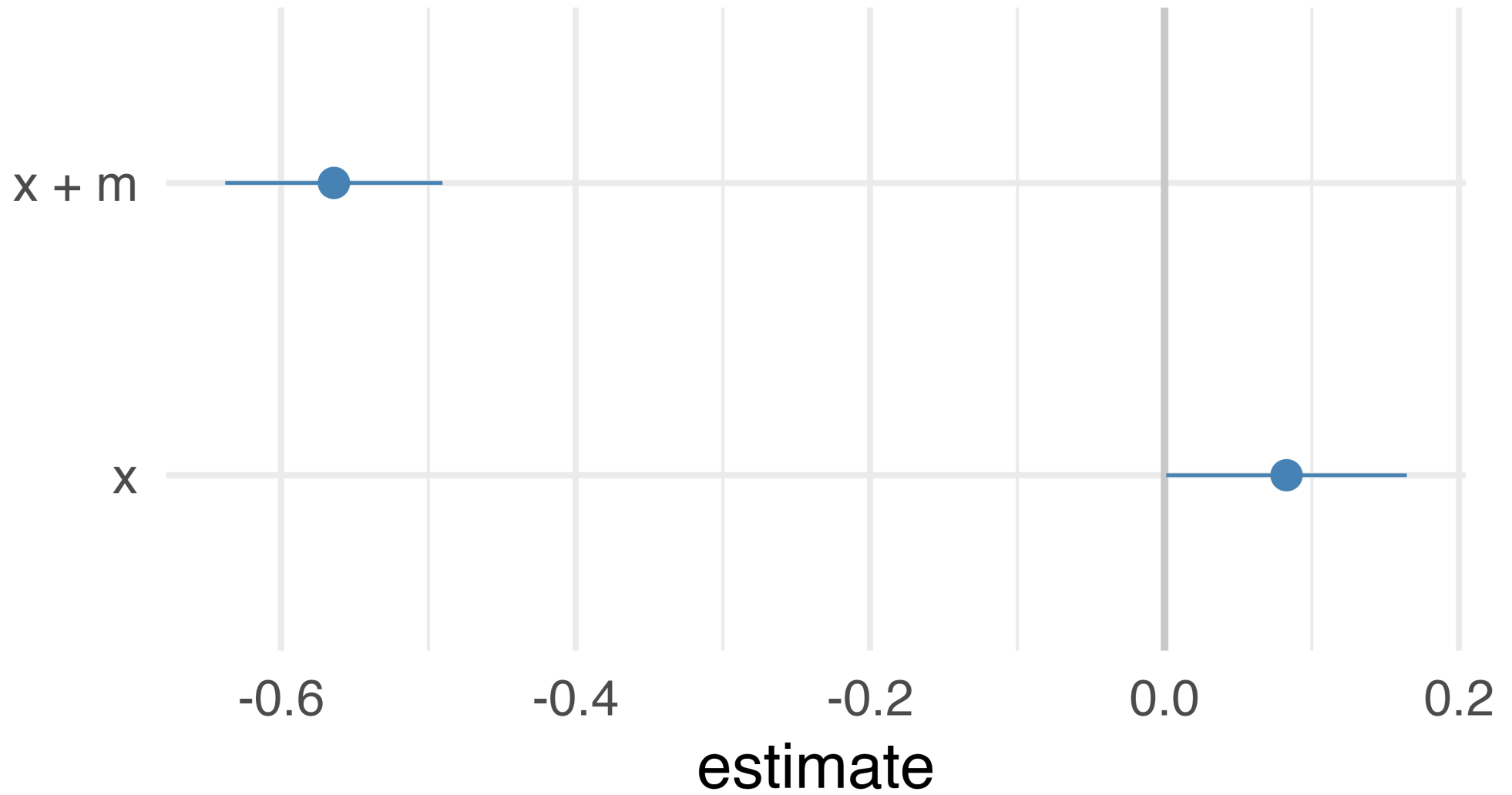
```
1 collider_data
```

```
# A tibble: 500 × 3
```

	m	x	y
	<dbl>	<dbl>	<dbl>
1	-0.829	0.359	1.75
2	0.184	0.619	-1.11
3	1.47	-0.940	0.0642
4	-2.43	1.55	1.39
5	0.219	-1.69	0.832
6	1.01	0.199	-0.145
7	-0.811	1.29	-0.872
8	-0.464	0.0675	0.763
9	-0.357	0.264	0.766
10	-0.978	0.531	0.506

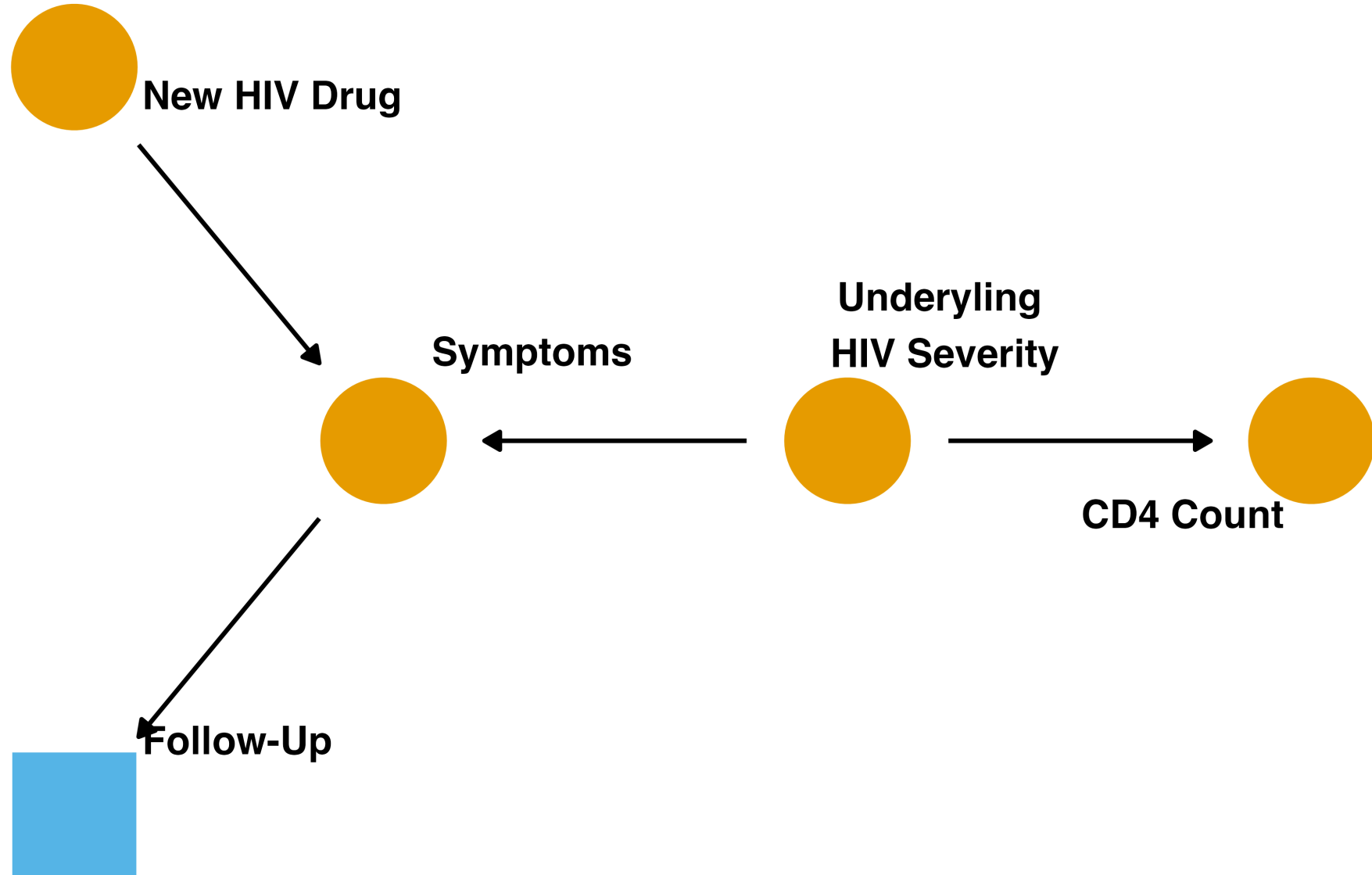
```
#> # A tibble: 500 × 3
```

Let's prove it!



correct effect size: 0

Loss to follow-up



Adjusting for selection bias

- 1 Fit a probability of censoring model,
e.g. *glm(censoring ~ predictors, family
= binomial())*
- 2 Create weights using inverse
probability strategy
- 3 Use weights in your causal model

We won't do it here, but you can include many types of weights in a given model. Just take their product, e.g. *multiply inverse propensity of treatment weights by inverse propensity of censoring weights.*

Your Turn

Work through Your Turns 1-3 in `13-bonus-selection-bias.qmd`