

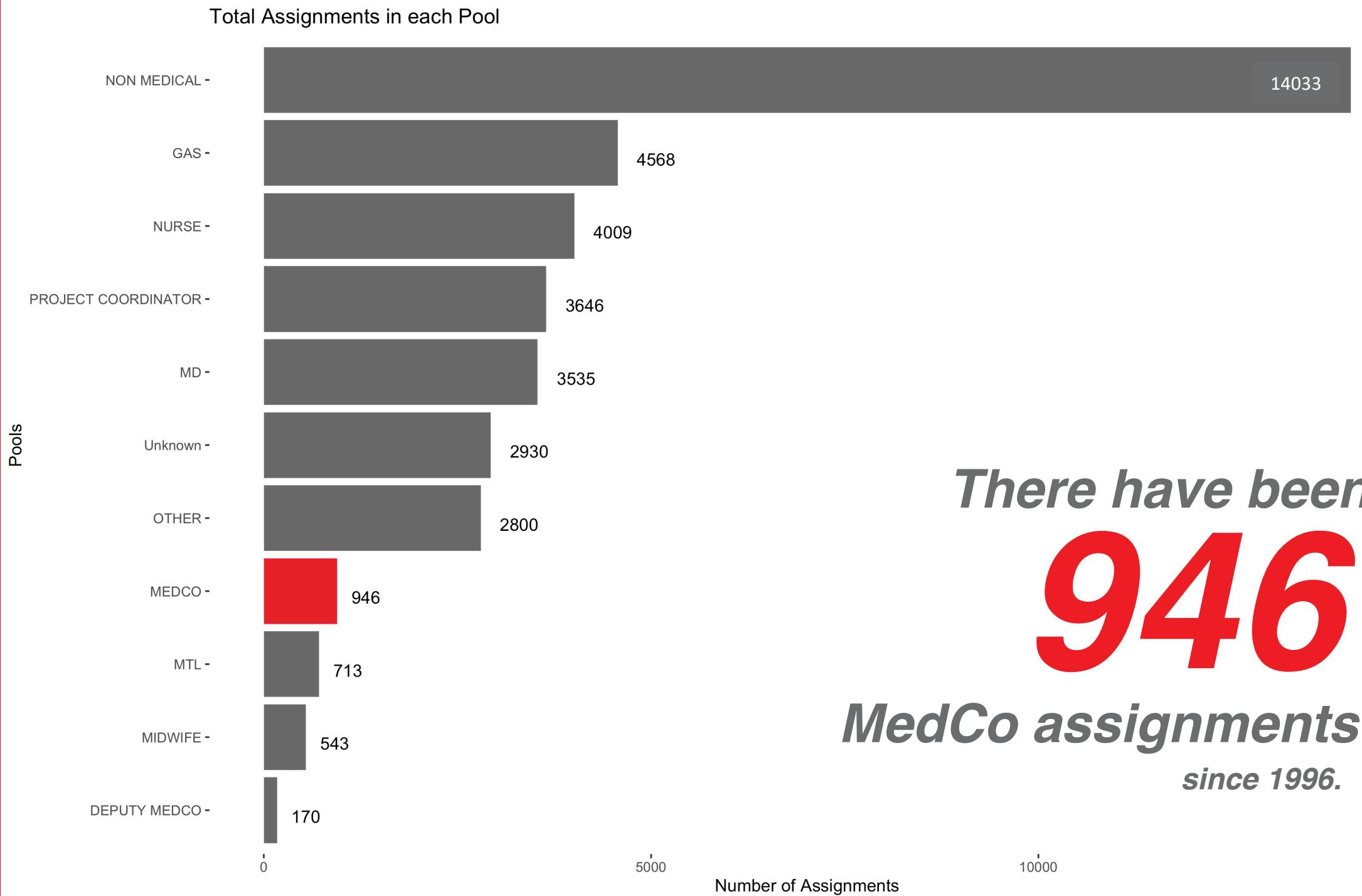


# Data Visualization Competition

Wharton People Analytics Conference 2020

Author: Paul Apivat Hanvongse





Assignments and People

**462** People

*have completed at least one  
MedCo assignment.*

Numbers

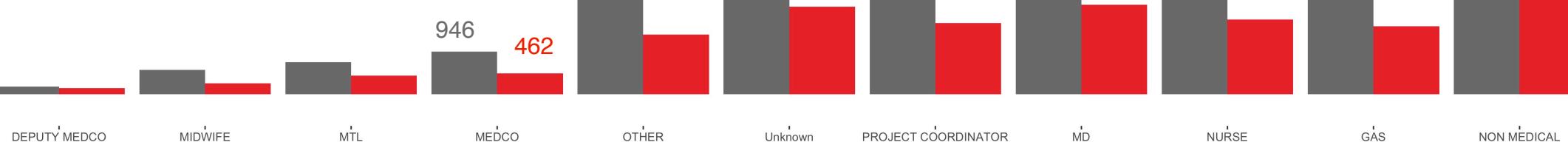
10000 -

5000 -

0 -

Variables

- Number of Assignments
- Number of People



How should we define  
*shortage*?

262

262

people did one MedCo  
assignment

200 -

Number of People

100 -

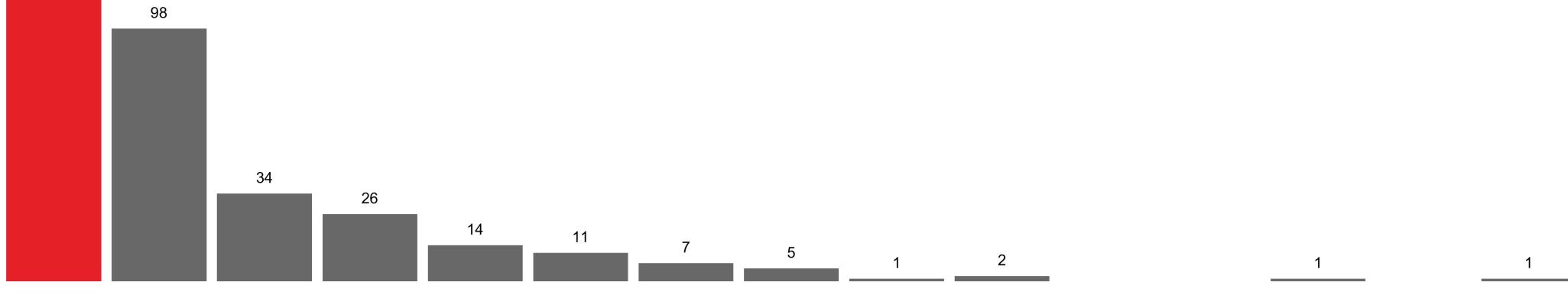
57%

of the time, people stop after  
**one** MedCo assignment

MedCo Assignments

one

more than one





262 people did  
**one** MedCo



One-Timers

200 people did  
more than one  
MedCo

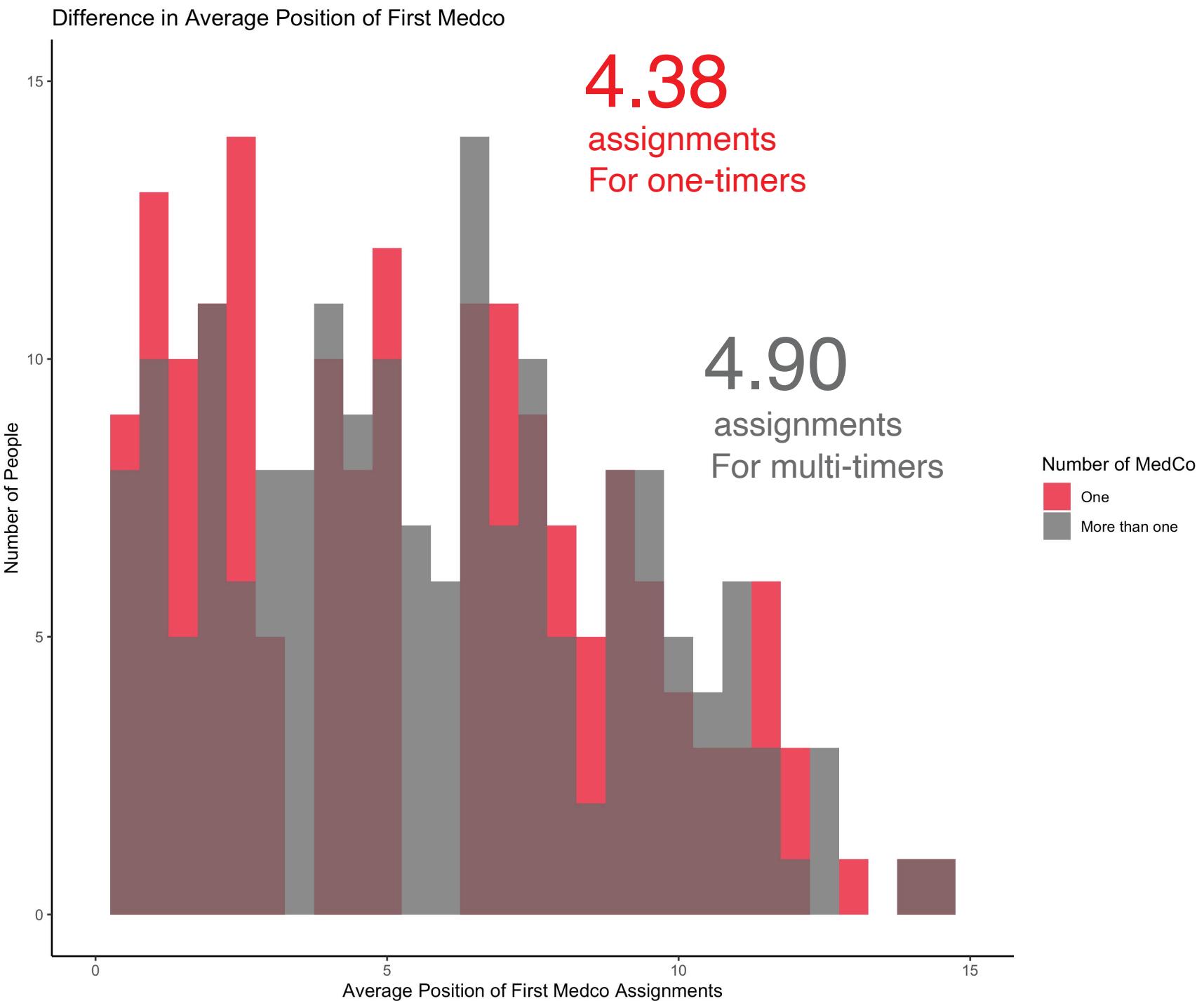


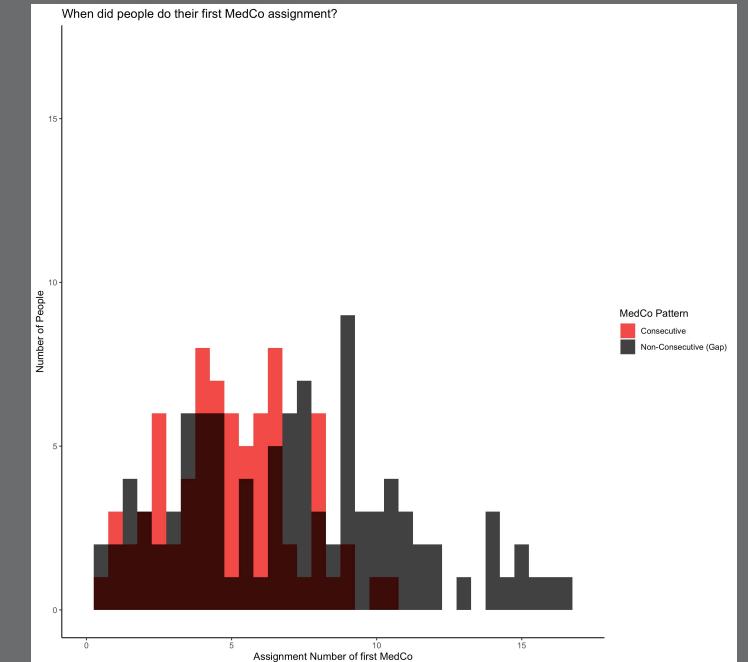
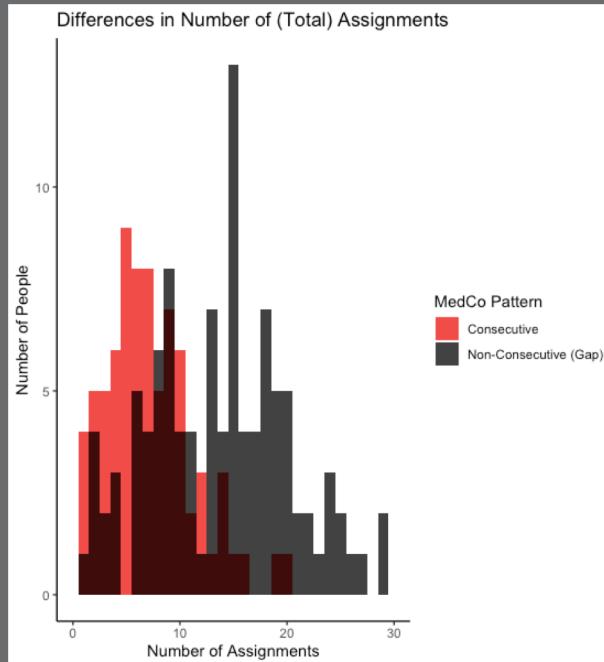
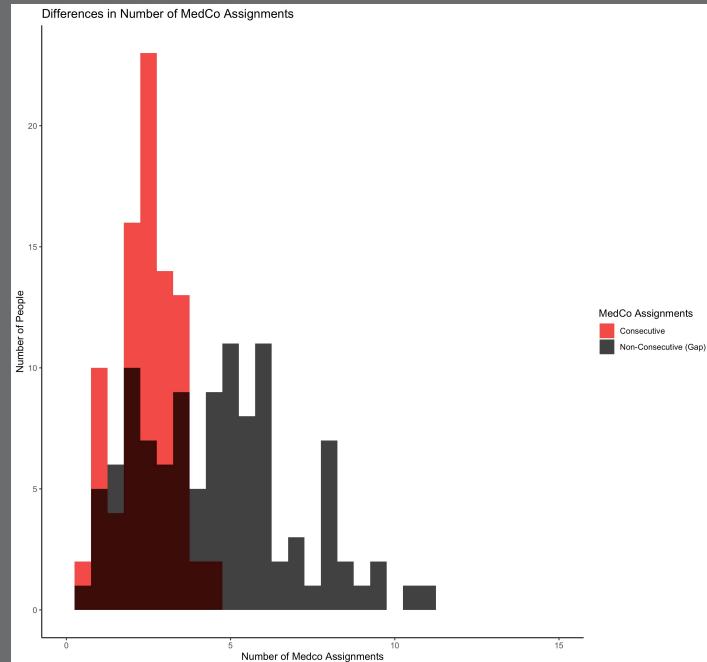
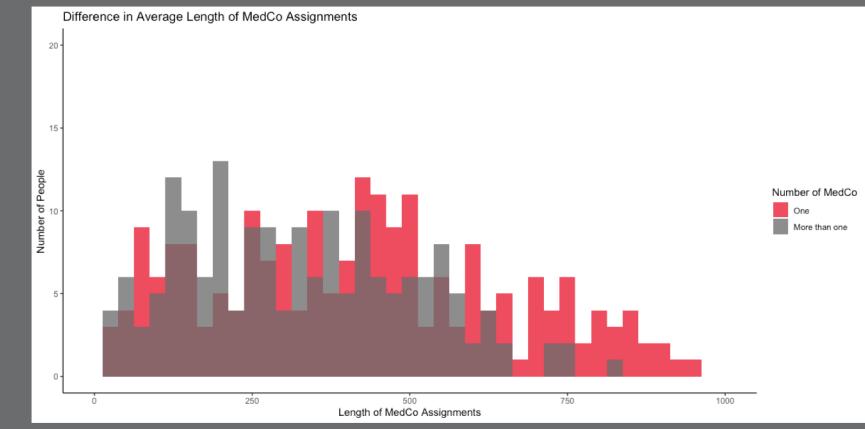
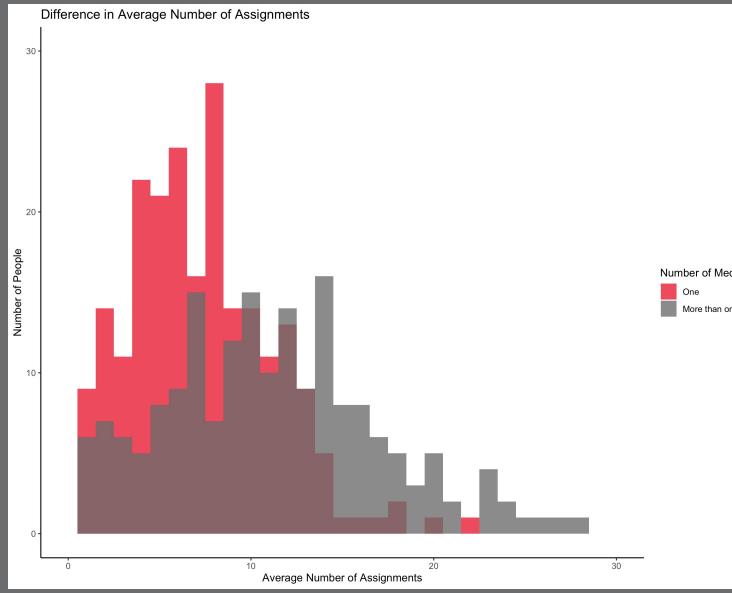
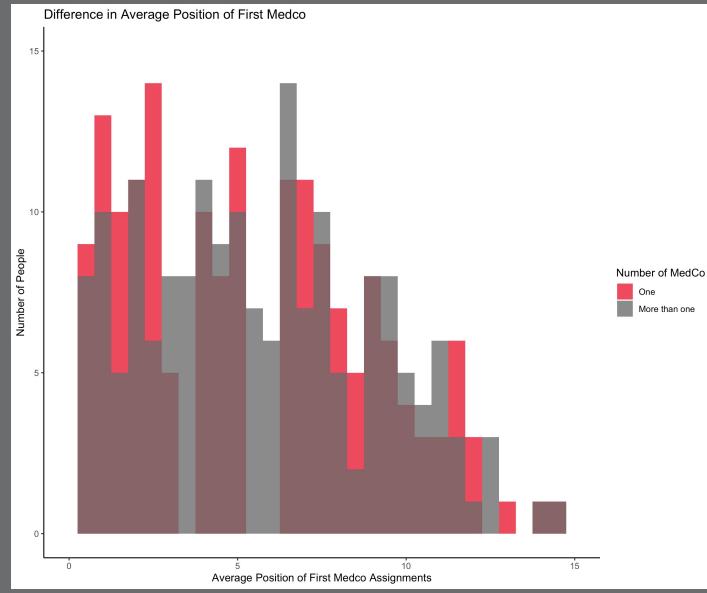
Multi-Timers

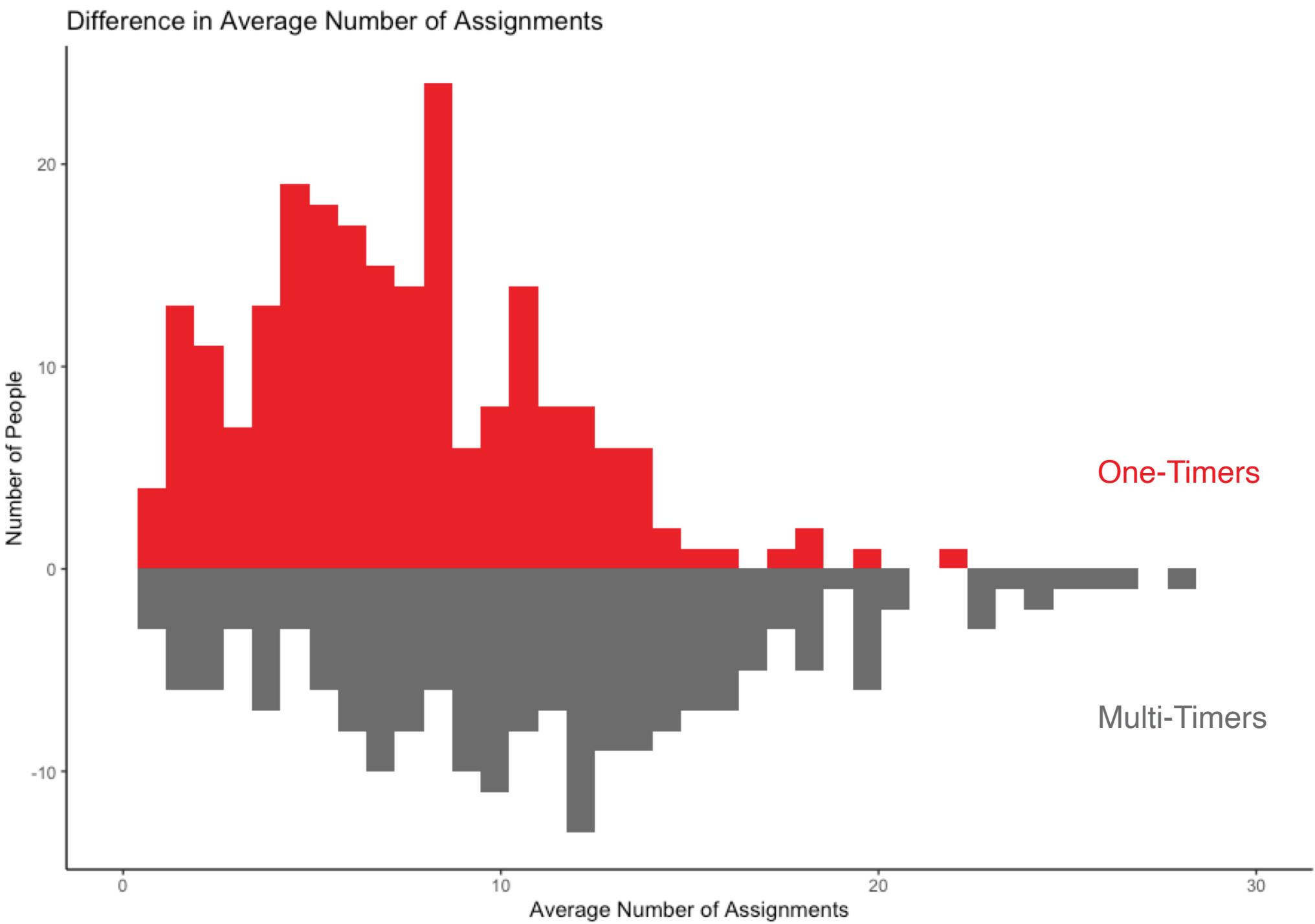
MedCo Assignments  
one  
more than one

How might we explain why some people **stop** after one Medco, while others continued?

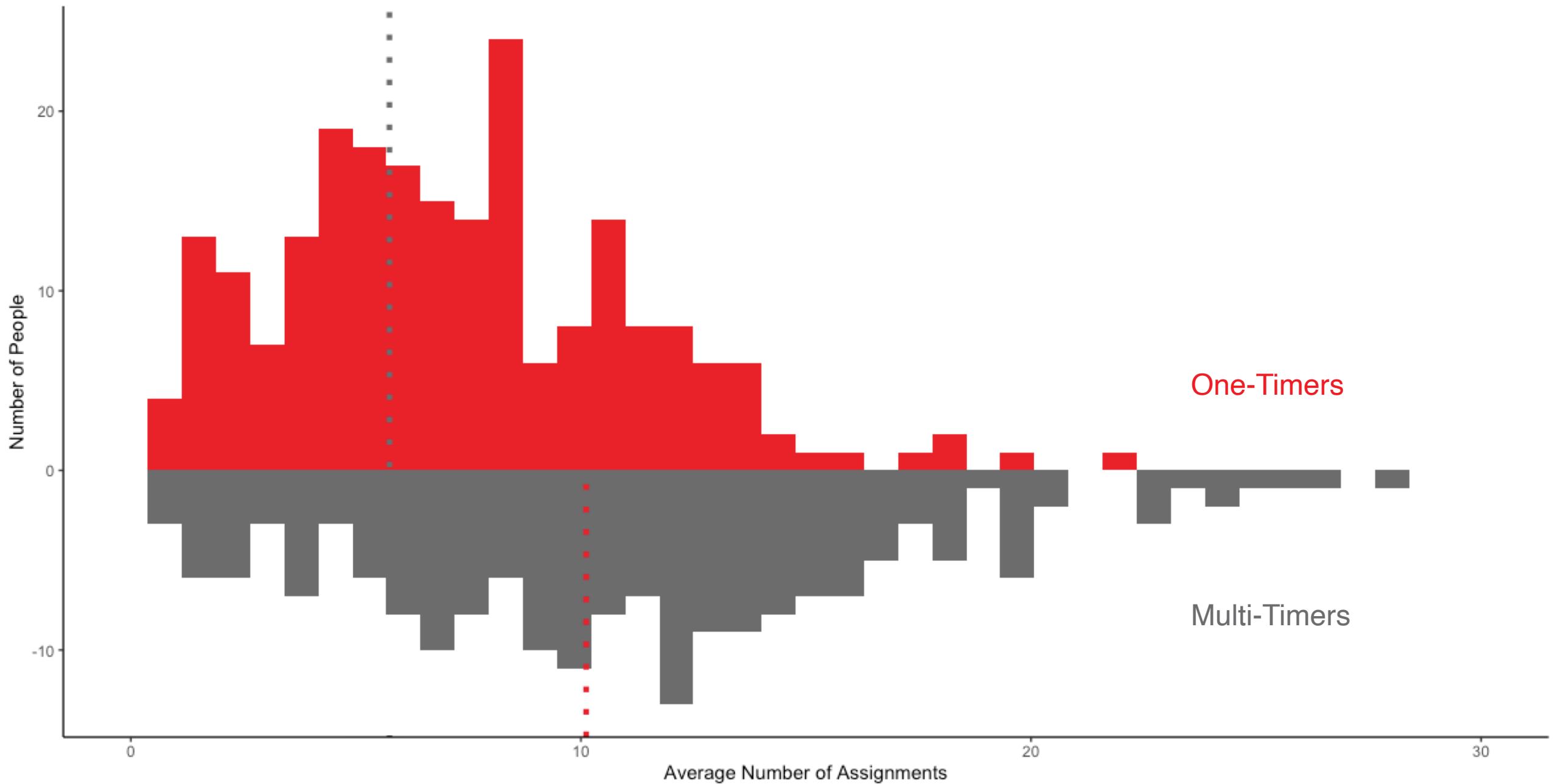
Considering  
the *average*  
*number of*  
*assignments*  
before  
someone is  
“ready” for  
MedCo.



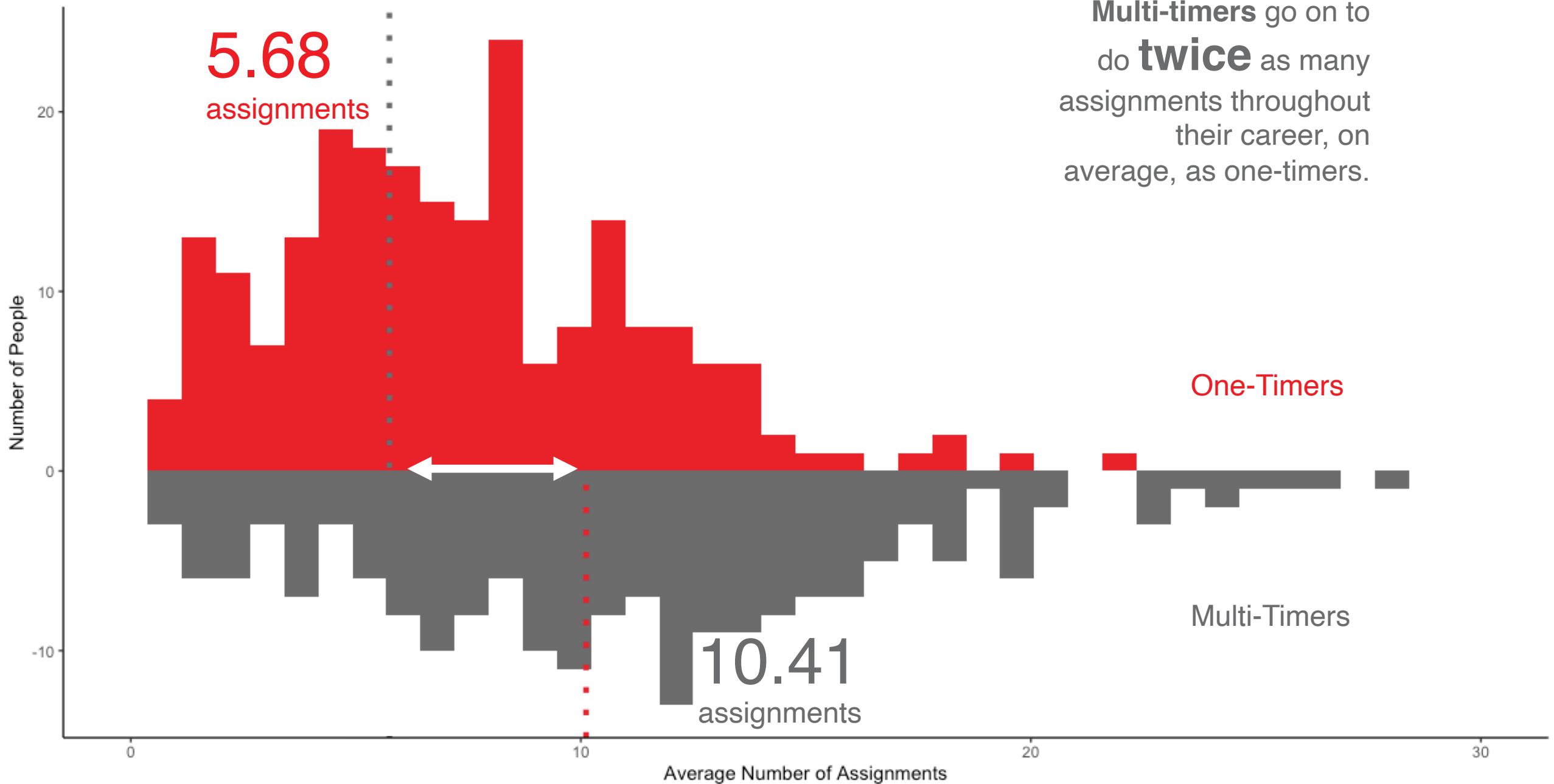




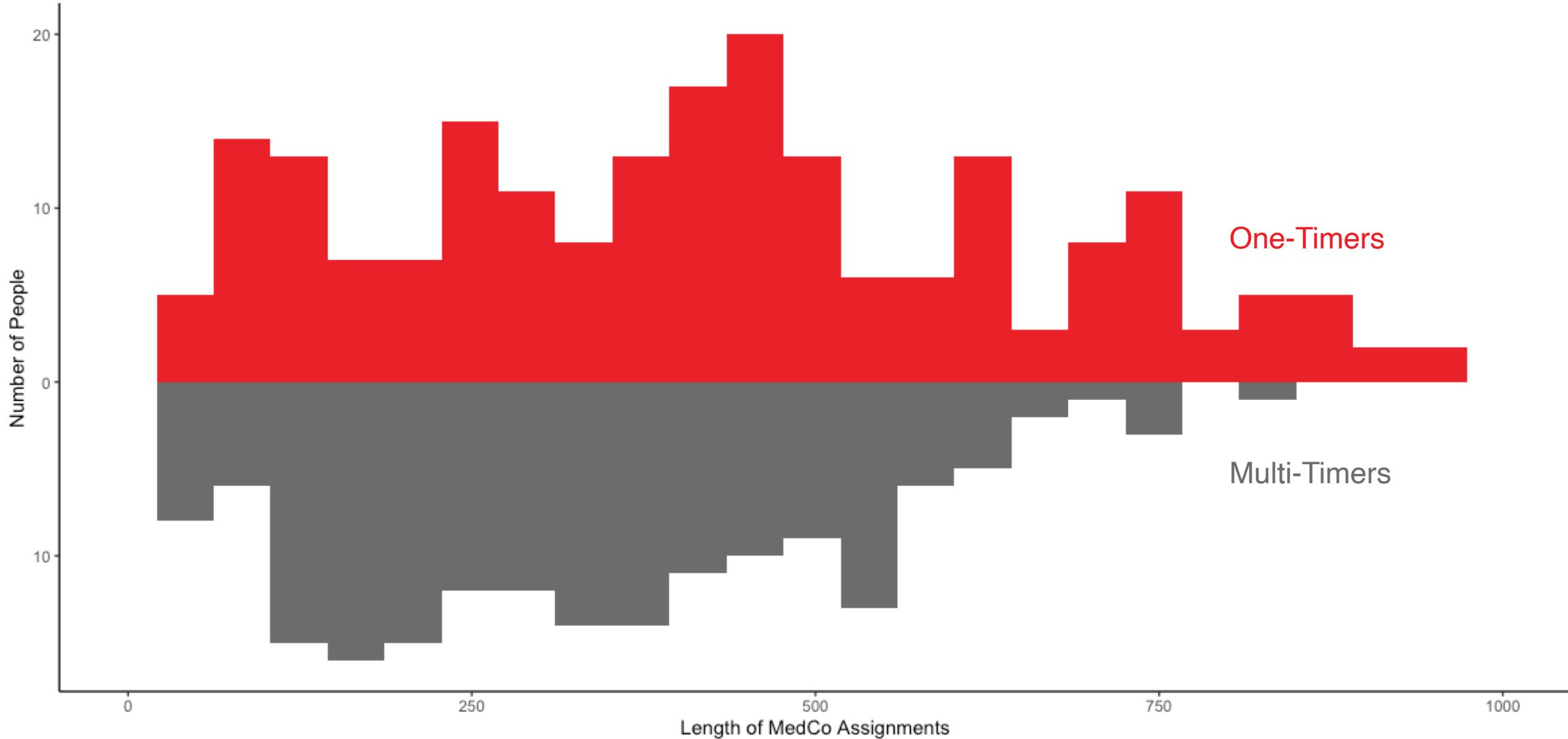
# Difference in Average Number of Assignments



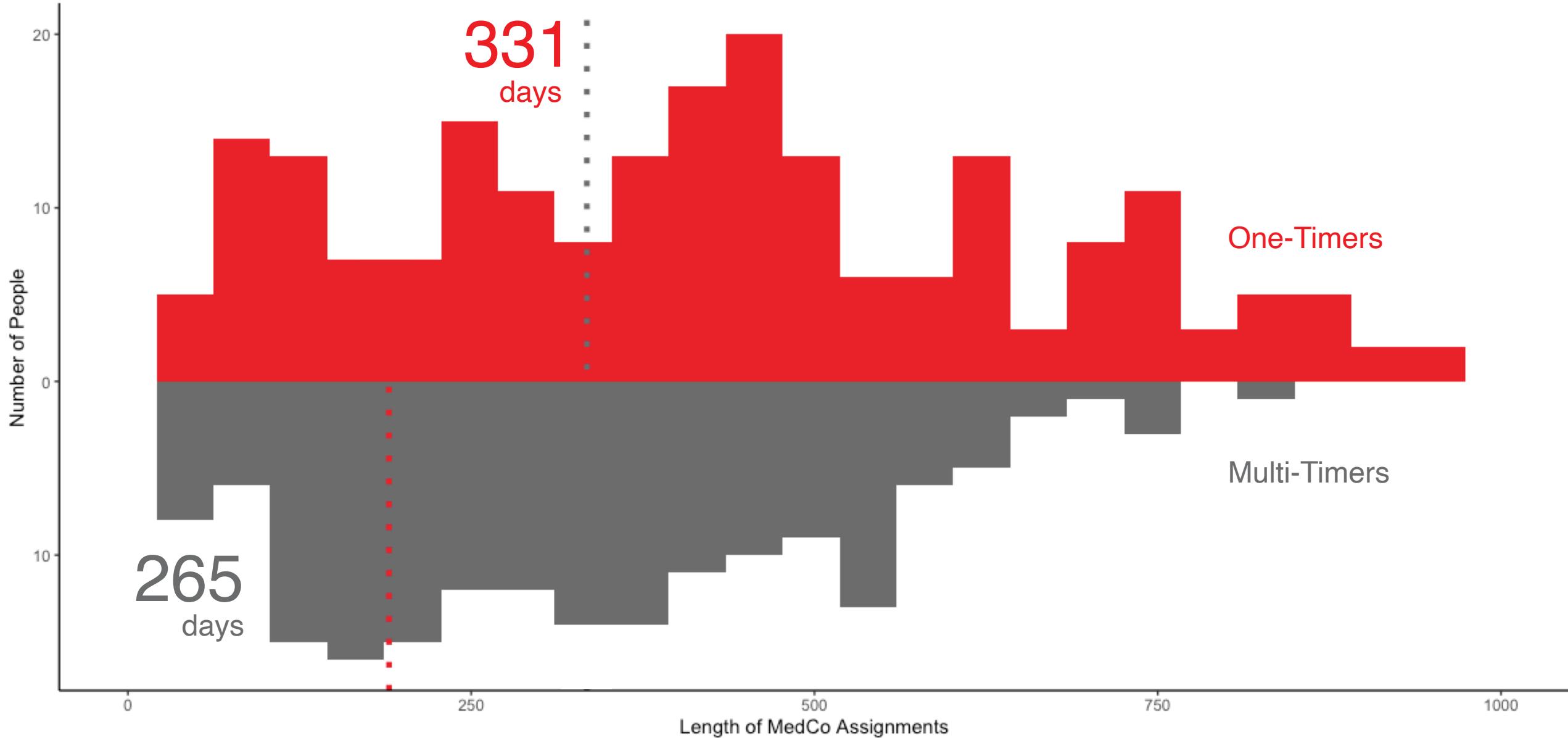
## Difference in Average Number of Assignments



## Difference in Average Length of MedCo Assignments



## Difference in Average Length of MedCo Assignments



# Recap

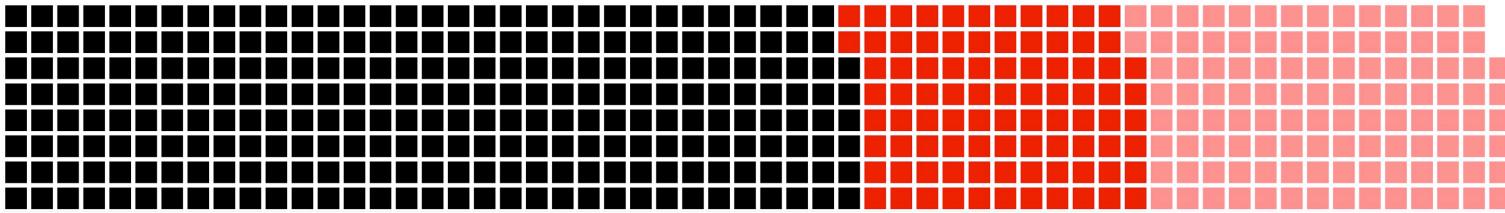
- Multi-timers
  - Do nearly **twice** as many assignments, *in total*.
  - Have gone on **shorter** MedCo assignments

How do we define *gaps*?

# 462

People

*have completed **at least one**  
MedCo assignments.*



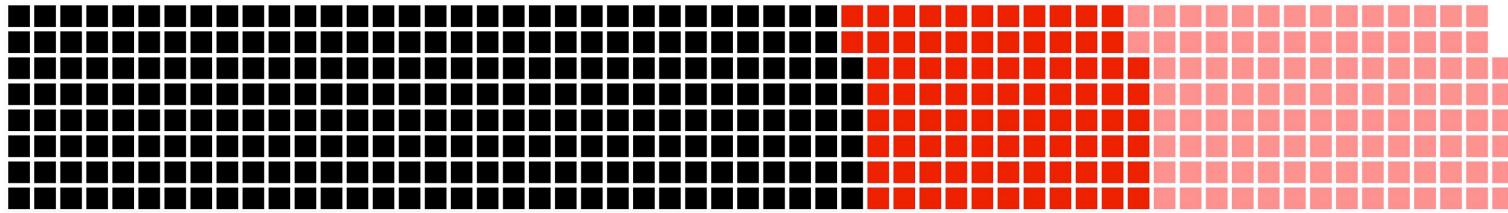
■ One assignment ■ Consecutive assignments ■ Non-consecutive assignments

# 262

People did **one** MedCo assignment

# 200

People did **more than one**



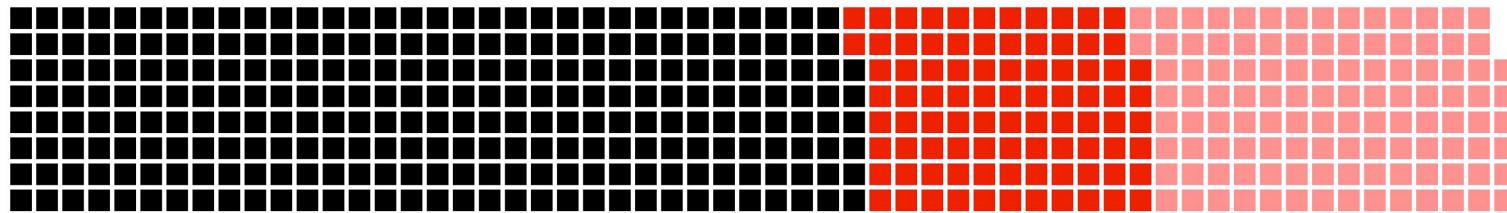
■ One assignment ■ Consecutive assignments ■ Non-consecutive assignments

88

People did  
**consecutive**  
assignments

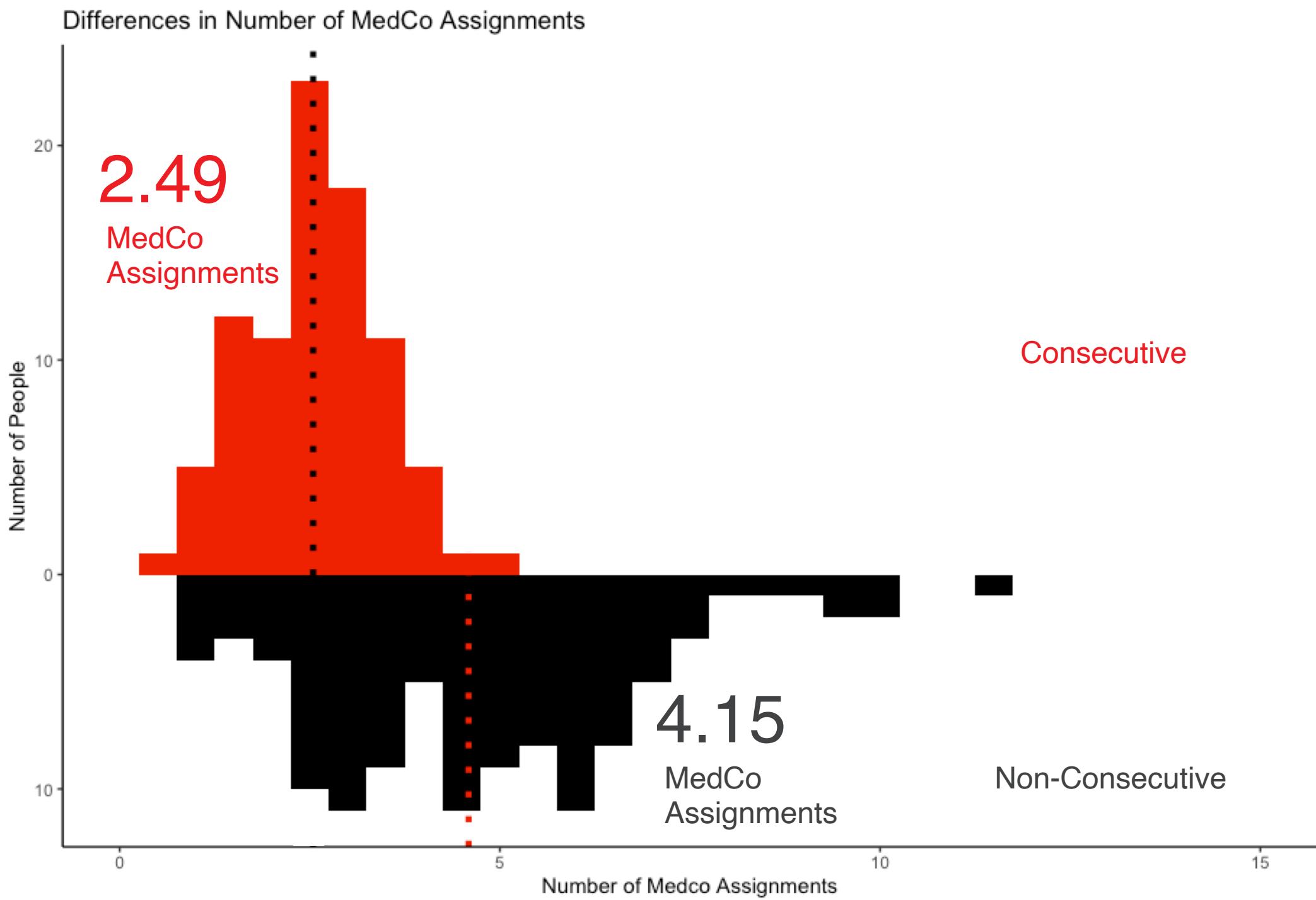
112

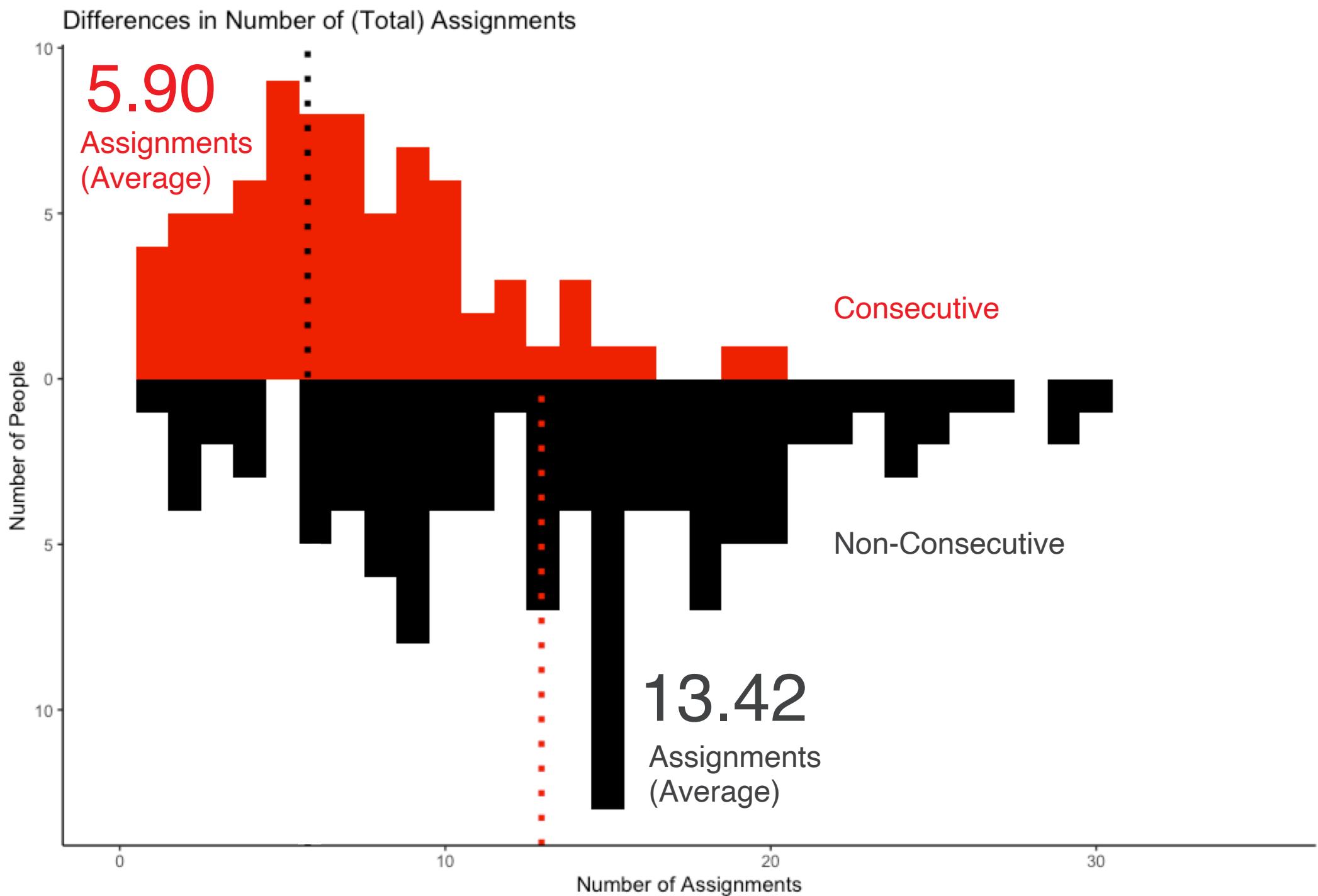
People took a  
break between  
MedCo  
assignments



■ One assignment ■ Consecutive assignments ■ Non-consecutive assignments

Are there differences between those who did *consecutive* MedCo assignments and those who took a break to do other jobs?

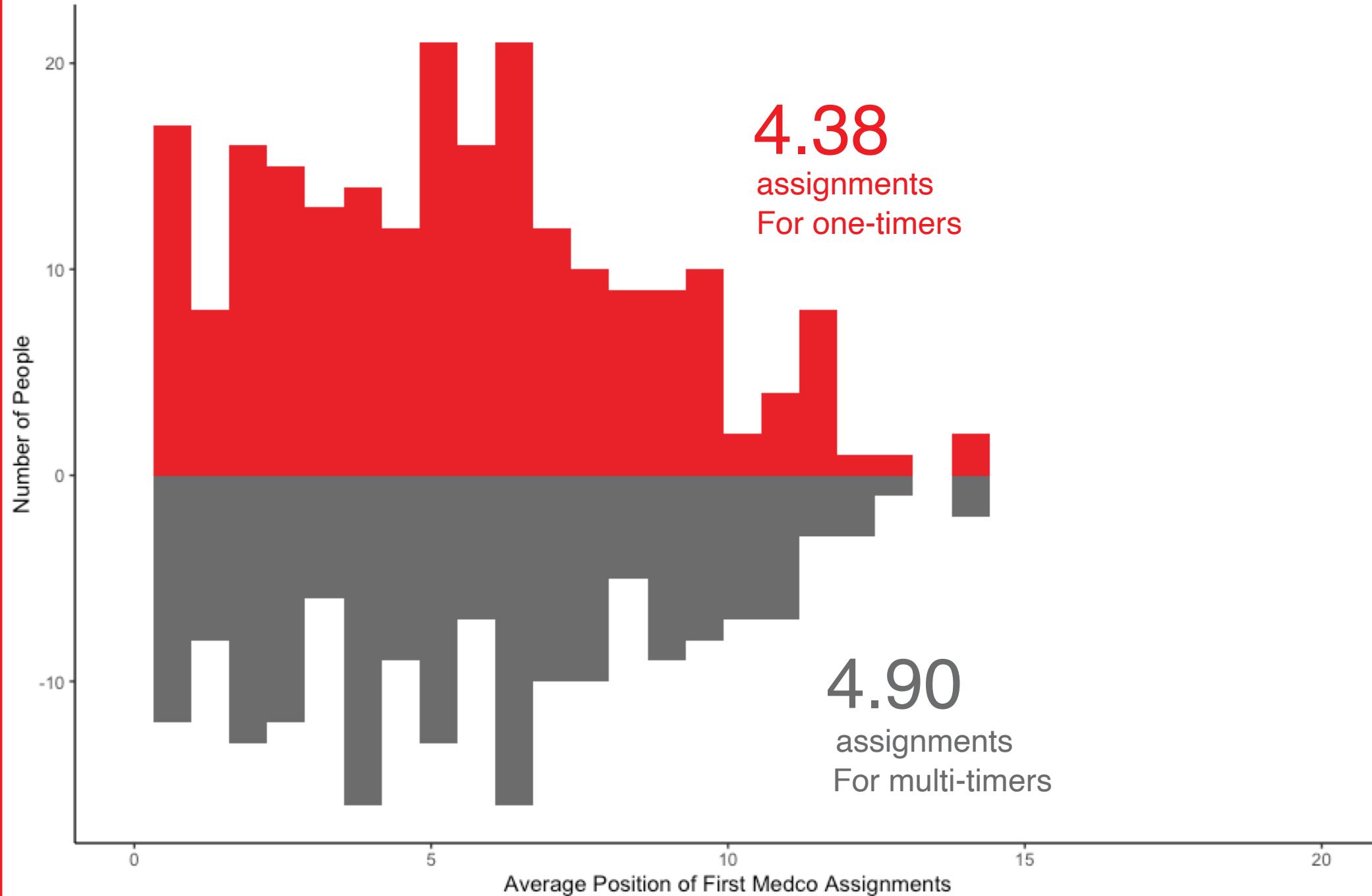




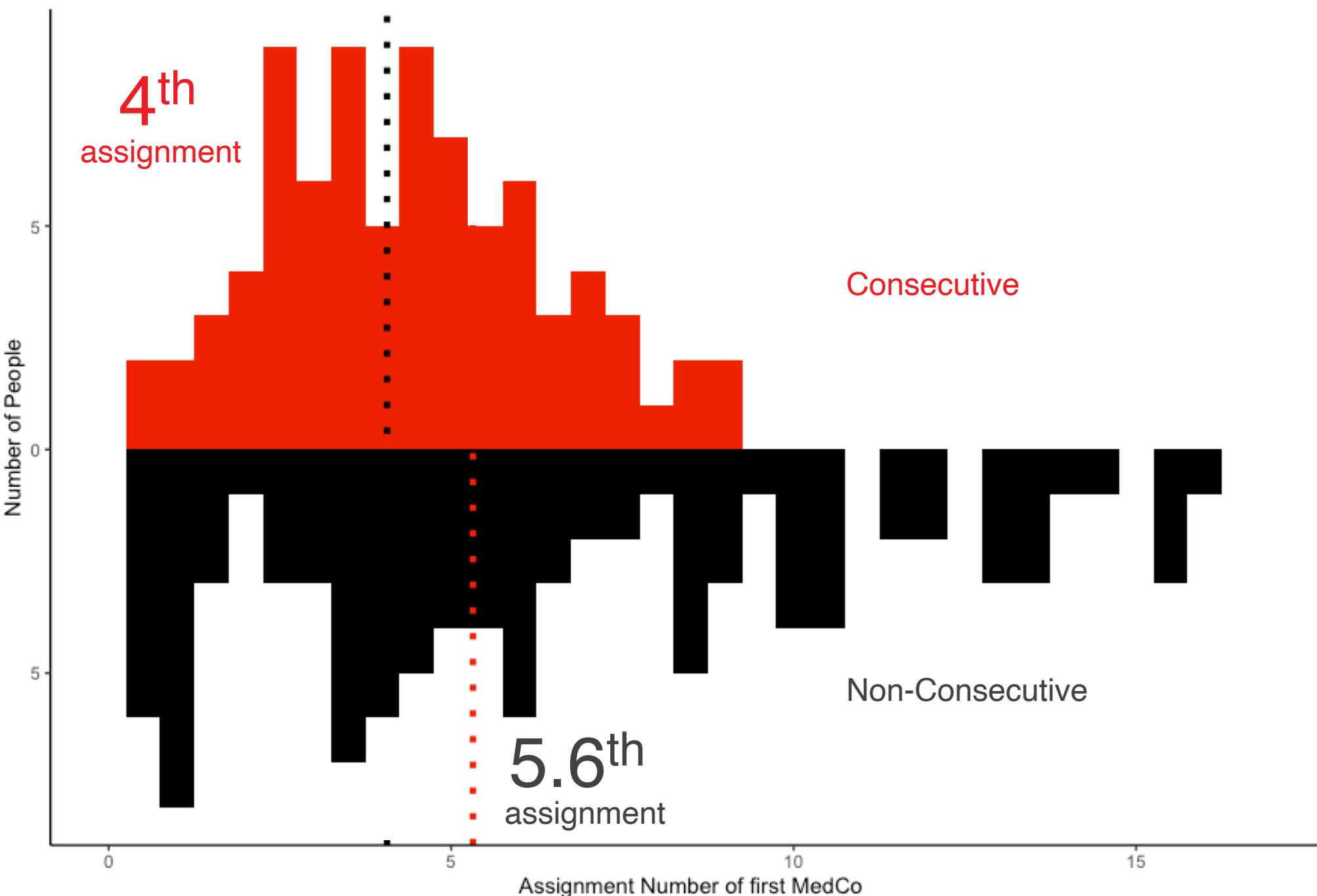
Perhaps gaps are a *good*  
thing.

Does timing matter?

## Difference in Average Position of First Medco



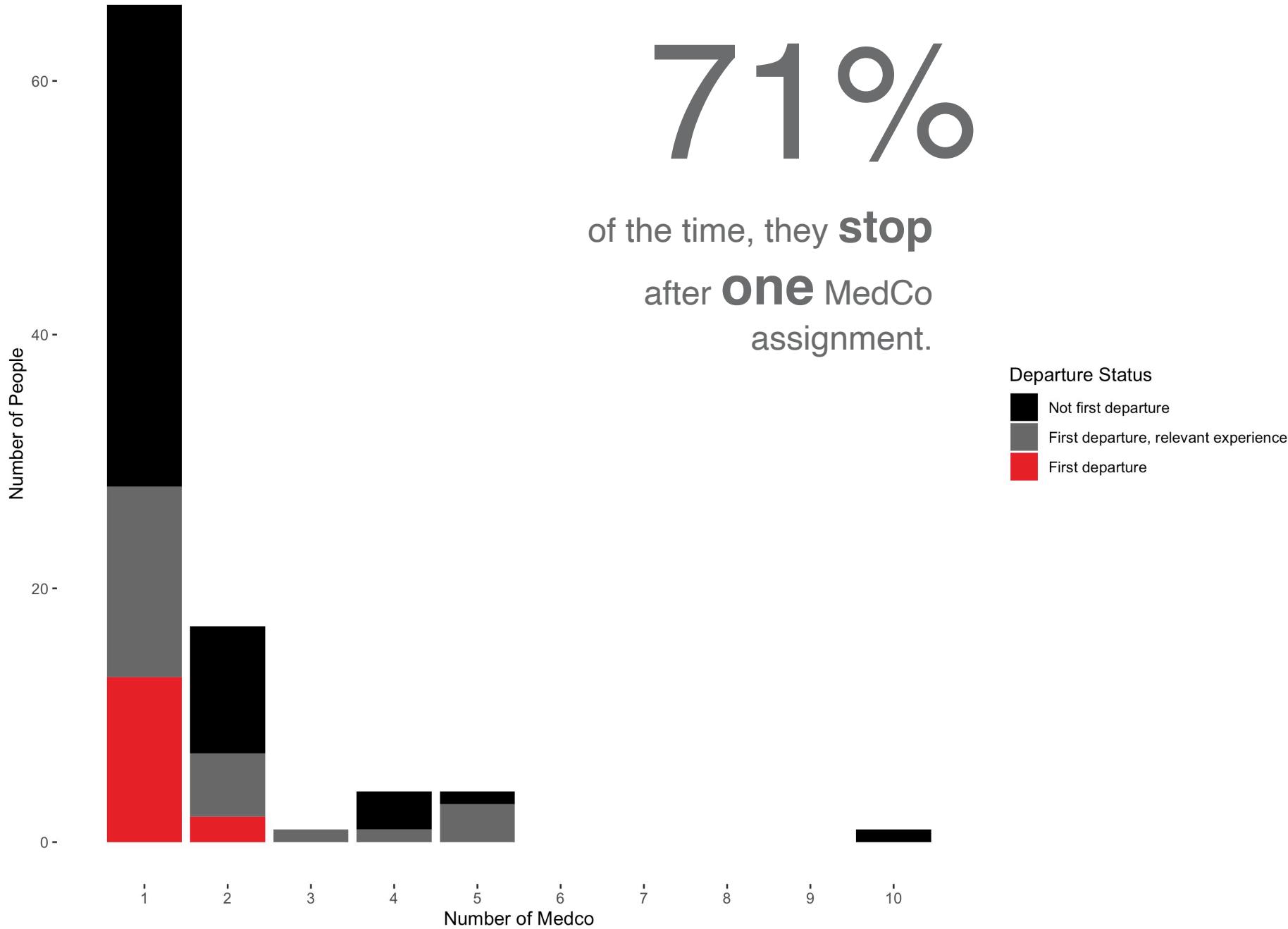
When did people do their first MedCo assignment?



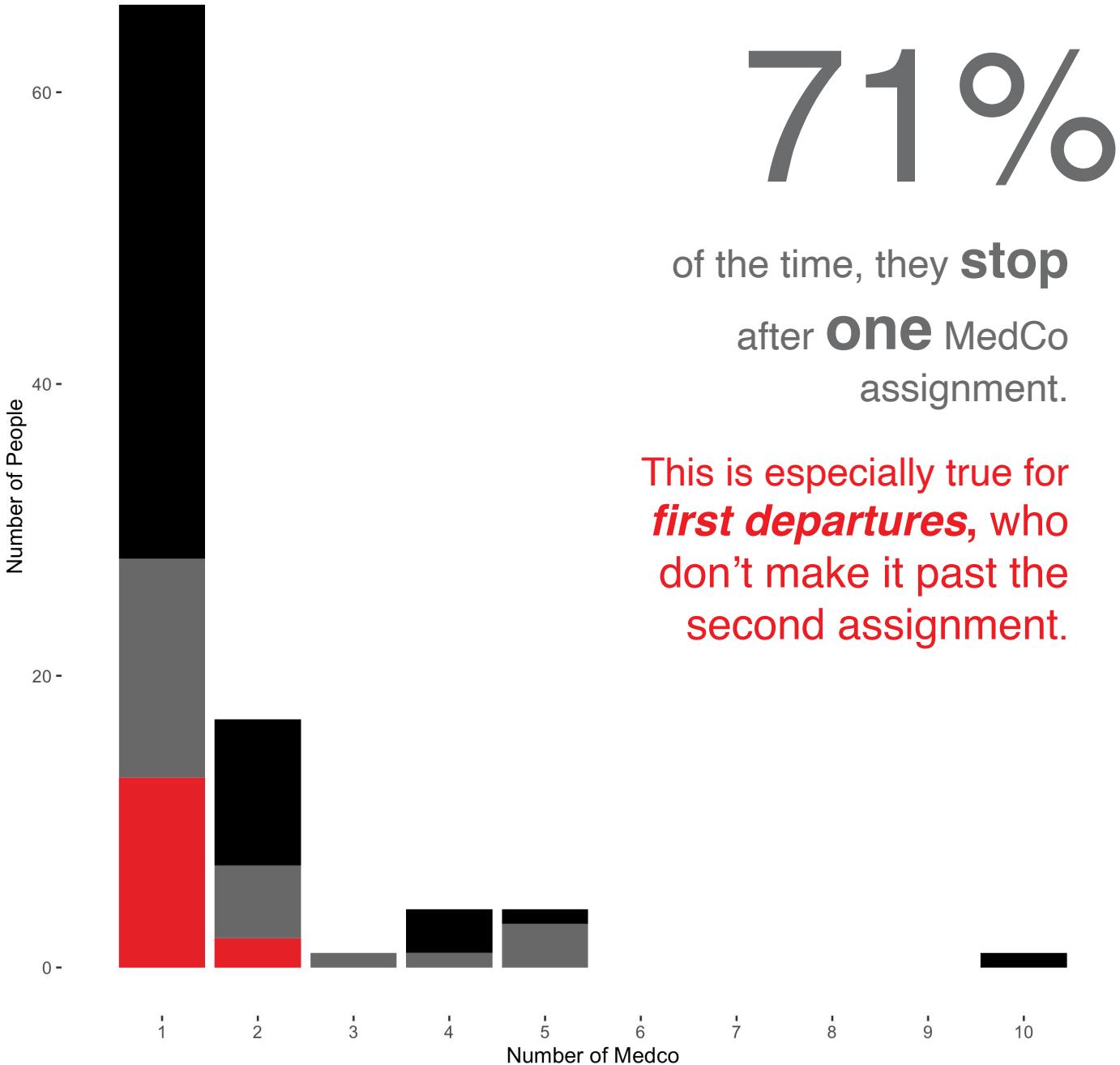
What happens when people  
go on a MedCo assignment,  
as their *first* assignment?

**93 people** have done this.

93 people whose first assignment was Medco



93 people whose first assignment was Medco



71 %  
of the time, they **stop**  
after **one** MedCo  
assignment.

This is especially true for  
***first departures***, who  
don't make it past the  
second assignment.

Departure Status  
Not first departure  
First departure, relevant experience  
First departure

# Timing matters.

MedCo assignments should be reserved for those who are not on their **first assignments**.

Particularly if it's their **first departure**.

# Re-defining success.

Conventional thinking has it that if someone ascended to MedCo after just a few assignments, they were “successful”.

The data suggest taking a *bit longer* to get ready for the first MedCo is fine.

## Tentative Conclusions:

1. Perhaps **gaps** are good thing.
2. Re-defining success (*slower* is not bad)

**Is it the path or the person?**

The present analysis is purely  
**exploratory data analysis.**

No statements of prediction or  
causality can be made.

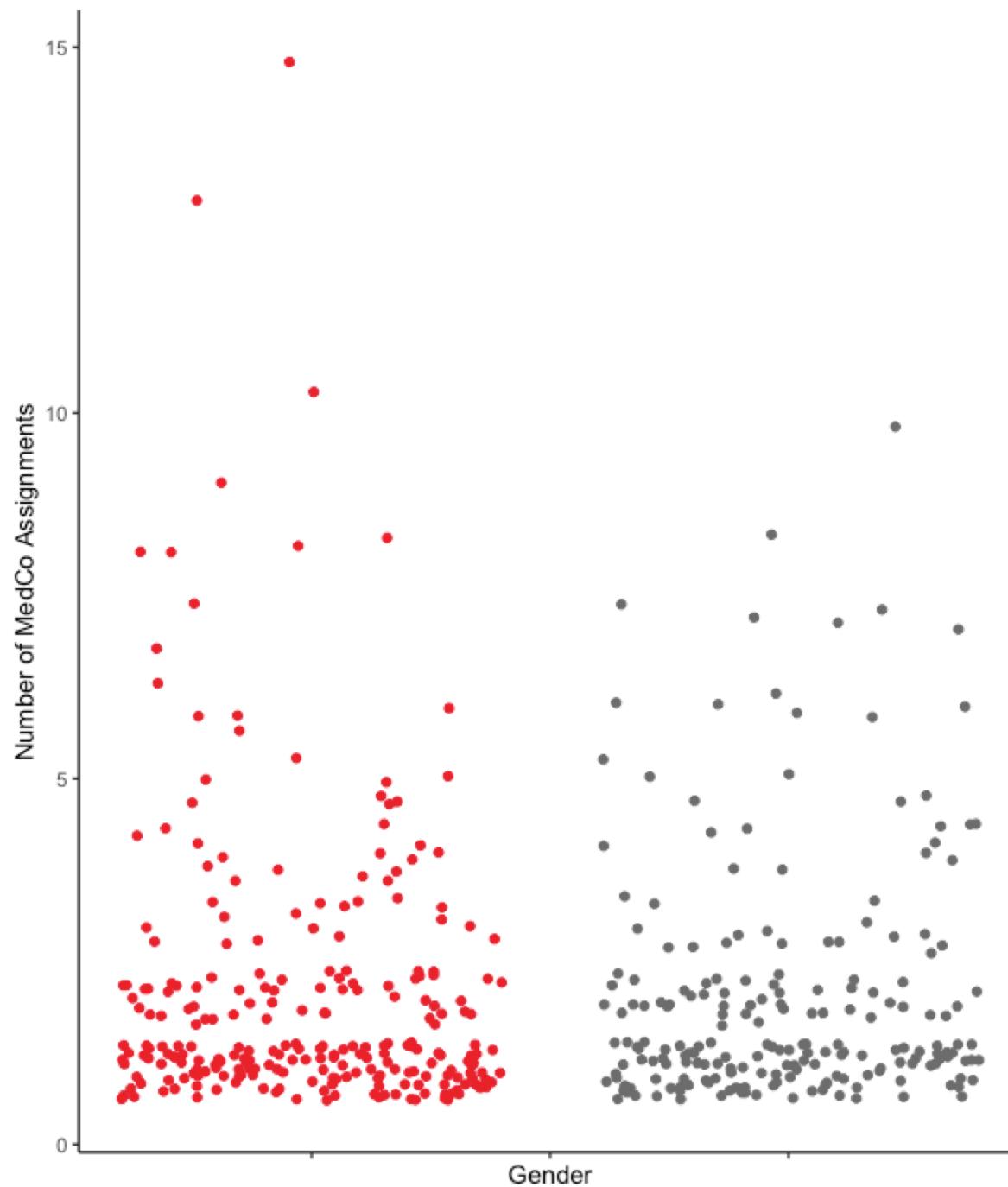
We can reason...

To what extent might we attribute  
desired outcomes to  
the person?

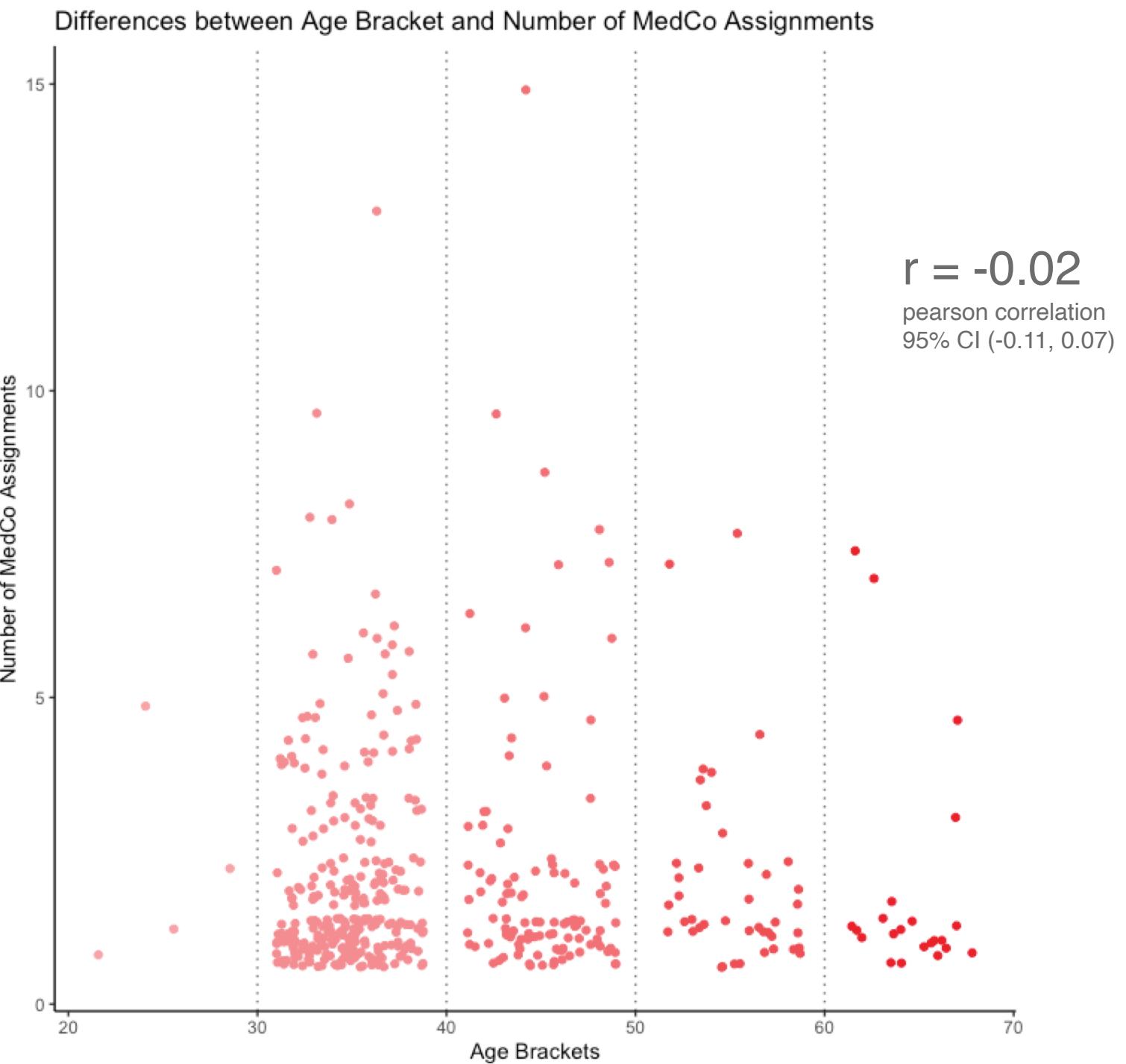
## Differences between Gender on Number of MedCo Assignments

There is no relationship between Gender and Number of MedCo assignments.

$r = 0.02$   
point biserial correlation



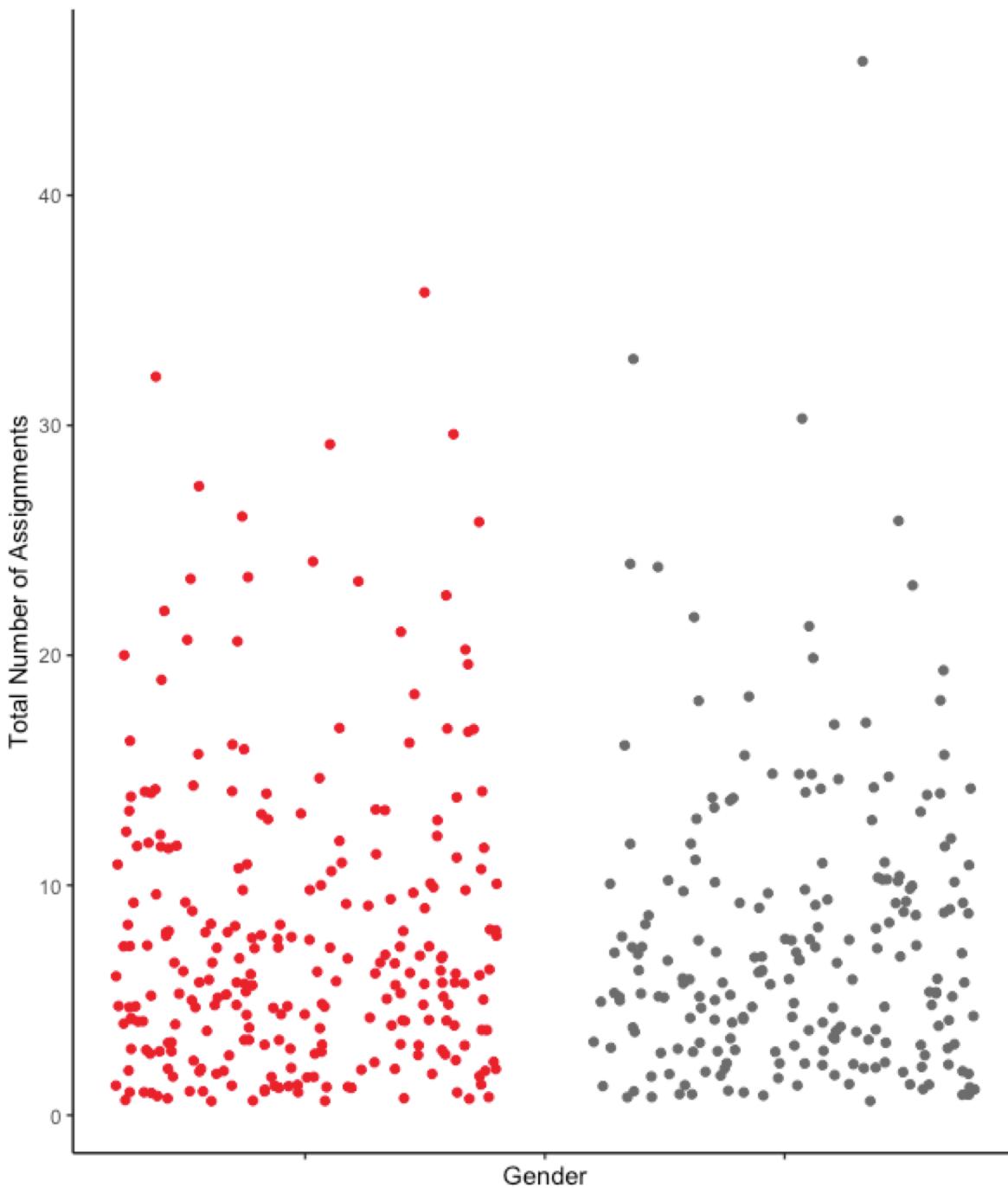
There are no relationship between Age Brackets and Number of MedCo assignments.



### Differences between Gender on Total Number of Assignments

$r = 0.02$

point biserial correlation

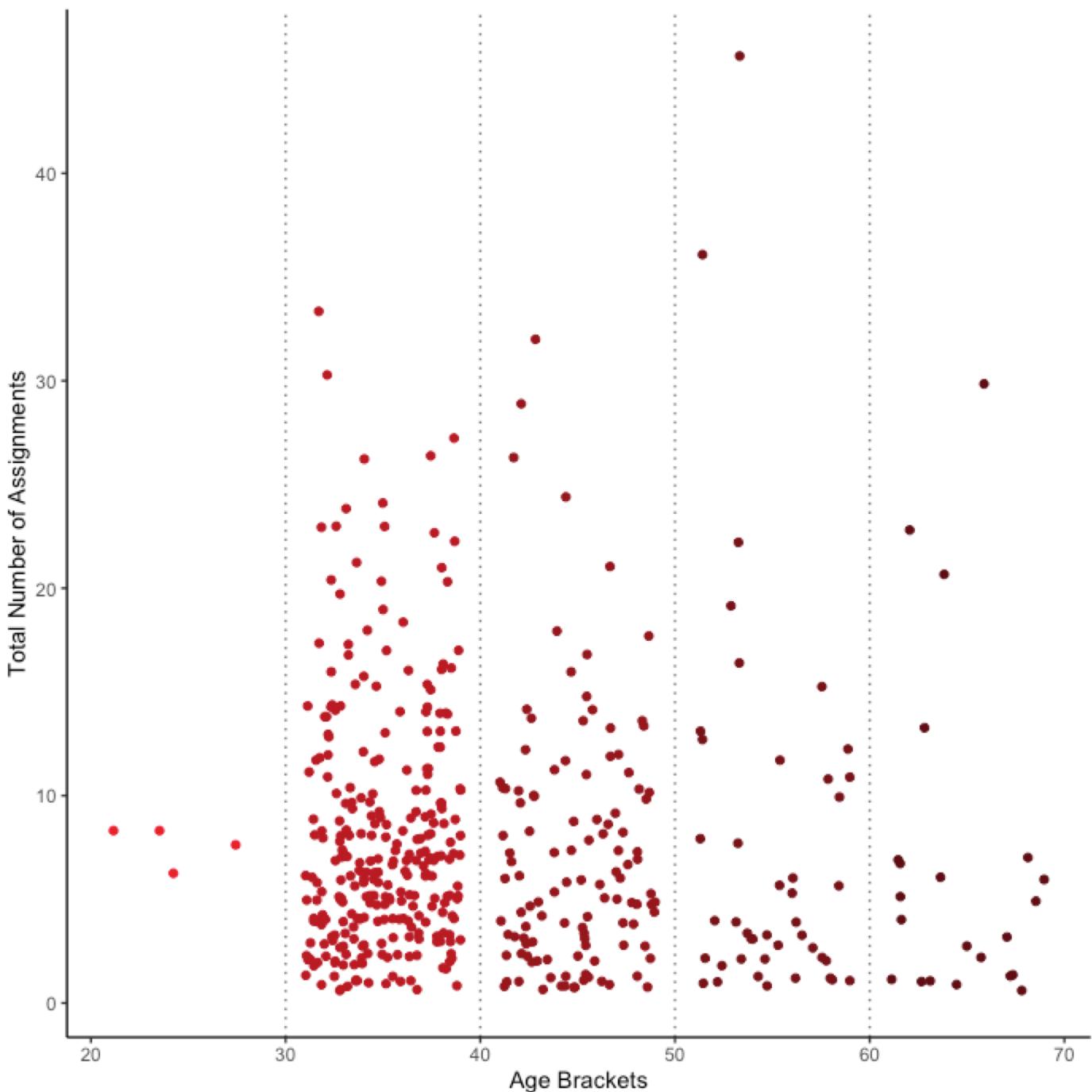


There are **no** relationship between Gender and Total Number of Assignments.

Differences between Age Bracket and Total Number of Assignments

$r = -0.05$

pearson correlation  
95% CI (-0.14, 0.04)

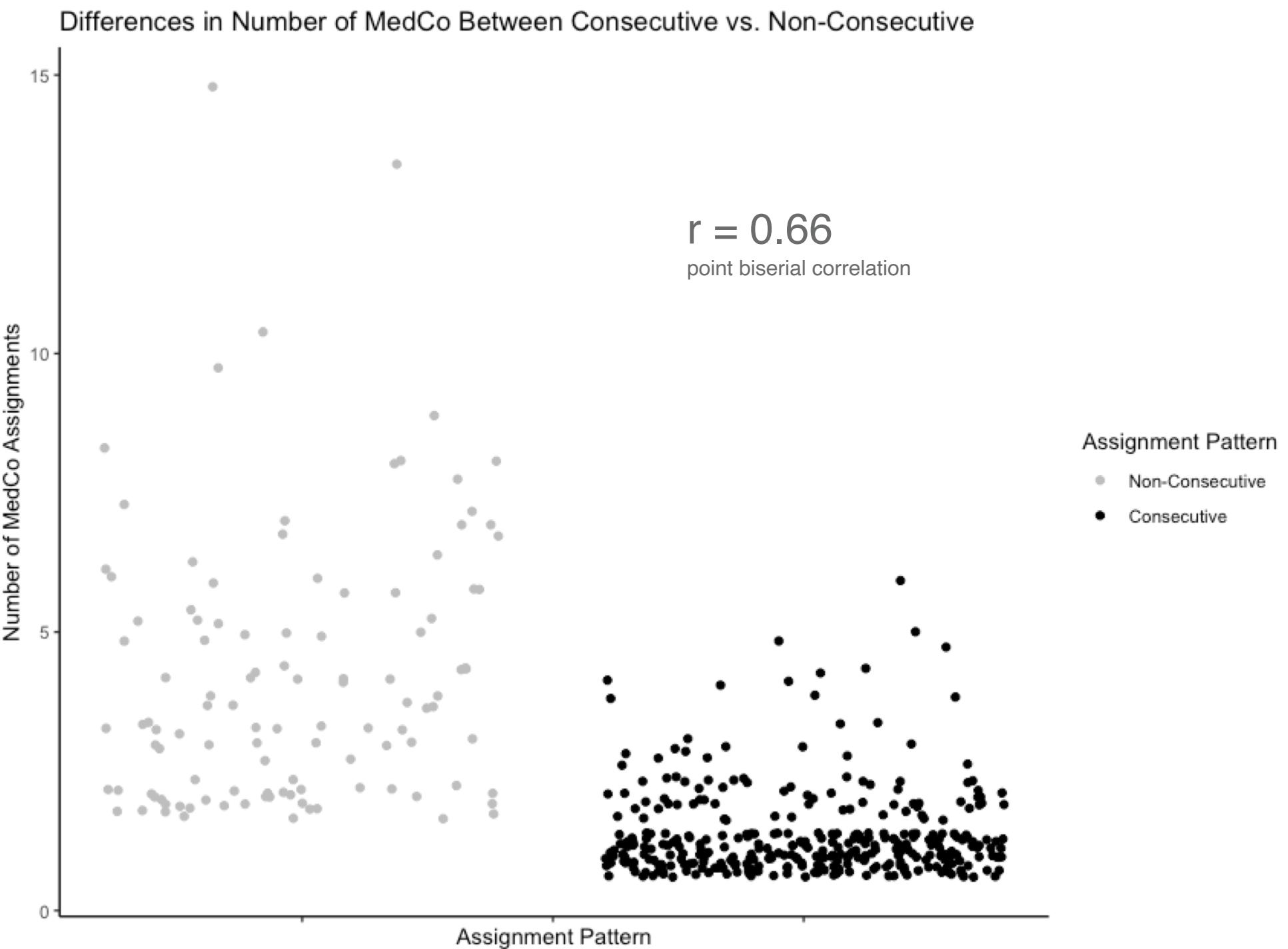


There are **no relationship** between Age Brackets and Total Number of Assignments.

Demographic variables in our current data set have no relationship to the Number of MedCo or Number of Total Assignments.

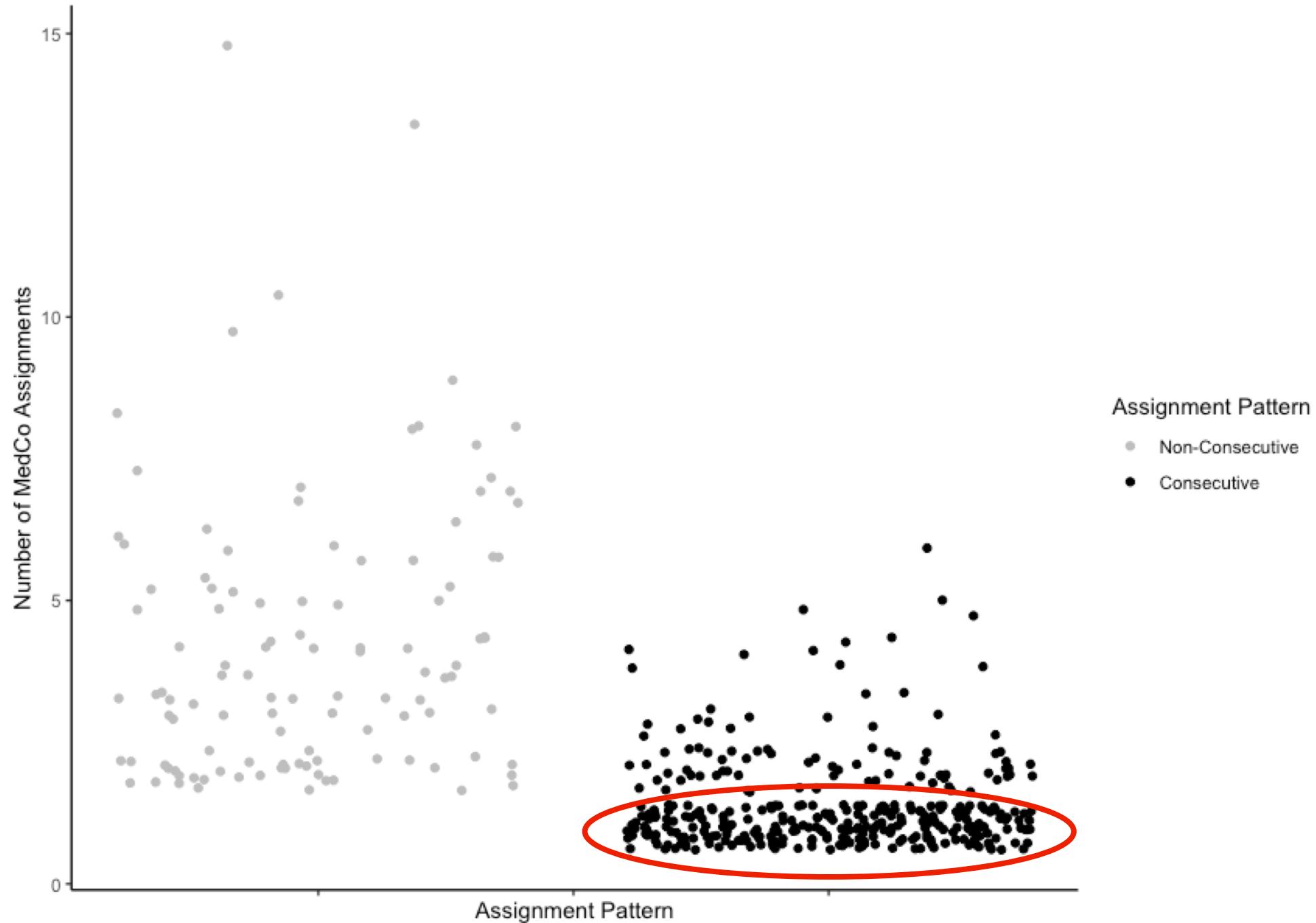
We can also look at the paths -  
Consecutive **vs** Non-Consecutive  
groupings

There is a  
moderate  
relationship  
between  
Assignment Pattern  
and Number of  
MedCo Assignment



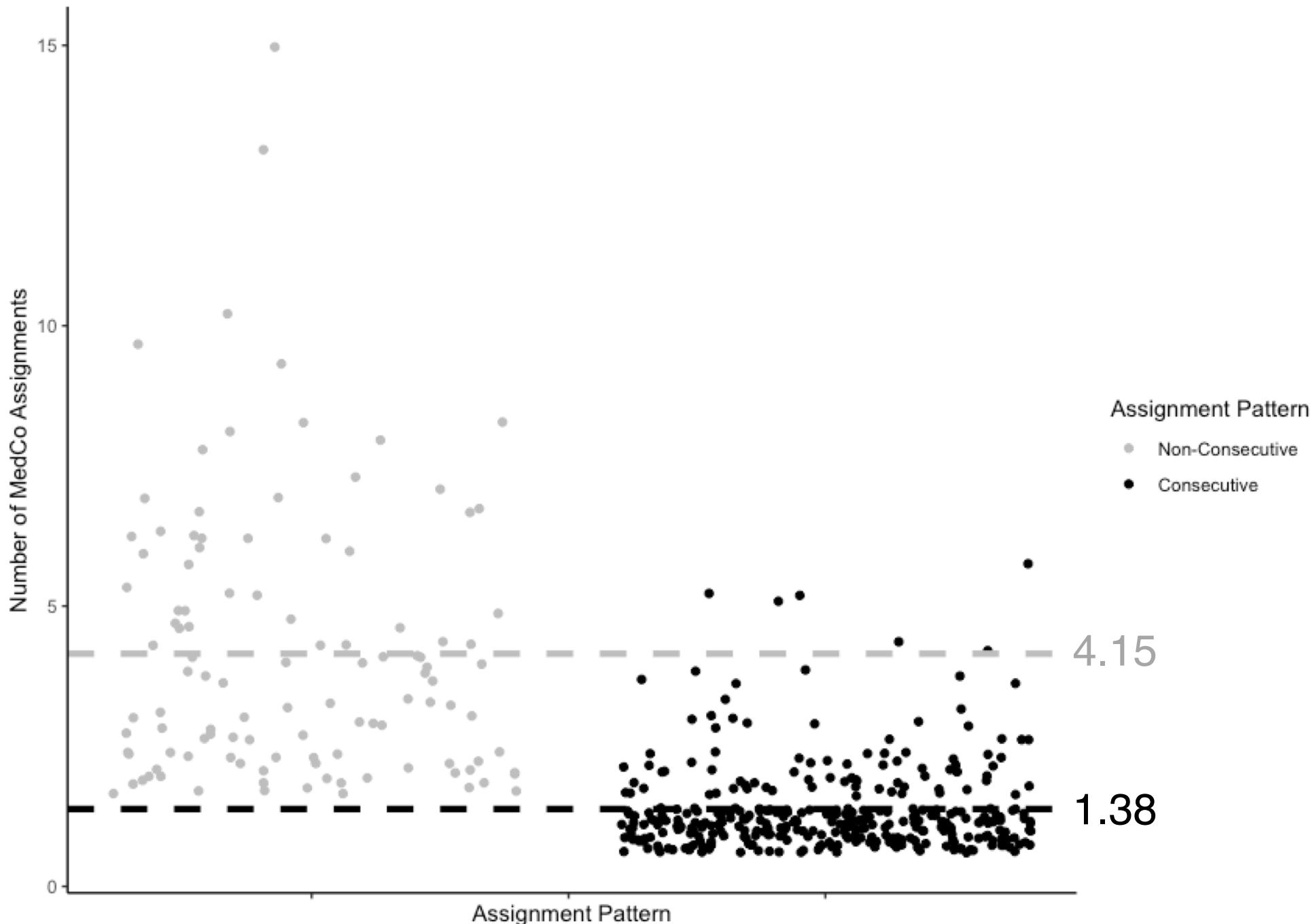
Differences in Number of MedCo Between Consecutive vs. Non-Consecutive

Those that did consecutive assignments, tend to cluster at the lower end of the Number of MedCo Assignment scatter-plot.

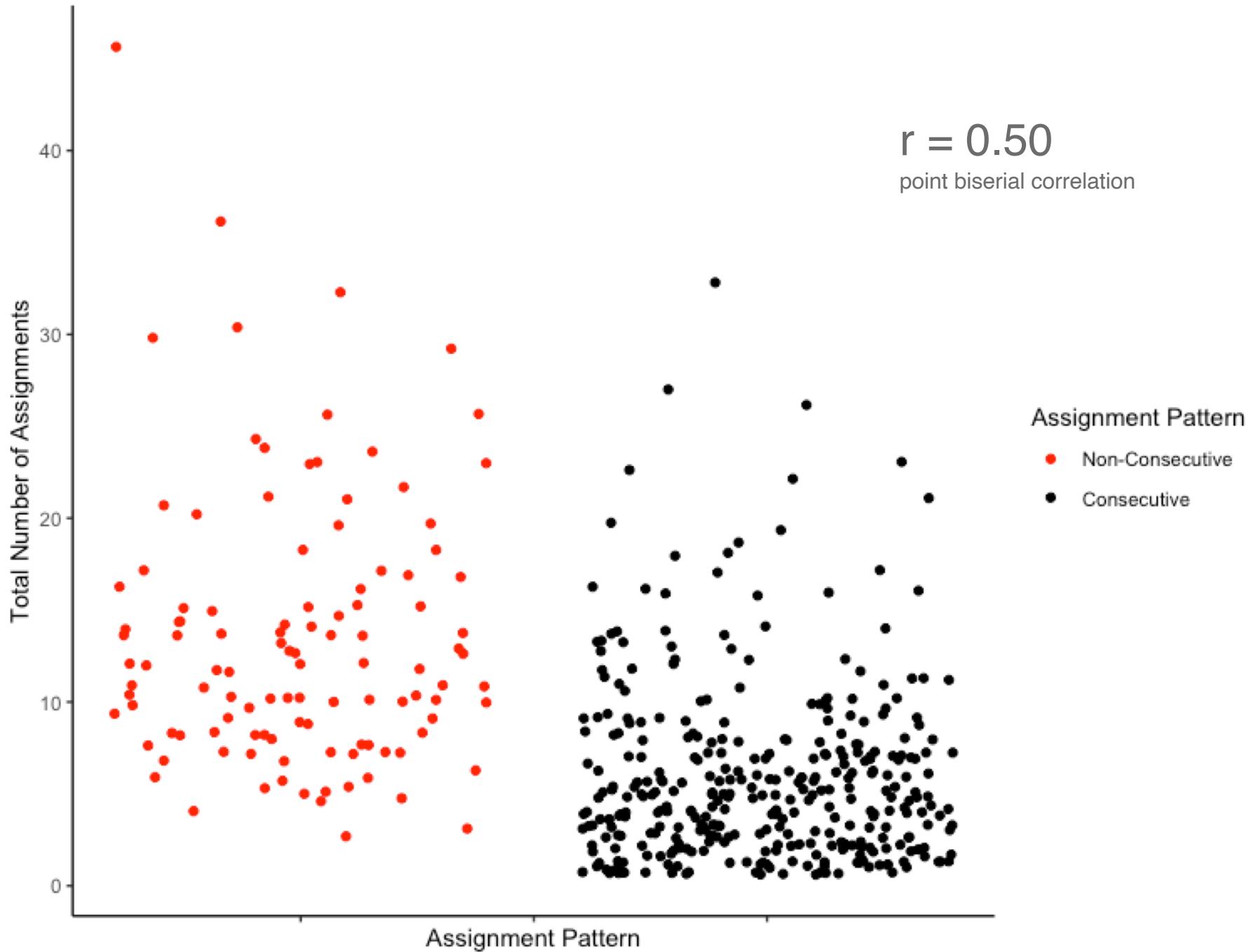


## Differences in Number of MedCo Between Consecutive vs. Non-Consecutive

The average  
Number of MedCo  
for Non-Consecutive  
assignment pattern  
is **more than**  
**double** the  
Consecutive  
assignment pattern.

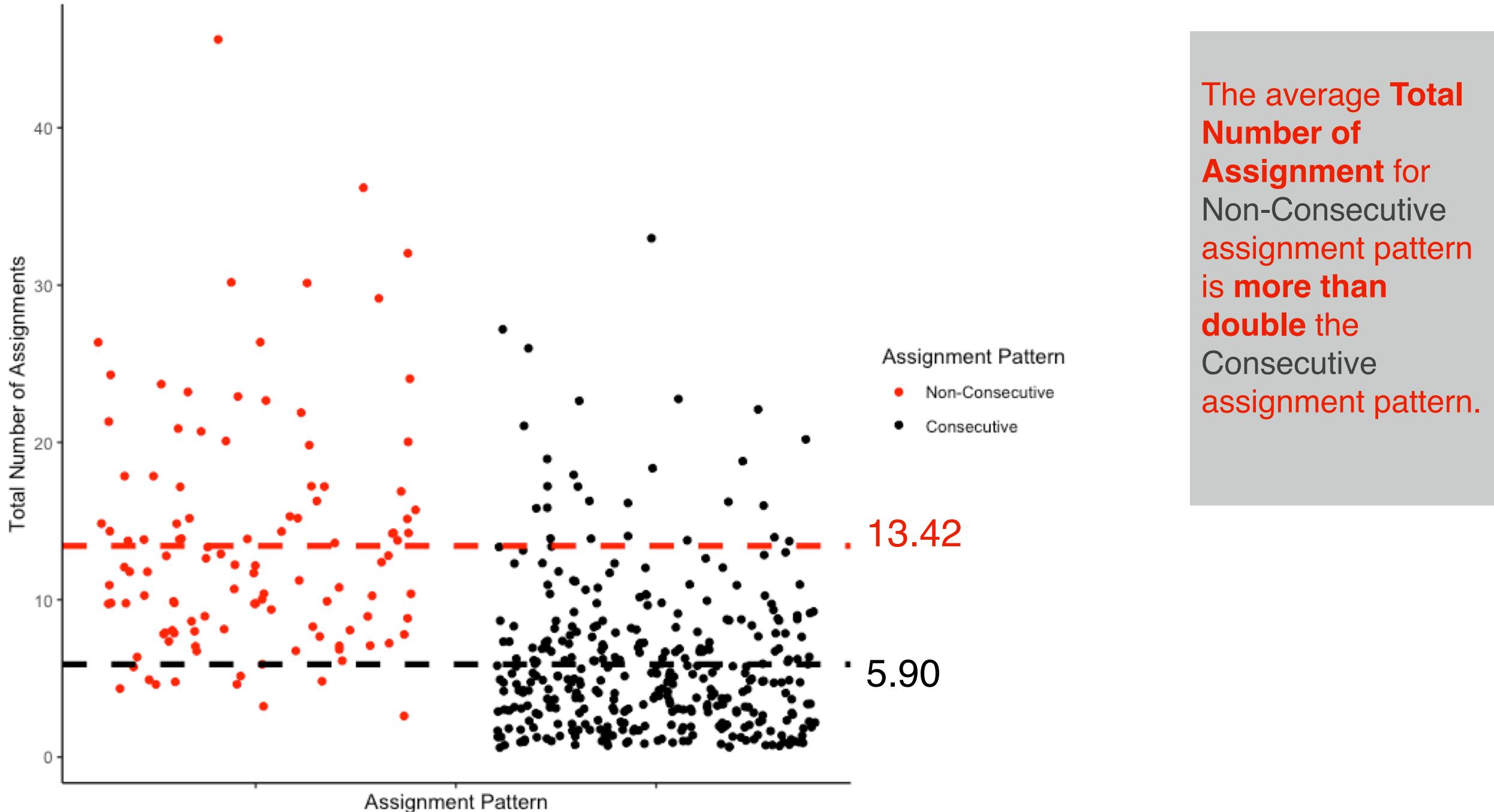


## Differences in Total Number of Assignments Between Consecutive vs. Non-Consecutive



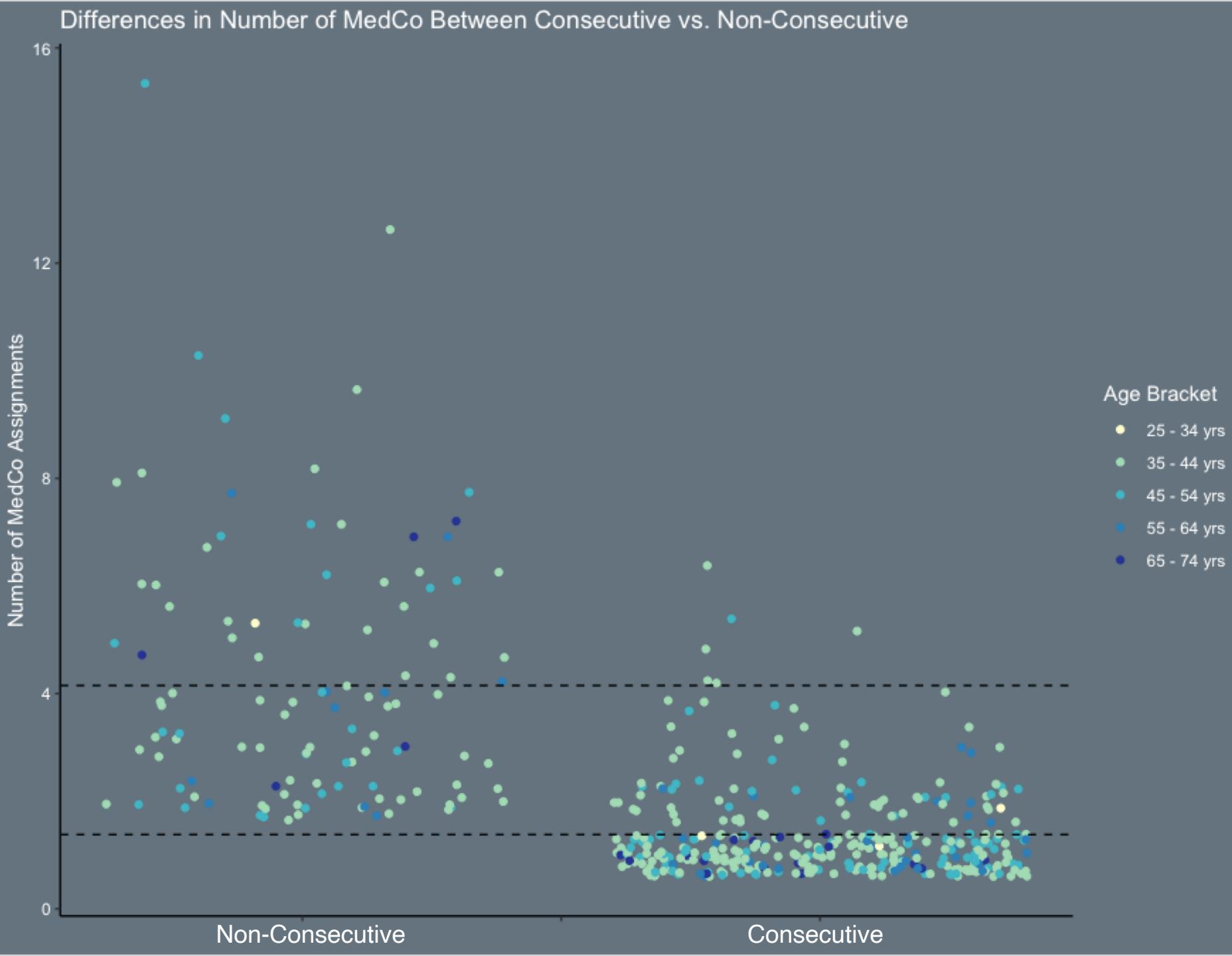
Although not as strong, there is a **moderate relationship** between Assignment Pattern and Total Number of Assignments.

# Differences in Total Number of Assignments Between Consecutive vs. Non-Consecutive

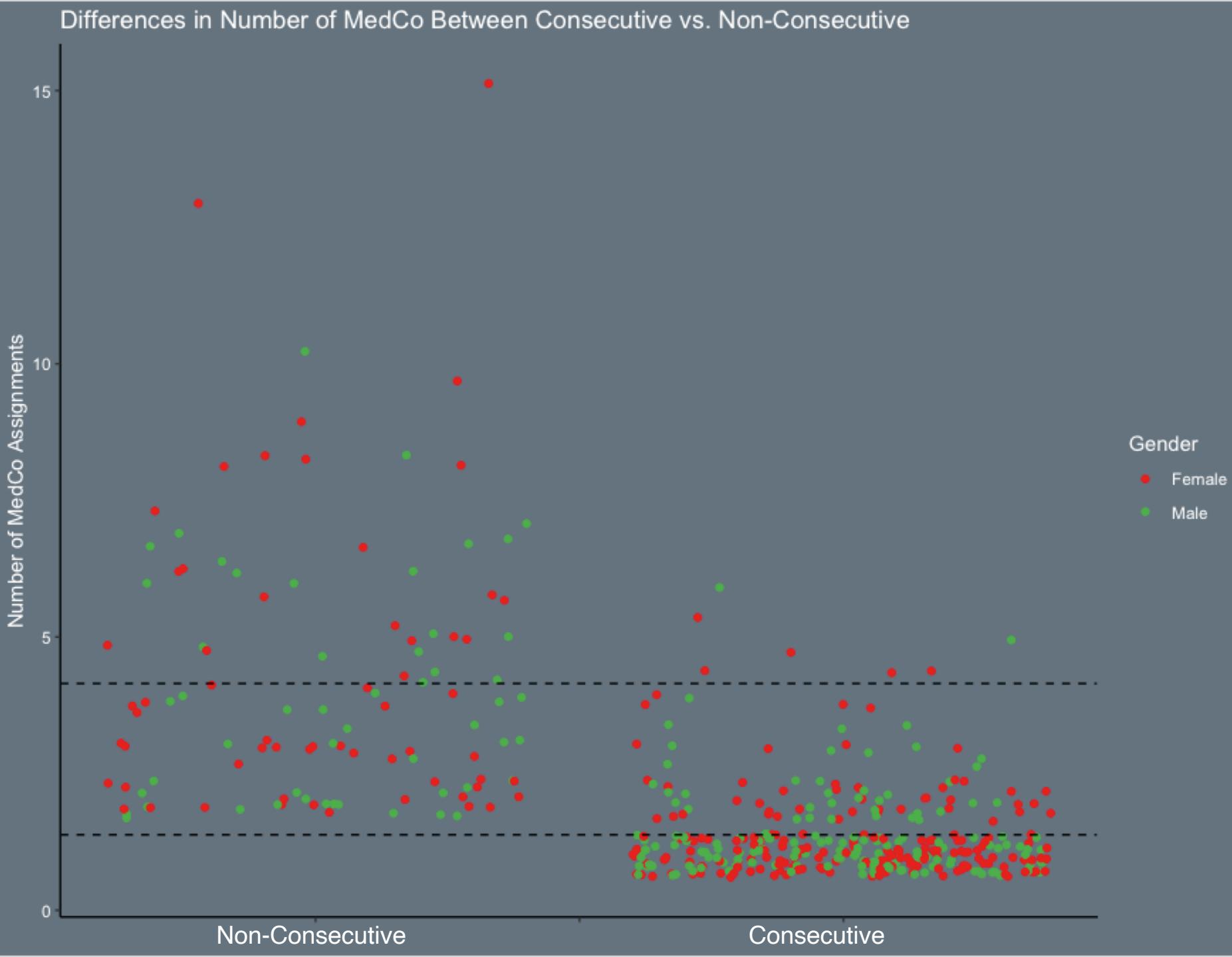


Demographic **variables**  
**distributed across**  
Consecutive **vs** Non-Consecutive  
**scatter plots.**

# Differences in Number of MedCo Between Consecutive vs. Non-Consecutive

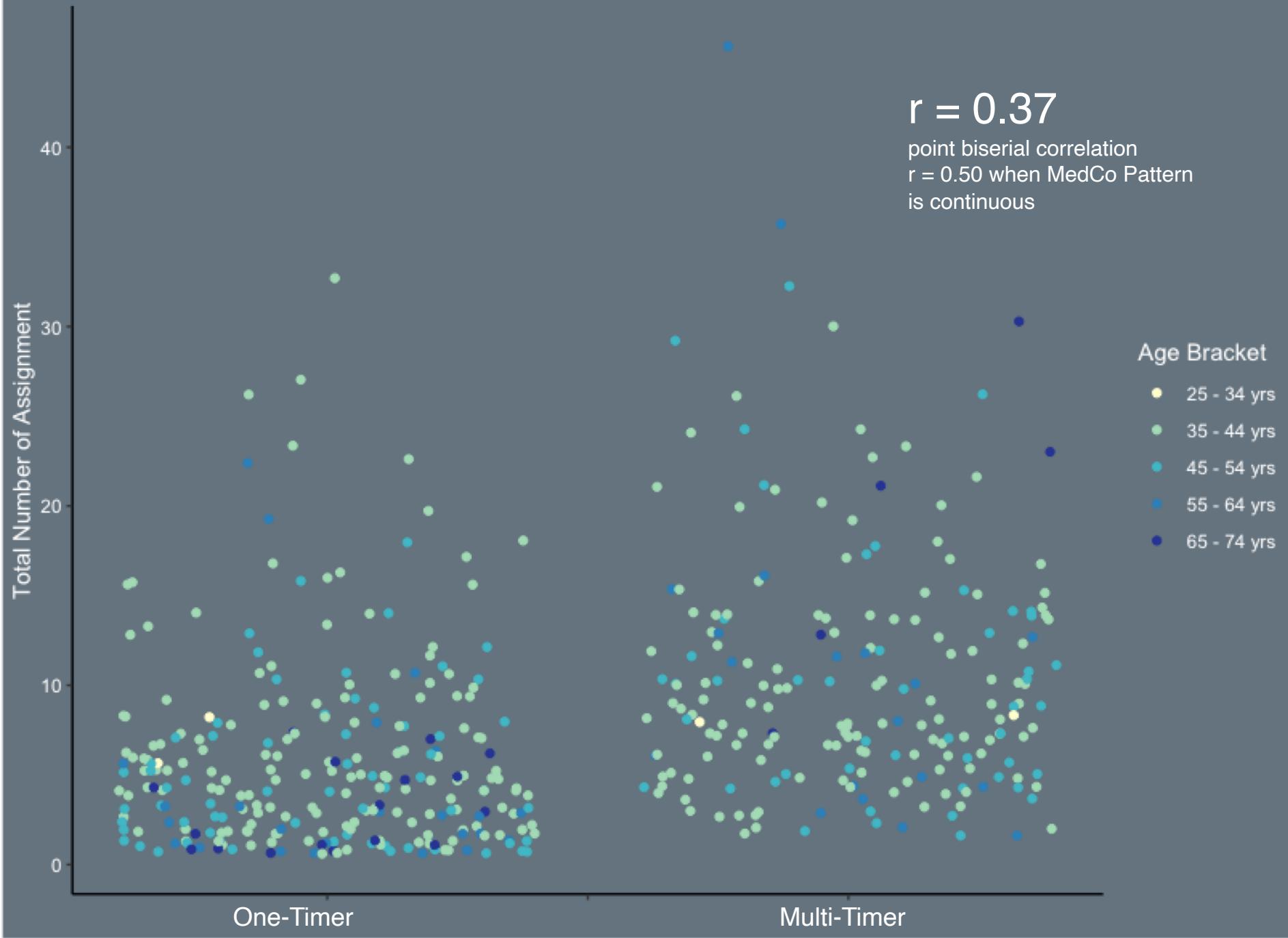


# Differences in Number of MedCo Between Consecutive vs. Non-Consecutive

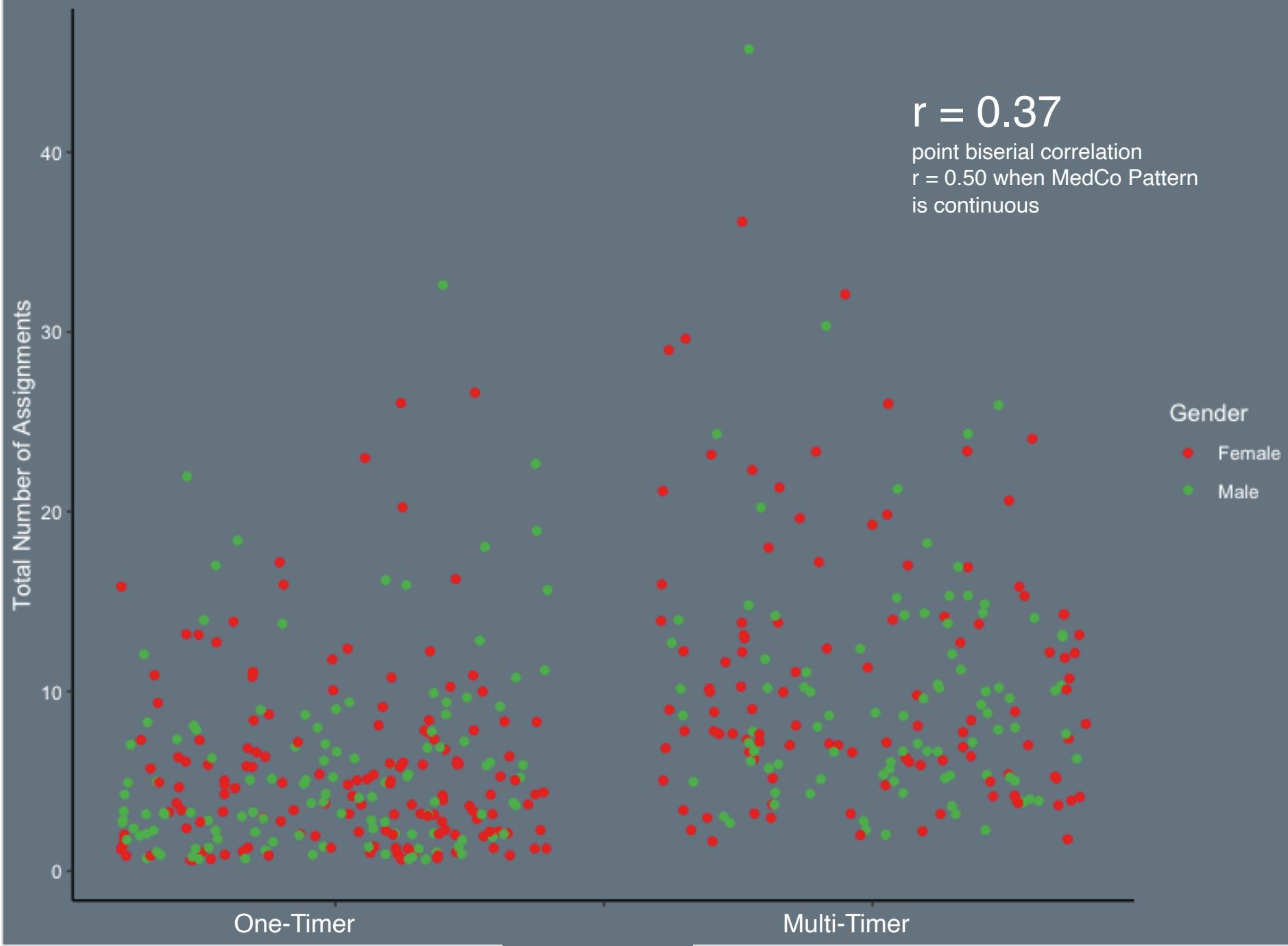


**Similar analysis for  
MedCo patterns  
(One-Timer vs Multi-Timers)**

# Differences in Total Number of Assignment Between One-Timer vs. Multi-Timer



# Differences in Total Number of Assignments Between One-Timer vs. Multi-Timer



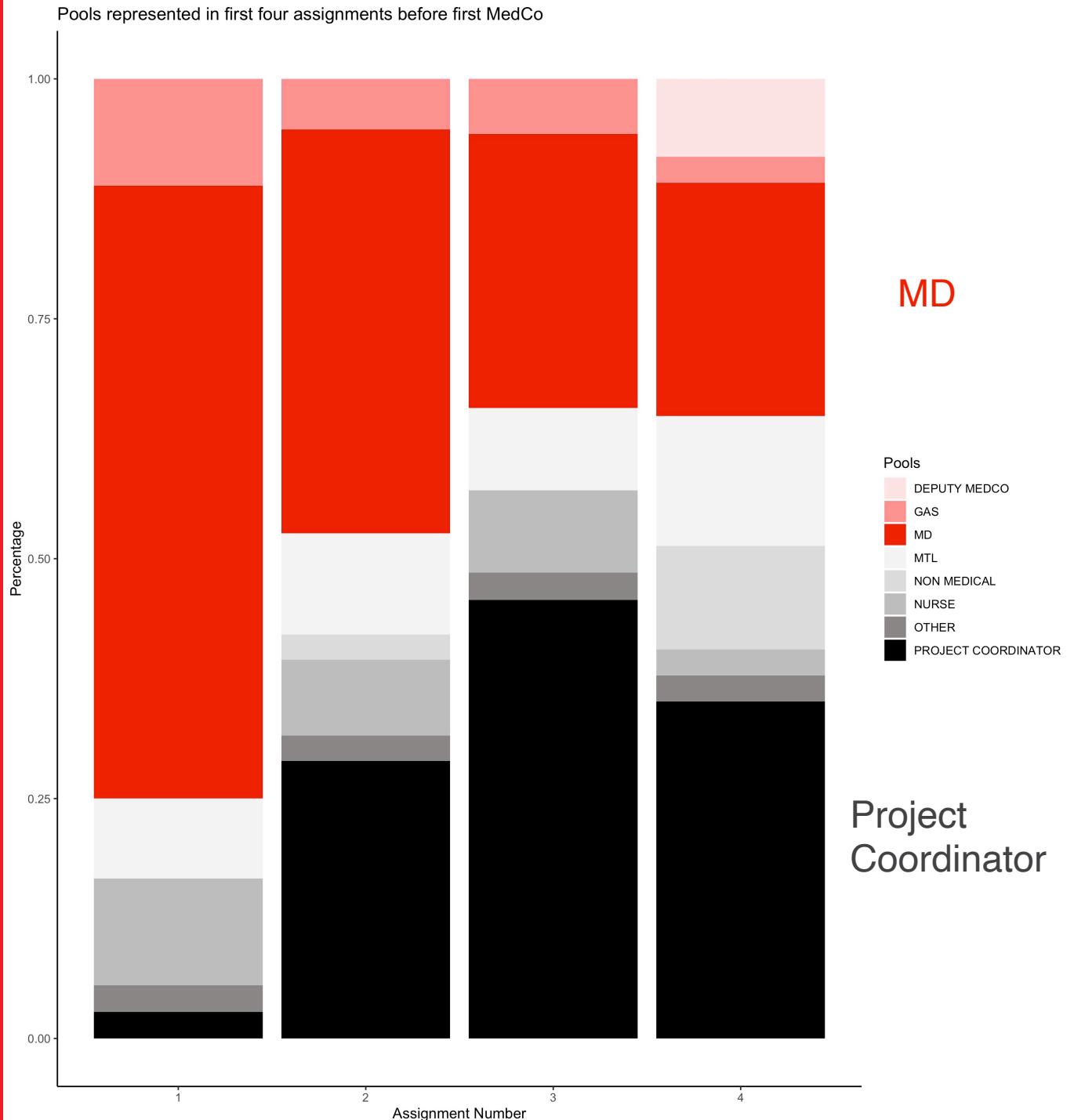
While the analysis cannot establish causality...

The current data set finds a stronger pattern of relationship in favor of **path/gaps** over the person

What do people do *before*  
their first MedCo assignment?

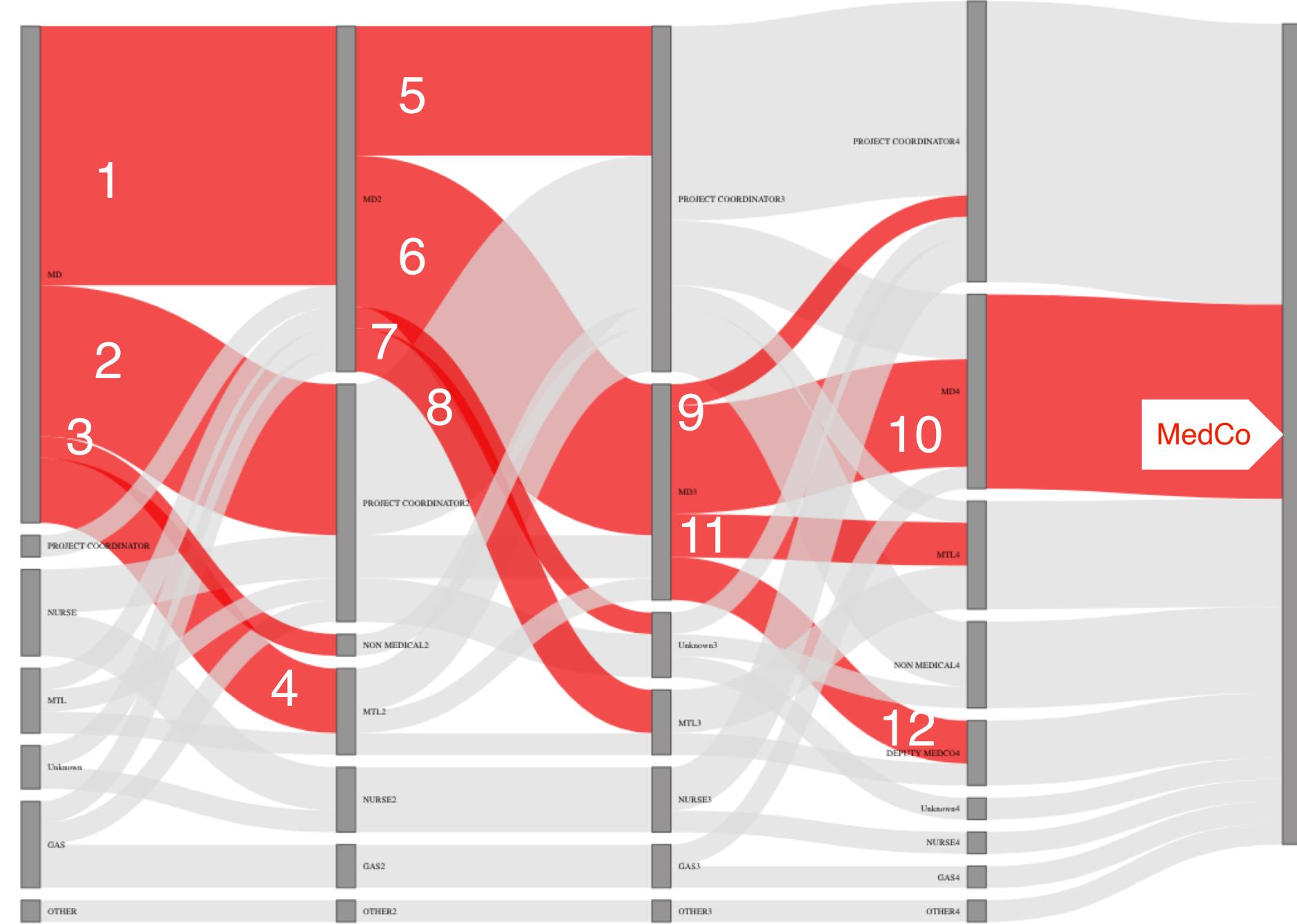
The **two** prominent positions to help people prepare for their first MedCo are:

1. MD
2. Project Coordinator.

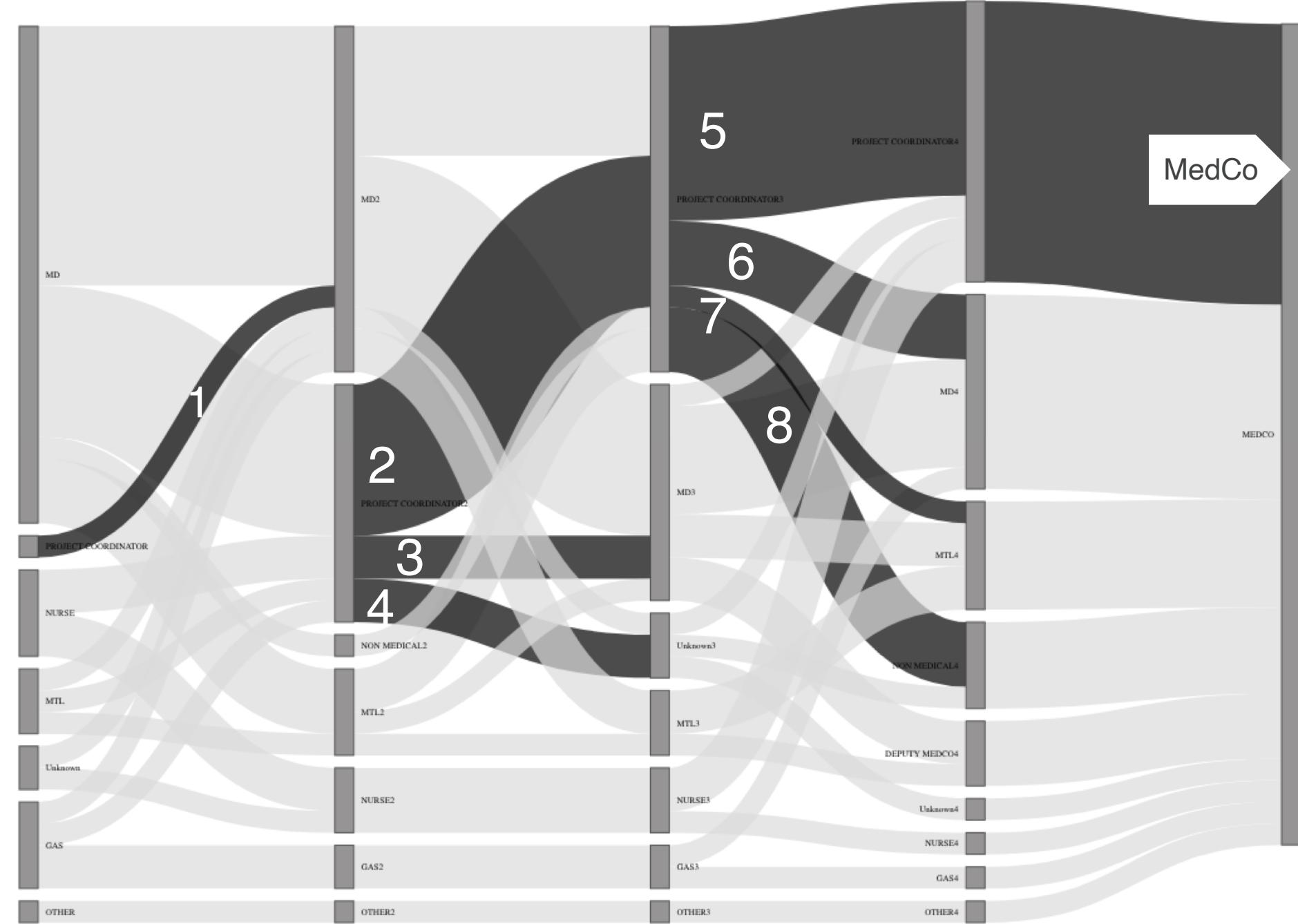


For others, the MD role provides **optionality**.

There are **12 flows** starting from the MD role, giving people a diverse range of career options within MSF before their first MedCo assignment.



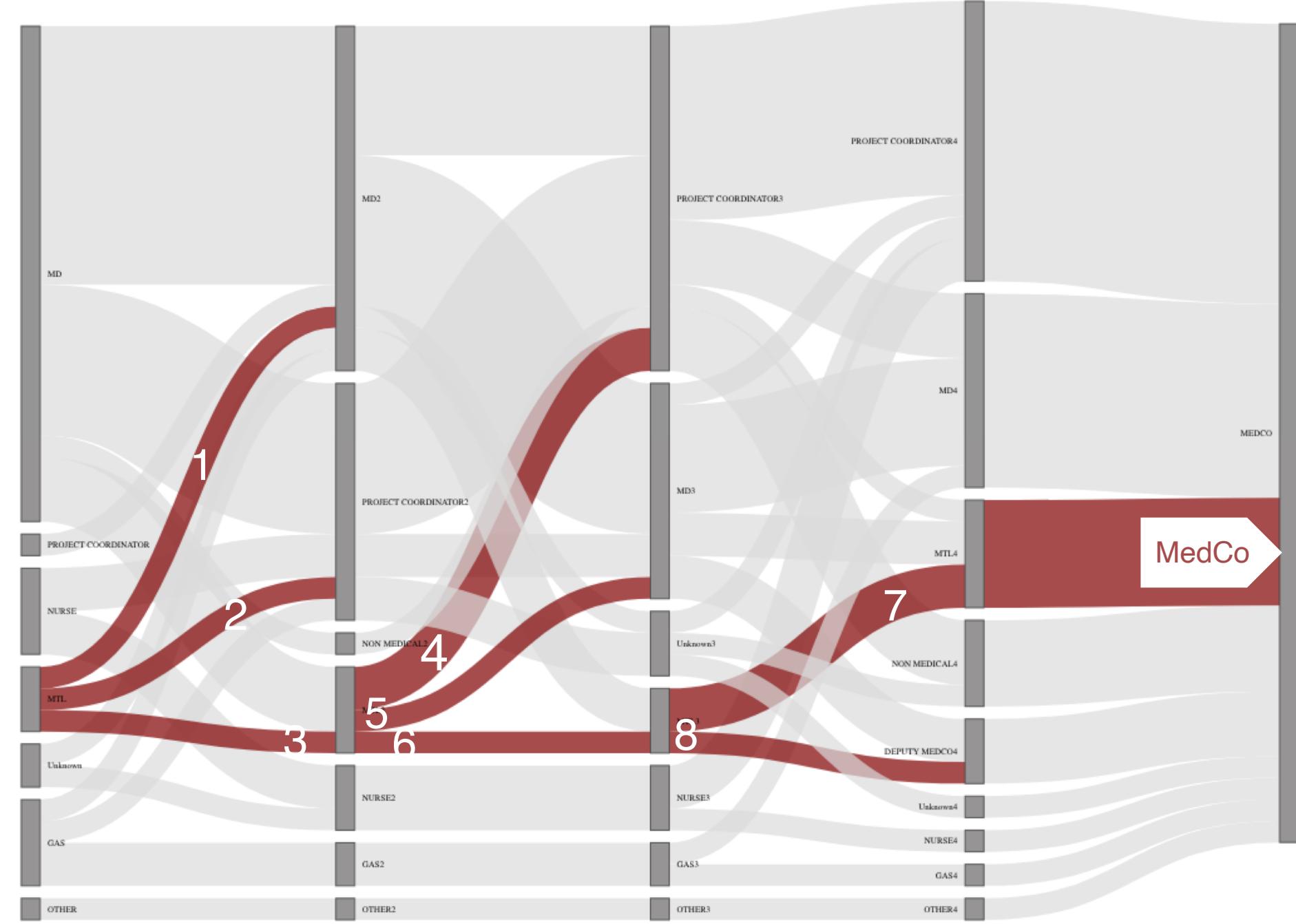
The Project Coordinator role provided the *second* most career optionality, with **8 flows** before MedCo.



The third path toward MedCo is via the Medical Team Lead (MTL) role.

This role provides just as much optionality as the Project Coordinator (**8 flows**).

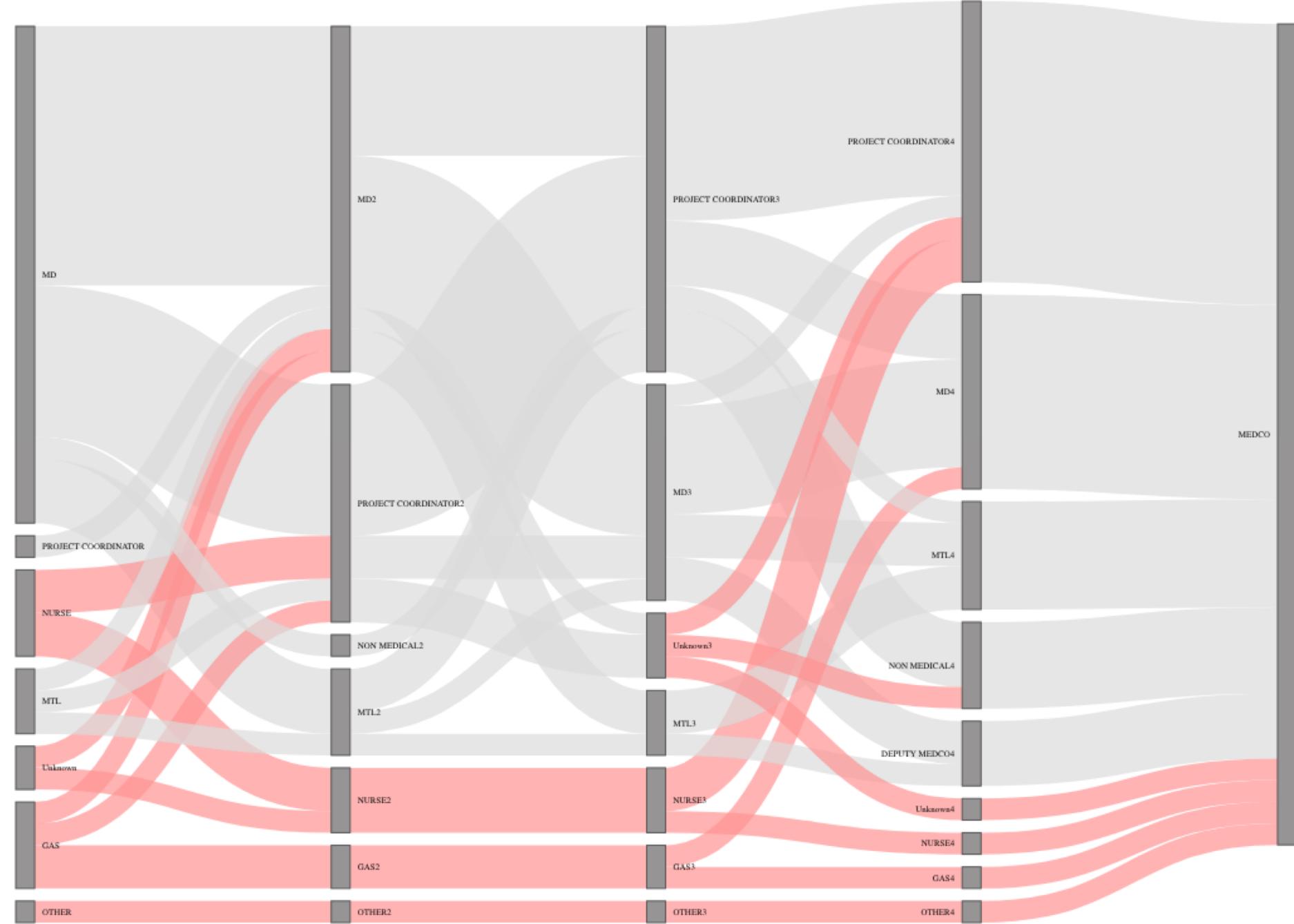
People can stay in MTL or migrate towards MD or Project Coordinator roles.



Nurse and GAS roles lag behind in terms of career paths towards MedCo.

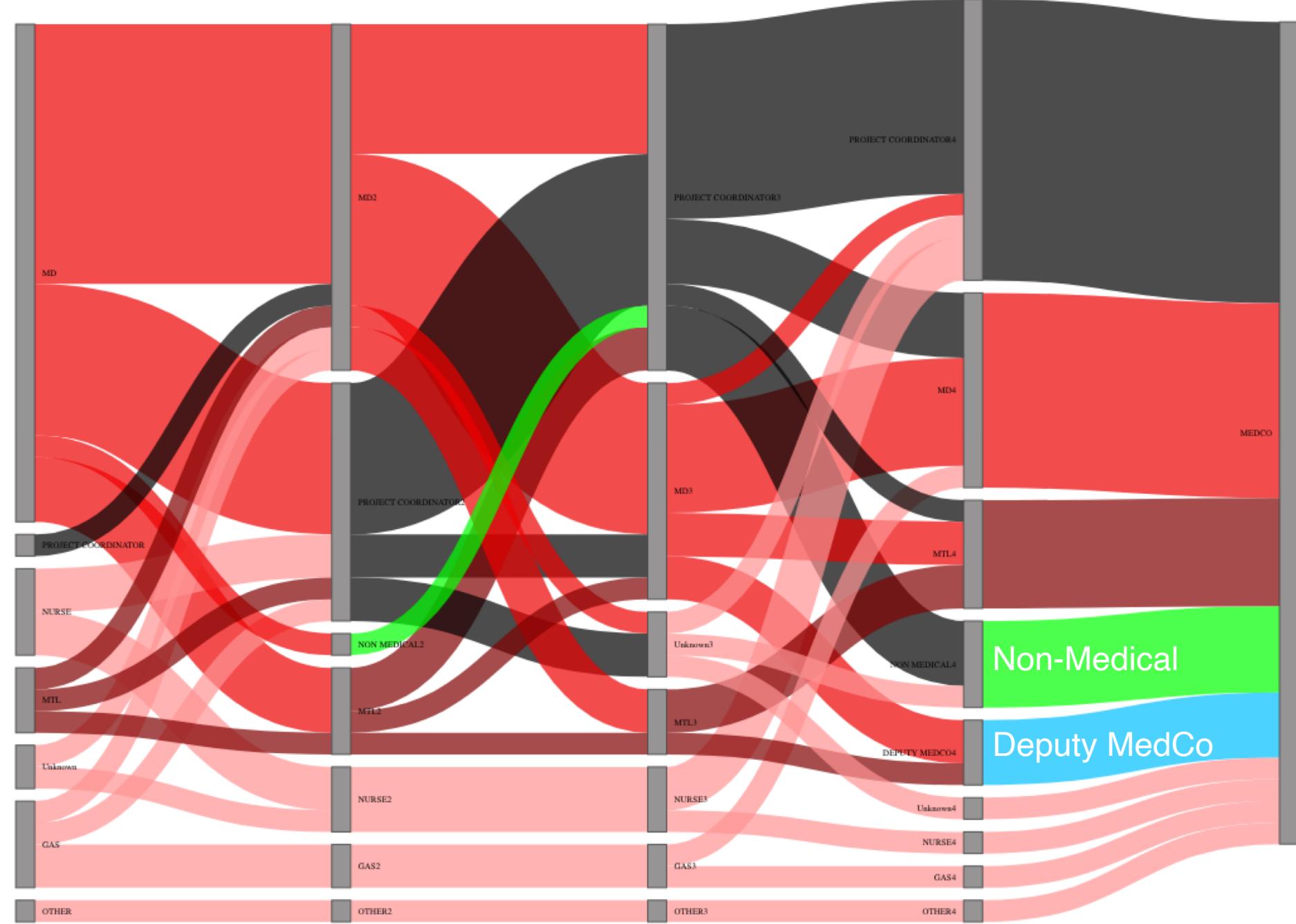
Between the two, GAS appears to have more optionality. Through GAS, people can switch to MD, Project Coordinator or remain in GAS.

Nurses appear to only choose between Project Coordinator or remaining in Nurse.

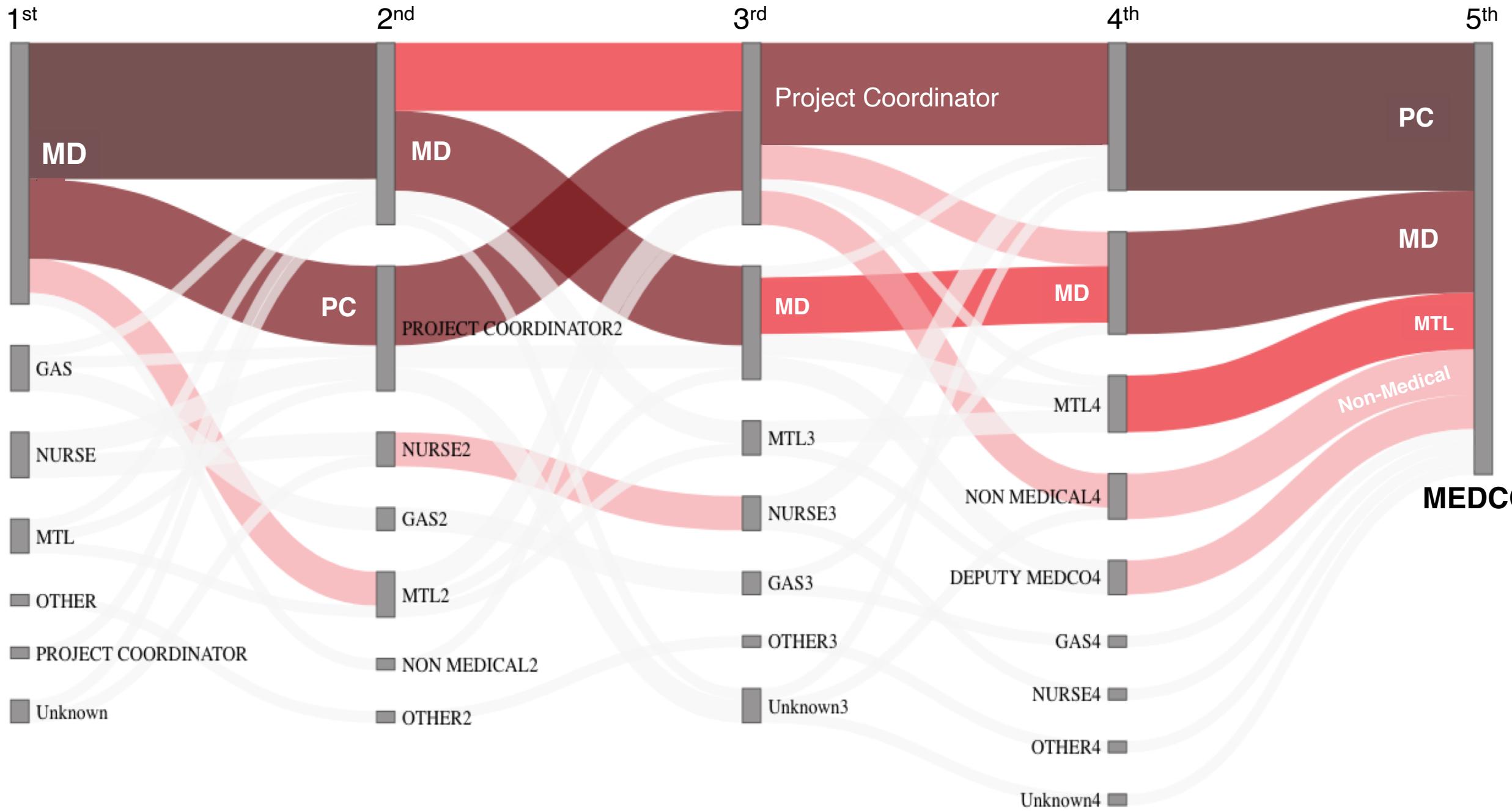


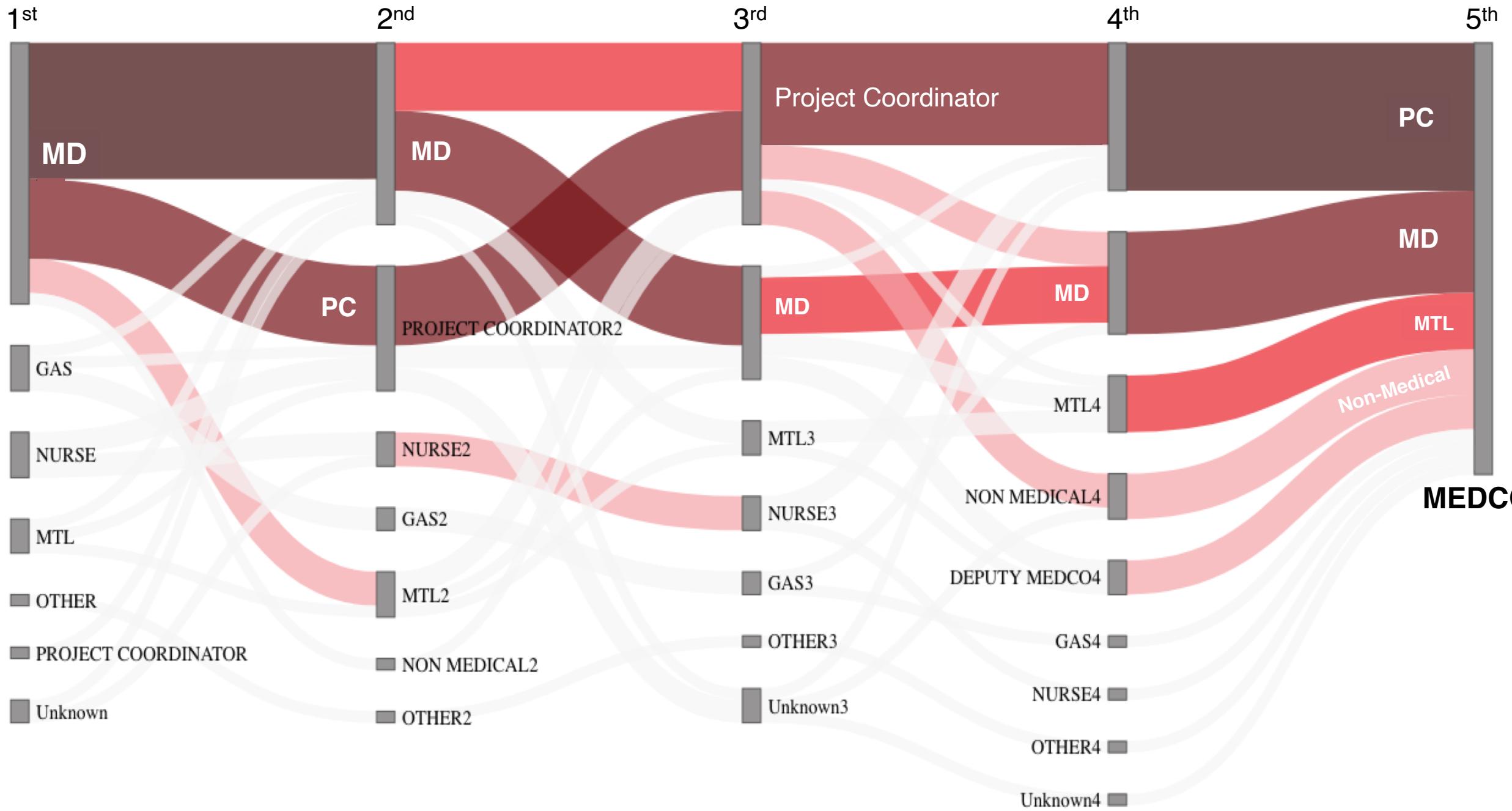
The two final roles to highlight are:  
1. Non-Medical,  
2. Deputy MedCo.

Since the Deputy MedCo *assists* the MedCo, its likely the role with the most realistic job preview for MedCo. Which is why we see it in the fourth assignment before MedCo.



To represent common career paths, use a combination of flow thickness and *sequential colors*.





# Recommendations to address Medco shortages

Encourage people to take **sufficient time** to prepare for their first MedCo assignment.

Examine **assignment length**. Is there a way to encourage shorter MedCo assignments for those earlier in their careers?

Encourage people to **take breaks** after they've completed a MedCo assignment to pause, reflect and replenish.

Create formal structures for **feedback, coaching and mentorship** while someone is doing a MedCo, particularly for those early in their careers.

# Recommendations

Encourage lesser traveled career paths towards MedCo (i.e., Nurses, GAS, MTL). Highlight Non-Medical and Deputy MedCo assignments.

## Future Data collection:

1. Cognitive Abilities
2. Personality
3. Resilience, Grit

## Quasi-Experiment Conditions

1. Consecutive (no coaching)
2. Consecutive (w/ coaching)
3. Non-Consecutive (no coaching)
4. Non-Consecutive (w/ coaching)
5. Fast vs Slow