Analysis change:

* Only estimate smoking trajectories using non-zero CPDs to minimize the influence of quitters.

Results:

ORIGINAL (leave 0’s in)

A graph of smoking trajectories

Description automatically generated

NEW (0’s not used for trajectory estimates)

A graph of smoking trajectories

Description automatically generated

Classes become slightly less separable. I could dive into the mapping, but I would assume they simply shifted downward. Some Class 3 went to Class 2, and some Class 2 to Class 1. The net result is a larger Class 1 and a smaller Class 3.

**Predicting Class Membership:** Cross-validated AUCs are now Class1 = 56.6%, Class 2 = 55.3%, and Class 3 = 53.6%, compared to 65.7%, 53.5%, and 56.7% respectively when 0’s were included in the trajectories. So, we lose a fair amount of ability to resolve individual differences (i.e., heavy reducers versus all).

**Predicting Quit:** Cross-validated AUCs are now 66.6% using baseline characteristics + latent class to predict quit status at week 52 and 64.1% using baseline characteristics alone, compared to 77.6% and 65.7% respectively.

The bottom line: we have evidence that including 0’s in the smoking trajectories artificially pulled the heavy-reducer trajectory toward 0, and therefore made it artificially more separated from the other trajectories. As a consequence, knowing a participant’s latent smoking trajectory does not substantially improve our ability to predict later abstinence.