

COMH7266: Longitudinal Analysis and Causal Inference

Causal Inference Labs 27 – 28 July 2017

1. Thursday PM. Assess the effect of baseline smoking intensity A on weight change Y in the NHEFS study by fitting the MSM

$$E[Y^a] = \beta_0 + \beta_1 a + \beta_2 a^2.$$

Consider how to interpret the results using language suitable for NHEFS investigators (i.e., non-statisticians).

2. Friday AM. Conduct an analysis assessing the effect of smoking cessation (qsmk) A on death Y in the NHEFS study using the parametric G-formula. Assume exchangeability conditional on the same 9 variables used by HR (i.e., sex, age, race, education, intensity and duration of smoking, etc).
3. Friday PM. Conduct an analysis assessing the effect of smoking cessation (qsmk) A on weight change Y in the NHEFS study using g-estimation. Assume the following structural nested mean model

$$E[Y^a - Y^{a=0} | A = a, L] = \beta_1 a$$