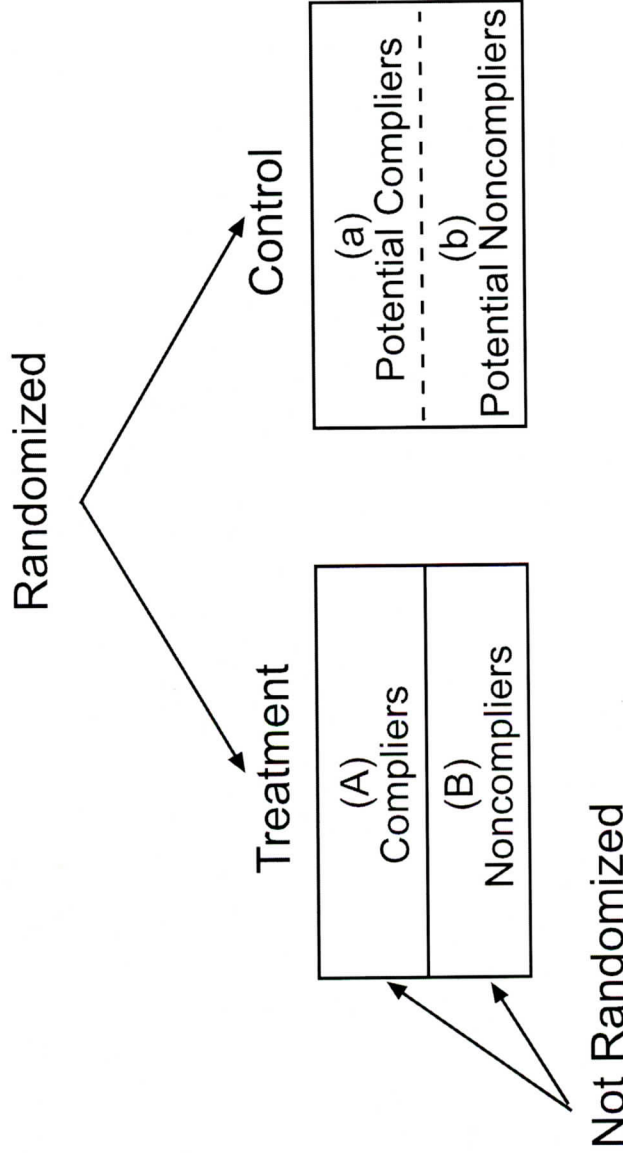


Options in Dealing with Noncompliance



- Intent-to-Treat (ITT) Analysis: $(A+B)$ vs. $(a+b)$
- As-Treated Analysis: (A) vs. $(B+a+b)$
- Per-Protocol Analysis: (A) vs. $(a+b)$
- CACE (Complier Average Causal Effect): (A) vs. (a)

Analysis in numbers

Compliance (week 7) recap overview

Stat 209

Common Setting

random key for w est of CACE

- Randomized trials, where successful placebo control is unlikely.
- 2 conditions: intervention ($Z = 1$) and control ($Z = 0$)
- 2 compliance types (C_i)
 - 1) complier (c) - receives the intervention treatment if assigned, and does not if not assigned. $\pi_c =$ compliance rate.
 - 2) noncomplier (n) - does not receive the intervention treatment even if assigned to receive it. $1 - \pi_c = \pi_n =$ noncompliance rate.
- 2 observed average outcomes in $Z = 1$: μ_{c1} and μ_{n1} .
- 2 unobserved average outcomes in $Z = 0$: μ_{c0} and μ_{n0} .
- 1 observed outcome in $Z = 0$: $\mu_0 (= \pi_c \mu_{c0} + \pi_n \mu_{n0})$.
- The estimators of interest are

	T	C
Complier	μ_{c1}	μ_{c0}
Noncomplier	μ_{n1}	μ_{n0}

$ITT = \mu_1 - \mu_0 = \pi_c(\mu_{c1} - \mu_{c0}) + (1 - \pi_c)(\mu_{n1} - \mu_{n0})$

$CACE = ITT_c = \mu_{c1} - \mu_{c0}$

$\widehat{CACE} \text{ complier average causal effect} = \widehat{ITT} / \widehat{\pi}_{c1}$ iff $\mu_{n1} \equiv \mu_{n0}$

ATR. Vietnam
Vitamin A
HW

single crossover

see Freedman
papers for s.e., bias
discussion