

2 sample prop

$P_w$  = prop. of all patients that would survive... w/c.a.

$P_{w/o}$  = " " w/o c.a.

(talk about it below)  
independent SRS from pops of interest  
random assigned

$H_0: P_w = P_{w/o}$   
 $H_a: P_w > P_{w/o}$

cond:  
 $40(.7067) \geq 5$   
 $40(1-.7067) \geq 5$   
 $35(.7067) \geq 5$   
 $35(1-.7067) \geq 5$

$\hat{p}_w = \frac{34}{40} = .85$   
 $\hat{p}_{w/o} = \frac{19}{35} = .5429$   
 $\hat{p}_c = \frac{53}{75} = .7067$

$$z = \frac{.85 - .5429}{\sqrt{.7067(1-.7067)(\frac{1}{40} + \frac{1}{35})}} = 2.91$$

$$p(z > 2.91) = .0018$$

with a p-value of .0018, this is sign. at the .01 level. There is enough evid. to reject  $H_0$ . Based on this sample, there is evid. that the disinfectant would reduce incidence of infection and death.

death rate (1-survival) w/o

$$(.15 - .457) \pm 1.96 \sqrt{\frac{.15(1-.15)}{40} + \frac{.457(1-.457)}{35}}$$

w/c.a.  
 survived = .85  
 died = .15

$-.3071 \pm .1987$   
 $(-.5058, -.1084)$

95% conf. Sarbacid decreased death rate over w/o c.a. by .1084 to .5058.

$.15(40) \geq 5$   
 $40(1-.15) \geq 5$   
 $.457(35) \geq 5$   
 $35(1-.457) \geq 5$

experiment (he performed surgery w/ or w/o c.a.)

- Should have:
  - randomly assigned

(conditions not met)  
because no random assignment