

## MCI COURSEWORK I – CLINICAL EPIDEMIOLOGY I

### The 2-by-2

	Outcome	No outcome	
Exposed	a	b	a + b
Not exposed	c	d	c + d
	a + c	b + d	N=a+b+c+d

### Basic measures of disease occurrence

$$CI = \frac{a}{a+b}$$

$$IR = \frac{\text{events}}{\text{person - time}}$$

$$\text{Odds}(\text{outcome}|\text{exposure}) = a/b$$

### Basic measures of association

$$RR = \frac{\text{Risk}_{\text{exposed}}}{\text{Risk}_{\text{unexposed}}}$$

$$CIR = \frac{CI_{\text{exposed}}}{CI_{\text{unexposed}}} = \frac{\frac{a}{a+b}}{\frac{c}{c+d}}$$

$$IRR = \frac{IR_{\text{exposed}}}{IR_{\text{unexposed}}} = \frac{\frac{a}{\text{pyrs}_{\text{exposed}}}}{\frac{c}{\text{pyrs}_{\text{unexposed}}}}$$

$$OR = \frac{\text{Odds}_{\text{exposed}}}{\text{Odds}_{\text{unexposed}}} = \frac{a/b}{c/d}$$

$$RD = \text{Risk}_{\text{exposed}} - \text{Risk}_{\text{unexposed}}$$

$$CID = CI_{\text{exposed}} - CI_{\text{unexposed}} = \frac{a}{a+b} - \frac{c}{c+d}$$

$$IRD = IR_{\text{exposed}} - IR_{\text{unexposed}} = \frac{a}{\text{pyrs}_{\text{exposed}}} - \frac{c}{\text{pyrs}_{\text{unexposed}}}$$

$$NNT = \frac{1}{\text{Risk difference}}$$

$$AP_{\text{exposed}} = \frac{RD}{R_{\text{exposed}}} \times 100 = \frac{R_{\text{exposed}} - R_{\text{unexposed}}}{R_{\text{exposed}}} \times 100$$

$$AP_t = \frac{PRD}{R_{\text{total}}} \times 100 = \frac{R_{\text{total}} - R_{\text{unexposed}}}{R_{\text{total}}} \times 100$$