



## Unit I – Problem 11 – Epidemiology: Calculation of Relative Risk (RR)

- **Example:** in study of 1000 people, investigators observed who was bitten by a flea and who later developed plague. 400 got plague out of 600 bitten by flea. Also, 100 got plague out of all bitten by flea.

	Disease yes	Disease no	Total
Exposure yes	A	B	A+B
Exposure no	C	D	C+D
Total	A+C	B+D	A+B+C+D

	Plague yes	Plague no	Total
Flea bite yes	400	200	600
Flea bite no	100	300	400
Total	500	500	1000

- **Relative Risk (RR)** =  $\frac{[A/(A+B)]}{[C/(C+D)]}$

$$\text{Relative Risk (RR)} = \frac{[400/(400+200)]}{[100/(100+300)]} = \frac{(400/600)}{(100/400)} = \frac{0.667}{0.25} = 2.67$$

- **Interpretation:**

- ✓ RR = 1 (no association).
- ✓ RR > 1 (positive association – causal relationship).
- ✓ RR < 1 (protective effect – exposure protects disease).

People with flea bites had a 2.7 times greater risk of developing plague than those without flea bites.