

Fundamental Insurance Principles and Issues

- ***Risk Pooling*** is the source of all value in insurance
- ***Moral Hazard*** dealt with partially by deductions and co-insurance
- ***Selection Bias*** dealt with by group policies, by testing and referrals, and by mandatory government insurance

Risk Pooling

- If n policies, each has independent probability p of a claim, then the number of claims follows the binomial distribution. The standard deviation of the fraction of policies that result in a claim is

$$\sqrt{p(1-p)/n}$$

- *Law of large numbers:* as n gets large, standard deviation approaches zero