

## **Benefit Trend Problems for Cancer Policies**

## **Indemnity products**

1. Potentially hit by new treatments but inflation not a problem
2. Benefit amounts may become insignificant

## **Capped and hybrid**

1. Hard to handle inflation
2. Billed rates differ from negotiated
3. Hybrid have some protection but
  - capped benefit becomes first occurrence over time
  - actual charges exceed cap when capped benefit continues for more than 1 year or on re-occurrence

## **Types of LTC Plans**

### 1. **Service reimbursement model**

- most popular model
- cost of services, subject to service related limits, paid to insured or provider when bills submitted
- limits can apply daily to annually to lifetime

### 2. **Service indemnity model**

- a fixed benefit paid for days on which any service received, regardless of actual charges

### 3. **Disability model**

- a fixed amount per day eligible for benefits
- easily explained and flexible- premiums higher due to additional benefit use and faster payout

## **Challenge and Solution at IBM Canada**

## **Challenge**

To contain costs without sacrificing employee satisfaction

## **Solution**

1. Employees responsible for drug dispensing fees
2. A drug card with a formulary
3. Electronic claims processing with an on line explanation of benefits
4. Direct deposit to employees' bank
5. Paper drug card - can print off card if current one lost
6. On line benefit information and enrollment

McKay Chapter 23

## **Advantages and Disadvantages of the Use of Profit Sharing Incidental Accounts to Fund Post Retirement Benefits**

## **Advantages**

1. Communication is easy and saleable
2. Employer contributions are tax deductible as paid
3. Investment income is tax free
4. Medical insurance premiums may be tax free
5. Profit sharing plan may already exist
6. Funding an asset under FAS 106

## **Disadvantages**

1. Few firms have adopted
2. 1/3 rule will usually restrict contributions
3. Certain qualified plan rules are uncertain
4. Uncertainty on tax status of distributions

## **Bayesian Inference About Binomial Probabilities**

1. Has the advantage that the question of data volume needed for credibility does not arise
2. Avoids the yes/no question at the 5% level
3. Gives an estimate of the posterior probability of the validity of the null hypothesis
4. Approach is straight forward computationally
5. Can use prior distributions other than the common conjugate priors
6. Likelihood function is  $L(\Theta) = \Theta^s(1-\Theta)^{n-s}$
7. Posterior probabilities are proportional to the product of the likelihood and the corresponding prior probability
8. The sum of the products must be normalized to 1
9. Assume prior distributions are independent