

## ***A Corporate Health Insurance Example***

Lisa Pon has just been hired as an analyst in the corporate planning department of Hungry Dawg Restaurants. Her first assignment is to determine how much money the company needs to accrue in the coming year to pay for its employees' health insurance claims. Hungry Dawg is a large, growing chain of restaurants that specialize in traditional southern foods. The company has become large enough that it no longer buys insurance from a private insurance company. The company is now self-insured, meaning that it pays health insurance claims with its own money (although it contracts with an outside company to handle the administrative details of processing claims and writing checks.)

The money the company uses to pay claims comes from two sources: employee contributions (or premiums deducted from employees' paychecks), and company funds (the company must pay whatever costs are not covered by employee contributions.) Each employee covered by the health insurance plan contributes \$125 per month. However, the number of employees covered by the plan changes from month to month as employees are hired and fired, quit or simply add or drop health insurance coverage. A total of 18,533 employees were covered by the plan last month. The average monthly health claim per covered employee was \$250 last month.

Source: Cliff Ragsdale, [Spreadsheet Modeling and Decision Analysis](#)

## ***Incorporating Uncertainty***

From analyzing historical data we have determined the following:

The change in the number of covered employees from one month to the next is expected to vary **uniformly** between a 3% decrease and a 7% increase.

The average month claim per employee can be modeled as a **normally distributed** random variable with a mean increase of 1% per month and a standard deviation of 3%.