Decision Support System (DSS) on Excel

**Inter-State Healthcare Profit Analysis**

You have been asked to develop a Decision Support System for inter-state healthcare profit analysis. The profit analysis format should be as given below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Texas** | **California** | **New York** | **Florida** | **Ohio** |
| **REVENUES** |  |  |  |  |  |
| Inpatient |  |  |  |  |  |
| Emergency |  |  |  |  |  |
| Outpatient |  |  |  |  |  |
| Beds |  |  |  |  |  |
| TOTAL |  |  |  |  |  |
| Deductions |  |  |  |  |  |
| NET REVENUE |  |  |  |  |  |
| EXPENSES |  |  |  |  |  |
| Salaries |  |  |  |  |  |
| Benefits |  |  |  |  |  |
| Supplies |  |  |  |  |  |
| Fees |  |  |  |  |  |
| Depreciation |  |  |  |  |  |
| TOTAL EXPENSES |  |  |  |  |  |
| **NET INCOME** |  |  |  |  |  |

The formulas to compute each of the items in the spreadsheet format above are shown in Table 1. The actual number of beds, inpatient expenses, etc., are shown in Table II.

TABLE 1

Formulas used for revenues and expenses

|  |  |
| --- | --- |
| Revenues |  |
| Inpatient revenue | Inpatient days x expenses per inpatient day |
| Emergency revenue | Emergency visits x expenses per visit |
| Outpatient revenue | Outpatient visits x expenses per visit |
| Bed revenue | # of beds \* cost per bed \* # of hospitals |
| Total revenue | Sum of inpatient revenues, emergency revenues, outpatient revenues, bed revenue |
| Deductions | Five percent of total revenue |
| Net Revenue | Total revenue less deductions |
| Expenses |  |
| Salaries | 15000+1.50 x # of beds x # of hospitals |
| Benefits | 25 percent of salaries |
| Supplies | 200 + 8 percent of total revenue |
| Fees | 2150 per 1,000 population |
| Depreciation | 1200 per 1,000 population |
| Total Expenses | All of the above |
| Net Income |  |
| Net Income | Net Revenue less Total Expenses |

TABLE II

Simulated data from different states

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Texas** | **California** | **New York** | **Florida** | **Ohio** |
| # of hospitals | 414 | 370 | 207 | 203 | 163 |
| # of beds per 1,000 population per hospital | 2.6 | 2.1 | 3.4 | 3.1 | 3.0 |
| Cost per bed | $80 | $95 | $76 | $72 | $65 |
| # of inpatient days per 1,000 population | 602 | 531 | 961 | 704 | 556 |
| Expenses per inpatient day | $1,482 | $1,763 | $1,402 | $1,387 | $400 |
| # of outpatient visits per 1,000 population | 1,541 | 1,524 | 2,444 | 1,347 | 950 |
| Expenses per outpatient visit | $115 | $126 | $112 | $109 | $100 |
| # of emergency room visits per 1,000 population | 379 | 397 | 391 | 289 | 349 |
| Expenses per emergency room visit | $2,000 | $3,000 | $1,950 | $1,600 | $500 |

To Do:

1. Use Excel to develop the inter-state healthcare profit analysis DSS using the data and the formulas given above.

2. Develop an alternative plan by varying the number of beds, and various expenses to let Ohio have a net income of at least $700,000.

3. Develop a third sheet inside the same worksheet with the following format:

**Alternative Profit Plans for Ohio**

|  |  |  |  |
| --- | --- | --- | --- |
|  | | **Alternative 1** | **Alternative 2** |
| **Ohio** | Net Income |  |  |
| # of beds per 1,000 population per hospital |  |  |
| Cost per bed |  |  |
|  | # of inpatient days per 1,000 population |  |  |
|  | Expenses per inpatient day |  |  |
|  | # of outpatient visits per 1,000 population |  |  |
|  | Expenses per outpatient visit |  |  |
|  | # of emergency room visits per 1,000 population |  |  |
|  | Expenses per emergency room visit |  |  |

The full worksheet is located in a separated Excell Workbook file.