# Emergency Preparedness Information Modules for Nurses Return on Investment (EPIMN ROI) Calculator

For background information on EPIMN, including details on the assumptions used in this calculator, please review ASPR TRACIE's Emergency Preparedness Information Modules for Nurses in Acute Care Settings available at https://files.asprtracie.hhs.gov/documents/aspr-tracie-emergency-preparedness-information-modules-for-nurses-and-economic-framework.pdf .

All dollar amounts are in 2019 dollars. Dollar amounts can be put in other year's dollars, but adjustments must be made to all entries (such as all in 2020 dollars).

## Inputs*

*Output based on default assumptions unless alternative input values are specified.

| | Input values | |
|---|---|---|
| | Default | Alternative |
| **Hospital inputs** | | |
| Operating expenses | | |
|   Percent personnel expenses | 55.00% | |
|   Percent non-personnel expenses | 45.00% | 45.00% |
| Staffed beds | 150 | |
| Occupancy rate | 65.50% | |
| Hospital costs per bed day (not charges or paid amount) | $2,596 | |
| | | |
| **Registered Nurse (RN) inputs** | | |
| RN full-time equivalents (FTEs) | 273.54 | |
| Percent of personnel expenses potentially impacted by RN turnover (excludes RN personnel expenses) | 39.78% | |
| RN hourly wage | $38.15 | |
| Benefits as a percentage of cash compensation | 27.15% | |
| RN turnover rate per year | 16.44% | |
| | | |
| **EPIMN training inputs** | | |
| Initial training hours | 1.50 | |
| Refresher training frequency, every X years | 2.00 | |
| Refresher training hours | 0.75 | |
| | | |
| **Training impact assumptions** | | |
| Probability that hospital will be affected by emergency | 2.09% | |
| Avoided percentage-point increase in RN turnover | 2.62 | |
| RN turnover cost-to-salary ratio | 0.68 | |
| | | |
| **Financial assumptions** | | |
| Cost of capital | 5.89% | |

## Output

Training costs
| | |
|---|---|
|   Initial year | $19,906 |
|   Subsequent year | $7,058 |
| Expected yearly gain | $13,275 |

Return of investment (ROI) by year

| Year end | Costs | Gains | Present value (PV) of Cost | Present value (PV) of Gain | Cumulative PV of Cost | Cumulative PV of Gain | Cumulative net gain | Cumulative ROI | Per annum ROI |
|---|---|---|---|---|---|---|---|---|---|
| 0 | $19,906 | | $19,906 | $0 | $19,906 | $0 | ($19,906) | -100.0% | |
| 1 | $7,058 | $13,275 | $6,666 | $12,900 | $26,572 | $12,900 | ($13,671) | -51.4% | -51.4% |
| 2 | $7,058 | $13,275 | $6,295 | $12,182 | $32,866 | $25,083 | ($7,783) | -23.7% | -12.6% |
| 3 | $7,058 | $13,275 | $5,944 | $11,504 | $38,810 | $36,587 | ($2,223) | -5.7% | -1.9% |
| 4 | $7,058 | $13,275 | $5,613 | $10,864 | $44,424 | $47,452 | $3,028 | 6.8% | 1.7% |
| 5 | $7,058 | $13,275 | $5,301 | $10,260 | $49,725 | $57,711 | $7,986 | 16.1% | 3.0% |
| 6 | $7,058 | $13,275 | $5,006 | $9,689 | $54,731 | $67,400 | $12,669 | 23.1% | 3.5% |
| 7 | $7,058 | $13,275 | $4,727 | $9,149 | $59,458 | $76,549 | $17,091 | 28.7% | 3.7% |
| 8 | $7,058 | $13,275 | $4,464 | $8,640 | $63,923 | $85,189 | $21,266 | 33.3% | 3.7% |
| 9 | $7,058 | $13,275 | $4,216 | $8,159 | $68,139 | $93,348 | $25,210 | 37.0% | 3.6% |
| 10 | $7,058 | $13,275 | $3,981 | $7,705 | $72,120 | $101,054 | $28,934 | 40.1% | 3.4% |

**Usage Notes:** For an Excel version of this tool, copy and paste this link into your browser: https://files.asprtracie.hhs.gov/documents/aspr-tracie-epimn-roi-calculator.xlsx. For questions, comments, or assistance with this spreadsheet, contact ASPR TRACIE at asprtracie.hhs.gov or 1-844-5-TRACIE (587-2243).