



How to Use the “EMS Budget Generator”

Updated April 2015

A budget template has been developed utilizing a Microsoft Excel spreadsheet. The Excel spreadsheet is available from the CD or is available on the website: www.ruralhealthworks.org. The latest version of the EMS Budget Generator will be available on the website. There are 13 worksheets included in the Excel Budget Template.

Worksheet #1 shows a basic budget for an EMS. **Worksheet #2** has all the parameters for changing this budget highlighted in light blue. To use this budget, add your EMS data in the light blue fields and the budget will be generated in the first worksheet. *This is the simplest way to build a budget.* This allows you to see the difference if you make any changes in your system; i.e., add additional calls, add a new crew, add an equipment payment etc. It also allows you to leave out the capital expenses and annual capital expenses and just show the annual mortgage payment on the building or the annual equipment loan payment or the annual equipment out of pocket payment.

Worksheet #3 allows you to build your own budget without using the parameters. This allows you to put up to five scenario budgets side by side or several years of budgets side by side.

Worksheet #4 allows you to show your budget versus the actual expenses. The budget amounts go in the first column (light blue cells). The actual expenses by category can be added each month. The worksheet will show the monthly and year to date percent variances. If the actual expenses are entered for the year, the EMS will know if it is on target for the budget or the variance from budget.

The next three worksheets (**Worksheet #5, #6, and #7**) show summaries of annual labor costs for different payment scenarios, different pay rates, and different benefit rates. **Worksheet #5** shows **Labor Summary Table 1** with the annual cost of one crew member working 365 days per year, 24 hours per day, at different regular pay rates plus different benefit rates (10 to 30%) and shows **Labor**

Summary Table 2 with the annual cost of two crew members working 365 days per year, 24 hours per day at different regular pay rates (vary by crew member) plus different benefit rates (10 to 30%).

Worksheet #6 shows **Labor Summary Table 3** with the annual cost of one crew member working a 40-hour week at different regular pay rates plus different benefit rates (10 to 30%) and shows **Labor Summary Table 4** with the annual cost of two crew members working a 40-hour week at different regular pay rates plus different benefit rates (10 to 30%).

Worksheet #7 shows **Labor Summary Table 5** with the annual cost of one crew member working two 24-hour shifts per week (40 hours of regular pay and 8 hours of overtime pay per week) at different regular pay rates plus different benefit rates and overtime pay and shows **Labor Summary Table 6** with the annual cost for two crew members, based on two 24 hour shifts (with 40 hours at regular time plus benefits and 8 hours at overtime pay for each crew member) at different regular pay rates plus benefit rates and overtime pay.

These six tables in **Worksheets #5, #6, and #7** are designed to assist EMS decision-makers with budgeting their labor costs and benefits costs, based on the EMS system’s payment methodology.

Worksheet #8 provides amortization factors for determining the annual payment for building or equipment. The table is provided to determine an annual payment for a capital equipment item, given the interest rate and the years for repayment. For instance, the EMS systems may be considering the purchase of a \$100,000 building. The amount of the building that is financed needs to be known, as well as the interest rate and the years of repayment. Assume the amount of the building to be financed is \$90,000, with an interest rate of 7% and repayment of 30 years. Using the table, go to the interest rate on left and years of repayment across the top and

determine the annual factor, 0.080587. Multiply the amount to be financed, \$90,000, times the factor of 0.080587 to determine the annual payment for the building of \$7,253. The formula is the amount to be financed times the amortization factor (from the table) equals the annual payment.

Worksheet # 9 provides the geographic price cost indices (GPCI's) for 2013. These are utilized to calculate the Medicare reimbursement to use as the base fee per call. In **Worksheet #2 Basic Budget Parameters**, the annual revenue parameters include a methodology to use the GPCI's and base call rates to determine a base fee per call. Choose the GPCI for your geographic area and enter it in the budget. The base call rate for your specific region will also need to be entered; these base call rates vary by region and will need to be determined for your region. The RVU units per type of call are already entered into the worksheet. This methodology can be used to determine revenues, with the formula below.

The formula for calculating the Medicare reimbursement per call is:

$$= (RVU*(.3+(.7*GPCI)))*BASE RATE*1.03$$

This formula is utilized to calculate the average fee per type of call (i.e., basic call non-emergency and emergency, and ALS call non-emergency and emergency. These call fees are then used to calculate the estimated revenues for each type of call. The user must decide the percent of revenues collected and enter into the worksheet.

This is only a tool to determine the base rate per call. The EMS can adjust this to their current base rate per call. The new GPCI's may need to be looked up on the internet.

Worksheet #10 includes nine example budgets to show the changes in the budget of an EMS system as the call volume increases and the level of service changes. **Worksheet #11** includes the parameters to change the data for the nine example budgets. These two are designed to be utilized together. **Example Budget 1** in **Worksheet #10** shows an average of one call per day for an annual total of 365 calls; **Example Budget 2** shows an average of two calls per day for an annual total of 730 calls; these continue with each budget increasing by one

call per day to **Example Budget 9** with nine calls per day for an annual total of 3,285 calls.

There are also some changes in service levels over the nine example budgets. For **Example Budget 1**, volunteer labor is illustrated. For **Example Budgets 2 and 3**, there is one 24/7 crew staffed. For **Example Budgets 4 through 6**, a 40-hour per week day vehicle and day crew is added and system protocols to provide ALS (when personnel are available) were added. For **Example Budgets 7 through 9**, there are two 24/7 crews (eliminating the day vehicle) and system protocols to provide ALS (when personnel are available) were added.

These nine example budgets are to show how costs increase as the call volume increases and how the personnel, vehicle and equipment costs, etc., go up as the call volume increases and the system changes to meet the volume requirements. These example budgets are for illustration only. The expenses and revenues may vary state to state but the spreadsheet is built on parameters or budget assumptions that can be adjusted for these variations. Everything in the budget template can be modified and adjusted to fit any state. All changes can be made in the **Worksheet #11 EXS 1-9 Budget Parameters**.

Worksheet #11 Budget Parameters, illustrates all the budget parameters or budget assumptions for the nine example budgets. These parameters can be modified by filling in the light blue highlighted cells and the numbers will carryover (through linkages) and be included in the final budgets in **Worksheets#10**. In other words, the numbers from the budget parameters from **Worksheet #11** are carried over through linkages into the final budgets in **Worksheet #10**. For instance, go to **Worksheet #11** and change the number of calls for **EX1** from 365 to 1,344. Then go to **Worksheet #10** and the number of calls for **EXI** in the Basic Parameters table will have changed to 1,344. Now go back to the first worksheet and change it back to 365 until you are ready to build your own budgets. **All items in the final budgets in Worksheet #10 have been determined by the budget parameters Worksheet #11 and can be further modified by changing any budget parameter in Worksheet #11.**

The nine budget worksheets can be very useful to show several years of budgets for a system or to illustrate the costs of several different EMS

providers and then show a system with the EMS providers combined. It can also be used to show several variations of budgets for one year.

Worksheets #12 & #13 include a **Side by Side Analysis (#12)** of your current EMS and the **Side by Side Parameters (#13)**. An EMS provider will want to complete a budget for themselves, utilizing the first column of the **Side by Side Parameters in Worksheet #13**. The EMS provider will need to complete the same budget for several of the five budget columns. This provides a tool for the EMS provider to determine the results of changing parameters in their EMS budget.

For example, if the volume of calls is increasing, the adjusted total number of calls can be changed in the second budget column and the EMS Director can see the total increase in costs from the increased call volume. Another example would be increased mileage. If the mileage driven is increasing (i.e., if the local hospital closes, etc.), then the adjusted total miles can be entered in one of the last four columns and the total increase in costs from the increase in mileage will reflect in the budget in the **Side by Side Analysis** budget page. Parameter changes can be considered one at a time or many different parameters can be considered at the same time.

BUDGET CATEGORIES

All the budget worksheets, **Worksheet #1 Basic Budget**, **Worksheet #3 Build Your Own Budget**, **Worksheet #11 EXS 1-9 Budgets** and **Worksheet #12 Side by Side Analysis** include the following categories:

- **BUDGET PARAMETERS** - shows the very basic parameters or assumptions for budget examples; i.e., number of calls, mileage.
- **TOTAL CAPITAL EXPENSES** - illustrates the total capital expenses for the budget examples.
- **ANNUAL CAPITAL EXPENSES** - illustrates the annual capital expenses for the budget examples. The total of annual capital is the amount that could be set aside each year in a capital equipment replacement fund to allow for replacement of capital equipment upon expiration.

- **ANNUAL OPERATING EXPENSES** - shows each of the operating expenses for the budget examples and the total annual operating expenses. Labor is shown for up to two crews and for management. Annual operating expenses also include billing expenses, building expenses and utilities (base station and substations), vehicle expenses, medical supplies, equipment repairs and monthly fees, licensing expenses, office supplies uniform allowances, general liability insurances, training expenses, and a miscellaneous expense. If not using annual capital expenses, the annual equipment or building payments can be shown here.
- **ANALYSIS OF LABOR** - shows the totals for crews and management and for volunteer labor compared to paid labor, and for volunteer and paid labor as a percent of total operating expenses.
- **SUMMARY OF EXPENSES** - shows a summary of labor and other operating expenses, annual capital expenses, and total annual capital and annual operating expenses for the budget examples.
- **SUMMARY OF REVENUES AND BREAKEVEN** - shows the totals for all sources of revenues and the breakeven or loss (revenues less expenses) for the budget examples.
- **EXPENSES AND REVENUES PER CALL** - shows totals and expense per call and revenue per call.
- **FIXED CAPITAL AND LABOR COSTS** - illustrates the totals and shows capital, annual capital, and annual paid labor as percent of operating expenses and percent of capital and operating expenses

All of the budget parameter worksheets, **Worksheet #2 Basic Budget Parameters**, **Worksheet #11 EXS 1-9 Budget Parameters**, and **Worksheet #13 Side by Side Parameters** include the following categories:

- **BUDGET PARAMETERS**
- **TOTAL CAPITAL EXPENSES PARAMETERS**
- **ANNUAL CAPITAL EXPENSES PARAMETERS**

- **ANNUAL OPERATING EXPENSES PARAMETERS**
- **ANNUAL REVENUE PARAMETERS**

Using the EMS Budget Generator (Excel Spreadsheet Template)

There are several ways to use the budget template. The 1st method is to modify the parameters (or budget assumptions) for a Basic Budget. To modify the parameters, go to the Excel spreadsheet to **Worksheet #2 Basic Budget Parameters**. To modify these parameters, change the parameters in all rows highlighted in a light blue. All light blue rows can be updated and the changes will be carried over through linkages to the basic budgets in **Worksheet #1 Basic Budget**. **Worksheet #1 Basic Budget** is “protected” so you can only change it through the parameters in **Worksheet #2**. However, you can “unprotect” **Worksheet #1** at any time if you do not want to use the parameters and the linkages.

The 2nd way to develop a budget is to use **Worksheet #3 Build Your Own Budget**. This worksheet has been provided for you to input your actual or estimated expenses and revenues and “Build Your Own” EMS budget. This spreadsheet is not attached to the budget parameters. This is just a budget format for the EMS systems to add their own data and the categories can be changed to reflect their categories. Anything can be changed or modified in this worksheet. There are no parameters, no links to other worksheets, and no protected cells.

The 3rd way to develop a budget is to use **Worksheets #10 EXS 1-9 Budgets** and **#11 EXS 1-9 Budget Parameters**. **Worksheet #11** is to be used to enter the budget parameters and then the budget or budgets are linked and will automatically create your budgets in **Worksheet #10**. Again, **Worksheet #10**, the final budget worksheet, is protected. **Worksheet #11** is unprotected and provides the highlighted cells to type in your specific parameters. In using the nine examples, choose the Example Budget that most closely resembles your service. For instance, if you have 900 annual calls, choose **Example Budget 2** or **Example Budget 3**. Then modify the parameters in the **Worksheet #11** for either of those two budgets or both. All nine of these budgets can be used;

either for nine years of budgeting (including past years, current year, and/or future years) or for variations of budgets for the current year. The nine budgets can also be used to consider consolidation of EMS services. All the EMS service budgets can be entered and totaled and, then, a new combined budget can be prepared.

In the budget parameters, there are a several rows that have bright yellow and green highlights in the budget parameter worksheets. These rows require that you decide amongst different options. The option that you choose should have the total costs of that option placed on the bright yellow total line. For instance, look at **Worksheet #11** under **ANNUAL OPERATING EXPENSES PARAMETERS**, there is a section on Billing. There are three options to choose for billing:

- In-house billing
- Outsource billing - Fee per Call
- Outsource billing - % of Collections

The light blue highlights indicate that you can change any of these parameters. For instance, you can change the fee per call for outsource billing or you can change the percent of collections on the next section of outsource billing. The green highlights indicate the totals for the three billing methods with different costs for each method. Once you have chosen the billing method for your EMS system, the total for that option should be placed on the Total Billing Cost line, which is in bright yellow. This line is linked to the final budget table and will show on the final budget table.

The template is available on CD and will be placed on the website:

www.ruralhealthworks.org

Remember that you can always download another copy or the latest update of the spreadsheet at any time. Also, copies of the spreadsheets are included in **Appendix D**. If you need to see what was included in the original spreadsheet, you can review the data in **Appendix D**.

A Closer Look at the Budget Parameters

Looking at **Worksheet #2 Basic Budget Parameters**, the first section includes the **BUDGET PARAMETERS**. These include the

level of care, protocols, and total annual number of calls. Any of the LIGHT BLUE CELLS can be changed. The average number of calls per day is a calculation and does not need to be changed.

The next parameter is the percent of calls that are billable. The number of billable calls is then calculated.

The calls need to be divided by level of service provided; i.e. the percent of calls that are considered basic level, basic emergency level, ALS level, and ALS emergency level. The number of billable calls is then calculated from the percents provided.

Only the blue highlighted cells should be changed in the worksheet if you want the template to build your budget for you.

The total miles driven by your EMS system can be entered and the average miles per call will be calculated. The percent of the total miles that are billable can be entered and the total of the billable miles will be calculated. The percent of miles drive by vehicle type should be entered for each vehicle and then the number of miles driven by vehicle type will be calculated. There are some CHECKS built into the parameters worksheet to be sure that your numbers are accurate.

The next section of this worksheet is the **TOTAL CAPITAL EXPENSES PARAMETERS**. All categories must be entered into the parameters spreadsheet. These parameters will be utilized to calculate the annual capital expenses. If you choose to not enter any total capital expense parameters, just leave the light blue cells blank. Other categories can be added, if needed.

The **ANNUAL CAPITAL EXPENSES PARAMETERS** will need to have the blue highlighted cells completed so that the annual capital costs will be calculated. If you chose to not list the total capital expense parameters above, there is no need to enter anything under the annual capital expenses parameters here.

The building category has the bright yellow and green highlights to indicate that there are options for you to choose from. For instance, for the base building, you can enter your monthly payment for your building or you can use the **Worksheet # 8 Amortization Factors** to estimate the annual

payment for the base building, based on the amount financed, the interest rate, and the years of repayment. Once you have chosen which method to use, the totals must be placed on the bright yellow line, Total Base Building Annual Payment. The same method should be used for the Substation Building.

Remember that as you change the budget parameters, the final budget in **Worksheet #1** will be completed and available for you to print. To check your work, look to see that the parameters you entered are carrying forward into the final budget in **Worksheet #1**.

Other categories can be added, as needed.

The **ANNUAL OPERATING EXPENSES PARAMETERS** is the largest category of parameters and the most detail. All the annual operating expenses are included here. One of the largest expenses of an EMS system is the labor. The budget template includes detailed information on labor, including categories to enter volunteer labor and paid labor. EMS systems should be able to quantify the amount of volunteer labor that goes into their EMS system. The labor information is detailed for each crew member and includes only two crews to be rural specific. You could combine information for several crews if necessary. Detailed labor summary totals are provided.

Management costs are separate from crew labor. There is provision for full-time management or part-time management. These can also be quantified into volunteer versus paid later in the worksheet. Detailed volunteer labor is provided with summary of paid compared to volunteer labor.

The **ANNUAL OPERATING EXPENSES PARAMETERS** includes the following categories:

- Billing (In-house or Outsourcing fee per call or Outsourcing % of collections)
- Building Expenses for Base Station
- Building Expenses for Substation
- Utilities for Base Station
- Utilities for Substation
- Vehicle Expenses (insurance, licenses, oil, filter & lubrication, tires, maintenance/repairs/inspections, gas)
- Medical Supplies

- Equipment Repairs/Monthly Fees
- Licensing Expenses for the service and the licensed personnel
- Office Supplies
- Uniform Allowance
- General Liability Insurance
- Training Expense
- Miscellaneous

Other categories can be added, as needed.

The final category of the budget parameters is the **ANNUAL REVENUE PARAMETERS**. To determine revenues, the Medicare reimbursement rate is calculated as the base fee per call. The 2013 Geographic Price Cost Indices are provided in the worksheet, “10 Medicare GPCIs.” Choose the GPCI for your geographic area and enter it. The base call rate for your specific region will also need to be entered. The RVU units per type of call are already entered into the worksheet.

The formula for calculating the Medicare reimbursement per call is:

$$= (RVU * (.3 + (.7 * GPCI))) * BASE RATE * 1.03$$

This formula is utilized to calculate the average fee per type of call (i.e., basic call non-emergency and emergency and ALS call non-emergency and emergency). These call fees are then used to calculate the estimated revenues for each type of call. The user must decide the percent of revenues collected and enter into the worksheet.

Mileage rates are based on Medicare rates; \$7.50 for ≤ 17 miles and \$5.00 for > 17 miles. There is a rural adjustment for mileage from Medicare and it is 1.03. This may be subject to change in the future. Applying the 1.03 the mileage rates utilizing to determine mileage revenues is:

Example Nine Budgets – Budgeting As the System Advances

Worksheets #10 and **#11** illustrate the nine budget examples. These two worksheets function exactly as **Worksheets #1** and **#2** for the basic budget. The only difference is that there are nine budgets, not just one budget. These provide an illustration of how the capital expenses, annual capital expenses, and labor expenses compare with the increase in

volume and level of services provided. At the bottom of **Worksheet #10**, the total capital expenses, the annual capital expenses, and annual paid labor expenses are shown as a percent of paid operating expenses and as a percent of annual capital and paid operating expenses.

Available are capital expenses as a percent of operating expenses and the nine budgets show how this ratio changes as a system grows and changes. The capital expenses as a percent of operating expenses goes down as the volume of calls goes up. Also available are capital expenses as a percent of annual capital and paid operating expenses. This shows the overall downward trend as volume increases, with upward surges when the capital expenditures are increased. The next category to look at is annual capital expenses as a percent of paid operating expenses. These trends follow the increases in capital needed to add a day vehicle and to add a second 24/7 crew. The annual capital expenses as a percent of annual capital and paid operating expenses follows the same trend.

The next category is the annual labor expense as a percent of operating expenses. The volunteer labor categories have lower percents and as the nine budgets show more paid labor, the percents are higher.

The same trends apply to labor expenses as a percent of annual capital and operating expenses. The first three examples are low due to the amount of volunteer labor with the last six examples at a higher level due to more labor expenses

Example Side by Side Analysis – Anticipating YOUR EMS System Changes

Worksheets #12 and **#13** illustrates the EMS Side by Side Budget Analysis. The EMS provider will need to add their actual budget to this sheet in the five available budget columns in the **Worksheet #13 Side by Side Parameters**.

Once the actual budget has been added in (Call if need assistance on this), then changes in the parameters can be looked at in the last four budget columns. The first column will be the current budget for the EMS. The EMS Director can look at the budget changes as different budget parameters are entered.

As the system changes, this tool provides the EMS Director the budget totals to plan for these changes and anticipate financial needs of the EMS system.

Regional Budgeting Alternatives

For current EMS systems, the methodology from above for analyzing costs and revenues could be utilized to determine if any of the following regional budgeting alternatives could be beneficial. Regional budgeting is showing regional alternatives to reduce expenses for the EMS system in total. Regional budgeting includes alternative funding mechanisms, alternative organizational options, and more efficient and effective modes of operation, including those described below:

- Purchasing options are expanded with opportunities to receive reduced prices and/or discounts on medical supplies, ambulance vehicles, etc.
- Combine billing and collections with other EMS systems
- Combine medical direction with other EMS systems
- Combine administrative and/or billing staff with other EMS systems
- Combined mechanic, maintenance, and/or repair activities with other EMS systems
- Develop Certified Emergency Medical Response Agencies (EMRAs)
- Regional dispatch and communication mechanisms
- Determine appropriate staffing patterns
- Determine appropriate user fees per call
- All-inclusive EMS system; combining two or more EMS providers

The regional budgeting considerations presented are not considered to be the only possible methods for providing more efficient and effective emergency medical services. These are presented as ideas for the EMS providers to consider. EMS providers may be innovative and develop their own ideas.

Other thoughts on regional budget considerations include location of stations and substations to maximize efficiency, review detailed call data for determination of stations and substations, review medical condition data in determining the level of care to be provided, consider the level of care that can be provided in conjunction with EMRAs to assist with coverage in remote or isolated areas, and consider seasonal trends in call frequencies and staff efficiently for coverage.

Regional budgeting alternatives are provided as ideas on developing efficiencies to maintain, sustain, and retain emergency medical services for the future.

Available Budgeting Assistance

The budget analyses, utilizing the budget template, can be provided for a single EMS provider or for multiple EMS providers considering regional budgeting alternatives. The budget spreadsheets are designed to be used for many different scenarios (the nine increasing budgets and the side by side budget analysis).

For assistance in utilizing the “EMS Budget Generator,” contact:

Cheryl F. St. Clair, Associate Director
or
Fred Eilrich, Program Analyst

National Center for Rural Health Works
OSU, OK Cooperative Extension Service
Dept of Ag Econ
513 Ag Hall
Stillwater, OK 74078
Phone: 405-744-9824 or 9814 or 9823
www.ruralhealthworks.org

