



Excel Functions Every Excel User Should Know, Pt. 4

By Nate Moore, CPA, MBA, FACMPE

Welcome back to the *RCM Advisor* series covering basic Excel functions to save you time and frustration when working with spreadsheets. The January/February 2012 issue of *Billing* introduced the IF function. The basic syntax of an IF function is =IF (condition, value if condition is true, value if condition is false). The condition is a logical test that Excel can evaluate, and the IF function returns the first value if the condition is true and the second value if the condition is false. For example, the formula =IF (A1<128700, 0.062, 0) returns 0.062 if cell A1 is less than 128,700, and 0 if cell A1 is greater than or equal to 128,700. IF is a very powerful, useful function. In this article, we will take IF a step further by introducing the SUMIF and SUMIFS functions.

SUMIF

The IF function returns values if a logical test is true or false. The SUMIF function applies a logical test to a series of a cells and sums the cells where the logical test is true. SUMIF only considers cells where the logical test is true. Unlike the IF function, there is no “false” component to a SUMIF formula. The syntax for SUMIF is =SUMIF (range, criteria, sum range). Range is the series of cells you want to test. Criteria is the logical test to apply to the range. Any expression Excel can evaluate as true or false can be used as the criteria. Sum range is the series of cells you want to add together if the logical test is true.

Consider the example in **Figure 1**. Column A has a list of payers, and column B has a list of primary insurance balances. SUMIF can sum all of the Medicare balances with a formula like =SUMIF (A3:A18, “Medicare”, B3:B18). The SUMIF function scans cells A3 to A18. If the value in those cells is Medicare, then SUMIF sums the corresponding cell in column B. Note that Medicare must be in quotes for the formula to work. Without quotes, Excel will look for a function called Medicare and give you an error message.

FIGURE 1

	A	B
2	A/R Primary Insurance	Balance
3	Medicare	\$ 1,000
4	BCBS	\$ 4,300
5	Medicaid	\$ 3,300
6	UHC	\$ 2,600
7	Medicare	\$ 4,300
8	Medicare	\$ 2,000
9	AETNA	\$ 3,600
10	CIGNA	\$ 1,300
11	Tricare	\$ 3,900
12	AETNA	\$ 2,600
13	Tricare	\$ 600
14	Medicaid	\$ 4,500
15	BCBS	\$ 700
16	BCBS	\$ 3,300
17	Medicare	\$ 2,000
18	CIGNA	\$ 1,200

You can make the SUMIF formula more flexible by replacing the word Medicare with a reference to a cell instead. For example, the formula =SUMIF (A3:A18, A20, B3:B18) uses the value in cell A20 instead of the text “Medicare.” The text in cell A20 does not need to be surrounded by quotation marks. Using a cell reference instead of hard coding the word “Medicare” makes your spreadsheet more flexible and easier for others to use. Rather than having to edit the formula to change from Medicare to another payer, users can simply change the payer in cell A20. Anything you can do to keep end users, especially end users who are not

Excel-savvy, from editing your formulas will keep your spreadsheets more accurate. An example referencing cell A20 is shown in cell B20 in **Figure 2**.

SUMIFS

SUMIF is great if you only have one criteria. What if you have more than one criteria you need to evaluate? The SUMIFS function is similar to SUMIF, but with up to 127 criteria. Do not try 127 criteria at home! Anything more than a few criteria will make your formula unwieldy and hard to manage over time. If you need that many criteria, consider pivot tables, as discussed below. The syntax for SUMIFS is a little different than SUMIF. The sum range is listed first, followed by the first criteria range, the first criteria, the second criteria range, the second criteria, and so on.

Consider the sample data in **Figure 3**. Column A has a

provider. Column B has the practice location. Column C counts the number of appointments for that provider at that location each day. **Figure 4** has an example of how a SUMIFS formula would calculate the number of appointments for Dr. Hernandez at the North location. The formula in cell H3 is =SUMIFS (C3:C24, A3:A24, F3, B3:B24, G3). The sum range is cells C3 to C24. The first criteria range is cells A3 to A24, and the criteria for that range is Hernandez, stored in cell F3. The second criteria range is cells B3 to B24, with the criteria of North, stored in cell G3.

SUMIF, SUMIFS, and Pivot Tables

The structure of the formula is easy for staff to change the provider in cell F3 or the location in cell G3 to sum the number of appointments by provider by location without having to edit any formulas or understand the SUMIFS syntax.

FIGURE 2

	A	B
2	A/R Primary Insurance	Balance
3	Medicare	\$ 1,000
4	BCBS	\$ 4,300
5	Medicaid	\$ 3,300
6	UHC	\$ 2,600
7	Medicare	\$ 4,300
8	Medicare	\$ 2,000
9	AETNA	\$ 3,600
10	CIGNA	\$ 1,300
11	Tricare	\$ 3,900
12	AETNA	\$ 2,600
13	Tricare	\$ 600
14	Medicaid	\$ 4,500
15	BCBS	\$ 700
16	BCBS	\$ 3,300
17	Medicare	\$ 2,000
18	CIGNA	\$ 1,200
19		
20	Medicare	\$ 9,300

FIGURE 3

	A	B	C
1			
2	Provider	Location	Appointments
3	Anderson	North	28
4	Taylor	South	17
5	Thomas	North	22
6	Hernandez	North	26
7	Taylor	South	20
8	Anderson	South	29
9	Anderson	North	14
10	Hernandez	South	29
11	Hernandez	South	23
12	Hernandez	North	18
13	Thomas	South	24
14	Hernandez	South	24
15	Anderson	South	22
16	Thomas	North	13
17	Taylor	North	15
18	Thomas	South	20
19	Taylor	South	26
20	Hernandez	North	25
21	Thomas	South	20
22	Taylor	South	18
23	Thomas	South	14
24	Thomas	South	12

The formula can also be replicated in other cells to check multiple provider/location combinations. SUMIF and SUMIFS work well for a few sums. If you need have many provider/location combinations, pivot tables are a fantastic way to sum multiple combinations of data. Pivot tables also make it easy to have multiple filters, like summing appointments for Hernandez, Taylor, and Thomas.

Pivot tables are the topic of my July/August 2011 article in *Billing*, available at www.mooreolutionsinc.com/articles with a wide variety of other articles on leveraging data in medical practices. Pivot tables provide the ability to sum, count, and average large groups of data quickly and easily. There are options to sort, filter, group, and pivot data to see exactly what you need to see. Pivot tables also allow users to drill down to see the data underlying the pivot table to help follow up on old accounts receivable, see which providers have a certain appointment, and much more.

Watch for more Excel functions, tips, and tricks in the next issue of *RCM Advisor*. For dozens of free articles and hundreds of free videos on using Excel in a medical practice, especially pivot tables, please visit www.mooreolutionsinc.com ■

Nate Moore, CPA, MBA, FACMPE writes custom SQL Server code to mine practice management data for analysis in Excel, on web pages, and via email. Nate's second book, Better Data, Better Decisions – The SQL: Business Intelligence for Medical Practices, was just published by MGMA. His free Excel videos have been viewed over 2 million times and are available at mooreolutionsinc.com.

FIGURE 4

	A	B	C	D
1				
2	Provider	Location	Appointments	
3	Anderson	North	28	
4	Taylor	South	17	
5	Thomas	North	22	
6	Hernandez	North	26	
7	Taylor	South	20	
8	Anderson	South	29	
9	Anderson	North	14	
10	Hernandez	South	29	
11	Hernandez	South	23	
12	Hernandez	North	18	
13	Thomas	South	24	
14	Hernandez	South	24	
15	Anderson	South	22	
16	Thomas	North	13	
17	Taylor	North	15	
18	Thomas	South	20	
19	Taylor	South	26	
20	Hernandez	North	25	
21	Thomas	South	20	
22	Taylor	South	18	
23	Thomas	South	14	
24	Thomas	South	12	

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