



Excel Functions Every Excel User Should Know, Pt. 1

By Nate Moore, CPA, MBA, FACMPE

This issue of *RCM Advisor* introduces a new series devoted to basic Microsoft Excel functions every Excel user should know. Back in 2013, I wrote an article about using SUM. SUM is a great place to start, but there are many other functions that can add power, flexibility, and accuracy to your spreadsheets. The first function to consider is COUNT.

COUNT and COUNTA

There are two versions of counting functions in Excel, COUNT and COUNTA. The COUNT function only counts numbers, while COUNTA counts cells that are not empty. Consider the example of patients and BMI measurements in Figure 1, especially focusing on the formulas in cells B17:C18. The formulas in row 17 use the COUNT function. The formula in cell B17 is =COUNT(B2:B15) and the formula in cell C17 is =COUNT(C2:C15). Since column B has patient names and the COUNT function only counts numbers, the result in cell B17 is zero. Column C has BMI measurements, so the COUNT function counts 14 numbers. The formulas in row

18 use the COUNTA function, which counts all non-empty cells, so both C17 and C18 are 14.

One way to approach the difference between COUNT and COUNTA is to always use COUNTA to ensure that your formulas count everything whether the data is expressed as numbers, text, or something else. Another approach is to use COUNT when you want to be sure to only count numbers. For example, if your data may have N/A or other non-numeric data, COUNT will only count numbers. Mix and match these approaches to get the counting results you need.

AVERAGE

Averaging data is easy using the AVERAGE function, as shown in Figure 2. Figure 2 has the same data as Figure 1 has. The difference is that the formula in cell B17 is =AVERAGE(B2:B15). The average BMI for this fictional group of patients is 25.1.

Now consider the examples in Figure 3. Focus on cells E4:E6 first. Cells E4 and E6 are numbers, but cell E5 is not. The

FIGURE 1

	A	B	C
1		Patient	BMI
2		Gomez, Leonard	27.1
3		Welch, Margie	25.3
4		Hansen, Elias	29.6
5		Maxwell, Harold	22.8
6		Peters, Janie	26.5
7		Wood, Marshall	24.9
8		Flores, Kelvin	25.3
9		Craig, Rochelle	25.0
10		Marquez, Christian	25.3
11		King, Terry	20.8
12		Davidson, Irvin	21.0
13		Peters, Julius	21.7
14		Graves, Donnie	28.4
15		Hicks, Lana	27.2
16			
17	COUNT	0	14
18	COUNTA	14	14

FIGURE 2

	A	B
1	Patient	BMI
2	Gomez, Leonard	27.1
3	Welch, Margie	25.3
4	Hansen, Elias	29.6
5	Maxwell, Harold	22.8
6	Peters, Janie	26.5
7	Wood, Marshall	24.9
8	Flores, Kelvin	25.3
9	Craig, Rochelle	25.0
10	Marquez, Christian	25.3
11	King, Terry	20.8
12	Davidson, Irvin	21.0
13	Peters, Julius	21.7
14	Graves, Donnie	28.4
15	Hicks, Lana	27.2
16		
17	Average	25.1

FIGURE 3

	C	D	E	F	G	H
1						
2		Average with text			Average with blanks	
3						
4			10			10
5			None			
6			8			8
7						
8			9			9

FIGURE 4

	A	B
1	Patient	BMI
2	Gomez, Leonard	27.1
3	Welch, Margie	25.3
4	Hansen, Elias	29.6
5	Maxwell, Harold	22.8
6	Peters, Janie	26.5
7	Wood, Marshall	24.9
8	Flores, Kelvin	25.3
9	Craig, Rochelle	25.0
10	Marquez, Christian	25.3
11	King, Terry	20.8
12	Davidson, Irvin	21.0
13	Peters, Julius	21.7
14	Graves, Donnie	28.4
15	Hicks, Lana	27.2
16		
17		20.8

FIGURE 5

	A	B
1	Patient	BMI
2	Gomez, Leonard	27.1
3	Welch, Margie	25.3
4	Hansen, Elias	29.6
5	Maxwell, Harold	22.8
6	Peters, Janie	26.5
7	Wood, Marshall	24.9
8	Flores, Kelvin	25.3
9	Craig, Rochelle	25.0
10	Marquez, Christian	25.3
11	King, Terry	20.8
12	Davidson, Irvin	21.0
13	Peters, Julius	21.7
14	Graves, Donnie	28.4
15	Hicks, Lana	27.2
16		
17		29.6

formula in cell E8 is =AVERAGE(E4:E6). The AVERAGE function ignores non-numeric cells, so the average is calculated based on 10 and 8, giving a result of 9 in cell E8.

Move to cells H4:H6. In this example, cell H5 is blank. The formula in cell H8 is =AVERAGE(H4:H6). The AVERAGE function also ignores blank cells, so the average is again calculated based on 10 and 8, giving a result of 9 in cell H8.

Use the AVERAGE function to give context to your numbers. For example, a dashboard showing 24 new patients last month may be interesting. If you show next to the 24 that the average number of new patients in the past 12 months is six or 40, you have given your dashboard readers a much better way to understand the 24 new patients in context of the past 12 months.

MIN and MAX

Figure 4 has the same patient BMI data, but the formula in cell B17 is =MIN(B2:B15). The MIN formula returns the lowest numeric value from a range. To get the maximum value in a range of cells instead, use the MAX function. Figure 5 has the same data as Figure 4, only with a MAX function in the formula instead of the MIN function.

The MIN and MAX functions can also provide context to dashboard numbers. To continue the same example from the AVERAGE section, a dashboard could show that there

were 24 new patients last month. The dashboard could then show that the lowest number of new patients in a month during the past 12 months is six patients. The maximum number of new patients in a month during the past 12 months could be 40 patients. Again, providing information like MIN and MAX can make your dashboard much more useful to the physicians and administrators you serve.

Figures 4 and 5 use Conditional Formatting in the MIN and MAX examples to make it easier to identify the minimum and maximum values. For more information about conditional formatting, please see the series of *Billing* articles from November – December 2012 through May – June 2013. Conditional formatting is another powerful feature to make dashboards easier to understand.

This article just scratches the surface of helpful Excel functions. Watch for more functions in the next issue of *RCM Advisor*. For dozens of free articles and hundreds of free videos on using Excel in a medical practice, please visit www.mooresolutionsinc.com ■

Nate Moore, CPA, MBA, FACMPE writes custom SQL Server code to mine practice management data for analysis in Excel, web pages, and via email. Nate's first book, *Better Data, Better Decisions: Using Business Intelligence in the Medical Practice*, written with Mona Reimers, is an MGMA bestseller. His free Excel Videos have been viewed over 2 million times and are available at mooresolutionsinc.com. Like PivotTableGuy on Facebook or follow PivotTableGuy on Twitter to be notified each time an Excel Video is released.

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