Using Microsoft Excel's® Pivot Table Feature to Turn Medical Billing Data into Actionable Practice Knowledge

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Anyone who has ever entered a claim in a medical billing software package knows that it takes a lot of information from a variety of sources to file a clean claim. Most practice management systems store all of that information, but out of necessity only offer a limited number of canned reports. Because of their unique role, medical billing offices accumulate a tremendous amount of valuable data that could really help physicians manage their practices. At the same time, medical billers need a way to differentiate themselves and add value by reporting that practice-changing information back to the doctors they serve. The challenge is finding an easy, cost-effective way of analyzing that data.

If you can download your practice management data to Microsoft Excel®, you should become familiar with a powerful Excel feature called the Pivot Table. (If you can't download your practice management software data to Excel, you should become familiar with a software package that can!). Pivot Tables are interactive tools that can help a medical billing office turn billing data into actionable knowledge for its physician practices. Pivot Tables allow users to easily sort, filter, and manipulate large amounts of data in a variety of ways and have been available in Excel for years. This article uses sample data to demonstrate basic Pivot Table features using Excel 2010.

What is a Pivot Table?

Figure 1 shows a basic Pivot Table analyzing 2,541 new patients by year, by rendering physician. You'll see that we can also categorize the new patients by the month of the visit, the referring physician, the diagnosis code, the primary insurance, or the clinic location.

Notice how the Pivot Table automatically subtotals the 2,541 patients by year, by rendering physician, and by both year and rendering physician. For example, Dr. Johann saw 161 new patients in 2009, 148 in 2010, and 175 in 2011, for a total of 484 patients. Pivot Tables are a great way to spot trends.

FIGURE 1

Subtotals

	A	B	C	D	E
1	Month	(All)			
2	Referring Physician	(All)			
3	Dx	(All)			
4	Insurance	(All)			
5	Location	(All)			
6					
7	**Count of Patient**	**Years**			
8	**Doctor**	**2009**	**2010**	**2011**	**Grand Total**
9	Dr. George	141	158	129	428
10	Dr. Johann	161	148	175	484
11	Dr. Ludwig	258	249	239	746
12	Dr. Peter	178	171	188	537
13	Dr. Wolfgang	113	115	118	346
14	**Grand Total**	**851**	**841**	**849**	**2,541**

Sorting and Filtering

Once you've spotted a trend, Pivot Tables can help you understand the trend as well. Figure 2 shows the same Pivot Table with three changes:

1. We've moved the doctor field to the Filter Area and dragged the location field to the Pivot Table.
2. We've filtered the data to only show Dr. Johann (note that Excel shows Dr. Johann next to doctor in the Filter Area above the Pivot Table).
3. We've sorted the data so that the largest location over the past three years is on top.

FIGURE 2

	A	B	C	D	E
1					
2	Month	(All)			
3	Referring Physician	(All)			
4	Dx	(All)			
5	Doctor	Dr. Johann			
6	Insurance	(All)			
7					
8	**Count of Patient**	**Years**			
9	**Location**	**2009**	**2010**	**2011**	**Grand Total**
10	Central	78	56	77	211
11	South	42	46	49	137
12	North	24	25	28	77
13	West	9	18	12	39
14	East	8	3	9	20
15	**Grand Total**	**161**	**148**	**175**	**484**

Now you can see that most of the new patients Dr. Johann saw in 2011 came from the Central location (from 56 in 2010 to 77 in 2011) and that patients from the East location tripled in 2011. It is easy to sort from A to Z or from Z to A in Pivot Tables, and you can manually sort the data as well. Excel lets you filter by manually choosing data by the category label (all doctors whose names start with D), by values (all locations with more than 100 patients), or by the top x% (top 20%).

Pivoting Data

It's as easy as dragging and dropping to move rows to columns or columns to rows in a Pivot Table. In Figure 3 we:

1. Dragged Location to the Filter Area and selected Central.
2. Dragged Years from columns to rows.
3. Dragged Insurance from rows to columns.

Now you can see that for Dr. Johann in the Central location, Medicare and commercial insurances were almost equal in

FIGURE 3

	A	B	C	D
1				
2	Location	Central		
3	Doctor	Dr. Johann		
4	Referring Physician	(All)		
5	Month	(All)		
6	Dx	(All)		
7				
8	Count of Patient	Insurance		
9	Years	Commercial	Medicare	Grand Total
10	2009	39	39	78
11	2010	29	27	56
12	2011	42	35	77
13	Grand Total	110	101	211

2010, but there are several more new commercial insurance patients in 2011.

Grouping Data

Excel also makes it easy to group data. In Figure 4, we grouped the referring physicians and added that data to the Pivot Table. Now you can see both referring physicians and years in the rows and primary insurance in the columns.

Now the Pivot Table tells you that for Dr. Johann in the Central location, the referring physicians in Group 1 sent 13 more commercial patients in 2011 than they referred in 2010, while referring the same number of Medicare patients. The Group 2 referring physicians did just the opposite. They referred the same number of commercial patients in 2011 as they did in 2010, but also referred 8 more Medicare patients. We could continue to refine our analysis to see which referring physicians are in Groups 1 and 2, which diagnosis codes were different

FIGURE 4

	A	B	C	D	E
1					
2	Location	Central			
3	Doctor	Dr. Johann			
4	Month	(All)			
5	Referring Physician	(All)			
6	Dx	(All)			
7					
8	Count of Patient		Insurance		
9	Referring Physician Gr Years		Commercial	Medicare	Grand Total
10	Group1				
11		2009	21	19	40
12		2010	17	18	35
13		2011	30	18	48
14	Group2				
15		2009	18	20	38
16		2010	12	9	21
17		2011	12	17	29
18	Grand Total		110	101	211

between Groups 1 and 2, if the change from 2010 to 2011 was seasonal, and much, much more. By understanding new patient trends, you can provide critical advice for doctors trying to market and grow their practices.

But Wait, There's More!

Pivot Tables can quickly chart your data and the chart will update as you filter and pivot the data. You can double-click on any value in the Pivot Table and Excel will open a new tab with all of the detail that makes up the value you double-clicked. You can also put formulas, percentages, and other calculations in Pivot Tables. You can analyze accounts receivable, collections, billed charges, contractual reimbursement, E&M coding levels, and much more using Excel Pivot Tables.

Conclusion

Medical billing companies have access to a tremendous amount of data that can dramatically improve medical practices. Excel has a variety of very powerful, flexible tools to understand that data. To get started, there are over 160 free videos on how to use Pivot Tables and other Excel features with medical practice data at mooresolutionsinc.com. Proactive HBMA members can differentiate themselves in a competitive marketplace by providing Pivot Table data to their physicians. ∎

Nate Moore, CPA, MBA, CMPE is the president of Moore Solutions, Inc., a company dedicated to using Excel in medical practices to make better decisions by turning clinic numbers into actionable knowledge. Nate speaks to and consults with medical practice managers around the country about using Excel in their practices. His presentations consistently receive top marks as powerful, entertaining tools that can be used in the clinic immediately. Nate creates a series of powerful Excel videos at mooresolutionsinc.com, demonstrating how to use Excel in a medical practice. These videos have been viewed thousands of times by practice managers across America.