How to Use Excel PivotTables to Analyze Child Welfare Data

What's a PivotTable and how can it benefit me?

PivotTables provide a means to visually organize and present data in an Excel Spreadsheet. PivotTables allow you to quickly:

- **Summarize numbers**, such as the total number of Access Reports a worker has completed;
- **Sort and filter data,** which allow you to hide or display only portions of a dataset. For example, perhaps you want to count the total number of CPS Access Reports a worker has completed and exclude Service Reports. You can add these filters within the PivotTable.
- **Experiment with various layouts and variables.** PivotTables allow you to swap in/out variables to allow for a quick analysis of your dataset.

PivotTables allow you to quickly and visually see data by variables you choose. This is helpful for when you want to view data that is not currently available in a dashboard or summary page of an eWReport.

## What does a PivotTable look like?

The following pages describe how to create the PivotTable seen below. This PivotTable answers the following question posed by a Child Welfare Supervisor: Of the Access Reports completed in the last month:

1) Were any Access Reports not screened within the required 24-hour time period?
2) Of those not screened timely, how many were 'urgent' reports, which this supervisor defines as 'same day' or 'within 24 hour' response time;
3) What is the information above, by worker?

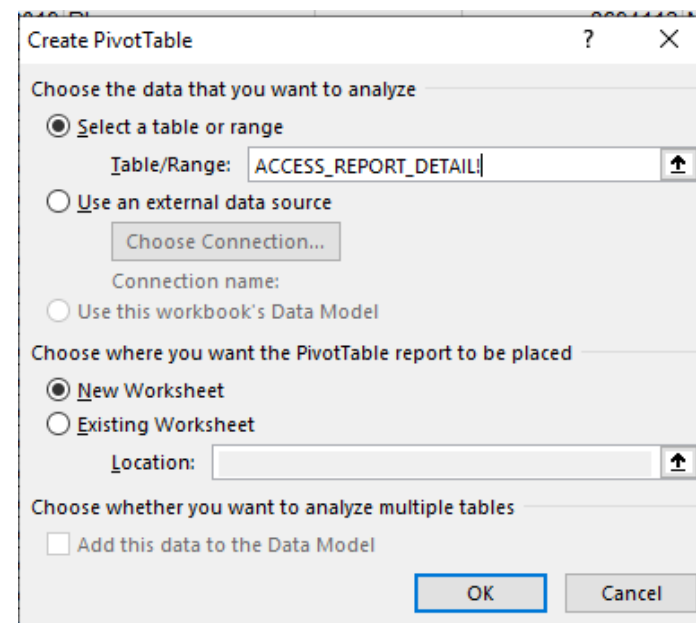| Count of REPORT_ID		RESP_TIME			
SCREENED_WITHIN_24_HRS	WORKER_NAME	Same Day	Within 24 - 48 Hours	Within 5 business days	Grand Total
N	Worker: Angela Adams		1		1
	Worker: Bradley Bufford			1	1
	Worker: Caitlin Courtney				0
	Worker: Dana Daniels				0
	Worker: Emily Elliott				0
	Worker: Felicity Fredericks	3	1		4
Y	Worker: Angela Adams	4	6	42	52
	Worker: Bradley Bufford	4	1	34	39
	Worker: Caitlin Courtney		1	14	15
	Worker: Dana Daniels	3	1	27	31
	Worker: Emily Elliott		2	2	4
	Worker: Felicity Fredericks	23	11	39	73
Grand Total		37	24	159	220

Making a PivotTable

To create an Excel PivotTable, open the spreadsheet that you want to analyze. Go to the Menu Bar at the top of the Excel Spreadsheet and click on the 'Insert' tab (third option from the left). Choose "PivotTable.
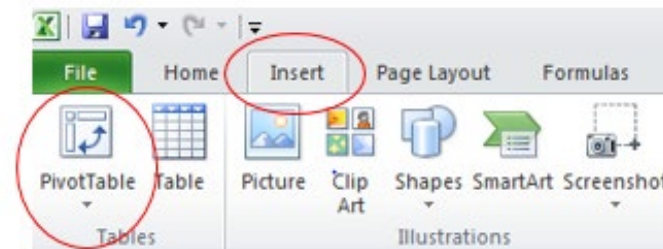
Choose the data to analyze and where the PivotTable should be located:

A 'Create PivotTable' window will appear and will prompt you to select the data you want to analyze. Excel will suggest what data it thinks you want to analyze, and the selection will have a box of 'marching ants' lines around it. Review the selection to decide if it is the correct dataset, or if you need to revise it.

The 'Create PivotTable' window will also ask you where you would like the PivotTable placed. You may either place the table in a new worksheet, or in your existing worksheet. Most choose to place it in a new worksheet (the default option). Once you have selected your data and its location, click 'Ok'.

Creating the PivotTable

A blank PivotTable will then appear as seen to the right, with prompts for the user to drop fields into the row, column, filter, and values section. The fields that you may select from are in the 'PivotTable Fields' window.

Create the PivotTable by clicking and dragging the field directly into the table itself, or into the squares below the list. The squares are defined as:

- The '**Rows'** and '**Columns'** area are where you put labels for your data.

- The '**Filters'** area allows the option of summarizing data items by only showing data related to a specific category or classification.

- The '**Values'** area is where the data is displayed. It quantifies the variable of your data question.

If you need to revise your selection and have closed the 'PivotTable Fields' window, the 'Field List' may be accessed in the following ribbon:

Child Welfare Example: Determining overdue CPS Access Reports, by Urgent Response Time, by Worker

In the example PivotTable on Page 1, the child welfare supervisor is interested in learning:
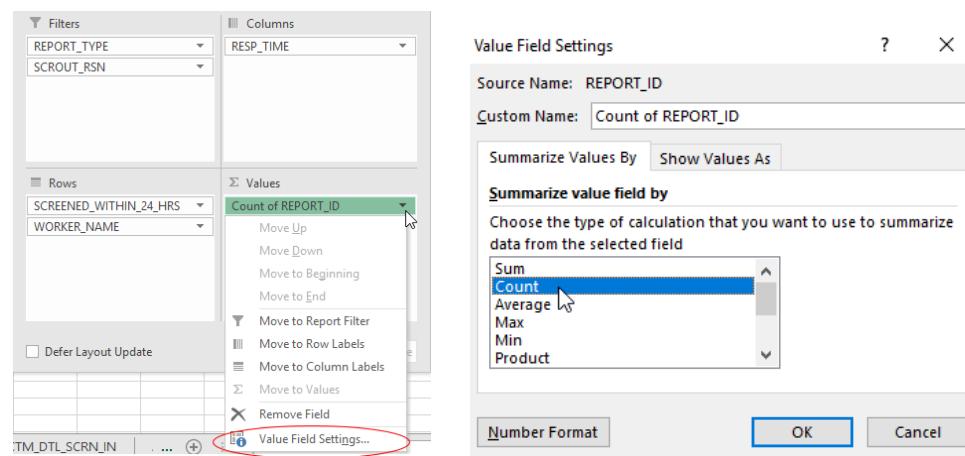
1) If any CPS Access Reports were not screened within 24 hours; and

2) Of those CPS Access Reports not screened within 24 hours, how many were 'urgent' reports with she defines as 'same day' or 'within 24-48 hour' response times; and

3) Review the information above by worker to see if additional supervision is needed.

To perform this analysis, please use the DIS Excel Workbook, and the ACCESS_RPT_PIVOT_TABLE_DATA tab. To answer the questions above, complete the following steps:

1) **Rows:** Select and drag the '**SCREENED_WITHIN_24_HRS'** field into the 'Rows' box.

    This provides a Yes/No answer to if the Access Report was screened within 24 hours.

2) **Columns:** Select and drag the '**RESP_TIME**' field into the 'Columns box.

    This notes if the Response Time was Same Day, Within 24-48 Hours, or Within 5 Business Days.

3) **Rows:** Select and drag the '**WORKER_NAME'** field into the 'Rows' box (under 'SCREENED_WITHIN_24-HRS').

    This provides a means of understanding the information above, by worker.

4) **Values:** Select and drag the '**REPORT_ID'** field into the 'Values' box.

The 'Report_ID' field is a unique identifier for each Access Report, and thus provides a means to count the total number of Access Reports.

NOTE: Be careful how Excel presents data in the 'Values' box. Often Excel defaults to *sums* of the Values variable, which in the case above would add all Access Report IDs together. However, we are looking for the total unique *count* of Access Report IDs and therefore need to change this from a 'sum' calculation to a 'count' calculation. To make this correction, click the 'Values' variable and select '**Value Field Settings'**. The prompt to the far right will allow you change it from '**sum'** to '**count'**.

Filters: The question we are trying to answer is specific to screened in CPS Reports, whereas the dataset we are using includes Services Reports, and also includes Screened Out Reports. We therefore need to use the 'Filter' option to do the following:

- **Remove Services Reports:** Select and drag the '**REPORT_TYPE'** field into the 'Filters' box. This variable states if the Access Report is a CPS Report or Services Report. De-select '**Services Report'**.
- **Remove Screened Out Reports:** Select and drag the '**SCRIN_RSN'** field into the 'Filters' box. This field states the Screen-In Type (e.g. Primary, Secondary, etc.), and is blank if the report is screened out. Select all values except the blank option to include only screened-in reports, as seen on the right.
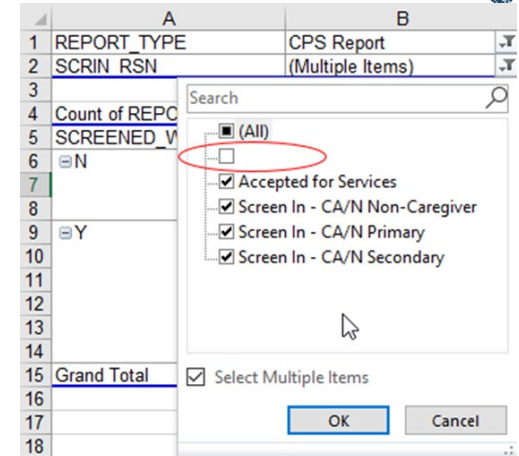
Completed PivotTable Fields Chart

When complete with steps 1-5 above, the PivotTable Fields chart will appear as seen on the right.
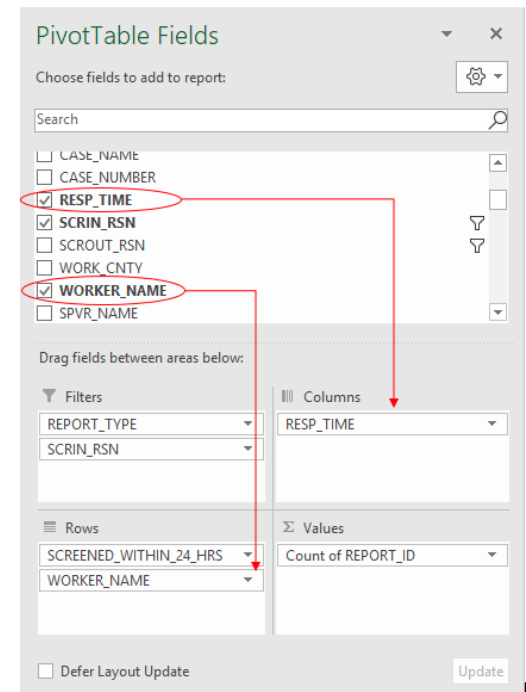
Analysis of overdue CPS Access Reports, by Urgent Response Time, by Worker

The completed PivotTable is seen in the screenshot below (with the area of greatest-interest highlighted in blue).

	A	B		C	D	E	F
1	REPORT_TYPE	CPS Report	▼				
2	SCRIN_RSN	(Multiple Items)	▼				
3							
4	Count of REPORT_ID			RESP_TIME	▼		
5	SCREENED_WITHIN_24 ▼	WORKER_NAME ▼		Same Day	Within 24 - 48 Hours	Within 5 business days	Grand Total
6	⊟N	Worker: Angela Adams			1		1
7		Worker: Bradley Bufford				1	1
8		Worker: Felicity Fredericks		3	1		4
9	⊟Y	Worker: Angela Adams		4	6	42	52
10		Worker: Bradley Bufford		4	1	34	39
11		Worker: Caitlin Courtney			1	14	15
12		Worker: Dana Daniels		3	1	27	31
13		Worker: Emily Elliott			2	2	4
14		Worker: Felicity Fredericks		23	11	39	73
15	Grand Total			37	24	159	220

In the chart above, six CPS Access Reports were screened over the required 24-hour time period. Of these six reports, five had a response time that was within the 'Same Day' or 'Within 24-48 hours', which is of concern to this supervisor. We also see in the table that four of these overdue and urgent reports were completed by Felicity Fredericks. The supervisor concludes that while only six of the total 220 CPS reports completed in this time period were untimely (2.7 percent), a significant proportion of the overdue reports were urgent, and also a majority came from a single worker. She notes that additional mentoring may be needed.

Note: Double clicking on a figure you are interested in, for example the four overdue untimely CPS Reports that Felicity completed, will open a new spreadsheet with just that subset. This is useful for additional analyses.

Video PivotTable Examples:

Additional, brief demonstrations of how to create PivotTables are available in the following links:

http://www.youtube.com/watch?v=k_PzoaUrW4A

https://www.youtube.com/watch?v=qu-AK0Hv0b4