



**NATIONAL
CHILDREN'S
BUREAU**

Using MS Excel to analyse and visualise data – some tips

21st February 2024

UNITED FOR A BETTER CHILDHOOD

MS Excel can be used in a variety of ways to

- 1. Collate**
- 2. Cleanse and analyse**
- 3. Visualise and**
- 4. Report data**

1. Collating data

- You can start with a survey dataset that has been generated by another application (e.g. Survey Monkey) or create a spreadsheet yourself
- Variables assembled in columns, records for individuals assembled in rows
- Ensure no gaps in the dataset (impacts on development of dashboards particularly)

Being able to undertake effective
visualising and reporting starts with
complete datasets!

Child ID	Health Trust	IY programme	Age	Gender	Referral month	Referral to assessment	Assessment to starting	Eyberg Intensity Score		In clinical range at	In clinical range at
						(No. days)	service (No. of days)	- Baseline	Score - Endpoint	baseline	endpoint
IY001	BHSCT	Basic	5	Male	01/01/2017	2	16	130	100	Yes	No
IY002	BHSCT	Basic	6	Female	01/01/2017	3	11	128	111	Yes	No
IY003	BHSCT	Basic	5	Male	01/01/2017	4	10	110	60	No	No
IY004	BHSCT	Basic	6	Male	01/02/2017	3	9	89	36	No	No
IY005	SEHSCT	TCM	10	Male	01/02/2017	4	8	196	111	Yes	No
IY006	SEHSCT	TCM	11	Female	01/02/2017	5	4	189	121	Yes	No
IY007	SEHSCT	TCM	10	Female	01/03/2017	4	5	180	11	Yes	No
IY008	SEHSCT	TCM	11	Female	01/03/2017	3	4	169	110	Yes	No
IY009	SHSCT	Baby	1	Male	01/04/2017	6	15	141	121	Yes	No
IY010	SHSCT	Baby	1	Female	01/05/2017	7	14	132	111	Yes	No
IY011	SHSCT	Baby	1	Female	01/05/2017	6	11	154	132	Yes	Yes
IY012	SHSCT	Baby	1	Female	01/05/2017	5	12	144	100	Yes	No
IY013	WHSCT	Toddler	2	Male	01/06/2017	4	9	109	89	No	No
IY014	WHSCT	Toddler	2	Male	01/06/2017	7	7	50	36	No	No
IY015	WHSCT	Toddler	3	Male	01/06/2017	6	8	141	89	Yes	No
IY016	WHSCT	Toddler	3	Female	01/06/2017	2	6	145	99	Yes	No
IY017	NHSCT	TCM	11	Female	01/06/2017	3	4	133	100	Yes	No
IY018	NHSCT	TCM	12	Male	01/06/2017	4	3	127	100	No	No
IY019	NHSCT	TCM	10	Male	01/06/2017	5	12	99	78	No	No
IY020	NHSCT	TCM	11	Male	01/06/2017	8	10	90	60	No	No
IY021	NHSCT	Toddler	2	Male	01/07/2017	3	15	45	42	No	No
IY022	NHSCT	Toddler	3	Male	01/07/2017	4	16	50	69	No	No
IY023	NHSCT	Toddler	2	Male	01/07/2017	5	14	38	40	No	No
IY024	NHSCT	Toddler	3	Male	01/07/2017	4	11	112	88	No	No
IY025	NHSCT	Toddler	2	Male	01/07/2017	3	18	114	68	No	No
IY026	NHSCT	Toddler	3	Female	01/07/2017	6	1	128	45	Yes	No
IY027	NHSCT	Toddler	2	Female	01/07/2017	45	21	130	88	Yes	No
IY028	NHSCT	Toddler	2	Male	01/07/2017	4	2	166	129	Yes	Yes
IY029	NHSCT	Toddler	2	Male	01/07/2017	3	26	188	111	Yes	No
IY030	NHSCT	Toddler	3	Female	01/07/2017	6	2	200	145	Yes	Yes
IY031	NHSCT	Toddler	3	Female	01/07/2017	5	16	123	111	No	No
IY032	NHSCT	Toddler	3	Female	01/07/2017	7	14	165	127	Yes	No
IY033	WHSCT	TCM	11	Male	01/08/2017	8	23	145	124	Yes	No
IY034	WHSCT	TCM	12	Male	01/08/2017	3	33	178	122	Yes	No
IY035	WHSCT	TCM	11	Male	01/08/2017	4	60	145	145	Yes	Yes

2. Cleanse and analyse

- Check for duplicates and remove
- Undertake initial toplines of all the variables
- Look for outliers and ensure they are valid and not an error and remove if needed

3. Visualise data

- Examine the type of data to understand most appropriate charts / graphs (e.g. line graphs don't suit for variables that have categories)
- Begin putting together a range of charts and graphs that feed into dashboard using pivot tables and charts

3. Visualise data

Creating a pivot table and pivot chart

- We are now going to create a pivot table and pivot chart using the following variables:
 - Referral month (Column F);
 - Referral to assessment no. of days (Column G); and
 - Assessment to starting service no. of days (Column H).

Child ID	Health Trust	IY programme	Age	Gender	Referral month	Referral to assessment (No. days)	Assessment to starting service (No. of days)
IY001	BHSCT	Basic	5	Male	01/01/2017	2	16
IY002	BHSCT	Basic	6	Female	01/01/2017	3	11
IY003	BHSCT	Basic	5	Male	01/01/2017	4	10
IY004	BHSCT	Basic	6	Male	01/02/2017	3	9
IY005	SEHSCT	TCM	10	Male	01/02/2017	4	8
IY006	SEHSCT	TCM	11	Female	01/02/2017	5	4
IY007	SEHSCT	TCM	10	Female	01/03/2017	4	5
IY008	SEHSCT	TCM	11	Female	01/03/2017	3	4
IY009	SHSCT	Baby	1	Male	01/04/2017	6	15
IY010	SHSCT	Baby	1	Female	01/05/2017	7	14
IY011	SHSCT	Baby	1	Female	01/05/2017	6	11
IY012	SHSCT	Baby	1	Female	01/05/2017	5	12
IY013	WHSCT	Toddler	2	Male	01/06/2017	4	9
IY014	WHSCT	Toddler	2	Male	01/06/2017	7	7
IY015	WHSCT	Toddler	3	Male	01/06/2017	6	8
IY016	WHSCT	Toddler	3	Female	01/06/2017	2	6
IY017	NHSCT	TCM	11	Female	01/06/2017	3	4
IY018	NHSCT	TCM	12	Male	01/06/2017	4	3
IY019	NHSCT	TCM	10	Male	01/06/2017	5	12
IY020	NHSCT	TCM	11	Male	01/06/2017	8	10
IY021	NHSCT	Toddler	2	Male	01/07/2017	3	15
IY022	NHSCT	Toddler	3	Male	01/07/2017	4	16
IY023	NHSCT	Toddler	2	Male	01/07/2017	5	14
IY024	NHSCT	Toddler	3	Male	01/07/2017	4	11
IY025	NHSCT	Toddler	2	Male	01/07/2017	3	18
IY026	NHSCT	Toddler	3	Female	01/07/2017	6	1
IY027	NHSCT	Toddler	2	Female	01/07/2017	45	21
IY028	NHSCT	Toddler	2	Male	01/07/2017	4	2
IY029	NHSCT	Toddler	2	Male	01/07/2017	3	26
IY030	NHSCT	Toddler	3	Female	01/07/2017	6	2
IY031	NHSCT	Toddler	3	Female	01/07/2017	5	16
IY032	NHSCT	Toddler	3	Female	01/07/2017	7	14
IY033	WHSCT	TCM	11	Male	01/08/2017	8	23
IY034	WHSCT	TCM	12	Male	01/08/2017	3	33
IY035	WHSCT	TCM	11	Male	01/08/2017	4	60

3. Visualise data

Creating a pivot table and pivot chart

The screenshot shows the Microsoft Excel interface with the 'INSERT' tab selected. The 'PivotTable' icon is circled in red and labeled with a '2'. The 'INSERT' tab is circled in red and labeled with a '1'. A 'Create PivotTable' dialog box is open, with the 'OK' button circled in red and labeled with a '3'. The dialog box contains the following options:

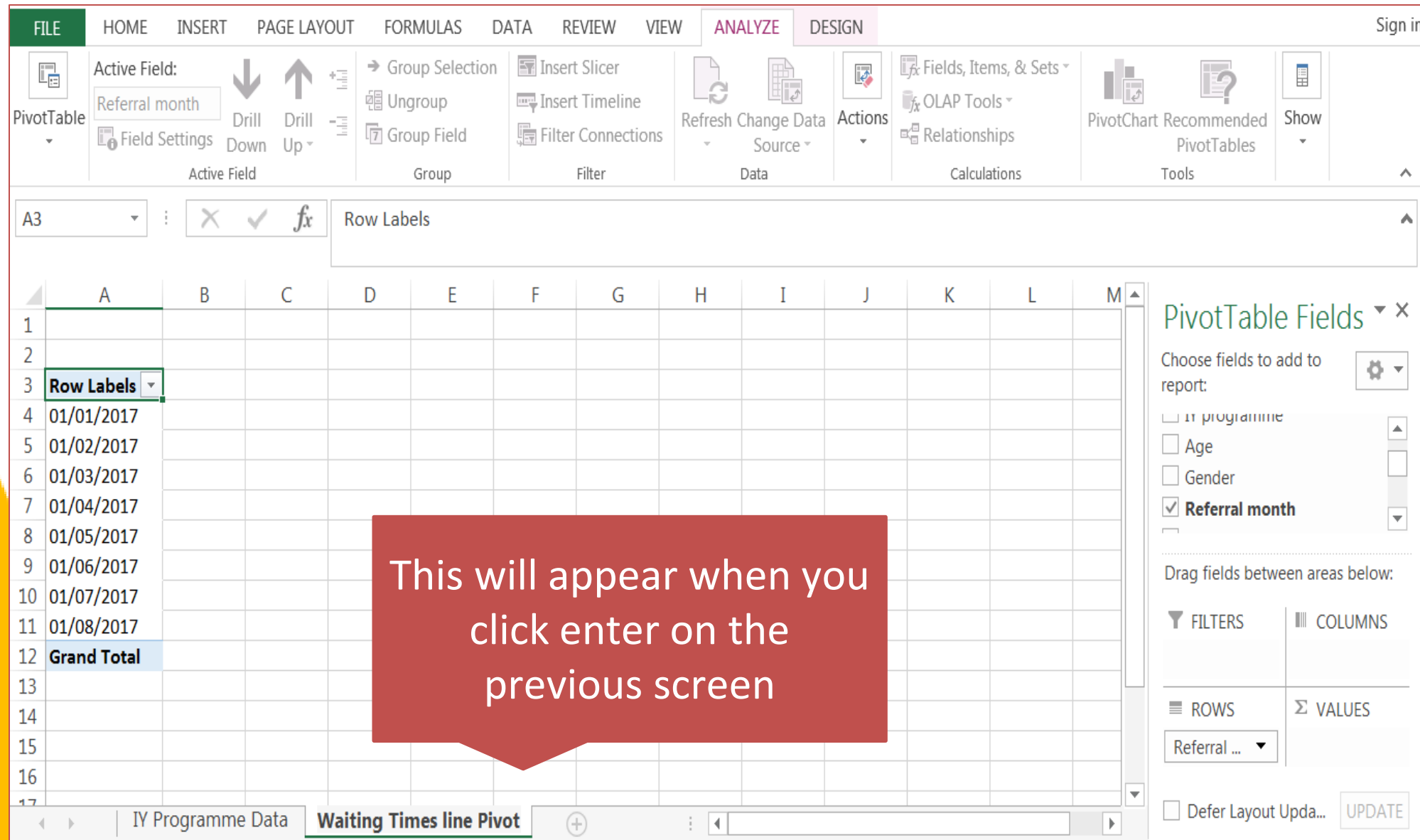
- Choose the data that you want to analyze:
 - Select a table or range
 - Table/Range: IYprogrammedata
 - Use an external data source
 - Choose Connection...
 - Connection name:
- Choose where you want the PivotTable report to be placed:
 - New Worksheet
 - Existing Worksheet
 - Location:
- Choose whether you want to analyze multiple tables:
 - Add this data to the Data Model

The background shows a table with the following data:

Child ID	Health Trust	IY programme	Age	Gen
2	IY001	BHSCT	Basic	5
3	IY002	BHSCT	Basic	6
4	IY003	BHSCT	Basic	5
5	IY004	BHSCT	Basic	6
6	IY005	SEHSCT	TCM	10
7	IY006	SEHSCT	TCM	11
8	IY007	SEHSCT	TCM	10
9	IY008	SEHSCT	TCM	11
10	IY009	SHSCT	Baby	1
11	IY010	SHSCT	Baby	1
12	IY011	SHSCT	Baby	1
13	IY012	SHSCT	Baby	1
14	IY013	WHSCT	Toddler	2
15	IY014	WHSCT	Toddler	2

3. Visualise data

Creating a pivot table and pivot chart



Active Field: Referral month

Row Labels

01/01/2017
01/02/2017
01/03/2017
01/04/2017
01/05/2017
01/06/2017
01/07/2017
01/08/2017
Grand Total

PivotTable Fields

Choose fields to add to report:

- IY programme
- Age
- Gender
- Referral month

Drag fields between areas below:

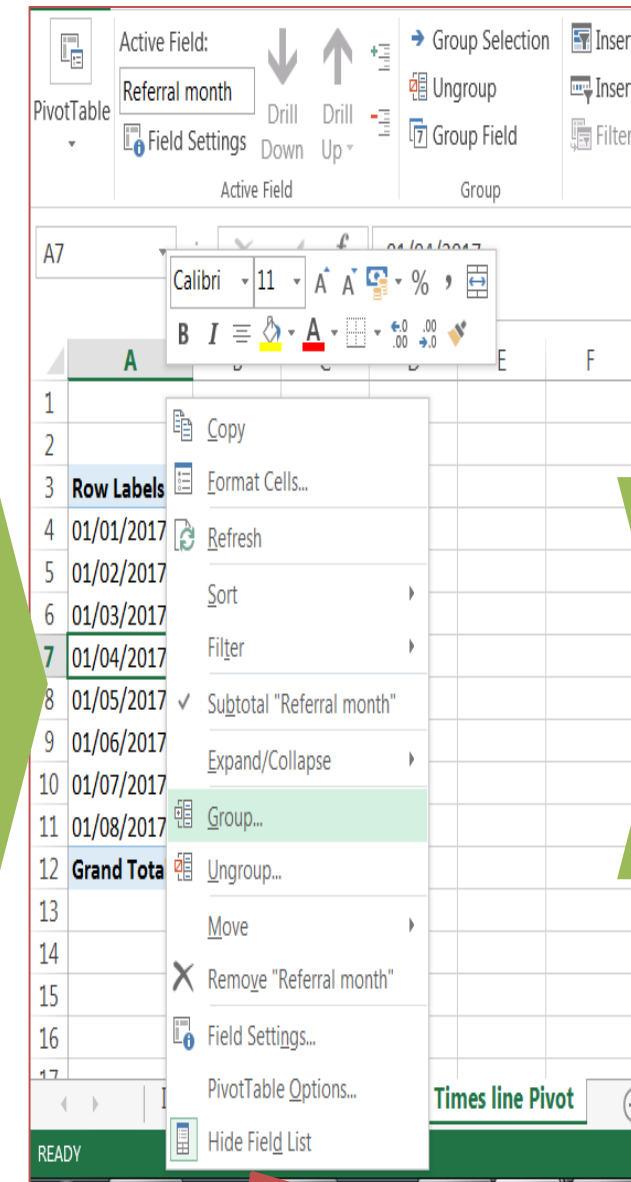
FILTERS: Referral ...

ROWS: Referral ...

VALUES: Referral ...

Columns: Referral ...

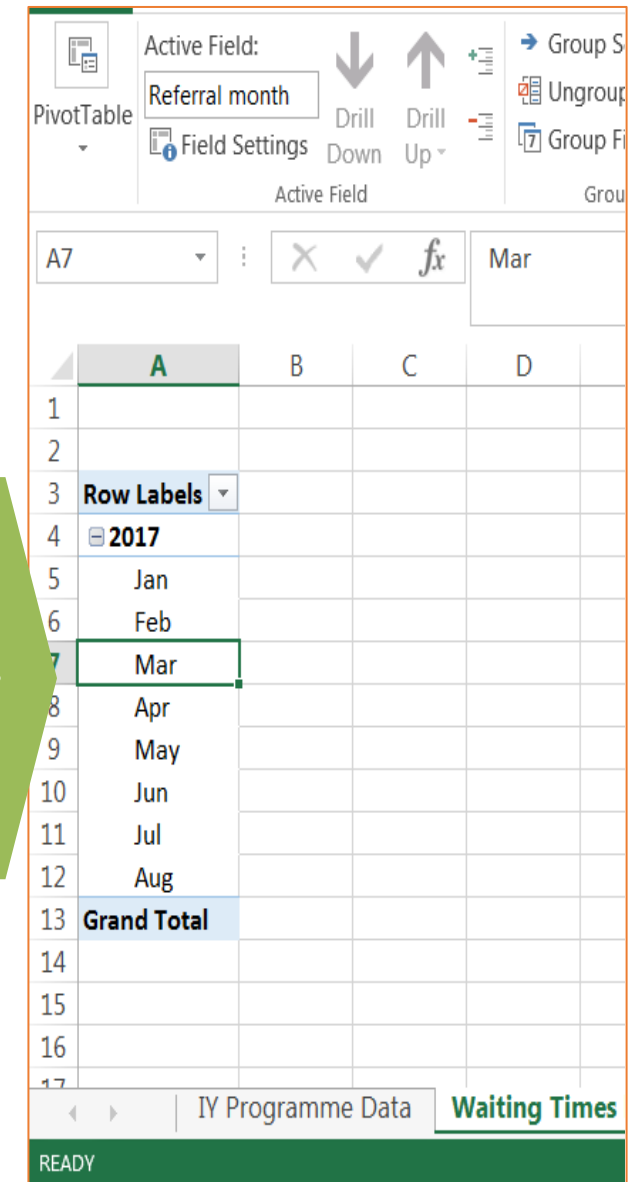
This will appear when you click enter on the previous screen



01/04/2017

- Copy
- Format Cells...
- Refresh
- Sort
- Filter
- Subtotal "Referral month"
- Expand/Collapse
- Group...
- Ungroup...
- Move
- Remove "Referral month"
- Field Settings...
- PivotTable Options...
- Hide Field List

Right click on month and select the group option and click "months" and "years"



Row Labels

2017

Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Grand Total

This is what we need in the end

3. Visualise data

Creating a pivot table and pivot chart

The screenshot shows an Excel PivotTable with the following data:

Row Labels	Sum of Referral to assessment (No. days)	Sum of Assessment to starting service (No. of days)
2017		
Jan	9	37
Feb	12	21
Mar	7	9
Apr	6	15
May	18	37
Jun	39	59
Jul	95	156
Aug	145	377
Grand Total	331	711

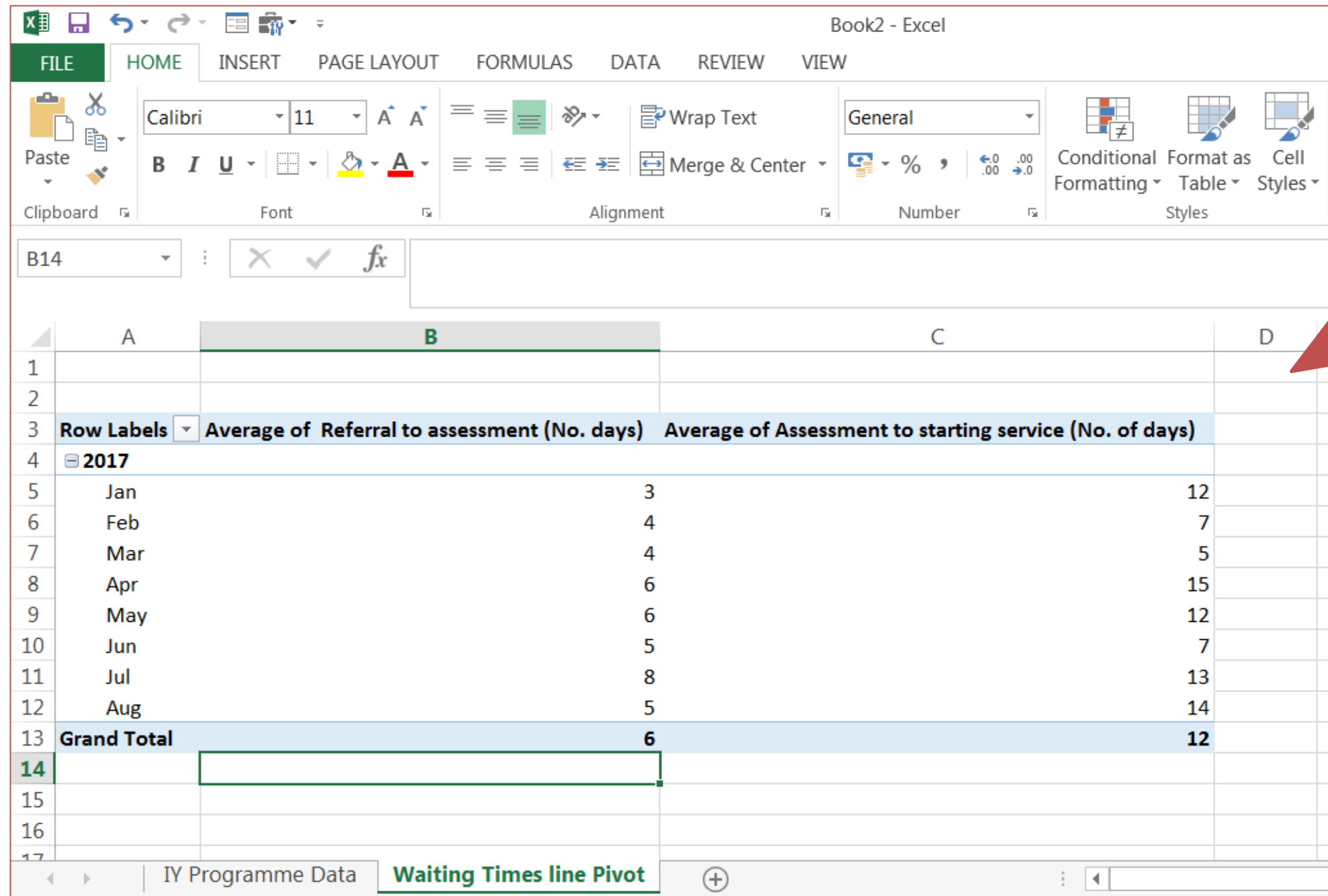
The PivotTable Fields task pane shows the following fields selected:

- Referral month
- Referral to assessment (No. days)
- Assessment to starting service (No. of days)

Clicking on these two fields adds to new columns to the table.

3. Visualise data

Creating a pivot table and pivot chart

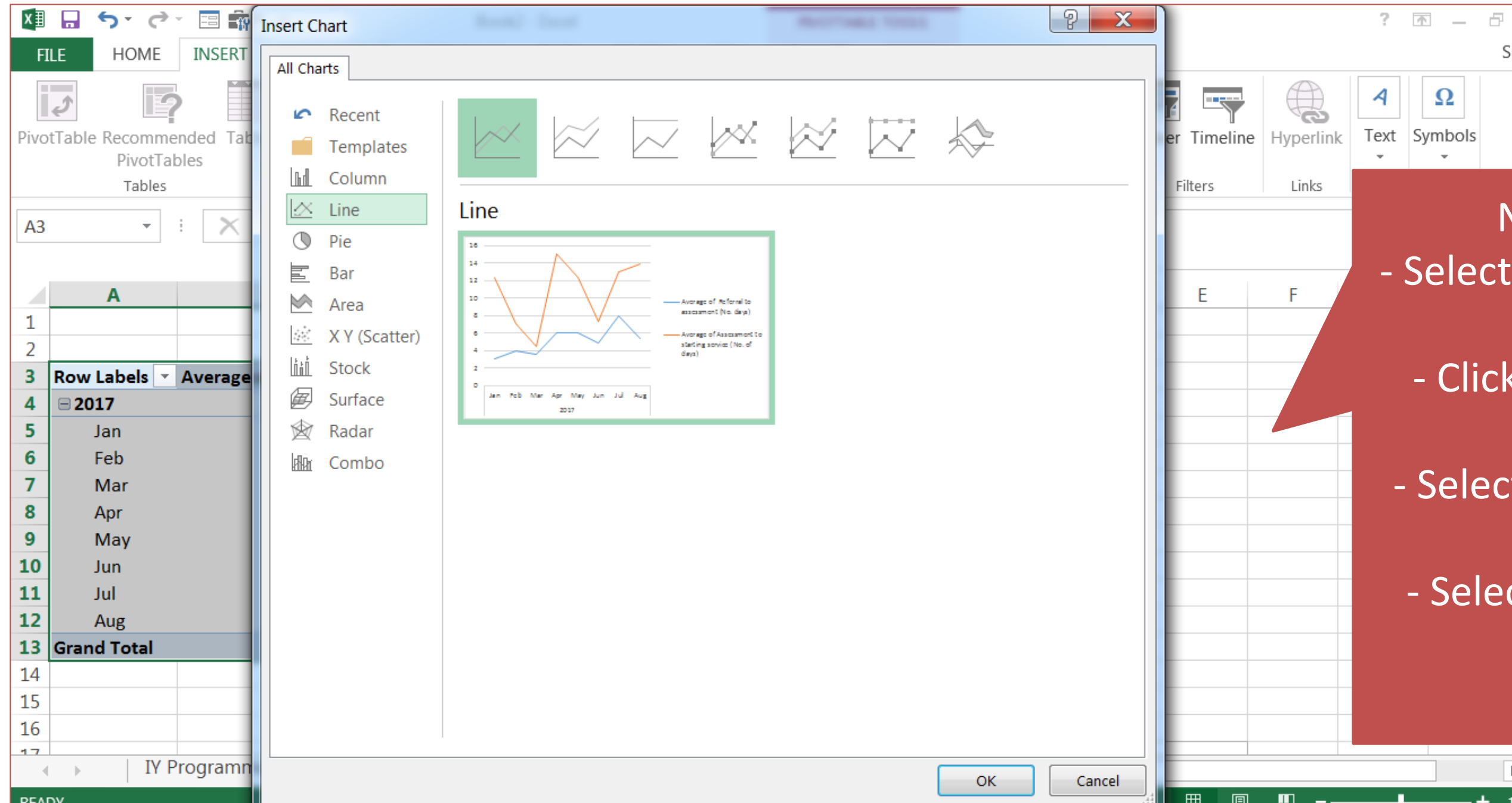


Row Labels	Average of Referral to assessment (No. days)	Average of Assessment to starting service (No. of days)
2017		
Jan	3	12
Feb	4	7
Mar	4	5
Apr	6	15
May	6	12
Jun	5	7
Jul	8	13
Aug	5	14
Grand Total	6	12

I've skipped a step here but make sure the total number of days become an average number of days per person (see handout)

3. Visualise data

Creating a pivot table and pivot chart



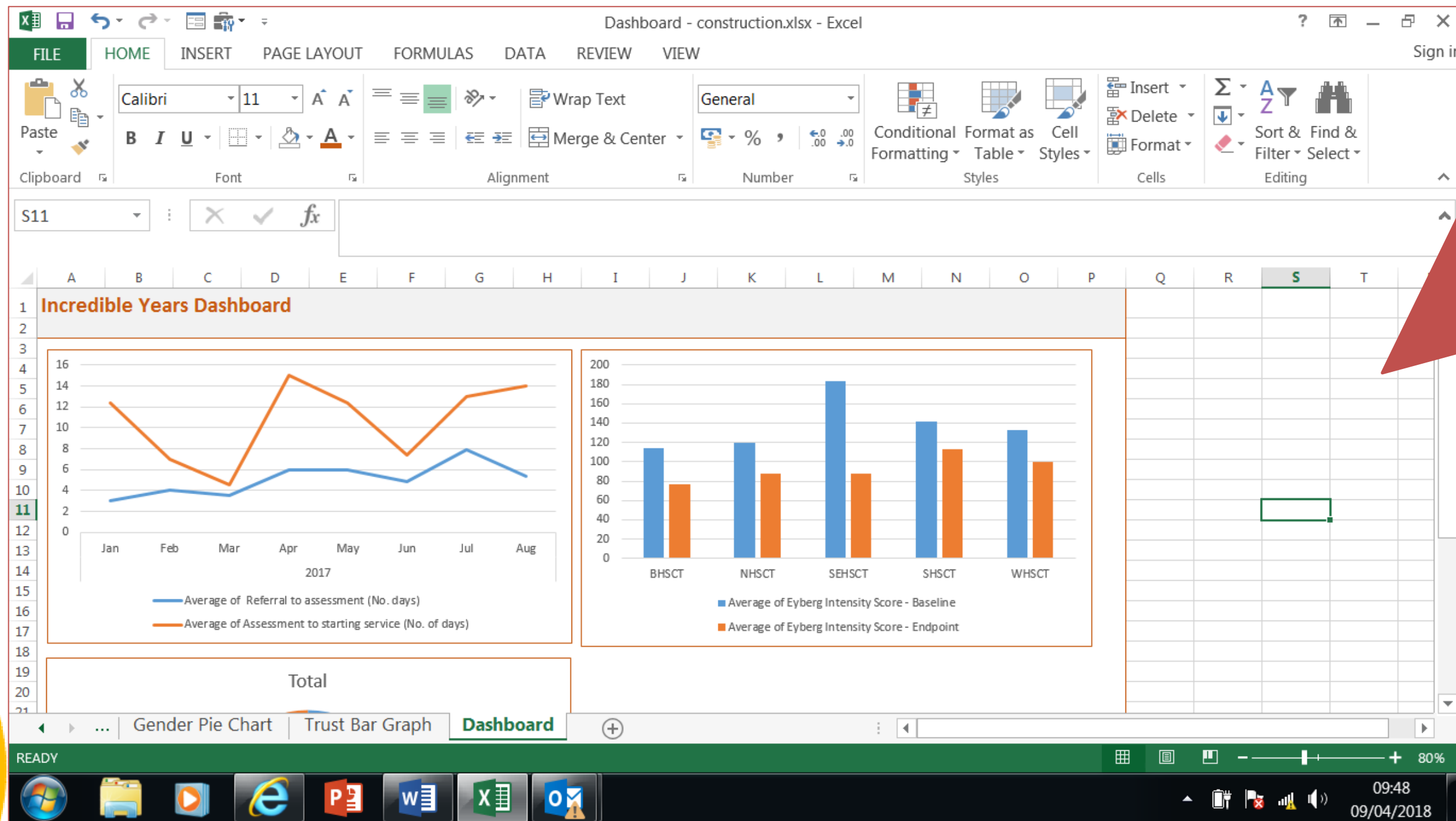
The screenshot shows the 'Insert Chart' dialog box in Microsoft Excel. The 'Line' chart type is selected, and a preview of a line chart is shown. The background shows a pivot table with data for 2017 by month.

Row Labels	Average
2017	
Jan	
Feb	
Mar	
Apr	
May	
Jun	
Jul	
Aug	
Grand Total	

Next steps:

- Select all of the data in the table
- Click on the 'insert' ribbon
- Select the pivot chart option
- Select the line chart option
- Click ok

4. Reporting data – using a dashboard



These charts can be copied and pasted into a dashboard like this.

4. Reporting data – using a dashboard

Now I am going to show you how to create a dashboard using MS Excel!