

How to create a theograph

A step-by-step guide



Simple theograph

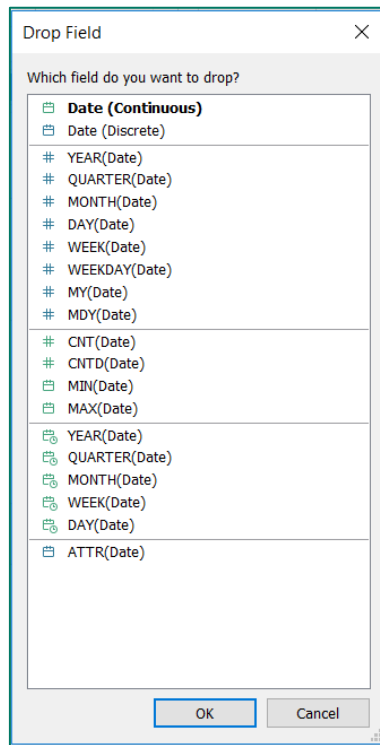
Firstly, to create a theograph you need data covering multiple services and events with relevant dates.

Patient ID	Setting	Event	Date	Duration
1	Acute	Outpatient Visit	30/01/2016	1
1	Acute	Inpatient Admission	20/02/2016	5
1	Primary Care	GP Visit	01/03/2016	1
1	Acute	Outpatient Visit	01/05/2016	1
1	Acute	Inpatient Admission	10/05/2016	50
1	Primary Care	GP Visit	05/06/2016	1
1	Acute	Inpatient Admission	30/08/2016	2
1	Acute	Outpatient Visit	01/09/2016	1
1	Primary Care	GP Visit	10/09/2016	1
1	Acute	Outpatient Visit	01/10/2016	1
1	Social	Assessment	15/10/2016	1

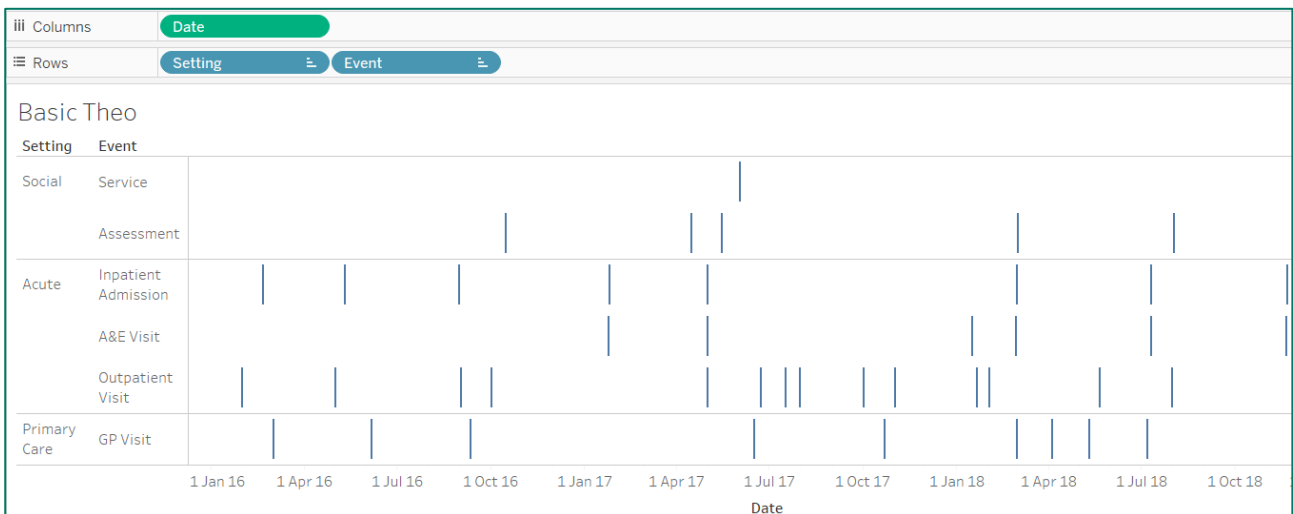
Once in Tableau we are going to create the channels we want to see data for. We will do this by adding the required dimensions to the 'Rows' shelf. I have then sorted the settings and events by manually dragging them into the order I want on the axis.

iii Columns		
Rows	Setting	Event
Social	Service	
	Assessment	
Acute	Inpatient Admission	
	A&E Visit	
	Outpatient Visit	
Primary Care	GP Visit	

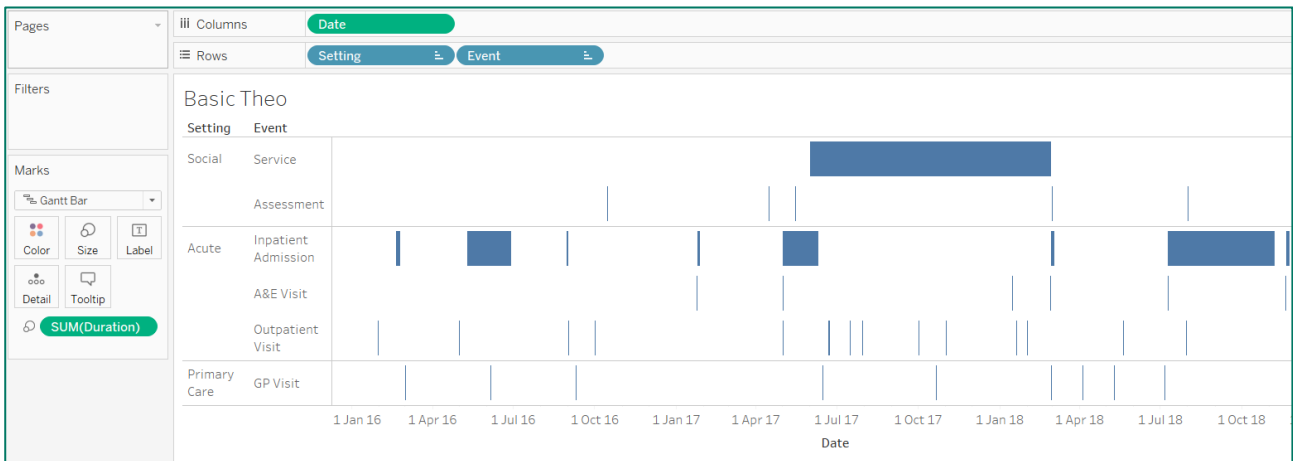
Next, we need to introduce the dates into the view. To do this, right click and drag the dates on the 'Columns' shelf and select the 'Date (Continuous)' option from the dialogue box.



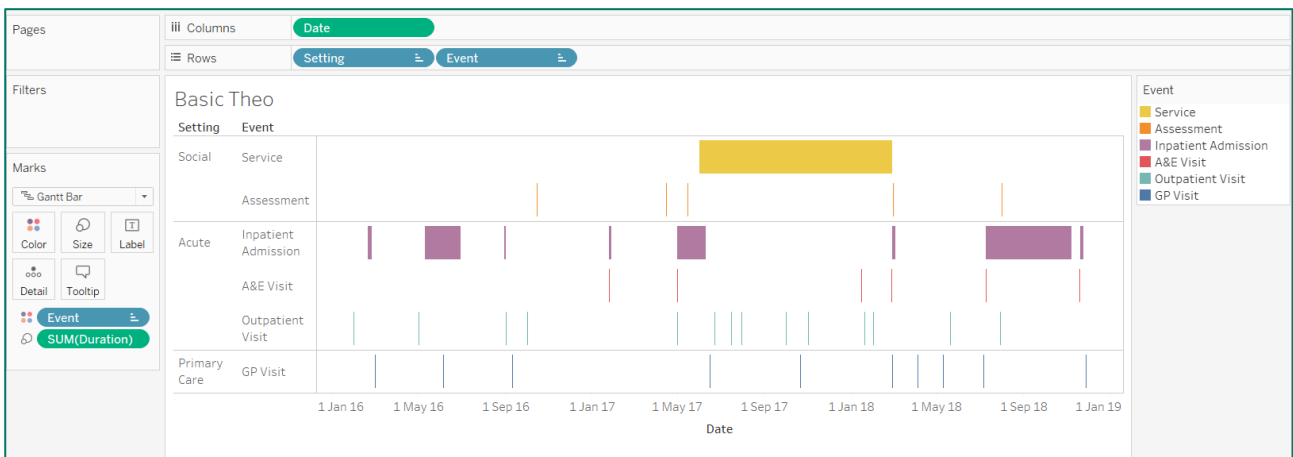
You should now have something like this:



Now we are going to convert the default chart that Tableau has drawn us into a Gantt chart using the drop-down menu in the 'Marks' card and add the duration of the activities as the size of the Gantt, by dragging the 'Duration' field on the 'Size' part of the 'Marks' card.



Finally, to make it easier to distinguish events we will colour the elements by event type. I have selected the colours I want using the colour menu from the 'Marks' card.



This is a quick and simple theograph, already in use in a number of Tableau-using healthcare organisations.

Advanced theograph

To create an advanced theograph in Tableau we need to split the events from the durations, so we need to feed Tableau two data sources.

Example data source 1

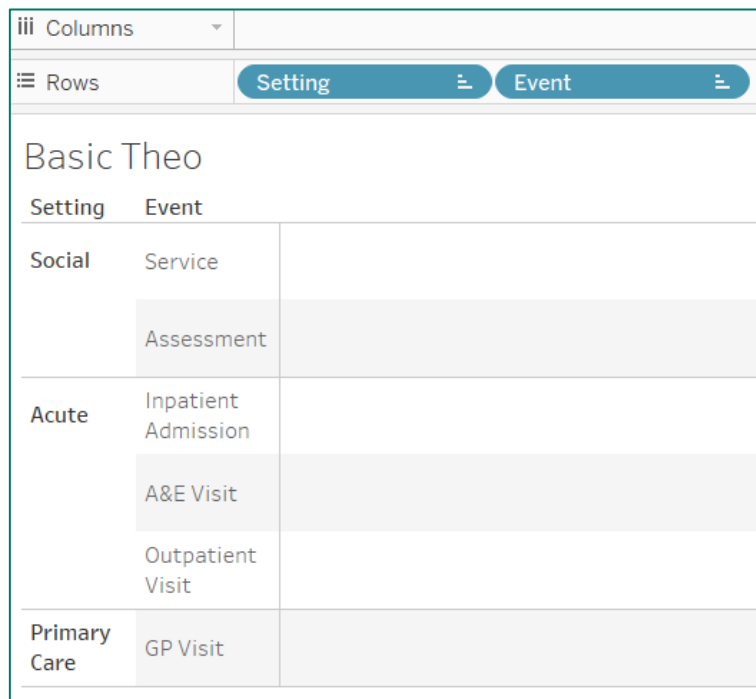
Patient ID	Setting	Event	Type	Date
1	Social	Service	Service Start	01/06/2017
1	Social	Service	Service End	28/02/2018
1	Social	Assessment	Assessment	15/10/2016
1	Social	Assessment	Assessment	15/04/2017
1	Social	Assessment	Assessment	15/05/2017
1	Social	Assessment	Assessment	01/03/2018
1	Social	Assessment	Assessment	01/08/2018
1	Acute	A&E Visit	A&E Visit	24/01/2017
1	Acute	A&E Visit	A&E Visit	01/05/2017
1	Acute	A&E Visit	A&E Visit	15/01/2018
1	Acute	A&E Visit	A&E Visit	27/02/2018
1	Acute	A&E Visit	A&E Visit	10/07/2018
1	Acute	A&E Visit	A&E Visit	19/11/2018
1	Acute	Inpatient Admission	Admission	20/02/2016
1	Acute	Inpatient Admission	Discharge	25/02/2016

Example data source 2

Patient ID	Setting	Event	Date	Duration
1	Social	Service	01/06/2017	272
1	Acute	Inpatient Admission	10/05/2016	50
1	Acute	Inpatient Admission	01/05/2017	40
1	Acute	Inpatient Admission	10/07/2018	120
1	Acute	Inpatient Admission	20/02/2016	5

Note that both data sources will need to include the Patient ID, Setting and Event fields to allow us to blend these two datasets within Tableau.

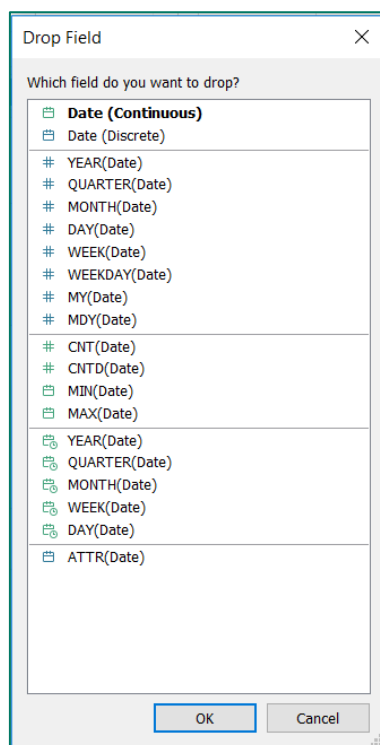
Once in Tableau we are going to create the channels we want to see data for. We will do this by adding the required dimensions to the 'Rows' shelf. I have then sorted the settings and events by manually dragging them into the order I want on the axis.



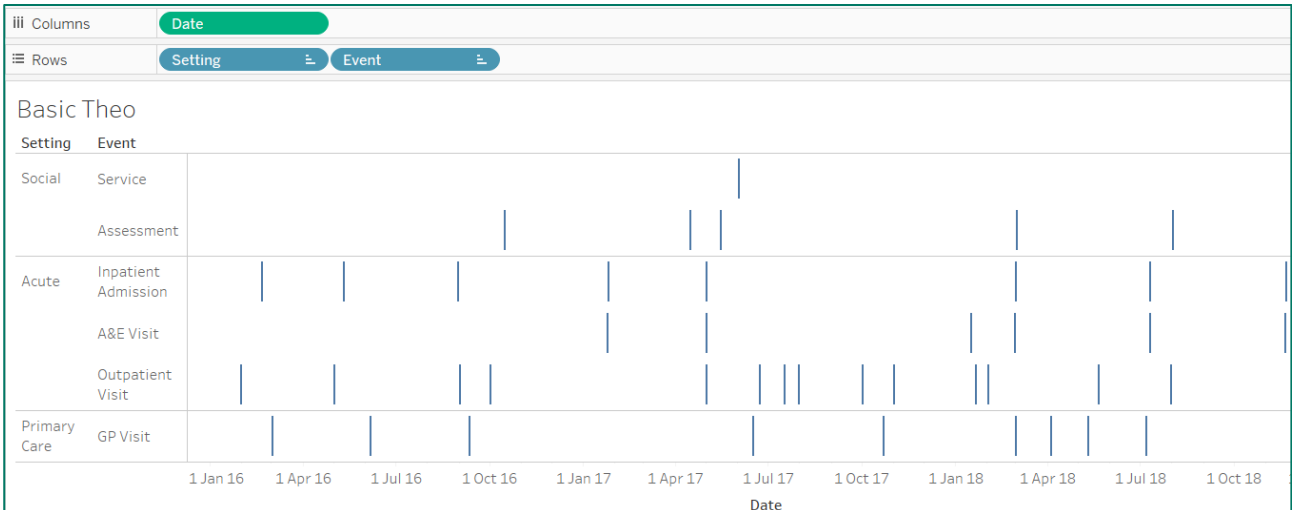
The screenshot shows the Tableau interface with a table view. The 'Columns' shelf is empty, and the 'Rows' shelf contains two fields: 'Setting' and 'Event'. The table is titled 'Basic Theo' and has the following data:

Setting	Event
Social	Service
	Assessment
Acute	Inpatient Admission
	A&E Visit
	Outpatient Visit
Primary Care	GP Visit

Next, we need to introduce the dates into the view. To do this, right-click, drag the dates on the 'Columns' shelf and select the 'Date (Continuous)' option from the dialogue box.

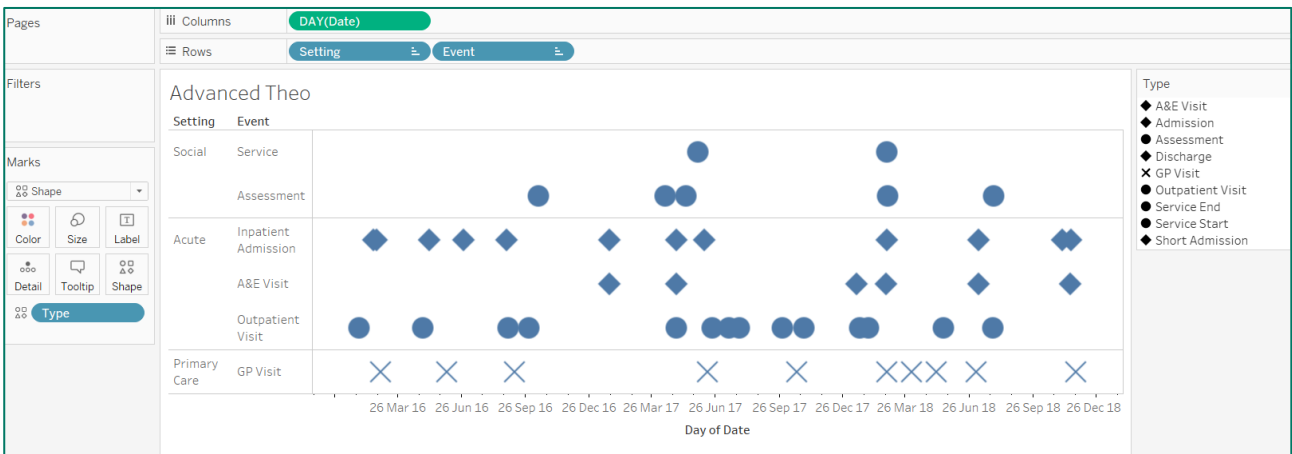


You should now have something like this:

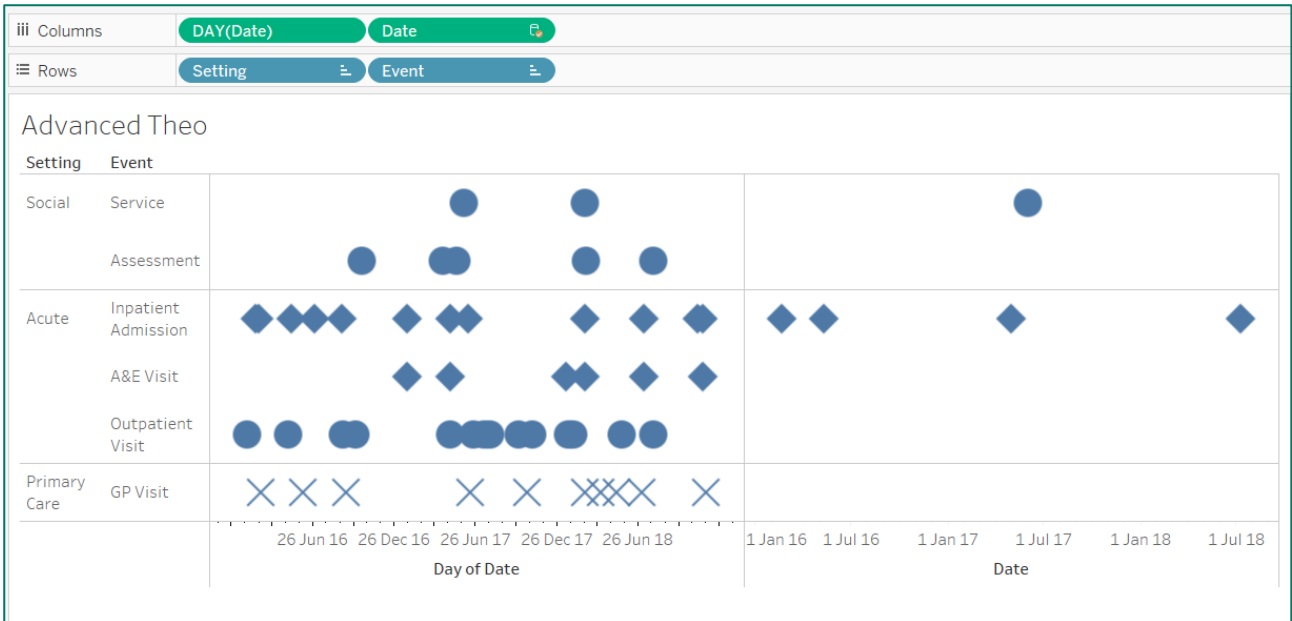


Now we will convert the events to shapes using the drop-down menu on the 'Marks' card and set the shapes by 'Event Type' by dragging the 'Type' field onto the shape part of the 'Marks' card. (This only appears once you have changed the chart type to 'Shape' in the drop-down menu).

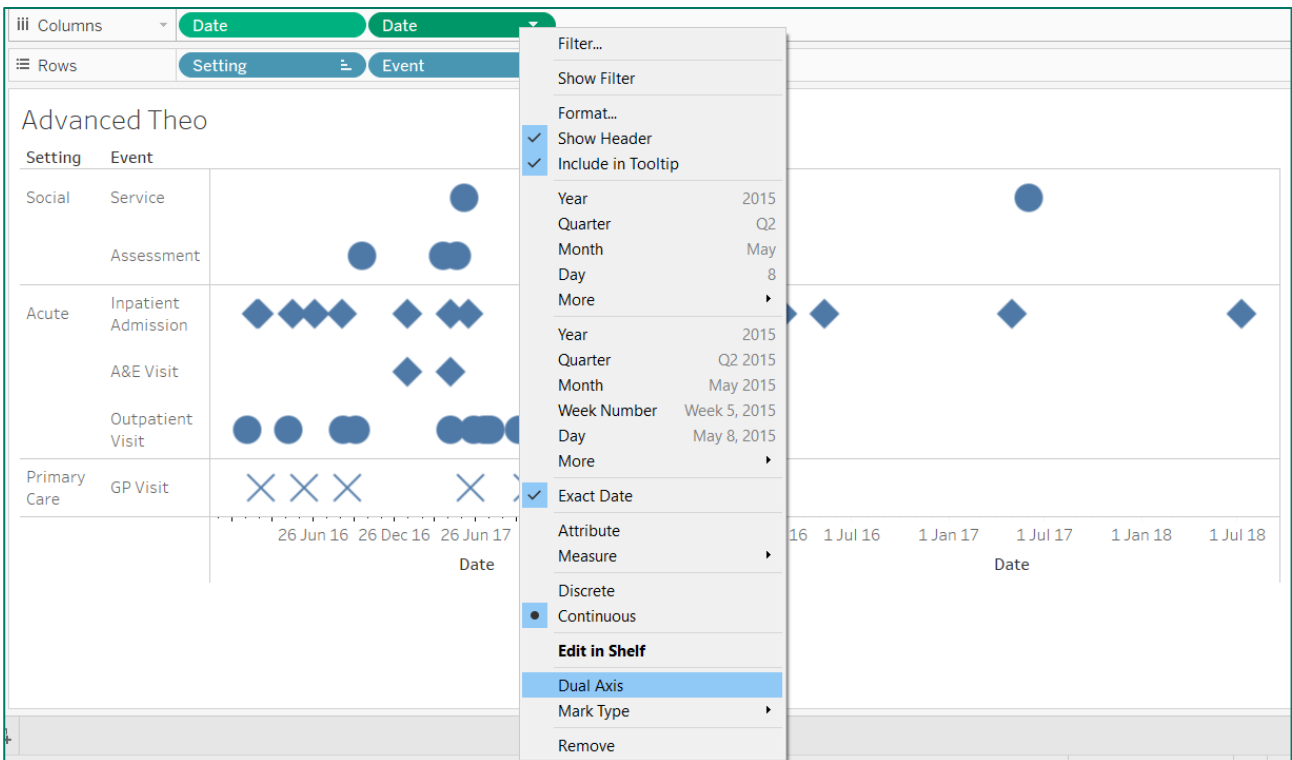
I have set the shapes to reflect the setting (circles for social, diamonds for acute and crosses for primary care).



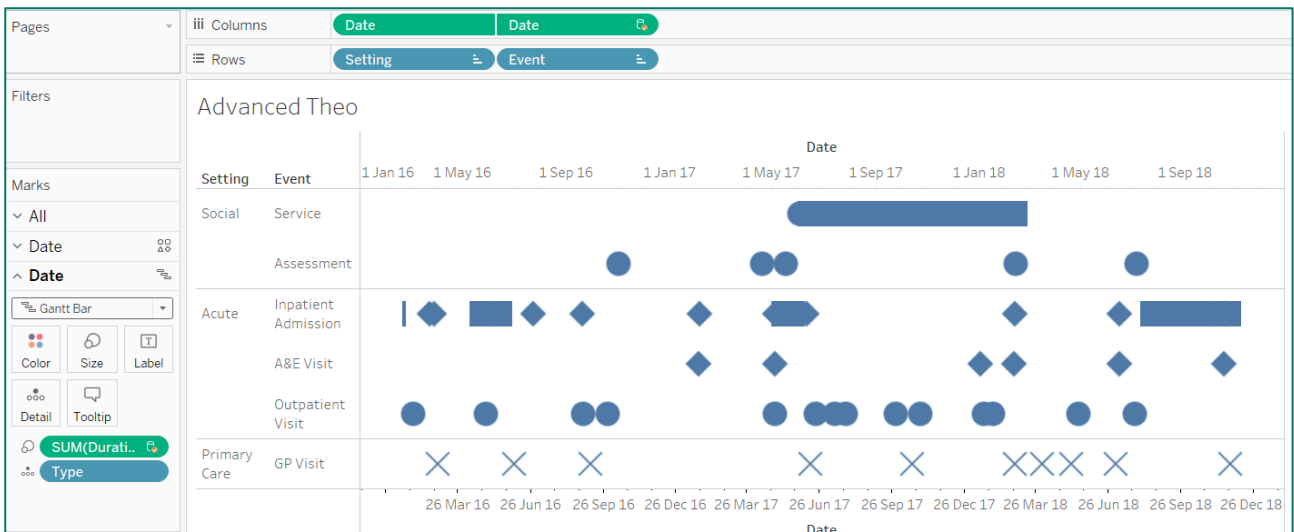
Now to join up the events that are start and end dates using our dataset containing durations. We do this by creating a blended dual axis chart (this is an advanced chart type after all) by bringing in the date from the second dataset onto columns in the same way we did for the first dataset. This will give us two side-by-side charts.



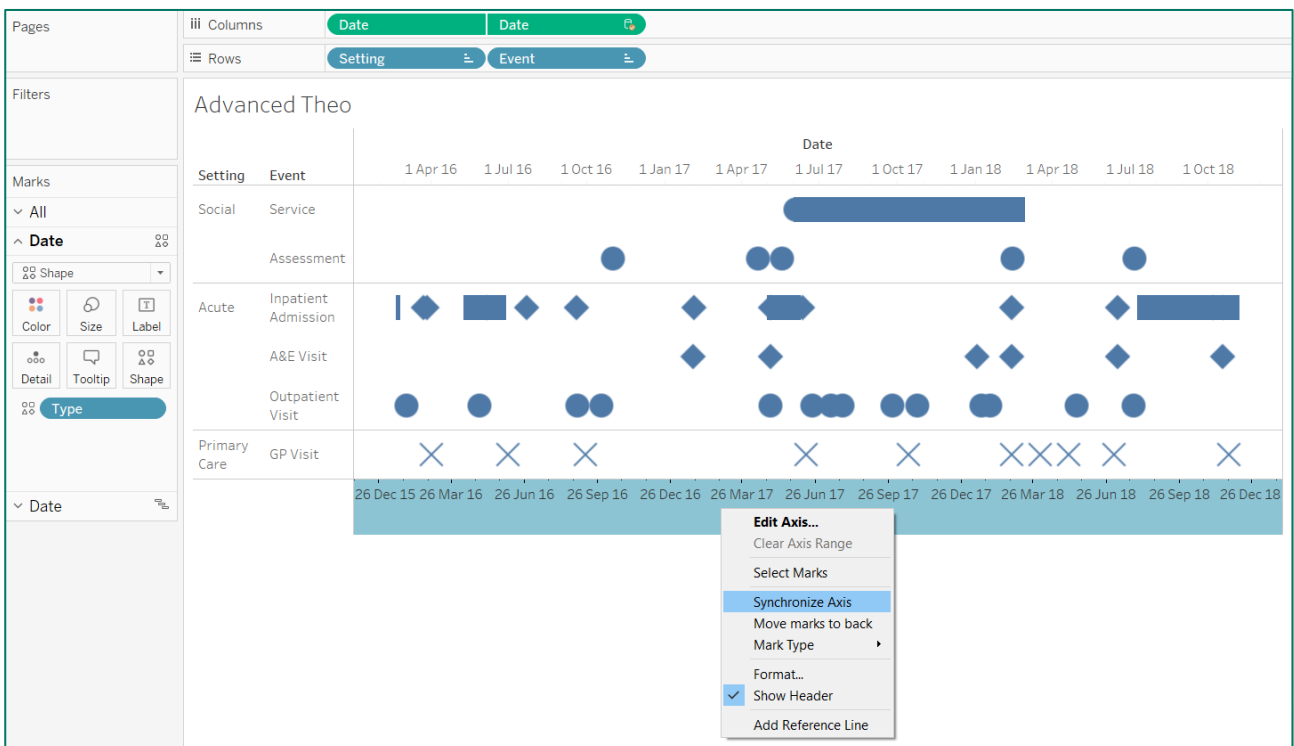
We now need to make the charts overlay on one another. To do this, right-click on the second date field (with the orange tick) and select 'Dual Axis'.



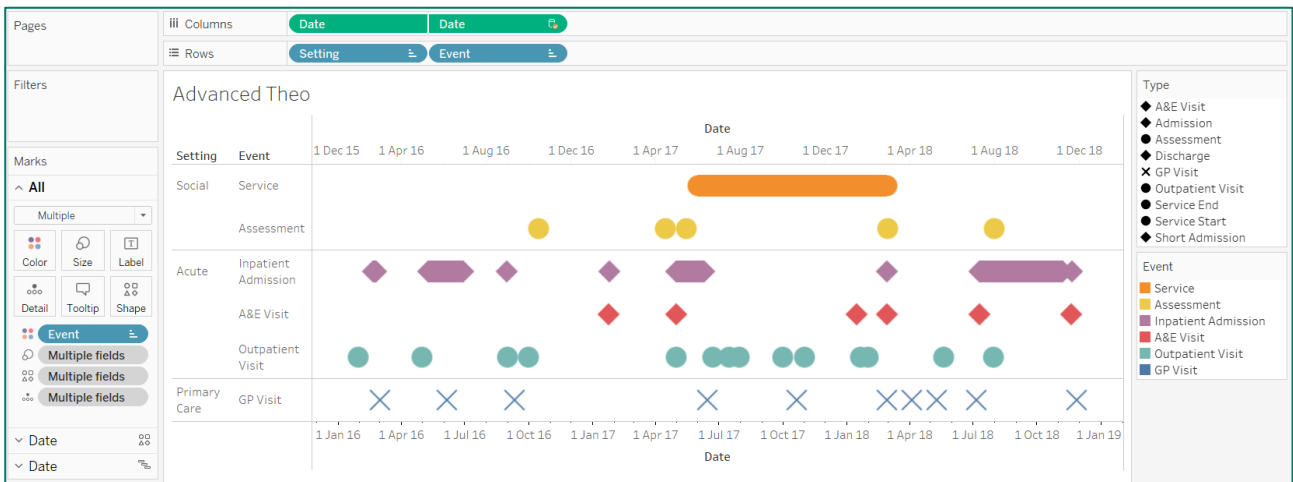
Once overlapped, we need to convert the second chart to a Gantt chart by using the drop-down in the 'Marks' card and adding 'Duration' from the second dataset to the 'Size' part of the 'Marks' card for the Gantt chart. (Beware there are now two charts and you need to do this only on the one from the secondary duration dataset.)



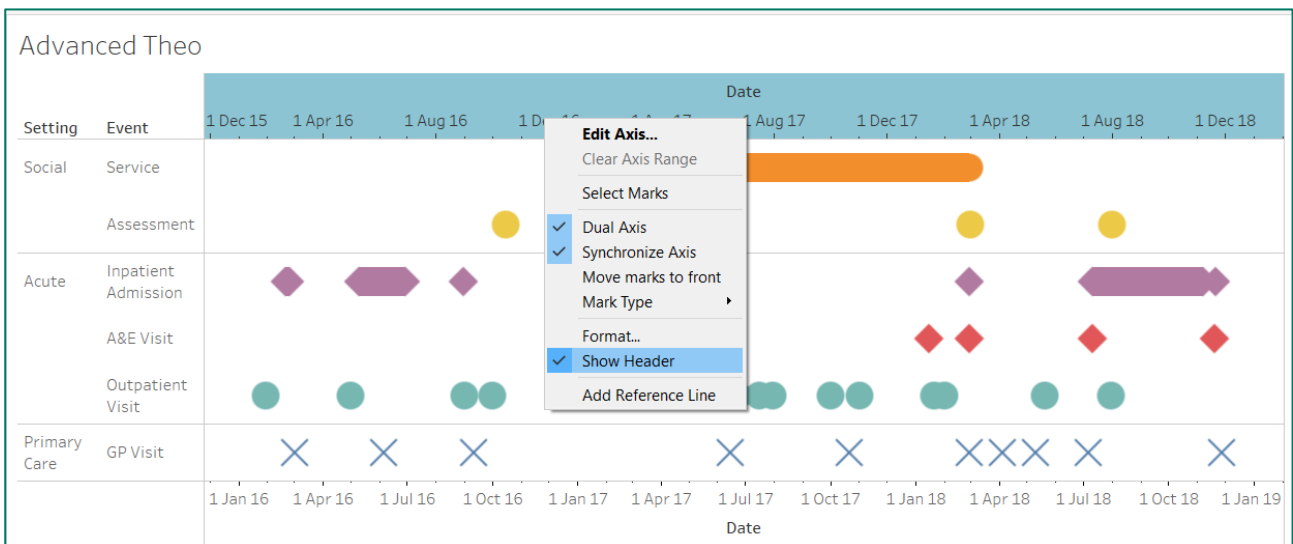
We now need to align the two date axes so they are synchronised. To do this, right-click on the bottom axis and select 'Synchronize Axis'.



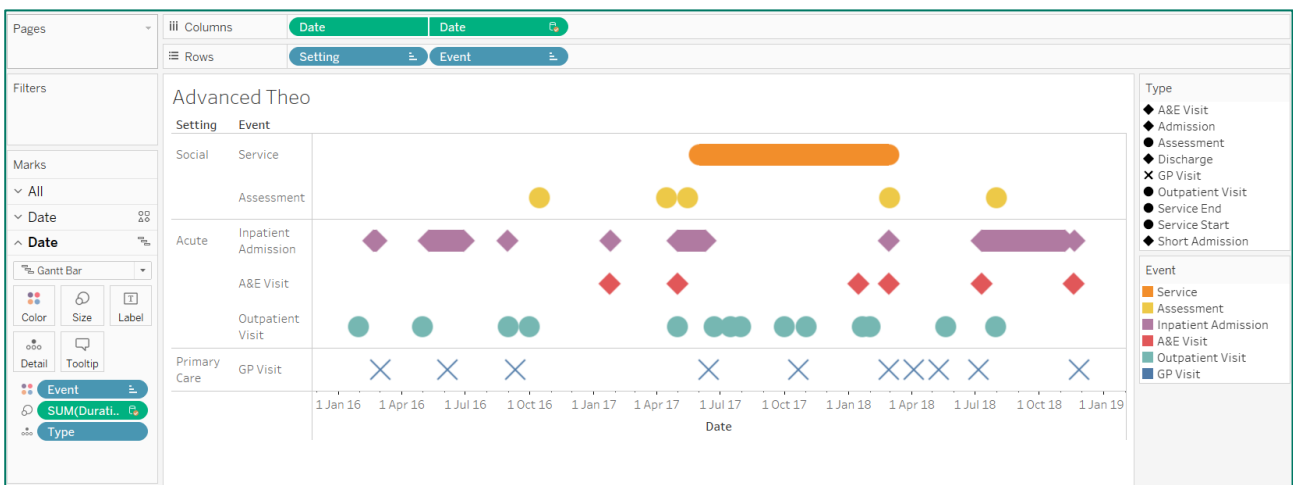
Once the axes are aligned, we go back to our 'Marks' card, select the 'All' card and add 'Event' to colour. I have selected the colours I want for each event.



The final bit is purely aesthetic – to hide the second axis, simply right-click and untick 'Show Header' on the top axis.



The final theograph should look like this:



Clearly, this is for just one patient; if you had multiple patients you would add Patient ID to the Filters section to allow you to view one at a time.