

Authors Introduction



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Visualizing Oncology Data Through Interactive Dashboards

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Paper# DV09

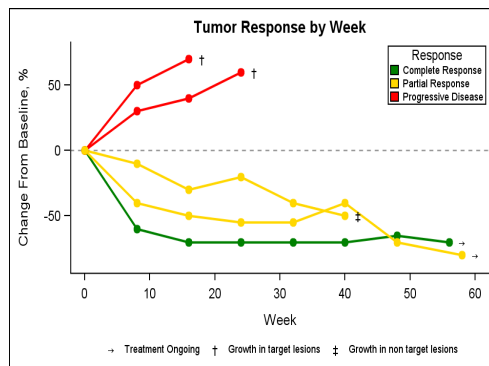
Generating Graphs Using SAS

```
data cars (drop=perc_sales car_type_perc subtype_perc);
format date date9.;
date=01Jan2016'd;
do until (date > '31Dec2016'd);
  if
    weekday(date) not in {1}
    and date not in ('01Jan2016'd,'04Jul2016'd,'23Dec2016'd)
  then output;
  date=intnx('day',date,1);
  $_price1 = 15000+200*rand('normal');      *Sedan;
  $_price2 = 30000+500*rand('normal');      *SUV;
  $_price3 = 25000+300*rand('normal');      *Truck;
  perc_sales = rand('uniform');
  car_type_perc = rand('uniform');
  subtype_perc = rand('uniform');
  if 0 < perc_sales <= 0.1 then NoCars = 0;      * 10% chance zero cars sold;
  if 0.1 < perc_sales <= 0.6 then NoCars = 1;      * 50% chance one car sold;
  if 0.6 < perc_sales <= 0.9 then NoCars = 2;      * 30% chance two cars sold;
  if 0.9 < perc_sales <= 1 then NoCars = 3;      * 10% chance three cars sold;
  if 0 < car_type_perc <= 0.3 then type = 'Sedan'; * 50% of cars sold are sedans;
  if 0.3 < car_type_perc <= 0.8 then type = 'SUV'; * 30% of cars sold are SUVs;
  if 0.8 < car_type_perc <= 1 then type = 'Truck'; * 20% of cars sold are trucks;
  if type = 'Sedan' and 0 < rand('uniform') <= 0.3 then model = 'S';
  if type = 'Sedan' and 0.3 < rand('uniform') <= 0.7 then model = 'SE';
  if type = 'Sedan' and 0.7 < rand('uniform') <= 1 then model = 'SEL';
  if type = 'SUV' and 0 < rand('uniform') <= 0.25 then model = 'S';
  if type = 'SUV' and 0.25 < rand('uniform') <= 0.6 then model = 'SE';
  if type = 'SUV' and 0.6 < rand('uniform') <= 1 then model = 'SEL';
  if type = 'Truck' and 0 < rand('uniform') <= 0.5 then model = 'S';
  if type = 'Truck' and 0.5 < rand('uniform') <= 0.8 then model = 'SE';
  if type = 'Truck' and 0.8 < rand('uniform') <= 1 then model = 'SEL';
end;
run;
```

Complex Code



Time Consuming



Static Output



Present a Lot of Challenges

Waterfall Plot in SAS

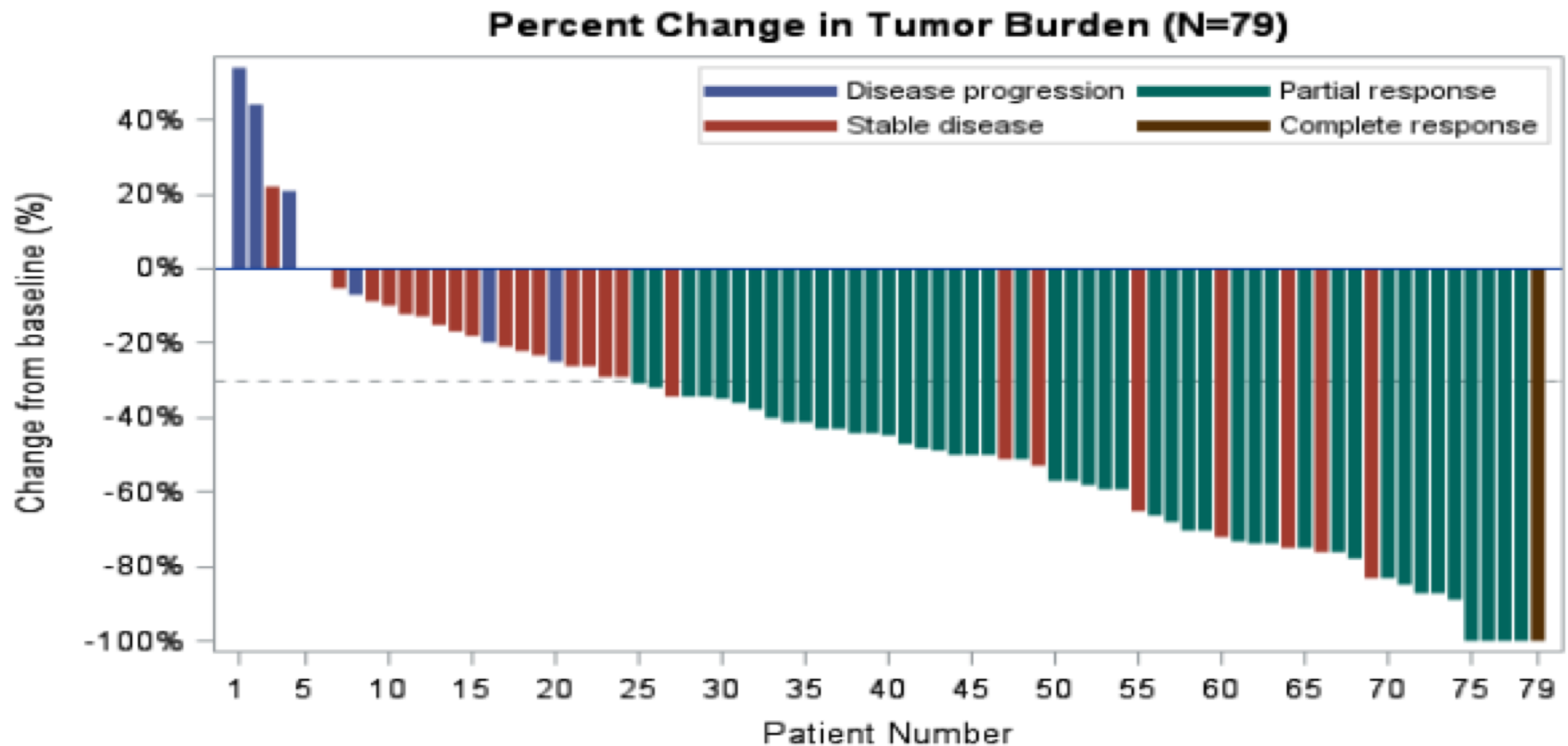


Fig. 1. Waterfall Plot (Wicklin, R. 2015, April 20)

Waterfall Plot in TIBCO Spotfire

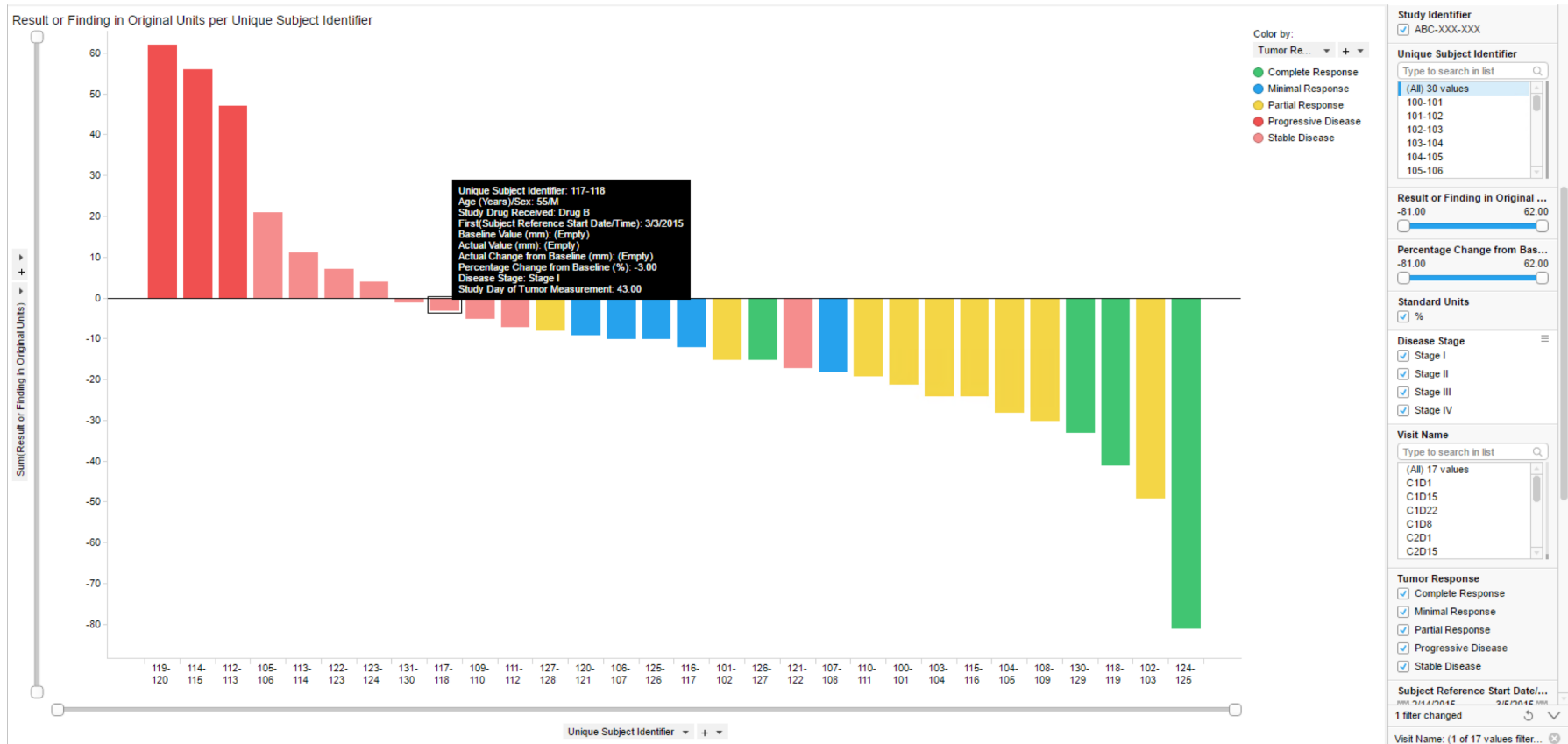


Fig. 2. Waterfall Plot (Spotfire)

Waterfall Plot by Disease Stage

Selected filter to only display Stage II and Stage III

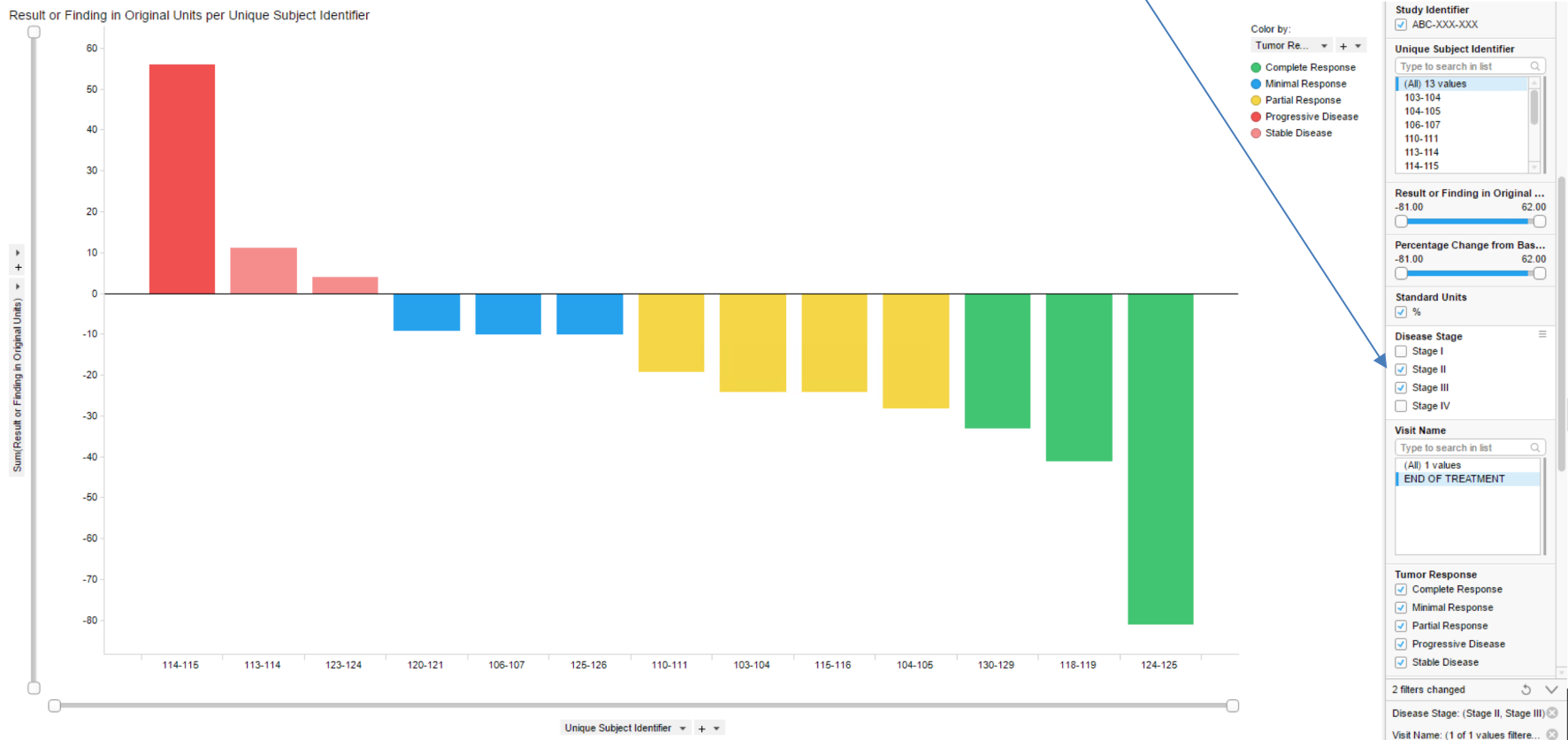


Fig. 3. Waterfall Plot (Spotfire) by Disease Stage

Swimmer Plot in SAS

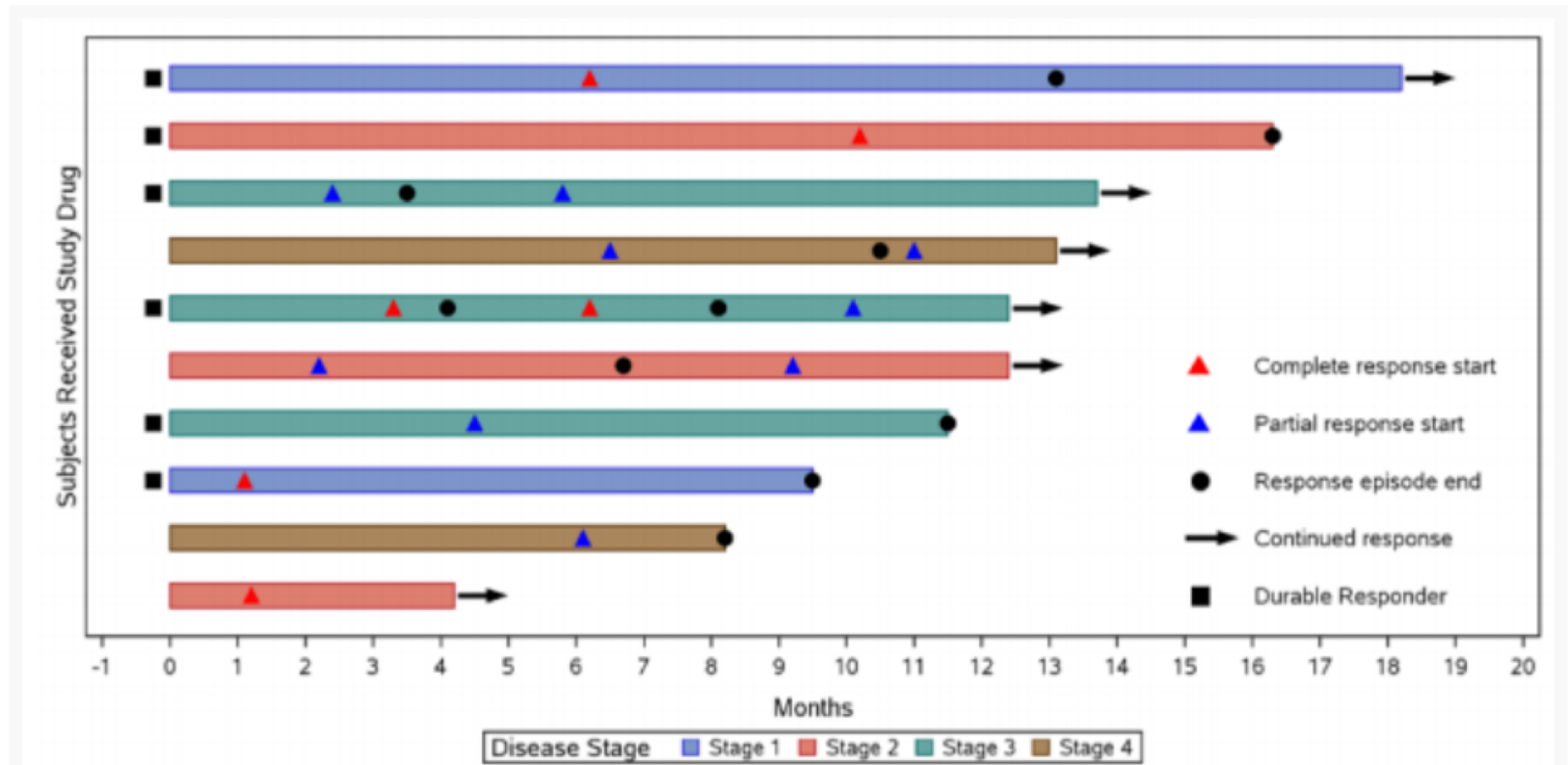


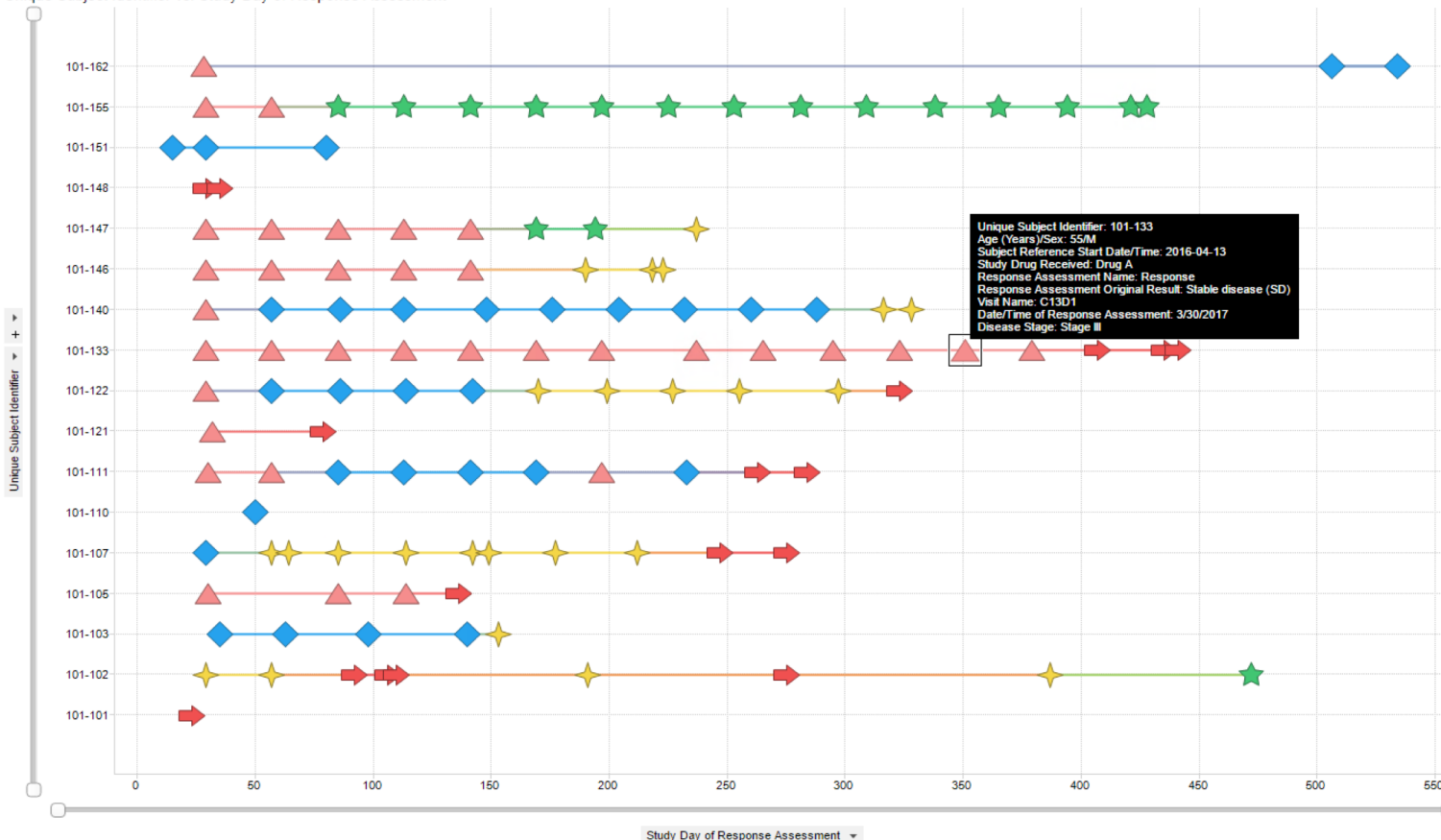
Fig. 4. Swimmer Plot (Matange, S. 2014, June 22)

Swimmer Plot in TIBCO Spotfire

By Disease Stage and Study Drug

Stage III Drug A

Unique Subject Identifier vs. Study Day of Response Assessment



Marker by:
(Row Nu... +
Color by:
Response... +
Shape by:
Response... +
Size by:
(None) -

- Complete response (CR)
- Minimal response (MR)
- Partial response (PR)
- Progressive disease (PD)
- Stable disease (SD)

Filters

Type to search filters

☒ Response

Study Identifier

ABC-XXX-XXX

Unique Subject Identifier

Type to search in list

(All) 17 values

101-101
101-102
101-103
101-105
101-107
101-110

Response Assessment Original Result

☒ Complete response (CR)
☒ Minimal response (MR)
☒ Partial response (PR)
☒ Progressive disease (PD)
☒ Stable disease (SD)

Response Assessment Result

☒ CR
☒ MR
☒ PD
☒ PR
☒ SD

Visit Number

1.00 999.00

Visit Name

Type to search in list

(All) 28 values

C10D1
C11D1
C12D1
C13D1
C14D1
C15D1

Planned Study Day of Visit

29.00 509.00

☒ Include empty values

Epoch

☒ FOLLOW-UP
☒ TREATMENT

Fig. 5. Swimmer Plot (Spotfire)

Swimmer Plot by Response Assessment

Selected filter to only display
Progressive Disease and Stable Disease

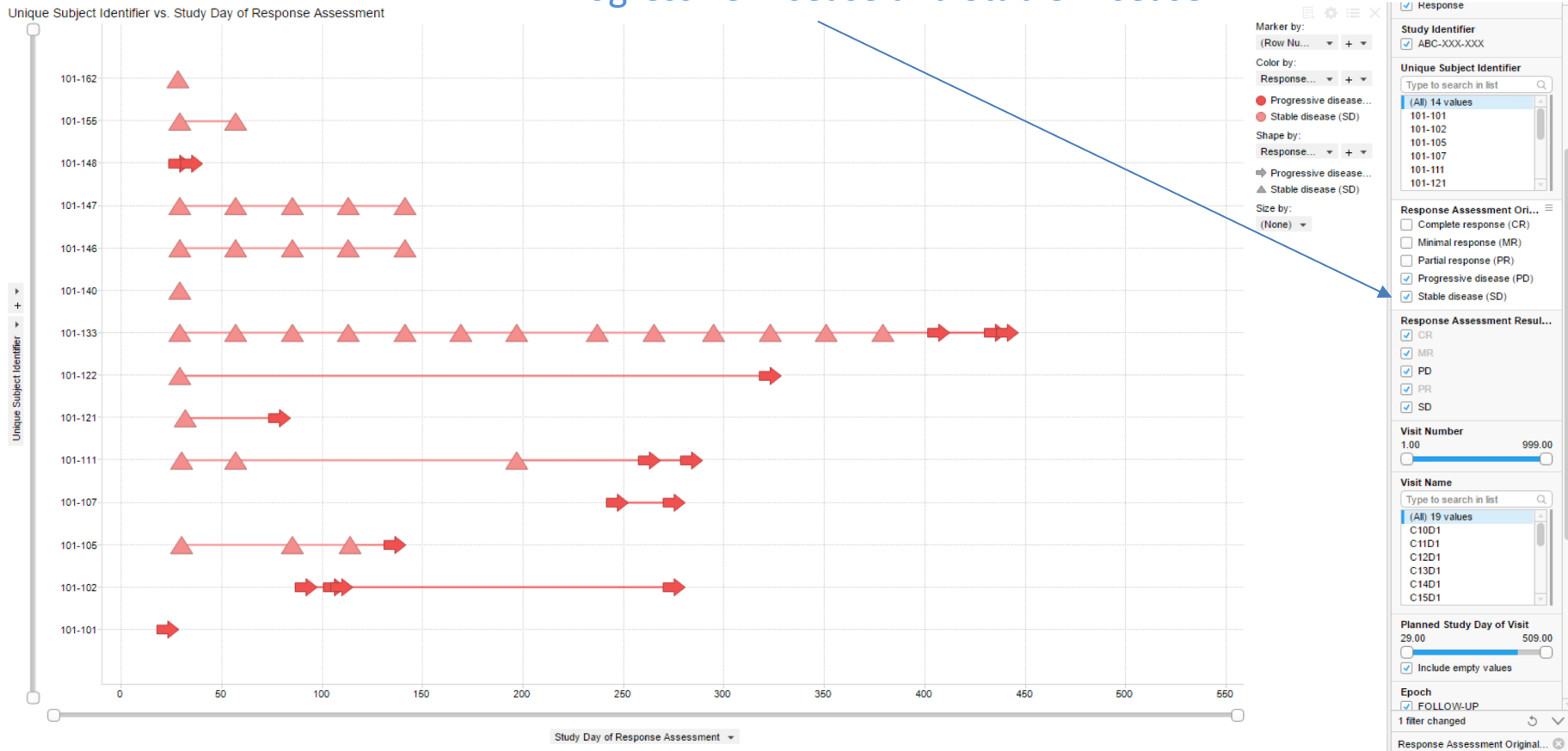


Fig. 6. Swimmer Plot (Spotfire) by Response Assessment

Kaplan-Meier in SAS

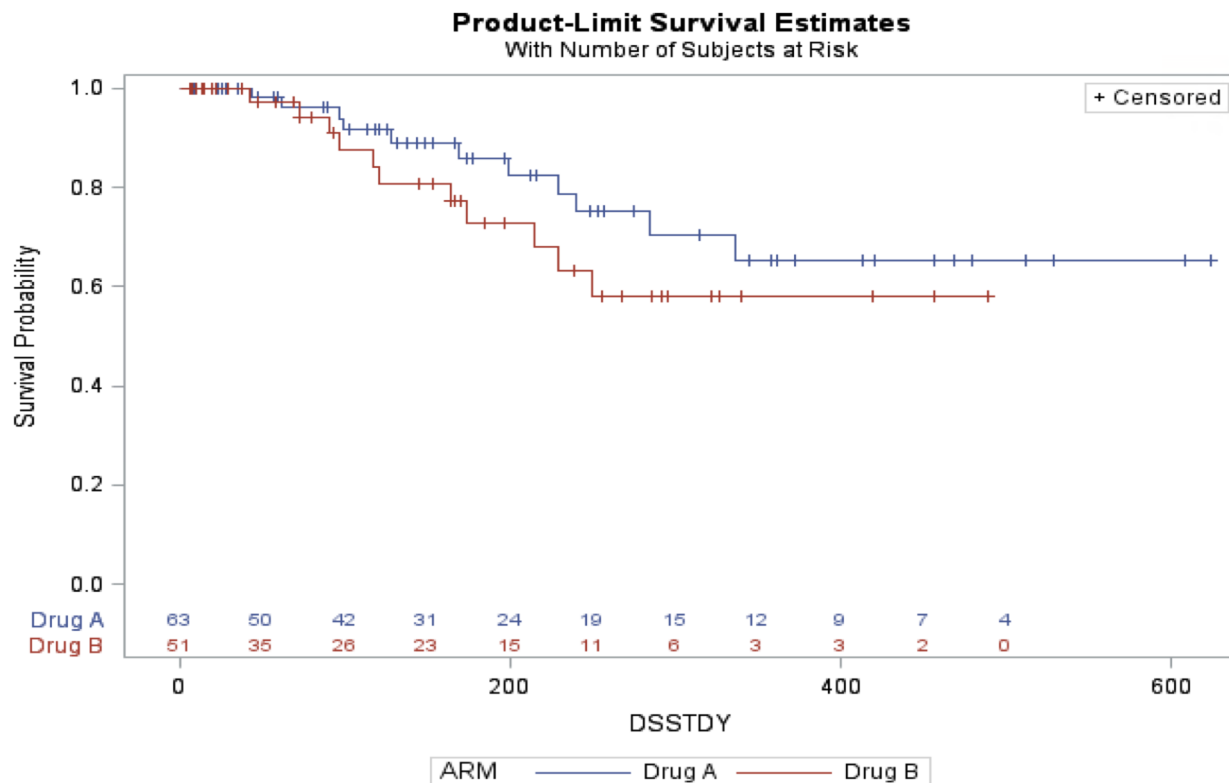


Fig. 7. Kaplan-Meier (SAS)

Kaplan-Meier in TIBCO Spotfire

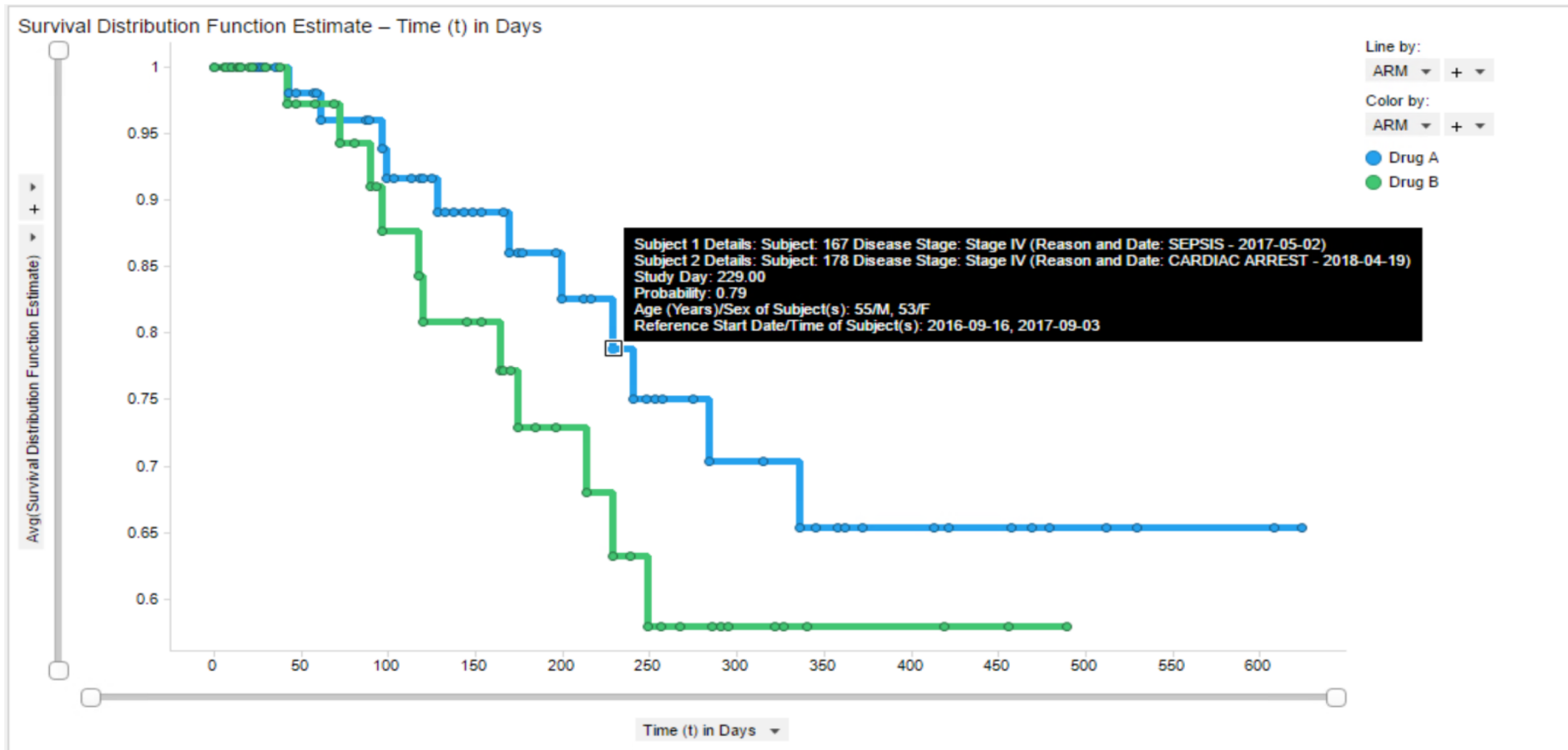


Fig. 8. Kaplan-Meier (Spotfire)

To Summarize

- Creating Interactive Visualizations using SAS and Spotfire.
- Spotfire gives us the ability to drill down the data and makes the review process faster and more effective.
- Reviewers can review the data from Day 1.

References

- [1] Wicklin, R. (2015, April 20). Create a waterfall plot in SAS. Retrieved from <https://blogs.sas.com/content/iml/2015/04/20/waterfall-plot.html>
- [2] Matange, S. (2014, June 22). Swimmer plot. Retrieved from <https://blogs.sas.com/content/graphicallyspeaking/2014/06/22/swimmer-plot/>
- [3] Busa, B., & Pothuri, K. (2018). Building Dashboards for Real-Time Insights into Clinical Data.
- [4] TIBCO Spotfire® Business Author and Consumer User's Guide.



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