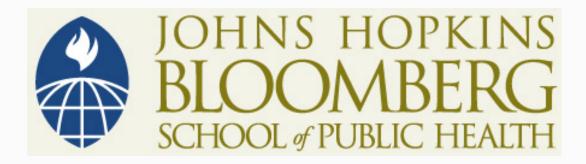
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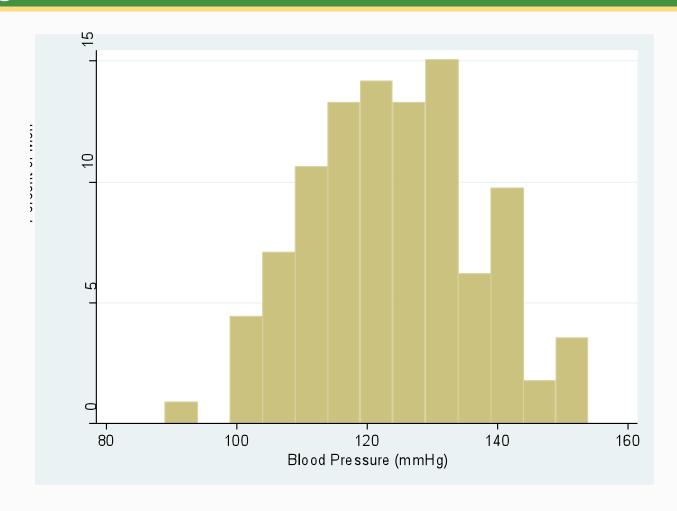
#### Section E

Stem and Leaf Plots, Box Plots

#### Sample 113 Men

- Suppose we took another look at our random sample of 113 men and their blood pressure measurements
- One tool for "visualizing" the data is the histogram

# Histogram: BP for 113 males



### Sample 113 Men: Stem and Leaf

- Another common tool for visually displaying continuous data is the "stem and leaf" plot
- Very similar to a histogram
  - Like a "histogram on its side"
  - Allows for easier identification of individual values in the sample

```
8.
 9*
 9. | 9
10* | 11334
10. I 566777899
11* | 111223333344444
11. | 55666667779
12* | 00000000111223344
12. | 5566677778888999999
13* | 000112222334
13. | 5677789
14* | 0000112222
14. | 67
15* | 0122
```

```
9
              9*
            10*
                   11334
                   566777899
            10.
            11*
                   1112233333344444
                   55666667779
            11.
"Stems"
                   00000000111223344
            12*
                   5566677778888999999
            12.
            13*
                   000112222334
            13.
                  5677789
                   0000112222
            14*
            14.
                   67
            15*
                   0122
```

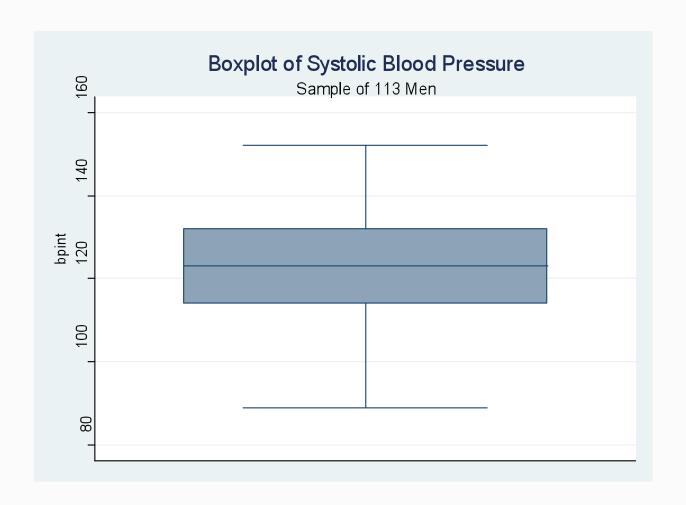
```
9*
 9.
10*
      11334
10.
      566777899
11* I
      1112233333344444
11.
   | 55666667779
                             "Leaves"
12* I
      00000000111223344
      5566677778888999999
12.
13*
      000112222334
13.
    1 5677789
      0000112222
14*
14.
      67
15*
      0122
```

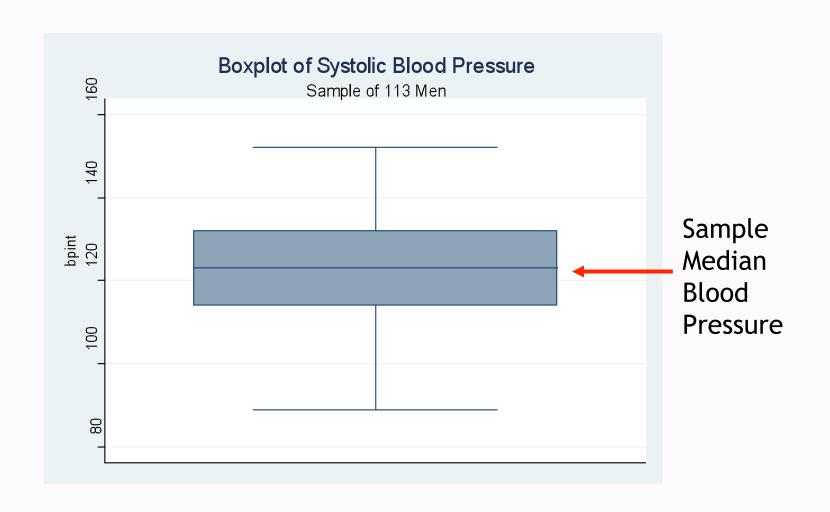
```
8.
 9*
 9.
    19
10* | 11334
10. I 566777899
11* | 1112233333344444
11. | 55666667779
12* | 00000000111223344
12. | 5566677778888999999
13* | 000112222334
13. | 5677789
14* | 0000112222
14. | 67
15* | 0122
```

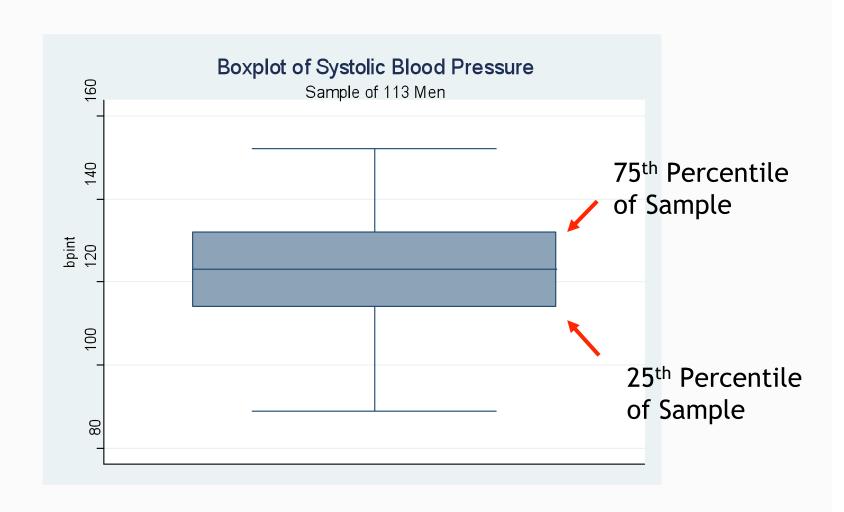
```
8.
 9*
 9. | 9
10* | 11334
10. | 566777899
11* | 1112233333344444
11. | 55666667779
12* | 00000000111223344
12. I 5566677778888999999
13* | 000112222334
13. | 5677789
14* L 0000112222
14. | 67
15* | 0122
```

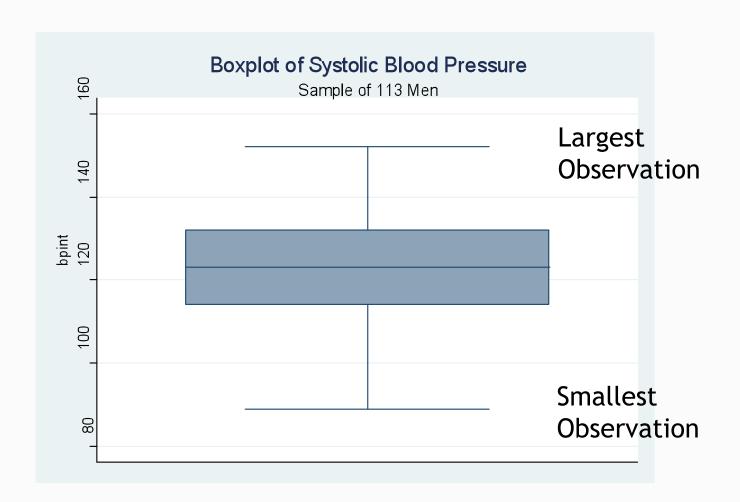
### Sample 113 Men: Stem and Boxplot

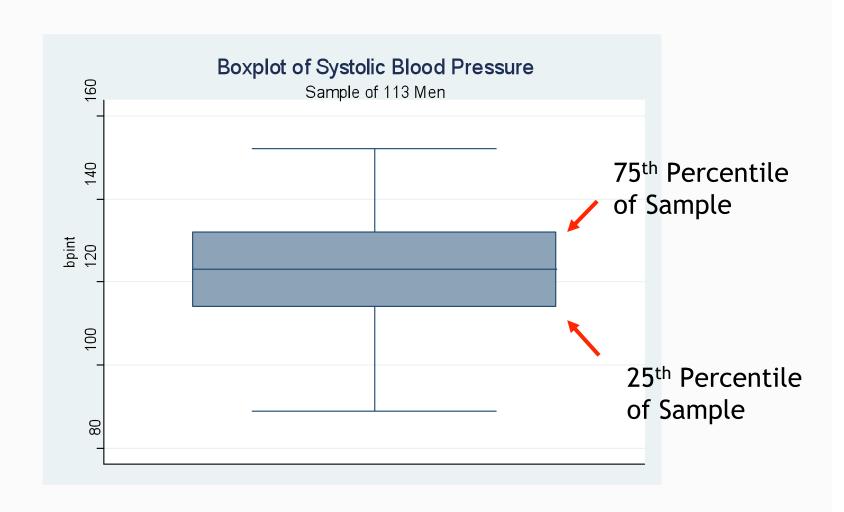
- Another common visual display tool is the boxplot
  - Gives good insight into distribution shape in terms of skewness and outlying values (extremes: values different than "most" of the rest of the data)
  - Very nice tool for easily comparing distribution of continuous data in multiple groups—can be plotted side by side









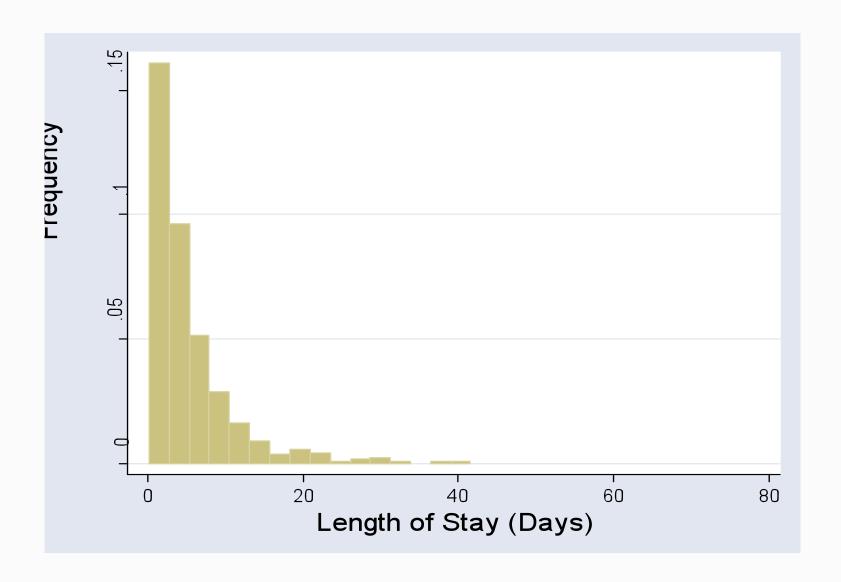


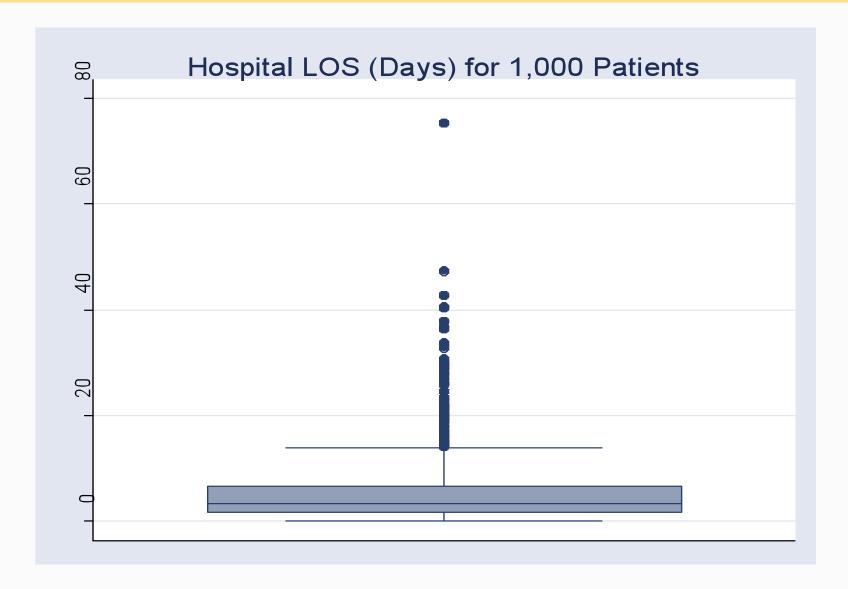
#### Hospital Length of Stay for 1,000 Patients

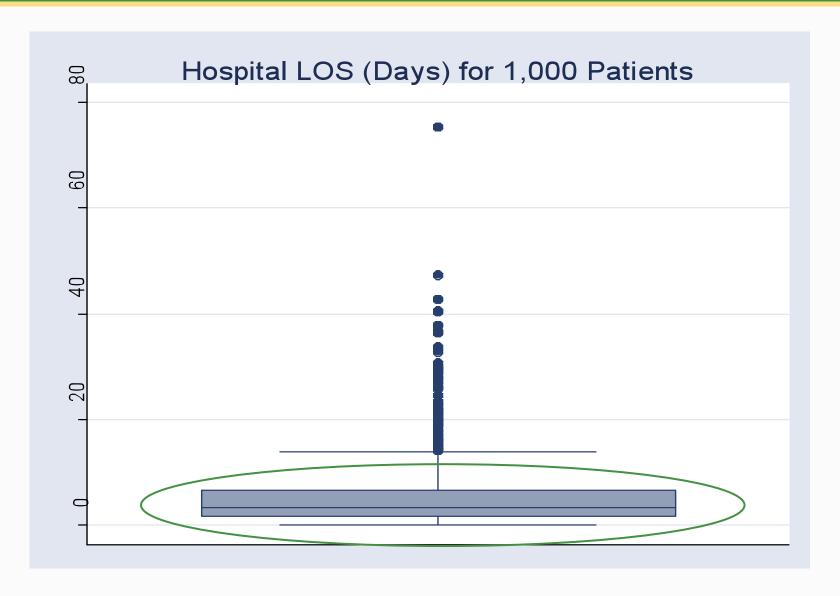
 Suppose we took a representative sample of discharge records from 1,000 patients discharged from a large teaching hospital in a single year

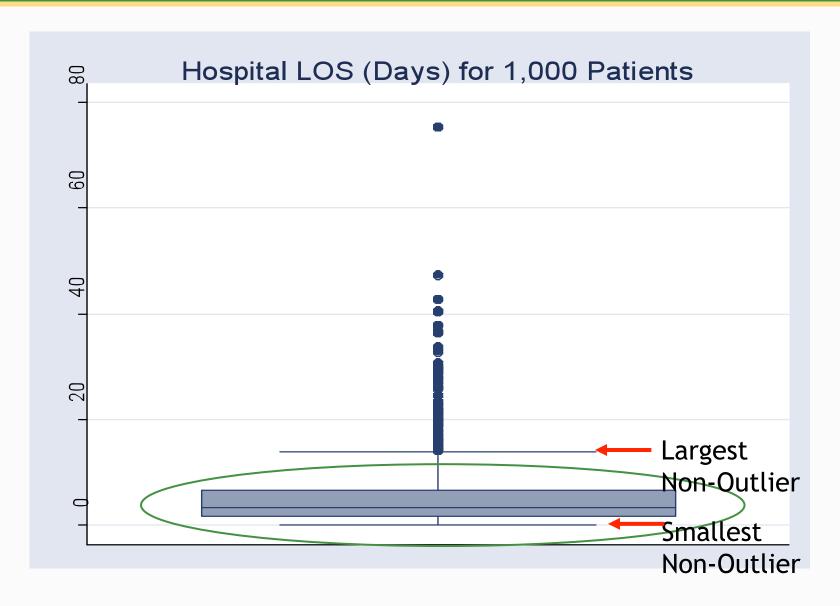
How could we visualize this data?

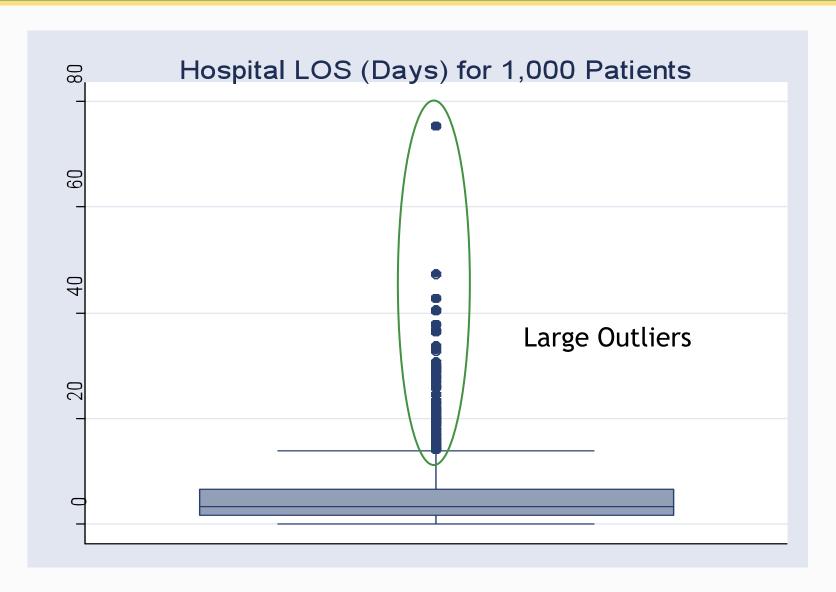
## Histogram: Length of Stay









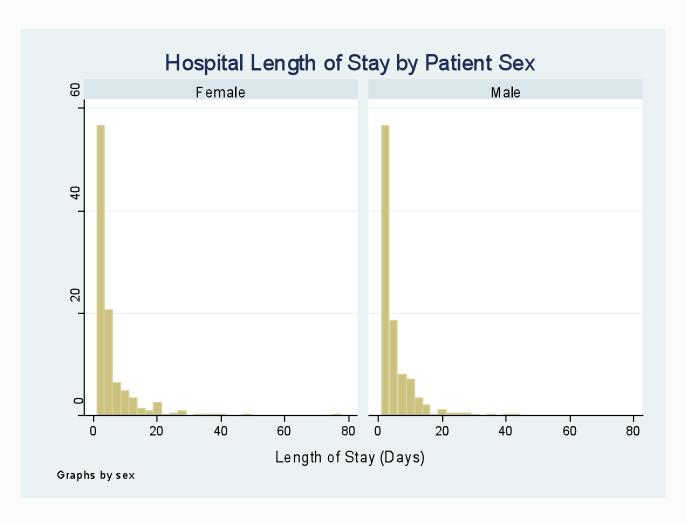


### Stem and Leaf: Length of Stay

```
0*
  Ot
  0f
                                  (140)
0s
  0.
  00000000000000000111111111111
1*
  2222222222222222222223333333333333
1t
  44444445555
1f
  66666777
1s
  8889999999
1.
2*
2t
  000001111111
  2233
2f
2s
  455
  6677
2.
3*
  889999
3t
  23
3f
3s
  667
3.
4*
  00
4t
  2
4f
4s
  7
4.
5*
5t
5f
5s
5.
6t
6f
6s
6.
7t
7f
  5
```

### Side by Side Distribution Comparison

 Side by side histograms of length of stay for female and male patients in sample



### Side by Side Distribution Comparison

 Side by side boxplots of length of stay for female and male patients in sample

