Descriptive Stats

```r
xls_path <- '../../data/ESSG extraction DEC 2022_3rd report 5Y - ONLY DPS Mod.xlsx'
```

Filters

```r
discarded_patients <- readLines('five_years/discarded_patients')

clinical_data %<>%
  .[, followup_2y :=
      !is.na(`2 YEAR VISIT - Date of visit`) |
      !is.na(`3 YEAR VISIT - Date of visit`)] %>%
  .[, followup_5y :=
      !is.na(`5 YEAR VISIT - Date of visit`) |
      !is.na(`6 YEAR VISIT - Date of visit`)]

# clinical_data %<>%
#   .[Site != 'ANK Op'] %>%
#   .[`Vital status` == 'Alive'] %>%
#   .[!(`Code of the patient` %in% discarded_patients)] %>%
#   .[`st1. Date of Stage` %>% as.Date() < as.Date('2015-3-15')]

total <- clinical_data[, `Code of the patient` %>% uniqueN]
patients_2y <- clinical_data[followup_2y==TRUE, `Code of the patient` %>% uniqueN]
patients_5y <- clinical_data[followup_5y==TRUE, `Code of the patient` %>% uniqueN]
```

- Number of Patients: 594
- Number of patients with visit in 2 years: 434
- Number of patients with visit in 5 years: 224

```r
# clinical_data %<>%
#   .[followup_2y==TRUE] %>%
#   .[`st1. Date of Stage` %>% as.Date() < as.Date('2016-6-1')]
```

Total Patients for the analysis: 594

Demographics

```
Age
[1] "mean"
[1] 53.19012
[1] "sd"
[1] 20.14594
```

```
Gender
[1] "table"
variable
Female   Male
   482    112
[1] "proportion"
variable
   Female      Male
0.8114478 0.1885522


Prior Spine Surgery
[1] "table"
variable
 No Yes
411 181
[1] "proportion"
variable
       No       Yes
0.6942568 0.3057432


Height (cm)_First Visit
[1] "mean"
[1] 162.9322
[1] "sd"
[1] 9.124613


Weight (kgs)_First Visit
[1] "mean"
[1] 65.86633
[1] "sd"
[1] 13.65647


BMI_First Visit
[1] "mean"
[1] 24.78151
[1] "sd"
[1] 4.660409


ASA classification
[1] "table"
variable
  1   2   3   4
140 318 133   2
[1] "proportion"
variable
          1          2          3          4
0.236087690 0.536256324 0.224283305 0.003372681
```

```
Tobacco use_First Visit
[1] "table"
variable
                         Current User:          Current User: 1 pack per day
                                     1                                     29
      Current User: 2 packs per day Current User: 3 packs or more per day
                                   1                                       5
  Current User: Less than 1pk per day                              Ex-User:
                                  83                                       1
              Ex-User: 0-6 months          Ex-User: 1 year or greater
                                  20                                       5
          Ex-User: 2 yrs or greater                 Ex-User: 6-12 months
                                  65                                       4
                      Ex-User: N.A.                              Non-User
                                   1                                     372
[1] "proportion"
variable
                         Current User:          Current User: 1 pack per day
                         0.001703578                           0.049403748
      Current User: 2 packs per day Current User: 3 packs or more per day
                         0.001703578                           0.008517888
  Current User: Less than 1pk per day                              Ex-User:
                         0.141396934                           0.001703578
              Ex-User: 0-6 months          Ex-User: 1 year or greater
                         0.034071550                           0.008517888
          Ex-User: 2 yrs or greater                 Ex-User: 6-12 months
                         0.110732538                           0.006814310
                      Ex-User: N.A.                              Non-User
                         0.001703578                           0.633730835


ESSG Diagnosis
[1] "table"
variable
                  Congenital                        Degenerative
                          10                                 251
            Failed-back                          Idiopathic
                          31                                 247
        Neuromuscular Other: radiotherapy induced
                           7                                   1
  Other: Spondylolisthesis                    Post-infection
                           7                                   2
            Post-traumatic                      Scheuermann
                          12                                  18
              Syndromic
                           8
[1] "proportion"
variable
                  Congenital                        Degenerative
                  0.016835017                        0.422558923
            Failed-back                          Idiopathic
                  0.052188552                        0.415824916
        Neuromuscular Other: radiotherapy induced
```

```
                    0.011784512                        0.001683502
     Other: Spondylolisthesis                        Post-infection
                    0.011784512                        0.003367003
                 Post-traumatic                           Scheuermann
                    0.020202020                        0.030303030
                       Syndromic
                    0.013468013


Surgical Approach
[1] "table"
variable
                       Anterior             Anterior-Posterior
                              1                             17
 Anterior-Posterior-Posterior                      Posterior
                              2                            554
           Posterior-Anterior Posterior-Anterior-Posterior
                              8                              3
           Posterior-Posterior
                              8
[1] "proportion"
variable
                       Anterior             Anterior-Posterior
                    0.001686341                        0.028667791
 Anterior-Posterior-Posterior                      Posterior
                    0.003372681                        0.934232715
           Posterior-Anterior Posterior-Anterior-Posterior
                    0.013490725                        0.005059022
           Posterior-Posterior
                    0.013490725
```

Radiology

```
Static Major curve Cobb angle
[1] "mean"
[1] 42.78882
[1] "sd"
[1] 20.95333


6W. Static Major curve Cobb angle
[1] "mean"
[1] 21.52741
[1] "sd"
[1] 14.78069


2Y. Static Major curve Cobb angle
[1] "mean"
[1] 23.57279
[1] "sd"
[1] 16.26678
```

5Y. Static Major curve Cobb angle
[1] "mean"
[1] 22.74064
[1] "sd"
[1] 17.67386

Static Major curve Cobb angle tests
preop vs 6w p-value
1.295613e-71
6w vs 2y p-value
0.07176794

6w vs 5y p-value
0.5055297
2y vs 5y p-value
0.6664113

Coronal Balance (C7PL to CSVL)
[1] "mean"
[1] 19.74022
[1] "sd"
[1] 19.28057

6W. Coronal Balance (C7PL to CSVL)
[1] "mean"
[1] 17.65617
[1] "sd"
[1] 14.91366

2Y. Coronal Balance (C7PL to CSVL)
[1] "mean"
[1] 17.33128
[1] "sd"
[1] 14.04835

5Y. Coronal Balance (C7PL to CSVL)
[1] "mean"
[1] 18.85894
[1] "sd"
[1] 15.54783

Coronal Balance (C7PL to CSVL) tests
preop vs 6w p-value
0.05486054
6w vs 2y p-value
0.7644823

6w vs 5y p-value

```
0.4746818
2y vs 5y p-value
0.37962

Sagittal Balance
[1] "mean"
[1] 45.6427
[1] "sd"
[1] 62.19278



6W. Sagittal Balance
[1] "mean"
[1] 24.57252
[1] "sd"
[1] 42.03249



2Y. Sagittal Balance
[1] "mean"
[1] 31.0822
[1] "sd"
[1] 48.89691



5Y. Sagittal Balance
[1] "mean"
[1] 34.35874
[1] "sd"
[1] 49.75912



Sagittal Balance tests
preop vs 6w p-value
2.210942e-10
6w vs 2y p-value
0.06171914

6w vs 5y p-value
0.06613875
2y vs 5y p-value
0.5647263

Sagittal T2-T5
[1] "mean"
[1] 12.46236
[1] "sd"
[1] 9.082544



6W. Sagittal T2-T5
[1] "mean"
[1] 14.3535
[1] "sd"
```

```
[1] 9.022884


2Y. Sagittal T2-T5
[1] "mean"
[1] 14.79493
[1] "sd"
[1] 10.64587


5Y. Sagittal T2-T5
[1] "mean"
[1] 14.74423
[1] "sd"
[1] 10.81092


Sagittal T2-T5 tests
preop vs 6w p-value
0.0008610533
6w vs 2y p-value
0.5524218

6w vs 5y p-value
0.7320957
2y vs 5y p-value
0.9670423

Sagittal T5-T12
[1] "mean"
[1] 32.4919
[1] "sd"
[1] 18.47544


6W. Sagittal T5-T12
[1] "mean"
[1] 35.06492
[1] "sd"
[1] 13.96107


2Y. Sagittal T5-T12
[1] "mean"
[1] 37.47884
[1] "sd"
[1] 17.22906


5Y. Sagittal T5-T12
[1] "mean"
[1] 40.80738
[1] "sd"
[1] 16.43304
```

Sagittal T5-T12 tests
preop vs 6w p-value
0.01068464
6w vs 2y p-value
0.0416303

6w vs 5y p-value
0.001246032
2y vs 5y p-value
0.08137577

Sagittal T2-T12
[1] "mean"
[1] 39.68118
[1] "sd"
[1] 19.34627

6W. Sagittal T2-T12
[1] "mean"
[1] 44.44504
[1] "sd"
[1] 15.21019

2Y. Sagittal T2-T12
[1] "mean"
[1] 47.11259
[1] "sd"
[1] 17.27783

5Y. Sagittal T2-T12
[1] "mean"
[1] 49.5476
[1] "sd"
[1] 16.41984

Sagittal T2-T12 tests
preop vs 6w p-value
1.006381e-05
6w vs 2y p-value
0.02893977

6w vs 5y p-value
0.004246386
2y vs 5y p-value
0.1999636

Lordosis (top of L1-S1)
[1] "mean"

```
[1] -44.98731
[1] "sd"
[1] 20.92598


6W. Lordosis (top of L1-S1)
[1] "mean"
[1] -51.14667
[1] "sd"
[1] 14.94956


2Y. Lordosis (top of L1-S1)
[1] "mean"
[1] -51.3612
[1] "sd"
[1] 16.17806


5Y. Lordosis (top of L1-S1)
[1] "mean"
[1] -51.68269
[1] "sd"
[1] 15.16752


Lordosis (top of L1-S1) tests
preop vs 6w p-value
1.378737e-08
6w vs 2y p-value
0.8458765

6w vs 5y p-value
0.7370631
2y vs 5y p-value
0.8514191

Pelvic Incidence
[1] "mean"
[1] 55.48861
[1] "sd"
[1] 13.73301


6W. Pelvic Incidence
[1] "mean"
[1] 55.17
[1] "sd"
[1] 13.4343


2Y. Pelvic Incidence
[1] "mean"
[1] 55.83188
```

```
[1] "sd"
[1] 14.00032


5Y. Pelvic Incidence
[1] "mean"
[1] 55.43343
[1] "sd"
[1] 12.78223


Pelvic Incidence tests
preop vs 6w p-value
0.6942122
6w vs 2y p-value
0.4961797

6w vs 5y p-value
0.8464833
2y vs 5y p-value
0.784896

Pelvic Tilt
[1] "mean"
[1] 21.47343
[1] "sd"
[1] 11.15988


6W. Pelvic Tilt
[1] "mean"
[1] 19.30847
[1] "sd"
[1] 9.981723


2Y. Pelvic Tilt
[1] "mean"
[1] 20.57743
[1] "sd"
[1] 9.87535


5Y. Pelvic Tilt
[1] "mean"
[1] 22.06731
[1] "sd"
[1] 10.18653


Pelvic Tilt tests
preop vs 6w p-value
0.0006349646
6w vs 2y p-value
```

0.07008127

6w vs 5y p-value
0.01086401
2y vs 5y p-value
0.1872226

Sacral Slope
[1] "mean"
[1] 34.1949
[1] "sd"
[1] 11.58929

6W. Sacral Slope
[1] "mean"
[1] 35.80482
[1] "sd"
[1] 10.3898

2Y. Sacral Slope
[1] "mean"
[1] 35.30659
[1] "sd"
[1] 11.36744

5Y. Sacral Slope
[1] "mean"
[1] 33.36657
[1] "sd"
[1] 10.20094

Sacral Slope tests
preop vs 6w p-value
0.0141466
6w vs 2y p-value
0.5211073

6w vs 5y p-value
0.02509651
2y vs 5y p-value
0.09863723

RLL
[1] "mean"
[1] -18.34581
[1] "sd"
[1] 19.87454

6W. RLL

```
[1] "mean"
[1] -12.05928
[1] "sd"
[1] 13.73125


2Y. RLL
[1] "mean"
[1] -12.20931
[1] "sd"
[1] 14.70905


5Y. RLL
[1] "mean"
[1] -11.68639
[1] "sd"
[1] 13.74324


RLL tests
preop vs 6w p-value
8.368877e-10
6w vs 2y p-value
0.8822169

6w vs 5y p-value
0.7971551
2y vs 5y p-value
0.7373786

Global Tilt
[1] "mean"
[1] 25.87359
[1] "sd"
[1] 17.2298


6W. Global Tilt
[1] "mean"
[1] 20.76093
[1] "sd"
[1] 12.8058


2Y. Global Tilt
[1] "mean"
[1] 22.95066
[1] "sd"
[1] 13.66316


5Y. Global Tilt
[1] "mean"
```

```
[1] 24.84722
[1] "sd"
[1] 14.79414


Global Tilt tests
preop vs 6w p-value
3.503624e-08
6w vs 2y p-value
0.02428359

6w vs 5y p-value
0.008576875
2y vs 5y p-value
0.2449217

T1 Sagittal Tilt
[1] "mean"
[1] -1.386372
[1] "sd"
[1] 5.710417


6W. T1 Sagittal Tilt
[1] "mean"
[1] -2.841145
[1] "sd"
[1] 4.117856


2Y. T1 Sagittal Tilt
[1] "mean"
[1] -2.780964
[1] "sd"
[1] 4.594274


5Y. T1 Sagittal Tilt
[1] "mean"
[1] -2.804955
[1] "sd"
[1] 4.48192


T1 Sagittal Tilt tests
preop vs 6w p-value
2.087489e-06
6w vs 2y p-value
0.8526457

6w vs 5y p-value
0.9386087
2y vs 5y p-value
0.9622914
```

```
Thoracolumbar L2-T10
[1] "mean"
[1] 8.855937
[1] "sd"
[1] 20.13117




6W. Thoracolumbar L2-T10
[1] "mean"
[1] 6.064743
[1] "sd"
[1] 12.12158




2Y. Thoracolumbar L2-T10
[1] "mean"
[1] 8.148125
[1] "sd"
[1] 13.27101




5Y. Thoracolumbar L2-T10
[1] "mean"
[1] 8.327143
[1] "sd"
[1] 14.0989




Thoracolumbar L2-T10 tests
preop vs 6w p-value
0.005622011
6w vs 2y p-value
0.02682163

6w vs 5y p-value
0.1290078
2y vs 5y p-value
0.9094901

RSA
[1] "mean"
[1] 14.21539
[1] "sd"
[1] 15.30773




6W. RSA
[1] "mean"
[1] 9.22915
[1] "sd"
[1] 10.22477
```

```
2Y. RSA
[1] "mean"
[1] 11.02317
[1] "sd"
[1] 11.75875


5Y. RSA
[1] "mean"
[1] 13.23917
[1] "sd"
[1] 12.44046


RSA tests
preop vs 6w p-value
3.54667e-10
6w vs 2y p-value
0.02796905

6w vs 5y p-value
0.002118317
2y vs 5y p-value
0.1086786

RPV
[1] "mean"
[1] -7.573511
[1] "sd"
[1] 9.217414


6W. RPV
[1] "mean"
[1] -5.749558
[1] "sd"
[1] 7.73223


2Y. RPV
[1] "mean"
[1] -6.634344
[1] "sd"
[1] 8.008375


5Y. RPV
[1] "mean"
[1] -8.339167
[1] "sd"
[1] 8.023281


RPV tests
```

preop vs 6w p-value
0.0003290958
6w vs 2y p-value
0.1128224

6w vs 5y p-value
0.002452149
2y vs 5y p-value
0.05765243

Quality of Life

ODI - Score (%)_First Visit
[1] "mean"
[1] 39.98946
[1] "sd"
[1] 19.91681

6M. ODI - Score (%)
[1] "mean"
[1] 29.08298
[1] "sd"
[1] 17.85847

2Y. ODI - Score (%)
[1] "mean"
[1] 28.55474
[1] "sd"
[1] 19.91883

5Y. ODI - Score (%)
[1] "mean"
[1] 28.62857
[1] "sd"
[1] 20.29673

ODI - Score (%)_First Visit tests
preop vs 6m p-value
8.259789e-20
6m vs 2y p-value
0.6804531

6m vs 5y p-value
0.7799035
2y vs 5y p-value
0.9656013

SRS22 - Function / Activity_First Visit
[1] "mean"

```
[1] 3.089877
[1] "sd"
[1] 0.9006412


6M. SRS22 - Function / Activity
[1] "mean"
[1] 3.247155
[1] "sd"
[1] 0.8145752


2Y. SRS22 - Function / Activity
[1] "mean"
[1] 3.423479
[1] "sd"
[1] 0.9259905


5Y. SRS22 - Function / Activity
[1] "mean"
[1] 3.44381
[1] "sd"
[1] 0.8750796


SRS22 - Function / Activity_First Visit tests
preop vs 6m p-value
0.003179263
6m vs 2y p-value
0.002943063

6m vs 5y p-value
0.005956683
2y vs 5y p-value
0.7884323

SRS22 - Pain_First Visit
[1] "mean"
[1] 2.583625
[1] "sd"
[1] 0.9879195


6M. SRS22 - Pain
[1] "mean"
[1] 3.329788
[1] "sd"
[1] 0.9676209


2Y. SRS22 - Pain
[1] "mean"
[1] 3.421071
```

```
[1] "sd"
[1] 1.063229



5Y. SRS22 - Pain
[1] "mean"
[1] 3.349286
[1] "sd"
[1] 1.128062



SRS22 - Pain_First Visit tests
preop vs 6m p-value
2.287579e-32
6m vs 2y p-value
0.1851708

6m vs 5y p-value
0.8280615
2y vs 5y p-value
0.4448486

SRS22 - Self image / Appearance_First Visit
[1] "mean"
[1] 2.447776
[1] "sd"
[1] 0.7280313



6M. SRS22 - Self image / Appearance
[1] "mean"
[1] 3.454756
[1] "sd"
[1] 0.8479938



2Y. SRS22 - Self image / Appearance
[1] "mean"
[1] 3.416107
[1] "sd"
[1] 0.9088572



5Y. SRS22 - Self image / Appearance
[1] "mean"
[1] 3.339762
[1] "sd"
[1] 0.9384031



SRS22 - Self image / Appearance_First Visit tests
preop vs 6m p-value
2.740451e-76
6m vs 2y p-value
```

0.5159325

6m vs 5y p-value
0.1292566
2y vs 5y p-value
0.3329476

SRS22 - Mental health_First Visit
[1] "mean"
[1] 3.215114
[1] "sd"
[1] 0.894811

6M. SRS22 - Mental health
[1] "mean"
[1] 3.51845
[1] "sd"
[1] 0.9015841

2Y. SRS22 - Mental health
[1] "mean"
[1] 3.514039
[1] "sd"
[1] 0.9601993

5Y. SRS22 - Mental health
[1] "mean"
[1] 3.521905
[1] "sd"
[1] 0.8993997

SRS22 - Mental health_First Visit tests
preop vs 6m p-value
7.326295e-08
6m vs 2y p-value
0.9441958

6m vs 5y p-value
0.9631287
2y vs 5y p-value
0.9197936

SRS22 - SRS Subtotal score_First Visit
[1] "mean"
[1] 2.838476
[1] "sd"
[1] 0.6960732

6M. SRS22 - SRS Subtotal score

```
[1] "mean"
[1] 3.382076
[1] "sd"
[1] 0.7518066



2Y. SRS22 - SRS Subtotal score
[1] "mean"
[1] 3.444015
[1] "sd"
[1] 0.8409511



5Y. SRS22 - SRS Subtotal score
[1] "mean"
[1] 3.398436
[1] "sd"
[1] 0.8737467



SRS22 - SRS Subtotal score_First Visit tests
preop vs 6m p-value
4.07275e-31
6m vs 2y p-value
0.2518855

6m vs 5y p-value
0.8137639
2y vs 5y p-value
0.5331138


SRS22 - Satisfaction with management_First Visit
[1] "mean"
[1] 3.068627
[1] "sd"
[1] 1.058577



6M. SRS22 - Satisfaction with management
[1] "mean"
[1] 4.233261
[1] "sd"
[1] 0.8861705



2Y. SRS22 - Satisfaction with management
[1] "mean"
[1] 4.128429
[1] "sd"
[1] 1.000795



5Y. SRS22 - Satisfaction with management
[1] "mean"
```

```
[1] 3.959135
[1] "sd"
[1] 1.040027


SRS22 - Satisfaction with management_First Visit tests
preop vs 6m p-value
3.989287e-58
6m vs 2y p-value
0.1058843

6m vs 5y p-value
0.00106349
2y vs 5y p-value
0.05436182

SF36 - PCS_First Visit
[1] "mean"
[1] 35.8387
[1] "sd"
[1] 10.23927


6M. SF36 - PCS
[1] "mean"
[1] 40.34817
[1] "sd"
[1] 9.564251


2Y. SF36 - PCS
[1] "mean"
[1] 41.65167
[1] "sd"
[1] 10.51772


5Y. SF36 - PCS
[1] "mean"
[1] 40.74315
[1] "sd"
[1] 11.311


SF36 - PCS_First Visit tests
preop vs 6m p-value
1.054996e-12
6m vs 2y p-value
0.05919641

6m vs 5y p-value
0.6652213
2y vs 5y p-value
0.3401059
```

```
SF36 - MCS_First Visit
[1] "mean"
[1] 44.07714
[1] "sd"
[1] 12.60726


6M. SF36 - MCS
[1] "mean"
[1] 47.69998
[1] "sd"
[1] 12.87508


2Y. SF36 - MCS
[1] "mean"
[1] 47.64317
[1] "sd"
[1] 12.66176


5Y. SF36 - MCS
[1] "mean"
[1] 47.39961
[1] "sd"
[1] 11.32544


SF36 - MCS_First Visit tests
preop vs 6m p-value
8.047527e-06
6m vs 2y p-value
0.9481616

6m vs 5y p-value
0.7633328
2y vs 5y p-value
0.810136
```

Surgery

```
Total Operative Blood Loss st1+st2+st3
[1] "mean"
[1] 1229.455
[1] "sd"
[1] 1098.151


Total surgical time
[1] "mean"
[1] 323.3378
[1] "sd"
```

```
[1] 182.4494


Number of Posterior Instrumented Levels
[1] "mean"
[1] 8.080944
[1] "sd"
[1] 3.938744


Pelvic fixation
[1] "table"
variable
 No Yes
385 200
[1] "proportion"
variable
       No       Yes
0.6581197 0.3418803


Surgical Approach
[1] "table"
variable
                    Anterior          Anterior-Posterior
                           1                          17
Anterior-Posterior-Posterior                    Posterior
                           2                         554
         Posterior-Anterior Posterior-Anterior-Posterior
                           8                           3
         Posterior-Posterior
                           8
[1] "proportion"
variable
                    Anterior          Anterior-Posterior
                 0.001686341                 0.028667791
Anterior-Posterior-Posterior                    Posterior
                 0.003372681                 0.934232715
         Posterior-Anterior Posterior-Anterior-Posterior
                 0.013490725                 0.005059022
         Posterior-Posterior
                 0.013490725


Number of Interbody Fusions
[1] "mean"
[1] 0.9510961
[1] "sd"
[1] 1.200775


Decompression
[1] "table"
variable
```

```
 No Yes
374 220
[1] "proportion"
variable
       No       Yes
0.6296296 0.3703704


Interbody Fusion
[1] "table"
variable
 No Yes
294 300
[1] "proportion"
variable
       No       Yes
0.4949495 0.5050505


Osteotomy
[1] "table"
variable
 No Yes
326 268
[1] "proportion"
variable
       No       Yes
0.5488215 0.4511785


3CO
[1] "table"
variable
FALSE  TRUE
  514    71
[1] "proportion"
variable
    FALSE      TRUE
0.8786325 0.1213675


uiv_t10_12_l1
[1] "table"
variable
 No Yes
544  50
[1] "proportion"
variable
        No        Yes
0.91582492 0.08417508
```