Descriptive Stats

```
xls_path <- '../../data/ESSG extraction June 2022_2nd report 5Y - ONLY DPS.xlsx'
```

Filters

```
discarded_patients <- readLines('five_years/discarded_patients')</pre>
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: 585
- Number of patients with visit in 2 years: 434
- Number of patients with visit in 5 years: 224

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

Total Patients for the analysis: 585

Demographics

```
Age
[1] "mean"
[1] 53.03932
[1] "sd"
[1] 20.09873
```

```
[1] "table"
variable
Female Male
   474
        111
[1] "proportion"
variable
   Female
               Male
0.8102564 0.1897436
Prior Spine Surgery
[1] "table"
variable
No Yes
407 176
[1] "proportion"
variable
                Yes
      No
0.6981132 0.3018868
Height (cm)_First Visit
[1] "mean"
[1] 163.0017
[1] "sd"
[1] 9.14038
Weight (kgs)_First Visit
[1] "mean"
[1] 65.95533
[1] "sd"
[1] 13.6988
BMI_First Visit
[1] "mean"
[1] 24.79569
[1] "sd"
[1] 4.685533
ASA classification
[1] "table"
variable
 1 2 3
137 315 130
[1] "proportion"
variable
                                  3
0.234589041\ 0.539383562\ 0.222602740\ 0.003424658
```

Gender

Tobacco use_First Visit [1] "table" variable Current User: Current User: 1 pack per day Current User: 2 packs per day Current User: 3 packs or more per day 5 Current User: Less than 1pk per day Ex-User: 1 Ex-User: 0-6 months Ex-User: 1 year or greater Ex-User: 6-12 months Ex-User: 2 yrs or greater Ex-User: N.A. Non-User 1 365 [1] "proportion" variable Current User: Current User: 1 pack per day 0.001730104 0.048442907 Current User: 2 packs per day Current User: 3 packs or more per day 0.001730104 0.008650519 Current User: Less than 1pk per day Ex-User: 0.143598616 0.001730104 Ex-User: 0-6 months Ex-User: 1 year or greater 0.034602076 0.008650519 Ex-User: 2 yrs or greater Ex-User: 6-12 months 0.110726644 0.006920415 Non-User Ex-User: N.A. 0.001730104 0.631487889 ESSG Diagnosis [1] "table" variable Congenital Degenerative 10 245 Failed-back Idiopathic Neuromuscular Other: radiotherapy induced Post-infection Other: Spondylolisthesis Post-traumatic Scheuermann 12 Syndromic [1] "proportion" variable Congenital Degenerative 0.017094017 0.418803419

Neuromuscular Other: radiotherapy induced

Idiopathic

0.420512821

Failed-back

0.051282051

0.010256410 0.001709402
Other: Spondylolisthesis Post-infection
0.011965812 0.003418803
Post-traumatic Scheuermann
0.020512821 0.030769231
Syndromic
0.013675214

Surgical Approach
[1] "table"
variable

Anterior Anterior-Posterior

1 17
Anterior-Posterior-Posterior Posterior
2 548

Posterior-Anterior Posterior-Anterior-Posterior 8 3

Posterior-Posterior 6

[1] "proportion" variable

Anterior Anterior-Posterior
0.001709402 0.029059829

Anterior-Posterior-Posterior Posterior
0.003418803 0.936752137

Posterior-Anterior Posterior-Anterior-Posterior
0.013675214 0.005128205

Posterior-Posterior 0.010256410

Radiology

Static Major curve Cobb angle

- [1] "mean"
- [1] 42.85034
- [1] "sd"
- [1] 20.99066
- 6W. Static Major curve Cobb angle
- [1] "mean"
- [1] 21.47398
- [1] "sd"
- [1] 14.71544
- 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 3.874961e-71 6w vs 2y p-value 0.06510127

6w vs 5y p-value 0.4872663 2y vs 5y p-value 0.6664113

Coronal Balance (C7PL to CSVL)

- [1] "mean"
- [1] 20.05479
- [1] "sd"
- [1] 19.16425
- 6W. Coronal Balance (C7PL to CSVL)
- [1] "mean"
- [1] 17.93016
- [1] "sd"
- [1] 14.7485
- 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 0.05028635 6w vs 2y p-value 0.5804567

6w vs 5y p-value

0.5806492 2y vs 5y p-value 0.37962

Sagittal Balance

- [1] "mean"
- [1] 45.44966
- [1] "sd"
- [1] 62.39865
- 6W. Sagittal Balance
- [1] "mean"
- [1] 24.68612
- [1] "sd"
- [1] 42.19419
- 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 6.186483e-10 6w vs 2y p-value 0.06749812

6w vs 5y p-value 0.0697836 2y vs 5y p-value 0.5647263

Sagittal T2-T5

- [1] "mean"
- [1] 12.45584
- [1] "sd"
- [1] 9.062317
- 6W. Sagittal T2-T5
- [1] "mean"
- [1] 14.33069
- [1] "sd"

- [1] 8.96815
- 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 0.0009953857 6w vs 2y p-value 0.532418

6w vs 5y p-value 0.7172125 2y vs 5y p-value 0.9670423

Sagittal T5-T12

- [1] "mean"
- [1] 32.57337
- [1] "sd"
- [1] 18.51124
- 6W. Sagittal T5-T12
- [1] "mean"
- [1] 35.15933
- [1] "sd"
- [1] 14.00223
- 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 0.01108225 6w vs 2y p-value 0.05103175

6w vs 5y p-value 0.001510953 2y vs 5y p-value 0.08137577

Sagittal T2-T12

- [1] "mean"
- [1] 39.7146
- [1] "sd"
- [1] 19.30406
- 6W. Sagittal T2-T12
- [1] "mean"
- [1] 44.51132
- [1] "sd"
- [1] 15.13722
- 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 9.592863e-06 6w vs 2y p-value 0.03337107

6w vs 5y p-value 0.004779042 2y vs 5y p-value 0.1999636

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

- [1] -45.1572
- [1] "sd"
- [1] 20.85209
- 6W. Lordosis (top of L1-S1)
- [1] "mean"
- [1] -51.21927
- [1] "sd"
- [1] 14.85742
- 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 2.57964e-08 6w vs 2y p-value 0.8977491

6w vs 5y p-value 0.7716778 2y vs 5y p-value 0.8514191

Pelvic Incidence

- [1] "mean"
- [1] 55.43555
- [1] "sd"
- [1] 13.75794
- 6W. Pelvic Incidence
- [1] "mean"
- [1] 55.08511
- [1] "sd"
- [1] 13.4553
- 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 0.6684951 6w vs 2y p-value 0.4442322

6w vs 5y p-value 0.7983159 2y vs 5y p-value 0.784896

Pelvic Tilt

- [1] "mean"
- [1] 21.37551
- [1] "sd"
- [1] 11.20006
- 6W. Pelvic Tilt
- [1] "mean"
- [1] 19.20805
- [1] "sd"
- [1] 10.00893
- 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 0.000720076 6w vs 2y p-value

0.05162831

6w vs 5y p-value 0.008456309 2y vs 5y p-value 0.1872226

Sacral Slope

- [1] "mean"
- [1] 34.24173
- [1] "sd"
- [1] 11.60421
- 6W. Sacral Slope
- [1] "mean"
- [1] 35.81936
- [1] "sd"
- [1] 10.38715
- 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 0.01713463 6w vs 2y p-value 0.5101496

6w vs 5y p-value 0.02444291 2y vs 5y p-value 0.09863723

RLL

- [1] "mean"
- [1] -18.14061
- [1] "sd"
- [1] 19.82325

6W. RLL

- [1] "mean"
- [1] -11.93318
- [1] "sd"
- [1] 13.63742
- 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 1.56753e-09 6w vs 2y p-value 0.7852076

6w vs 5y p-value 0.8649501 2y vs 5y p-value 0.7373786

Global Tilt

- [1] "mean"
- [1] 25.74411
- [1] "sd"
- [1] 17.2978
- 6W. Global Tilt
- [1] "mean"
- [1] 20.66374
- [1] "sd"
- [1] 12.85039
- 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 6.159393e-08 6w vs 2y p-value 0.01917659

6w vs 5y p-value 0.0072497 2y vs 5y p-value 0.2449217

- T1 Sagittal Tilt
- [1] "mean"
- [1] -1.401665
- [1] "sd"
- [1] 5.728467
- 6W. T1 Sagittal Tilt
- [1] "mean"
- [1] -2.810559
- [1] "sd"
- [1] 4.126
- 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 5.483389e-06 6w vs 2y p-value 0.9274829

6w vs 5y p-value 0.9905009 2y vs 5y p-value 0.9622914

Thoracolumbar L2-T10

- [1] "mean"
- [1] 8.887016
- [1] "sd"
- [1] 20.08491
- 6W. Thoracolumbar L2-T10
- [1] "mean"
- [1] 6.082929
- [1] "sd"
- [1] 12.05203
- 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 0.005613873 6w vs 2y p-value 0.02836678

6w vs 5y p-value 0.1322717 2y vs 5y p-value 0.9094901

RSA

- [1] "mean"
- [1] 14.11161
- [1] "sd"
- [1] 15.35716
- 6W. RSA
- [1] "mean"
- [1] 9.174869
- [1] "sd"
- [1] 10.25142

- 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 8.145895e-10 6w vs 2y p-value 0.02408418

6w vs 5y p-value 0.00187588 2y vs 5y p-value 0.1086786

RPV

- [1] "mean"
- [1] -7.495682
- [1] "sd"
- [1] 9.245453
- 6W. RPV
- [1] "mean"
- [1] -5.684944
- [1] "sd"
- [1] 7.743588
- 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
0.000417917
6w vs 2y p-value
0.09002722

6w vs 5y p-value 0.001947816 2y vs 5y p-value 0.05765243

Quality of Life

- ODI Score (%)_First Visit
- [1] "mean"
- [1] 39.93583
- [1] "sd"
- [1] 19.91974
- 6M. ODI Score (%)
- [1] "mean"
- [1] 29.03205
- [1] "sd"
- [1] 17.87193
- 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 1.285104e-19 6m vs 2y p-value 0.7101174

6m vs 5y p-value 0.8041769 2y vs 5y p-value 0.9656013

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

- [1] 3.085204
- [1] "sd"
- [1] 0.8980018
- 6M. SRS22 Function / Activity
- [1] "mean"
- [1] 3.24683
- [1] "sd"
- [1] 0.8154125
- 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 0.002514277 6m vs 2y p-value 0.002914801

6m vs 5y p-value 0.005903485 2y vs 5y p-value 0.7884323

SRS22 - Pain_First Visit

- [1] "mean"
- [1] 2.582327
- [1] "sd"
- [1] 0.9866084
- 6M. SRS22 Pain
- [1] "mean"
- [1] 3.330915
- [1] "sd"
- [1] 0.9683423
- 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 2.467165e-32 6m vs 2y p-value 0.1909873

6m vs 5y p-value 0.83793 2y vs 5y p-value 0.4448486

SRS22 - Self image / Appearance_First Visit

- [1] "mean"
- [1] 2.446234
- [1] "sd"
- [1] 0.7308093

6M. SRS22 - Self image / Appearance

- [1] "mean"
- [1] 3.454872
- [1] "sd"
- [1] 0.8488936

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 8.131351e-76 6m vs 2y p-value

0.5150541

6m vs 5y p-value 0.1290853 2y vs 5y p-value 0.3329476

SRS22 - Mental health_First Visit

- [1] "mean"
- [1] 3.211776
- [1] "sd"
- [1] 0.895743
- 6M. SRS22 Mental health
- [1] "mean"
- [1] 3.516149
- [1] "sd"
- [1] 0.9011591
- 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 7.453832e-08 6m vs 2y p-value 0.9732971

6m vs 5y p-value 0.9386187 2y vs 5y p-value 0.9197936

SRS22 - SRS Subtotal score_First Visit

- [1] "mean"
- [1] 2.835702
- [1] "sd"
- [1] 0.6952943

6M. SRS22 - SRS Subtotal score

- [1] "mean"
- [1] 3.38172
- [1] "sd"
- [1] 0.752566
- 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 3.762895e-31 6m vs 2y p-value 0.2495706

6m vs 5y p-value 0.8098784 2y vs 5y p-value 0.5331138

 ${\tt SRS22 - Satisfaction \ with \ management_First \ Visit}$

- [1] "mean"
- [1] 3.063433
- [1] "sd"
- [1] 1.054184
- 6M. SRS22 Satisfaction with management
- [1] "mean"
- [1] 4.231602
- [1] "sd"
- [1] 0.8864106
- 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 4.544735e-58 6m vs 2y p-value 0.111712

6m vs 5y p-value 0.001143494 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] 1231.76
- [1] "sd"
- [1] 1084.726

Total surgical time

- [1] "mean"
- [1] 324.2813
- [1] "sd"

[1] 182.6255

[1] "table" variable

```
Number of Posterior Instrumented Levels
[1] "mean"
[1] 8.090753
[1] "sd"
[1] 3.932577
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
                                                        17
Anterior-Posterior-Posterior
                                                Posterior
                                                       548
          Posterior-Anterior Posterior-Anterior-Posterior
         Posterior-Posterior
[1] "proportion"
variable
                    Anterior
                                       Anterior-Posterior
                 0.001709402
                                               0.029059829
Anterior-Posterior-Posterior
                                                 Posterior
                                               0.936752137
                 0.003418803
          Posterior-Anterior Posterior-Anterior-Posterior
                 0.013675214
                                               0.005128205
         Posterior-Posterior
                 0.010256410
Number of Interbody Fusions
[1] "mean"
[1] 0.9487179
[1] "sd"
[1] 1.20676
Decompression
```

No Yes 368 217 [1] "proportion" variable No Yes 0.6290598 0.3709402

No Yes 0.4991453 0.5008547

Osteotomy

[1] "table"
variable
No Yes
320 265
[1] "proportion"
variable
No Yes
0.5470085 0.4529915

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