Descriptive Stats

```
xls_path <- '../../data/Dataset 4th report 5Y - ONLY DPS.xlsx'</pre>
```

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: 608
- 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: 633

Demographics

```
Age
[1] "mean"
[1] 52.94451
[1] "sd"
[1] 20.22608
```

```
Gender
[1] "table"
variable
Female Male
   492
        115
[1] "proportion"
variable
   Female
               Male
0.8105437 0.1894563
Prior Spine Surgery
[1] "table"
variable
No Yes
422 183
[1] "proportion"
variable
                Yes
      No
0.6975207 0.3024793
Height (cm)_First Visit
[1] "mean"
[1] 163.0033
[1] "sd"
[1] 9.156266
Weight (kgs)_First Visit
[1] "mean"
[1] 65.88411
[1] "sd"
[1] 13.6075
BMI_First Visit
[1] "mean"
[1] 24.76746
[1] "sd"
[1] 4.637766
ASA classification
[1] "table"
variable
 1 2 3
143 326 134
[1] "proportion"
variable
                                  3
0.236363636 \ 0.538842975 \ 0.221487603 \ 0.003305785
```

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 1 381 [1] "proportion" variable Current User: Current User: 1 pack per day 0.048333333 0.001666667 Current User: 2 packs per day Current User: 3 packs or more per day 0.001666667 0.008333333 Current User: Less than 1pk per day Ex-User: 0.143333333 0.001666667 Ex-User: 0-6 months Ex-User: 1 year or greater 0.035000000 0.008333333 Ex-User: 2 yrs or greater Ex-User: 6-12 months 0.108333333 0.006666667 Non-User Ex-User: N.A. 0.001666667 0.635000000 ESSG Diagnosis [1] "table" variable Congenital Degenerative 11 255 Failed-back Idiopathic Neuromuscular Other: radiotherapy induced Post-infection Other: Spondylolisthesis Post-traumatic Scheuermann 12 Syndromic [1] "proportion" variable Congenital Degenerative

Neuromuscular Other: radiotherapy induced

0.420098847

Idiopathic

0.416803954

0.018121911

Failed-back

0.052718287

0.011532125 0.001647446
Other: Spondylolisthesis Post-infection
0.011532125 0.003294893
Post-traumatic Scheuermann
0.019769357 0.031301483
Syndromic

0.013179572

Surgical Approach
[1] "table"
variable

Anterior Anterior-Posterior

1 17

Anterior-Posterior-Posterior Posterior
2 560

Posterior-Anterior Posterior-Anterior-Posterior 8

Posterior-Posterior 8

[1] "proportion" variable

Anterior Anterior-Posterior
0.001669449 0.028380634
Anterior-Posterior-Posterior Posterior
0.003338898 0.934891486
Posterior-Anterior Posterior-Anterior-Posterior

Posterior-Posterior 0.013355593

Radiology

Static Major curve Cobb angle

- [1] "mean"
- [1] 42.86437
- [1] "sd"
- [1] 20.89644
- 6W. Static Major curve Cobb angle
- [1] "mean"
- [1] 21.49699
- [1] "sd"
- [1] 14.75974
- 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 2.088811e-73 6w vs 2y p-value 0.06733782

6w vs 5y p-value 0.4947386 2y vs 5y p-value 0.6664113

Coronal Balance (C7PL to CSVL)

- [1] "mean"
- [1] 19.30844
- [1] "sd"
- [1] 19.4848
- 6W. Coronal Balance (C7PL to CSVL)
- [1] "mean"
- [1] 17.5704
- [1] "sd"
- [1] 15.0086
- 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 0.1104851 6w vs 2y p-value 0.8258546

6w vs 5y p-value

0.4442288 2y vs 5y p-value 0.37962

Sagittal Balance

- [1] "mean"
- [1] 44.97592
- [1] "sd"
- [1] 62.20977
- 6W. Sagittal Balance
- [1] "mean"
- [1] 24.52501
- [1] "sd"
- [1] 41.99866
- 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 5.720771e-10 6w vs 2y p-value 0.05969538

6w vs 5y p-value 0.06478222 2y vs 5y p-value 0.5647263

Sagittal T2-T5

- [1] "mean"
- [1] 12.50871
- [1] "sd"
- [1] 9.145658
- 6W. Sagittal T2-T5
- [1] "mean"
- [1] 14.36206
- [1] "sd"

- [1] 9.015173
- 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 0.0010712 6w vs 2y p-value 0.5599207

6w vs 5y p-value 0.7376843 2y vs 5y p-value 0.9670423

Sagittal T5-T12

- [1] "mean"
- [1] 32.38092
- [1] "sd"
- [1] 18.45926
- 6W. Sagittal T5-T12
- [1] "mean"
- [1] 35.03893
- [1] "sd"
- [1] 13.95783
- 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 0.008002394 6w vs 2y p-value 0.03941607

6w vs 5y p-value 0.00118409 2y vs 5y p-value 0.08137577

Sagittal T2-T12

- [1] "mean"
- [1] 39.65363
- [1] "sd"
- [1] 19.30111
- 6W. Sagittal T2-T12
- [1] "mean"
- [1] 44.42667
- [1] "sd"
- [1] 15.19923
- 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 8.449831e-06 6w vs 2y p-value 0.02776585

6w vs 5y p-value 0.004104616 2y vs 5y p-value 0.1999636

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

- [1] -45.13301
- [1] "sd"
- [1] 20.91009
- 6W. Lordosis (top of L1-S1)
- [1] "mean"
- [1] -51.21122
- [1] "sd"
- [1] 14.96732
- 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 1.726668e-08 6w vs 2y p-value 0.8918834

6w vs 5y p-value 0.7677249 2y vs 5y p-value 0.8514191

Pelvic Incidence

- [1] "mean"
- [1] 55.51809
- [1] "sd"
- [1] 13.6675
- 6W. Pelvic Incidence
- [1] "mean"
- [1] 55.22147
- [1] "sd"
- [1] 13.45122
- 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 0.712483 6w vs 2y p-value 0.530174

6w vs 5y p-value 0.8761907 2y vs 5y p-value 0.784896

Pelvic Tilt

- [1] "mean"
- [1] 21.43678
- [1] "sd"
- [1] 11.12938
- 6W. Pelvic Tilt
- [1] "mean"
- [1] 19.33743
- [1] "sd"
- [1] 9.993358
- 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 0.0008545427 6w vs 2y p-value

0.07662895

6w vs 5y p-value 0.01169815 2y vs 5y p-value 0.1872226

Sacral Slope

- [1] "mean"
- [1] 34.25767
- [1] "sd"
- [1] 11.57239
- 6W. Sacral Slope
- [1] "mean"
- [1] 35.82747
- [1] "sd"
- [1] 10.37749
- 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 0.01600754 6w vs 2y p-value 0.5019193

6w vs 5y p-value 0.023729 2y vs 5y p-value 0.09863723

RLL

- [1] "mean"
- [1] -18.21864
- [1] "sd"
- [1] 19.86133

6W. RLL

- [1] "mean"
- [1] -12.02615
- [1] "sd"
- [1] 13.7431
- 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 1.152119e-09 6w vs 2y p-value 0.8564198

6w vs 5y p-value 0.8148003 2y vs 5y p-value 0.7373786

Global Tilt

- [1] "mean"
- [1] 25.74227
- [1] "sd"
- [1] 17.18257
- 6W. Global Tilt
- [1] "mean"
- [1] 20.78461
- [1] "sd"
- [1] 12.80033
- 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 6.959007e-08 6w vs 2y p-value 0.02573538

6w vs 5y p-value 0.008938366 2y vs 5y p-value 0.2449217

- T1 Sagittal Tilt
- [1] "mean"
- [1] -1.444341
- [1] "sd"
- [1] 5.716108
- 6W. T1 Sagittal Tilt
- [1] "mean"
- [1] -2.842739
- [1] "sd"
- [1] 4.118429
- 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 4.451769e-06 6w vs 2y p-value 0.848698

6w vs 5y p-value 0.9358914 2y vs 5y p-value 0.9622914

Thoracolumbar L2-T10

- [1] "mean"
- [1] 8.726948
- [1] "sd"
- [1] 20.04044
- 6W. Thoracolumbar L2-T10
- [1] "mean"
- [1] 6.085481
- [1] "sd"
- [1] 12.1095
- 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 0.008139923 6w vs 2y p-value 0.02820533

6w vs 5y p-value 0.1323666 2y vs 5y p-value 0.9094901

RSA

- [1] "mean"
- [1] 14.06993
- [1] "sd"
- [1] 15.28143
- 6W. RSA
- [1] "mean"
- [1] 9.226516
- [1] "sd"
- [1] 10.2088

- 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 7.929945e-10 6w vs 2y p-value 0.02757145

6w vs 5y p-value 0.002095879 2y vs 5y p-value 0.1086786

RPV

- [1] "mean"
- [1] -7.527563
- [1] "sd"
- [1] 9.208536
- 6W. RPV
- [1] "mean"
- [1] -5.757193
- [1] "sd"
- [1] 7.726982
- 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
0.0004497338
6w vs 2y p-value
0.1156324

6w vs 5y p-value 0.002514461 2y vs 5y p-value 0.05765243

Quality of Life

- ODI Score (%)_First Visit
- [1] "mean"
- [1] 39.73196
- [1] "sd"
- [1] 19.95702
- 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 3.73754e-19 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] 3.105685
- [1] "sd"
- [1] 0.9075703
- 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 0.007831416 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] 2.595291
- [1] "sd"
- [1] 0.9918463
- 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 1.124155e-31 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] 2.452877
- [1] "sd"
- [1] 0.7294202

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 4.334144e-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] 3.221284
- [1] "sd"
- [1] 0.8912548
- 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 1.093744e-07 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] 2.848065
- [1] "sd"
- [1] 0.6986587

$6\mbox{M. SRS}22$ - 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 2.522276e-30 6m vs 2y p-value

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

- ${\tt SRS22 Satisfaction \ with \ management_First \ Visit}$
- [1] "mean"

0.2518855

- [1] 3.077381
- [1] "sd"
- [1] 1.064434
- 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 3.820064e-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] 1212.258
- [1] "sd"
- [1] 1093.944

Total surgical time

- [1] "mean"
- [1] 321.9058
- [1] "sd"

[1] 182.7838

[1] "table" variable

```
Number of Posterior Instrumented Levels
[1] "mean"
[1] 8.079208
[1] "sd"
[1] 3.922429
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
          Posterior-Anterior Posterior-Anterior-Posterior
         Posterior-Posterior
[1] "proportion"
variable
                    Anterior
                                       Anterior-Posterior
                 0.001669449
                                               0.028380634
Anterior-Posterior-Posterior
                                                 Posterior
                                               0.934891486
                 0.003338898
          Posterior-Anterior Posterior-Anterior-Posterior
                 0.013355593
                                               0.005008347
         Posterior-Posterior
                 0.013355593
Number of Interbody Fusions
[1] "mean"
[1] 0.9565217
[1] "sd"
[1] 1.198037
Decompression
```

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No Yes 382 225 [1] "proportion" variable No Yes 0.6293245 0.3706755

Osteotomy
[1] "table"
variable
No Yes
334 273
[1] "proportion"
variable
No Yes
0.5502471 0.4497529

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