http://dx.doi.org/10.2106/JBJS.21.01172

The following content was supplied by the authors as supporting material and has not been copy-edited or verified by JBJS.

Appendix 1

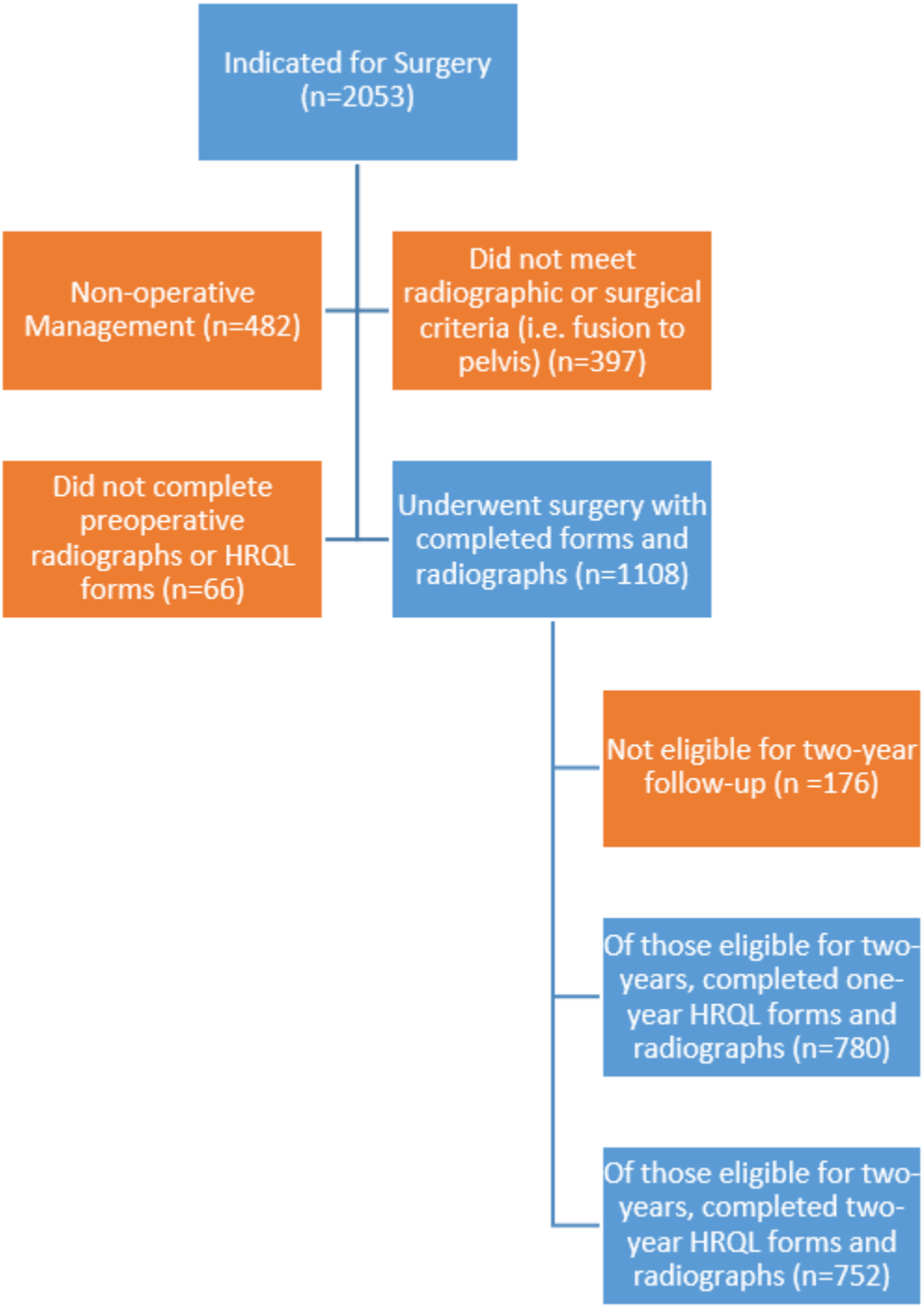
Variable tested	Odds Ratios (Group II vs Group I)	p-value
Controlling for baseline SVA and PI-LL, history of previous revision, age and Charlson comorbidity index, rates of overall 3CO usage	OR: 0.62, 95% CI: [0.4-0.97]	**0.021**
Controlling for age, CCI, baseline SVA and PI-LL, and history of previous fusion, rates of 3CO usage among SVA or PI-LL matched patients	OR: 0.53, 95% CI: [0.27-0.98]	**0.030**
Controlling for age, and CCI, and history of prior fusion, rates of 3CO usage patients among patients with severe sagittal deformity	OR: 0.45, 95% CI: [0.2-0.8]	**0.012**
Controlling for age, baseline deformity, CCI, and surgical invasiveness, usage of prophylaxis among 3CO cohorts	OR: 2, 95% 95% CI: [.86-4.7]	0.11
Controlling for age, baseline deformity, CCI, and surgical invasiveness, usage of supplemental rods among 3CO cohorts	OR: 21.8, 95% CI: [7.8- 61]	**0.001**
Controlling for age, baseline deformity, CCI, and surgical invasiveness, rates of overall complications among 3CO cohorts	OR: .32, 95% CI: [.117-.853]	**0.023**
Controlling for age, baseline deformity, CCI, and surgical invasiveness, rates of reoperations among 3CO cohorts	OR: .34, 95% CI: [.146-.793]	**0.013**
Controlling for age, baseline deformity, CCI, and surgical invasiveness, development of PJF among 3CO cohorts	OR: 0.23, 95% CI: [.07-.76]	**0.017**
Controlling for age, baseline deformity, CCI, and surgical invasiveness, rod breakage by 2 years among 3CO cohorts	OR: 0.30, 95% CI: [.1-.9])	**0.026**
Controlling for age, baseline deformity, CCI, and surgical invasiveness, hardware complications by 2 years among 3CO cohorts	OR: 0.28, 95% CI: [.1-.8]	**0.019**
Controlling for baseline disability, reaching best clinical outcome in ODI among 3CO cohorts	OR: 2.8, 95% CI: [1.2-6.4]	**0.019**
Controlling for baseline disability, reaching best clinical outcome in SRS among 3CO cohorts	OR: 4.6, CI: [1.3-16]	**0.019**

Controlling for age, CCI, baseline SVA, baseline lumbo-pelvic mismatch, and revision status, usage of titanium rods among 3CO cohorts	OR: 2.7, 95% CI: [1.03-7.2]	**0.044**
Usage of ALIF among overall cohort	OR: 1.6, 95% CI: [1.6-2.3]	**0.025**
Usage of LLIF among overall cohort	OR: 3.8, 95% CI: [2.3-6.2]	**0.001**
Controlling for age, CCI, baseline SVA, baseline mismatch, and revision status, usage of ALIF non among non-3CO patients	OR: 1.8, 95% CI: [1.2-2.6]	**0.008**
Controlling for age, CCI, baseline SVA, baseline mismatch, and revision status, usage of LLIF non among non-3CO patients	OR: 3.6, 95% CI: [2.1-6]	**<0.001**
Controlling for age, CCI, baseline SVA, baseline mismatch, surgical invasiveness, revision status, usage of anterior interbody fusion, and usage of multi-rod constructs lower incidence of rod breakage among 3CO cohorts	OR: .129, 95% CI: .017-.962	**.046**
Controlling for age, CCI, baseline SVA, baseline mismatch, surgical invasiveness, revision status, usage of anterior interbody fusion, and usage of multi-rod constructs, incidence of overall hardware complications among 3CO cohorts	OR: .204, 95% CI: [.036 - 1.159]	.073
Controlling for age, CCI, baseline SVA, baseline mismatch, surgical invasiveness, revision status, usage of anterior interbody fusion, and usage of multi-rod constructs, incidence of proximal junctional failure among 3CO cohorts	OR: .287, 95% CI: [.073 – 1.130]	**.019**
Controlling for age, BL SVA, BL mismatch, CCI, invasiveness, revision status, usage of ALIF, LLIF, and prophylaxis, overall hardware complications among 3CO cohort	OR: .281, 95% CI: [.057-1.382]	**.**118
Controlling for age, BL SVA, BL mismatch, CCI, invasiveness, revision status, usage of ALIF, LLIF, and prophylaxis, rates of rod breakage among 3CO cohort	OR: .165, 95% CI: [.026-1.061]	.058
Controlling for age, BL SVA, BL mismatch, CCI, invasiveness, revision status, usage of ALIF, LLIF, and prophylaxis, rates of PJF among 3CO cohort	OR: .143, 95% CI: [.023-.876]	**.035**
Controlling for age, BL SVA, BL mismatch, CCI, invasiveness, revision status, usage of ALIF, LLIF, overall hardware complications among 3CO cohort	OR: .227, 95% CI: [.050- 1.029]	.054

Controlling for age, BL SVA, BL mismatch, CCI, invasiveness, revision status, usage of ALIF, LLIF, rates of rod breakage among 3CO cohort	OR: .148, 95% CI: [.025-.888]	**.037**
Controlling for age, BL SVA, BL mismatch, CCI, invasiveness, revision status, usage of ALIF, LLIF, rates of PJF among 3CO cohort	OR: .137, 95% CI: [.023-.833]	**.031**
Controlling for age, BL SVA, BL mismatch, CCI, invasiveness, revision status, usage of prophylaxis, overall hardware complications among 3CO cohort	OR: .343, 95% CI: [.125-.941]	**.038**
Controlling for age, BL SVA, BL mismatch, CCI, invasiveness, revision status, usage of prophylaxis, rates of rod breakage among 3CO cohort	OR: .277, 95% CI: [.079-.973]	**.046**
Controlling for age, BL SVA, BL mismatch, CCI, invasiveness, revision status, usage of prophylaxis, rates of PJF among 3CO cohort	OR: .188, 95% CI: [.065-.542]	**.002**

http://dx.doi.org/10.2106/JBJS.21.01172

Appendix A. Inclusion and Follow-up Flowchart



http://dx.doi.org/10.2106/JBJS.21.01172

Appendix B. Baseline demographic and radiographic differences between patients with two-year follow-up and those without two-year follow-up

Baseline Demographic and Radiographic Parameters	Without 2Y F/U	With 2Y F/U	p-value
Age	60.7	60.9	.8
Gender	67%	78%	**<.001**
BMI	28.4	27.8	.05
Charlson Comorbidity Index	1.8	1.8	.83
Pelvic Tilt	24.5	24.5	.94
Pelvic Incidence	56.6	55	**.03**
Pelvic Incidence minus Lumbar Lordosis (PI-LL)	17.9	16.8	.29
Thoracic Kyphosis T4-T12	-35	-35	.88
Sagittal Vertical Axis C7-S1 (SVA)	73cm	66cm	.07
Surgical Details	Without 2Y F/U	With 2Y F/U	p-value
Estimated Blood Loss	1460	1715	**<.001**
Operative Time	350	378	**<.001**
Number of levels fused	10	11	**<.001**
Average Upper Instrumented Vertebrae	T9	T8	**<.001**
Average Lower Instrumented Vertebrae	Pelvis	Pelvis	<.15
Decompression	42%	53%	**<.001**
Invasiveness Index	84	90	**<.001**
Anterior Approach	0%	0%	-
Posterior Approach	59%	66%	**<.001**
Combined Approach	40%	33%	**<.001**
Fused to Pelvis	76%	80%	.12
History of Prior Fusion	8%	11%	.9

*Bold indicates significant p-values ($p<0.05$).

http://dx.doi.org/10.2106/JBJS.21.01172

Appendix C. Baseline and two-year patient reported outcomes between patients with two-year follow up and those with one year follow up.

Baseline HRQL Scores	With 1Y F/U	With 2Y F/U	p-value
Baseline ODI	46	44	**.02**
Baseline Physical Component Score	30	31	**<.001**
Baseline Mental Component Score	45	45	.74
Baseline SRS-22 Activity	2.7	2.8	**<.001**
Baseline SRS-22 Pain	2.3	2.4	.06
Baseline SRS-22 Appearance	2.4	2.4	.33
Baseline SRS-22 Mental	3.4	3.4	.59
Baseline SRS-22 Satisfaction	2.7	2.8	.15
Baseline SRS-22 Total	2.7	2.8	**.04**
Baseline SF-36 Physical Functioning	29	30	**.02**
Baseline SF-36 Role Physical	29	31	**.003**
Baseline SF-36 Body Pain	31	32	**.04**
Baseline SF-36 General Health	44	46	**.03**
Baseline SF-36 Vitality	41	40	.59
Baseline SF-36 Social Functioning	34	36	**<.001**
Baseline SF-36 Role Emotional	39	40	.21
Baseline SF-36 Mental Health	44	44	.78
One Year Follow-up HRQL Scores			
1 Year ODI	28.4	27.5	.43
1 Year Physical Component Score	39	40	.40
1 Year Mental Component Score	50	51	.13
1 Year SRS-22 Activity	3.4	3.5	**.04**
1 Year SRS-22 Pain	3.4	3.4	.30
1 Year SRS-22 Appearance	3.5	3.6	**.03**
1 Year SRS-22 Mental	3.8	3.9	**.02**
1 Year SRS-22 Satisfaction	4.1	4.3	**<.001**
1 Year SRS-22 Total	3.6	3.7	**.02**
1 Year SF-36 Physical Functioning	37.7	38.4	.26
1 Year SF-36 Role Physical	39	40	.37
1 Year SF-36 Body Pain	43	43.6	.49
1 Year SF-36 General Health	47.6	48.9	.05
1 Year SF-36 Vitality	47.9	48.8	.19
1 Year SF-36 Social Functioning	43.4	45	.05
1 Year SF-36 Role Emotional	44.3	45.8	.08
1 Year SF-36 Mental Health	49.6	50.5	.23

*Bold indicates significant p-values ($p<0.05$).