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2020 Annual Report Patient Presentation for Surgeons

SHOULDER REPLACEMENT



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SHOULDER REPLACEMENT

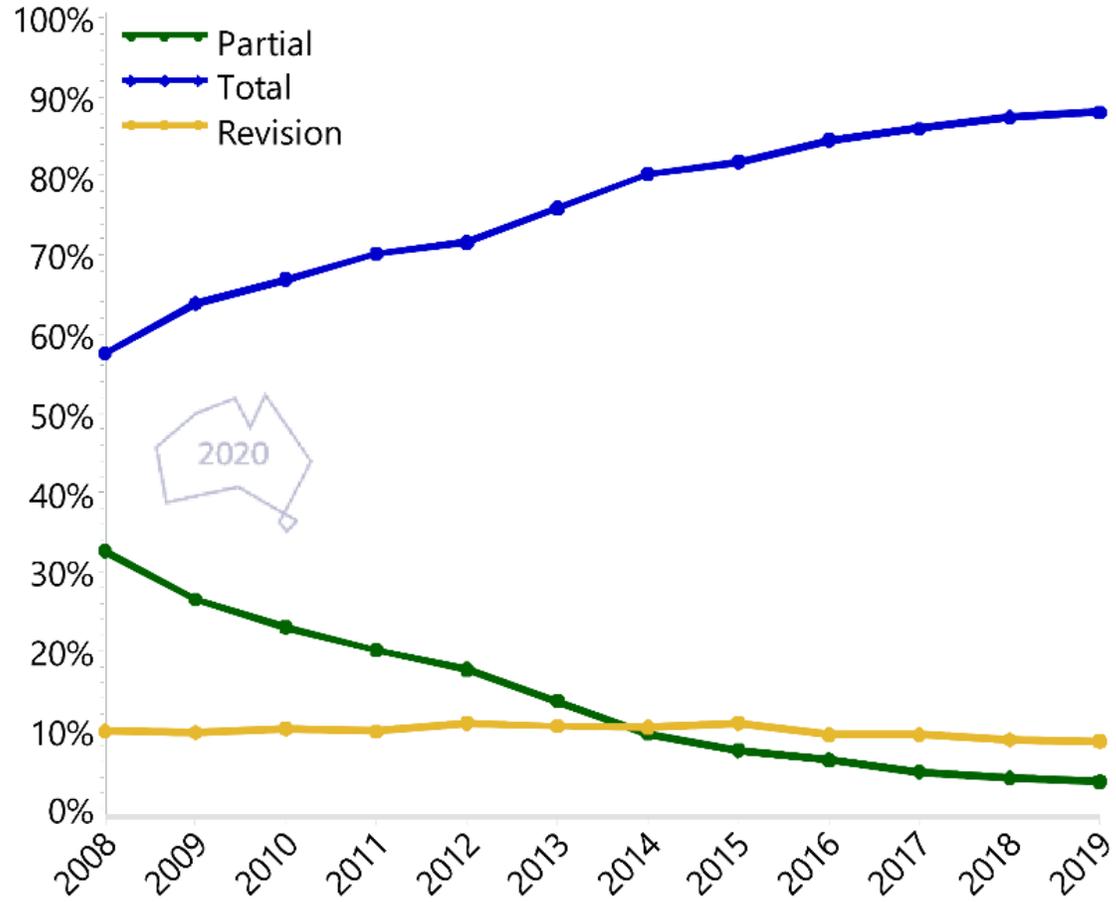
Figure S1

Proportion of Shoulder Replacement



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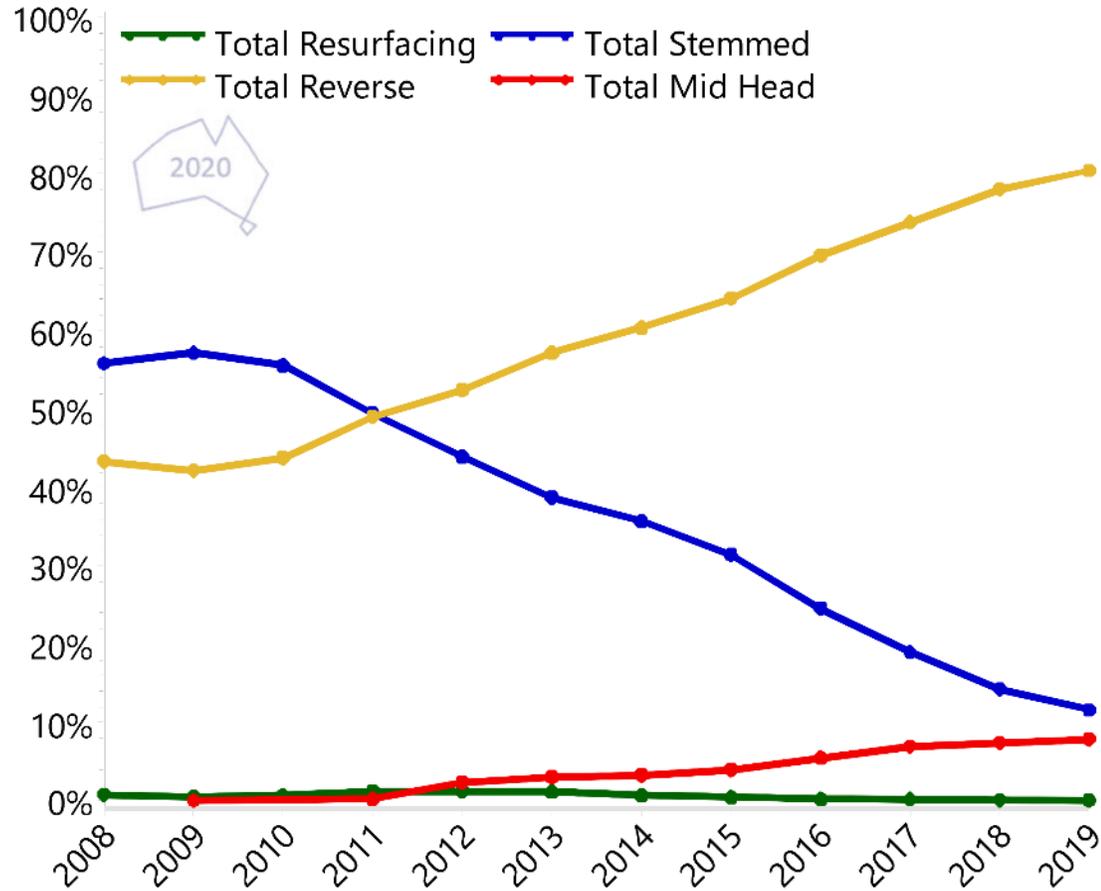


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Total Shoulder Replacement

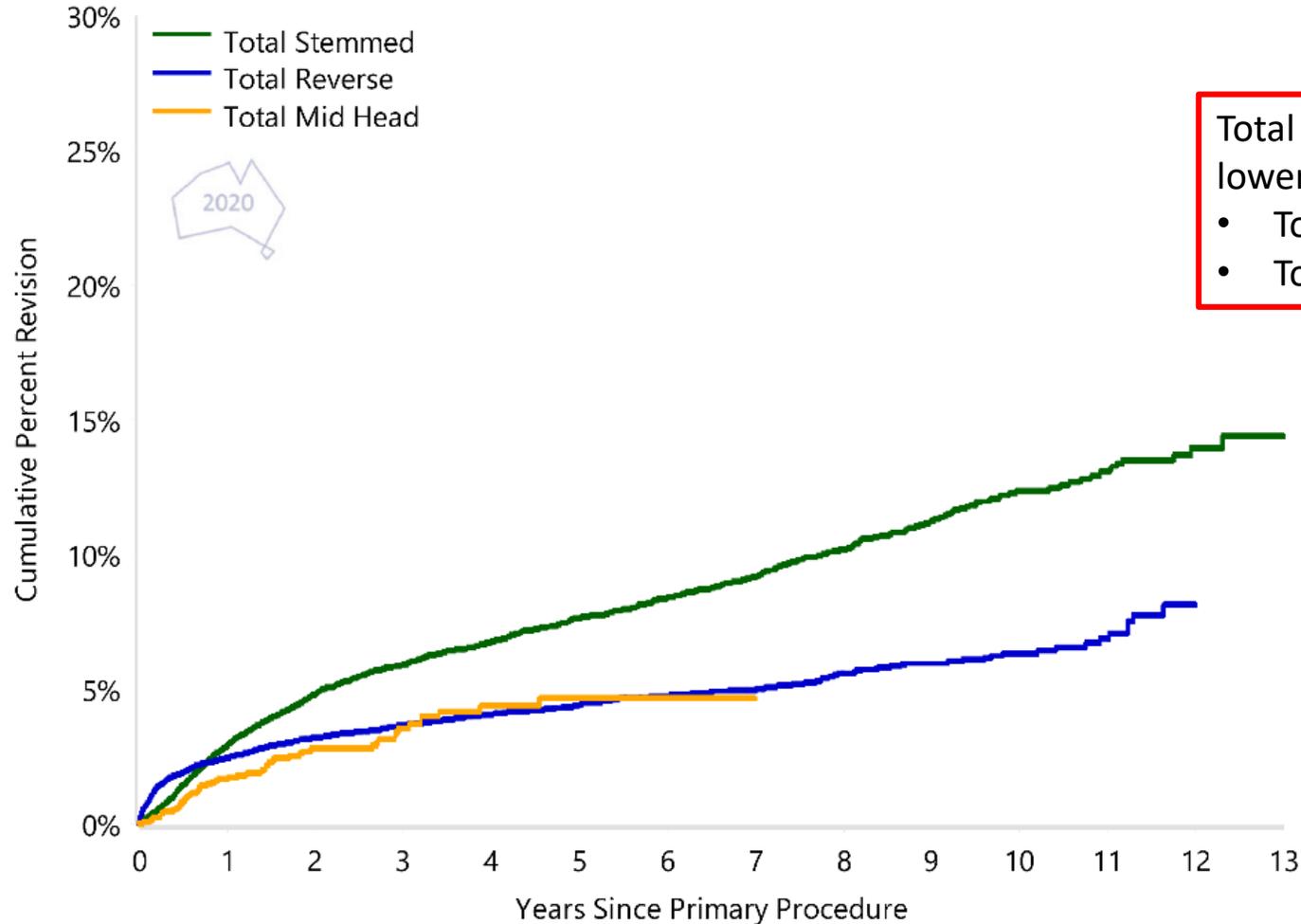
Figure ST1 & Table ST1 Primary Total Shoulder Replacement by Class



Shoulder Class	Number	Percent
Total Resurfacing	234	0.5
Total Stemmed	14231	30.3
Total Reverse	30330	64.6
Total Mid Head	2124	4.5
TOTAL	46919	100.0

Figure ST2

Cumulative Percent Revision of Primary Total Shoulder Replacement by Class (All Prostheses)

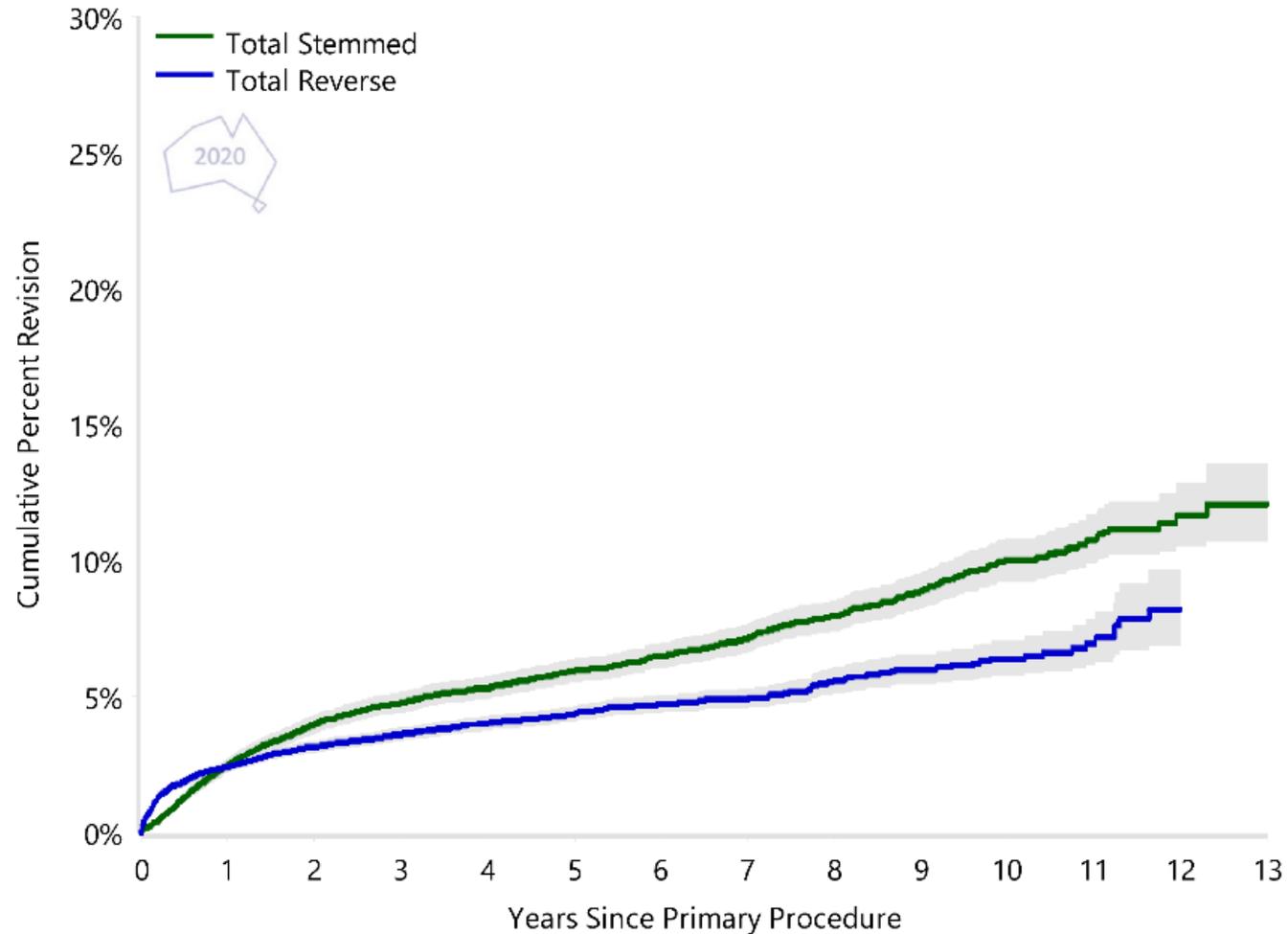


Total mid head shoulder replacement has a lower rate of revision compared to:

- Total stemmed
- Total reverse (in the first 3 months)

Figure ST3

Cumulative Percent Revision of Primary Total Shoulder Replacement by Class (excluding SMR L2)



Compared to total stemmed, total reverse shoulder replacement has a higher rate of revision in the first 3 months only, with a lower rate of revision after this time

Note: The SMR L2 prosthesis has been excluded from total reverse and total stemmed replacement procedures



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Total Stemmed Shoulder Replacement



Table ST25

Cumulative Percent Revision of Primary Total Stemmed Shoulder Replacement by Primary Diagnosis



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Primary Diagnosis	N Revised	N Total	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	13 Yrs
Osteoarthritis	1100	13413	2.8 (2.6, 3.1)	5.8 (5.4, 6.3)	7.5 (7.1, 8.0)	9.1 (8.5, 9.6)	12.2 (11.4, 13.1)	14.3 (12.9, 15.9)
Rheumatoid Arthritis	15	248	1.6 (0.6, 4.3)	2.5 (1.2, 5.6)	4.1 (2.2, 7.8)	6.1 (3.5, 10.6)	8.6 (4.9, 14.9)	
Osteonecrosis	23	227	4.1 (2.1, 7.7)	7.2 (4.4, 11.6)	9.9 (6.4, 15.2)	12.1 (7.8, 18.4)		
Fracture	16	126	7.5 (4.0, 14.0)	11.9 (7.2, 19.3)	12.9 (8.0, 20.5)	14.2 (8.9, 22.3)		
Other Inflammatory Arthritis	9	84	2.4 (0.6, 9.4)	3.7 (1.2, 11.2)	10.7 (5.1, 21.4)	12.9 (6.5, 24.8)	15.8 (8.3, 29.2)	
Rotator Cuff Arthropathy	10	75	5.6 (2.1, 14.2)	12.6 (6.4, 23.7)	14.6 (7.8, 26.4)	14.6 (7.8, 26.4)		
Instability	8	42	7.3 (2.4, 21.0)	20.0 (10.0, 37.8)	20.0 (10.0, 37.8)	20.0 (10.0, 37.8)		
Other (2)	1	16	0.0 (0.0, 0.0)	9.1 (1.3, 49.2)	9.1 (1.3, 49.2)	9.1 (1.3, 49.2)		
TOTAL	1182	14231						

Note: Only primary diagnoses with over 30 procedures have been listed

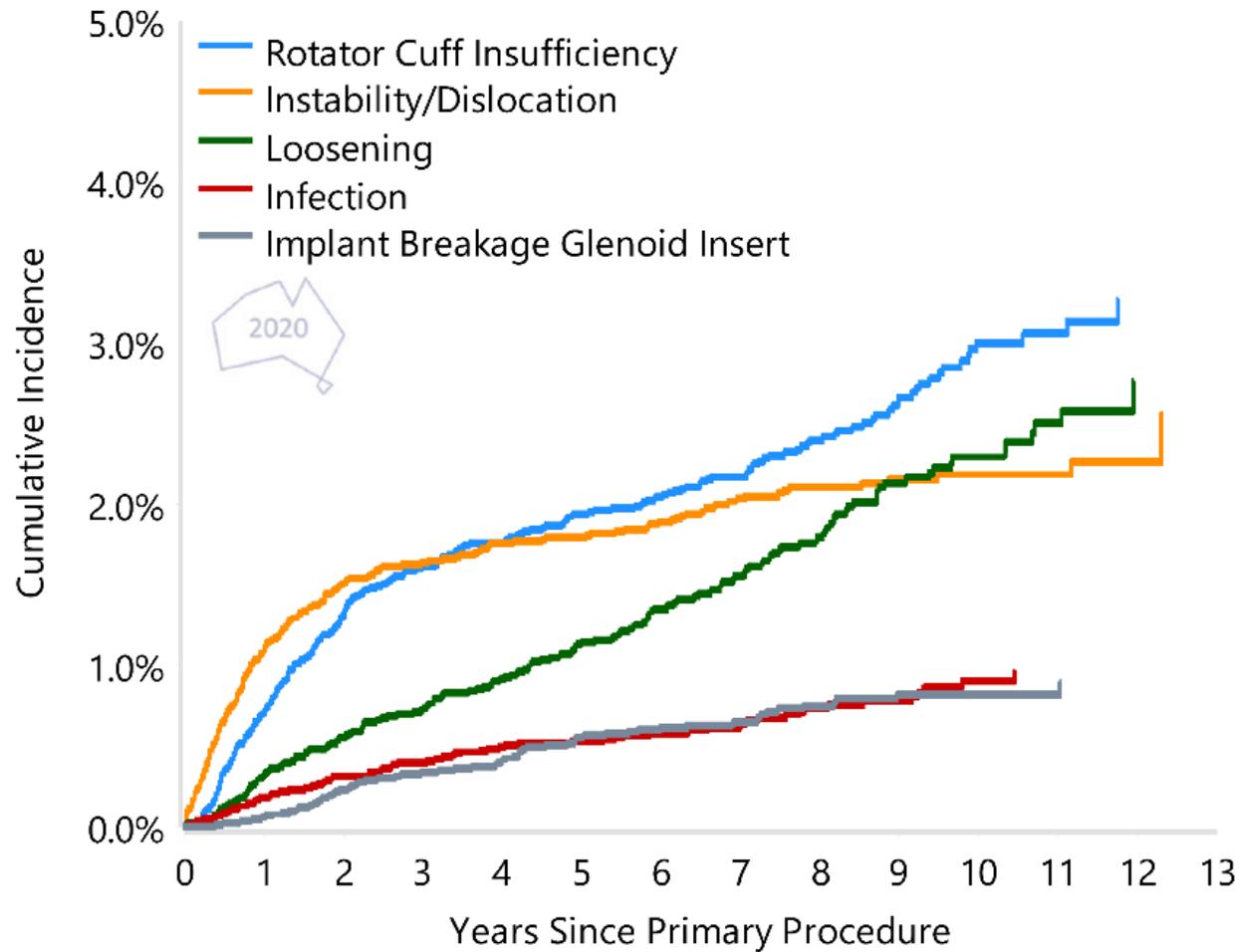
Figure ST8

Cumulative Incidence Revision Diagnosis of Primary Total Stemmed Shoulder Replacement



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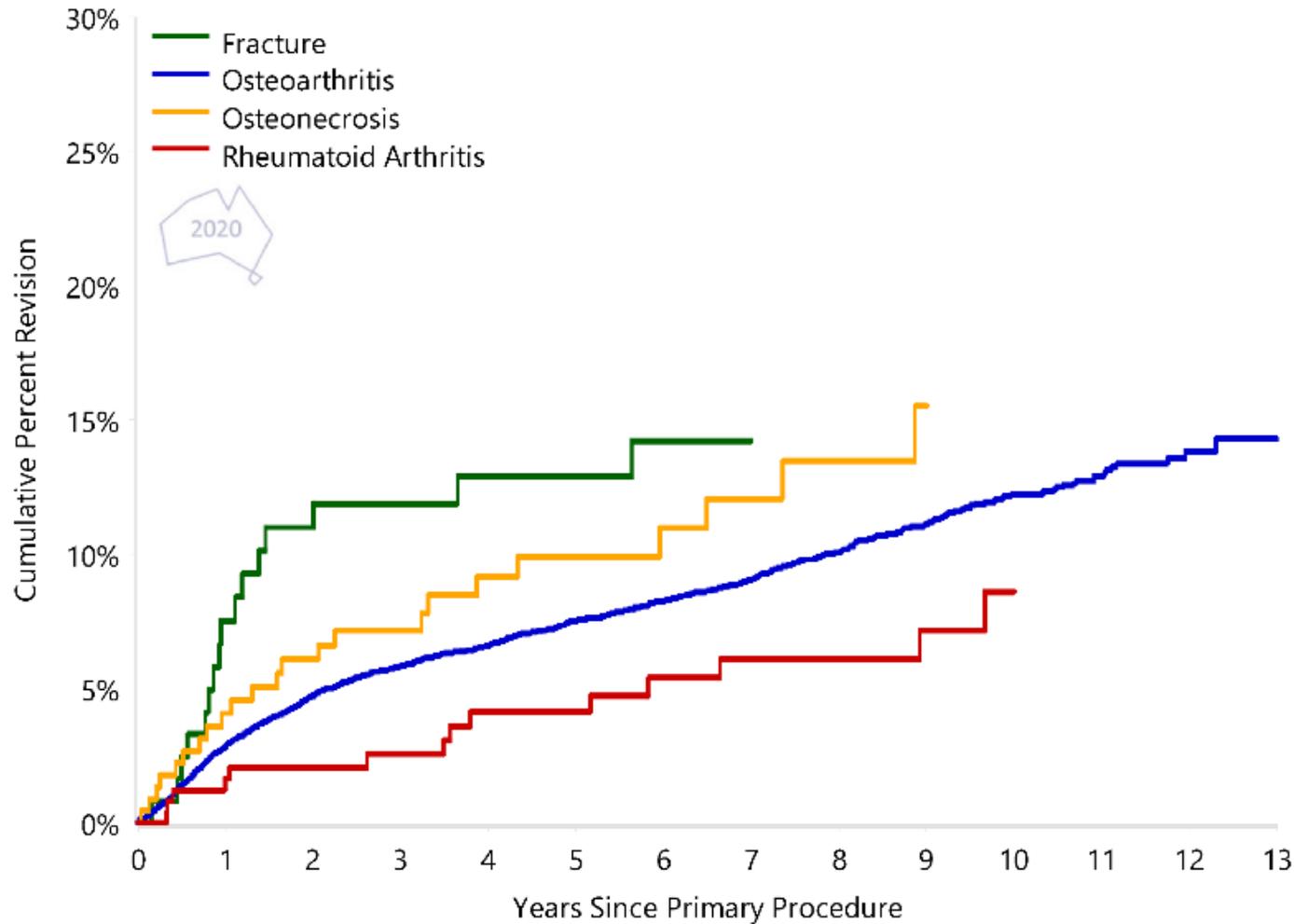
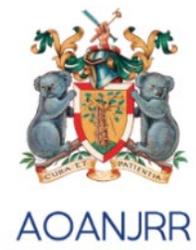
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Rotator cuff insufficiency is the most common reason for revision.

Figure ST7

Cumulative Percent Revision of Primary Total Stemmed Shoulder Replacement by Primary Diagnosis



Rheumatoid arthritis has a lower rate of revision compared to osteoarthritis.

Note: Only primary diagnoses with over 100 procedures have been listed

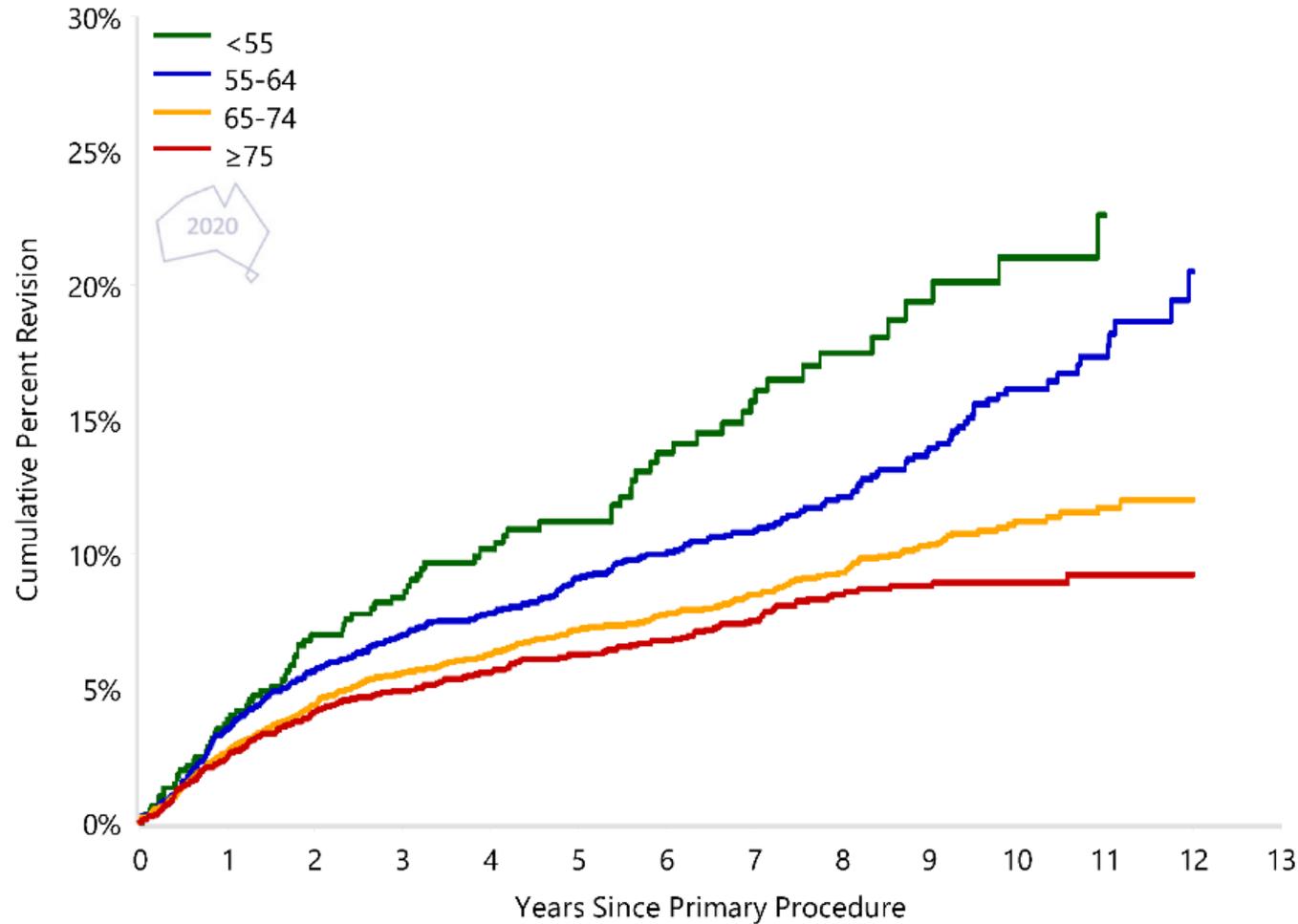
Figure ST9

Cumulative Percent Revision of Primary Total Stemmed Shoulder Replacement by Age (OA)



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Patients aged ≥ 55 years have a lower rate of revision compared to patients aged < 55 years.

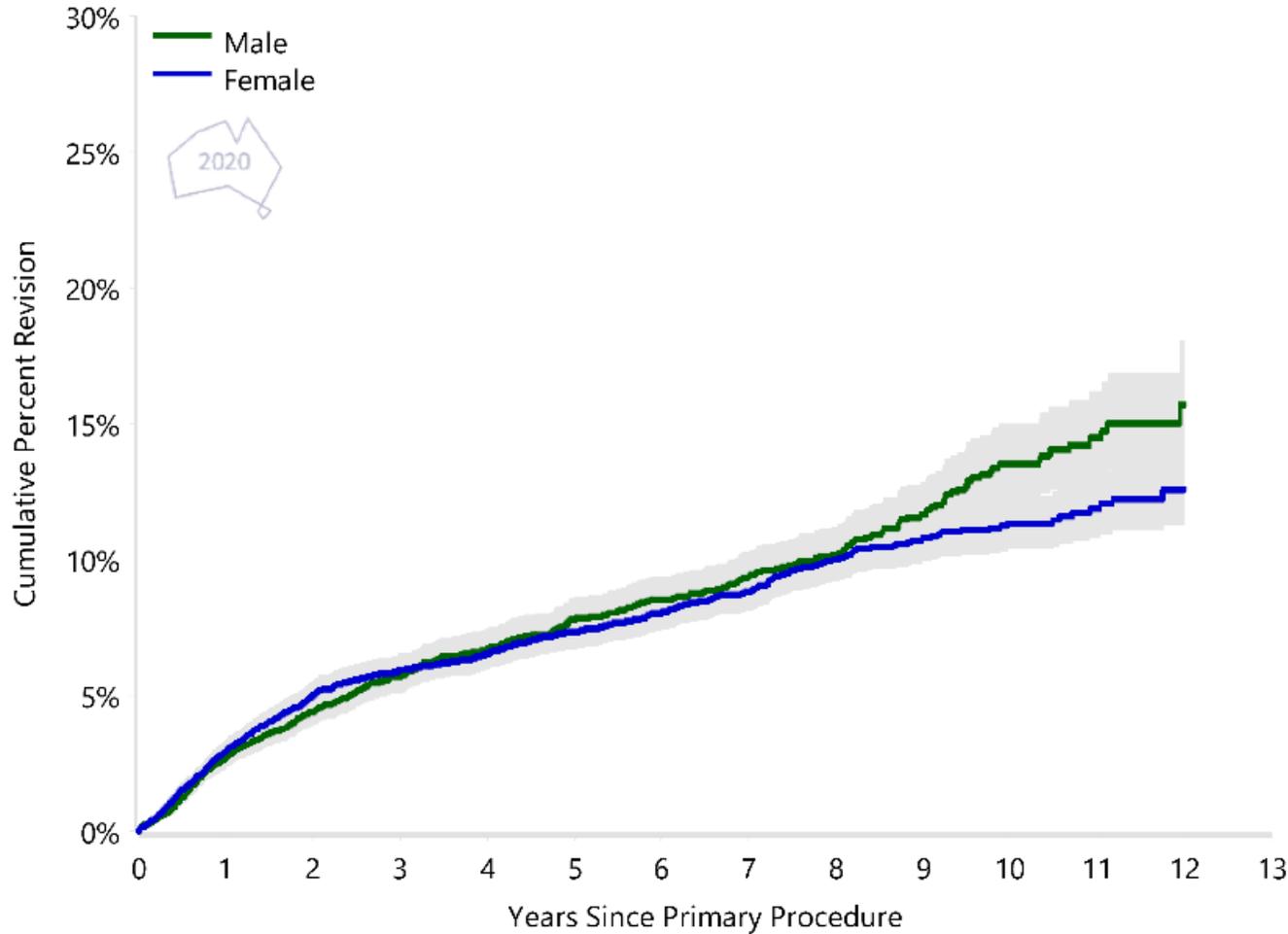
Figure ST10

Cumulative Percent Revision of Primary Total Stemmed Shoulder Replacement by Gender (OA)



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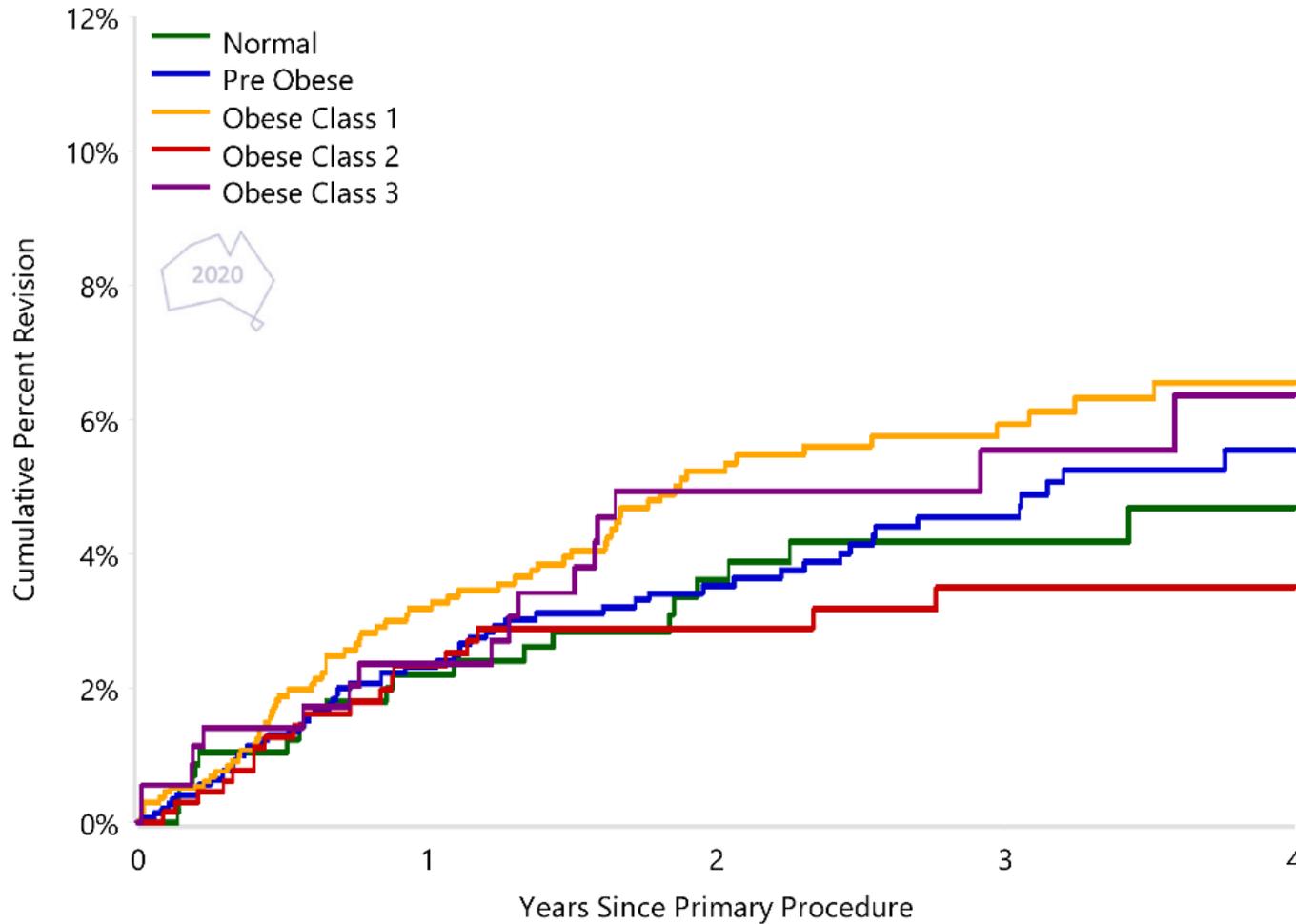
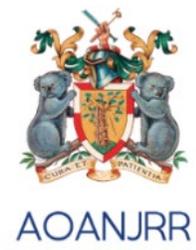
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There is no difference in the rate of revision between males and females.

Figure ST13

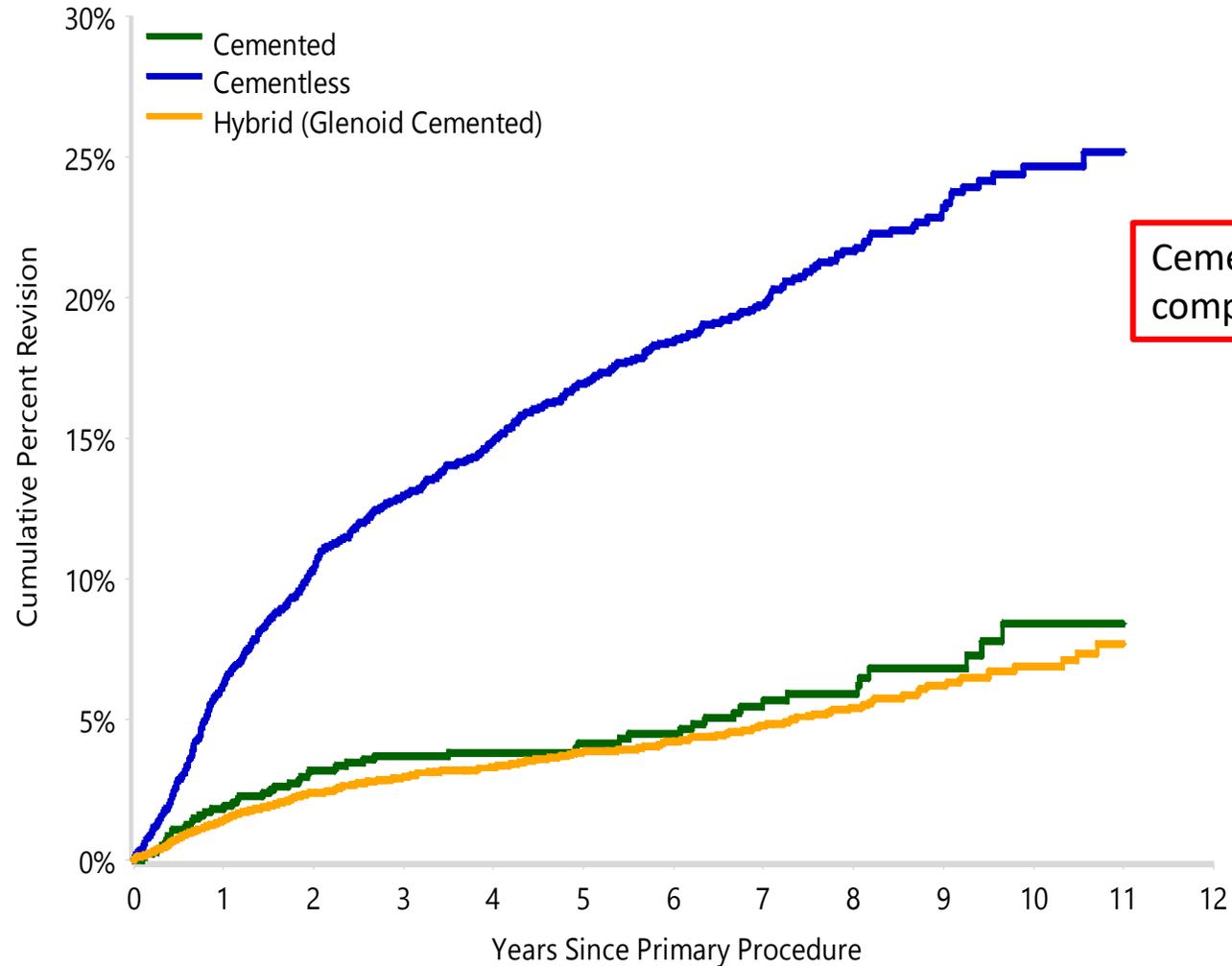
Cumulative Percent Revision of Primary Total Stemmed Shoulder Replacement by BMI Category (OA)



BMI is not a risk factor for revision.

Figure ST11

Cumulative Percent Revision of Primary Total Stemmed Shoulder Replacement by Fixation (Primary Diagnosis OA)



Cementless fixation has a higher rate of revision compared to the other types of fixation.



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Reverse Shoulder Replacement



Table ST47

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Primary Diagnosis



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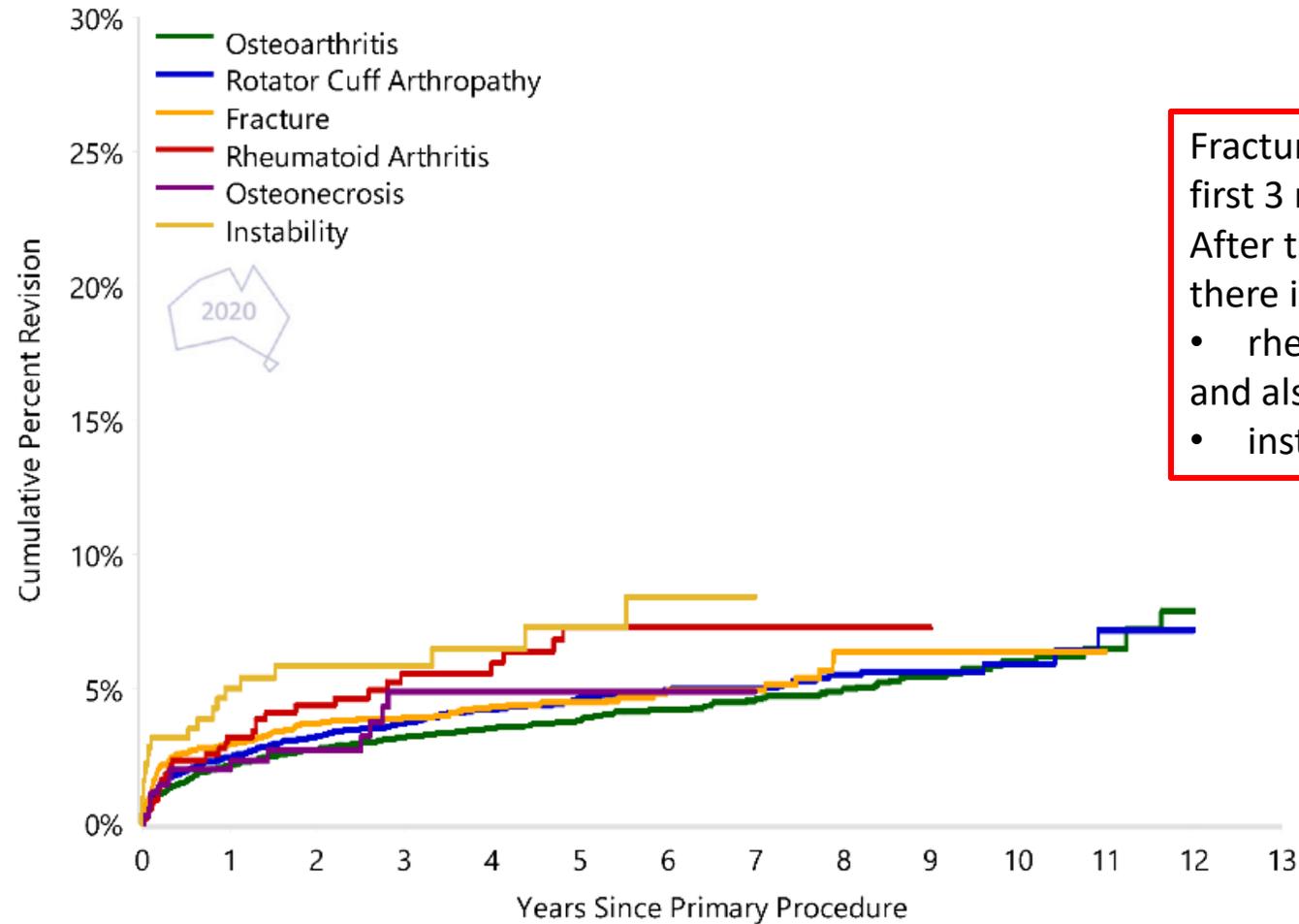
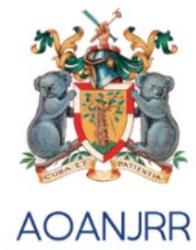
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Primary Diagnosis	N Revised	N Total	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	13 Yrs
Osteoarthritis	446	13374	2.1 (1.9, 2.4)	3.2 (2.9, 3.5)	3.8 (3.5, 4.2)	4.6 (4.1, 5.1)	6.0 (5.2, 7.0)	
Rotator Cuff Arthropathy	394	10808	2.5 (2.2, 2.8)	3.7 (3.3, 4.1)	4.7 (4.2, 5.2)	5.0 (4.5, 5.6)	5.9 (5.1, 6.9)	
Fracture	178	4601	3.0 (2.5, 3.5)	3.9 (3.4, 4.6)	4.5 (3.8, 5.2)	4.9 (4.2, 5.9)	6.4 (5.0, 8.1)	
Rheumatoid Arthritis	31	569	3.2 (2.0, 5.1)	5.6 (3.8, 8.1)	7.3 (5.0, 10.5)	7.3 (5.0, 10.5)		
Osteonecrosis	13	363	2.0 (1.0, 4.1)	4.9 (2.8, 8.5)	4.9 (2.8, 8.5)	4.9 (2.8, 8.5)		
Instability	22	316	5.0 (3.1, 8.2)	5.8 (3.7, 9.3)	7.3 (4.6, 11.5)	8.4 (5.2, 13.5)		
Other (3)	27	299	5.1 (3.0, 8.6)	11.4 (7.4, 17.2)	12.5 (8.2, 18.9)			
TOTAL	1111	30330						

Note: Only primary diagnoses with over 300 procedures have been listed

Figure ST29

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Primary Diagnosis

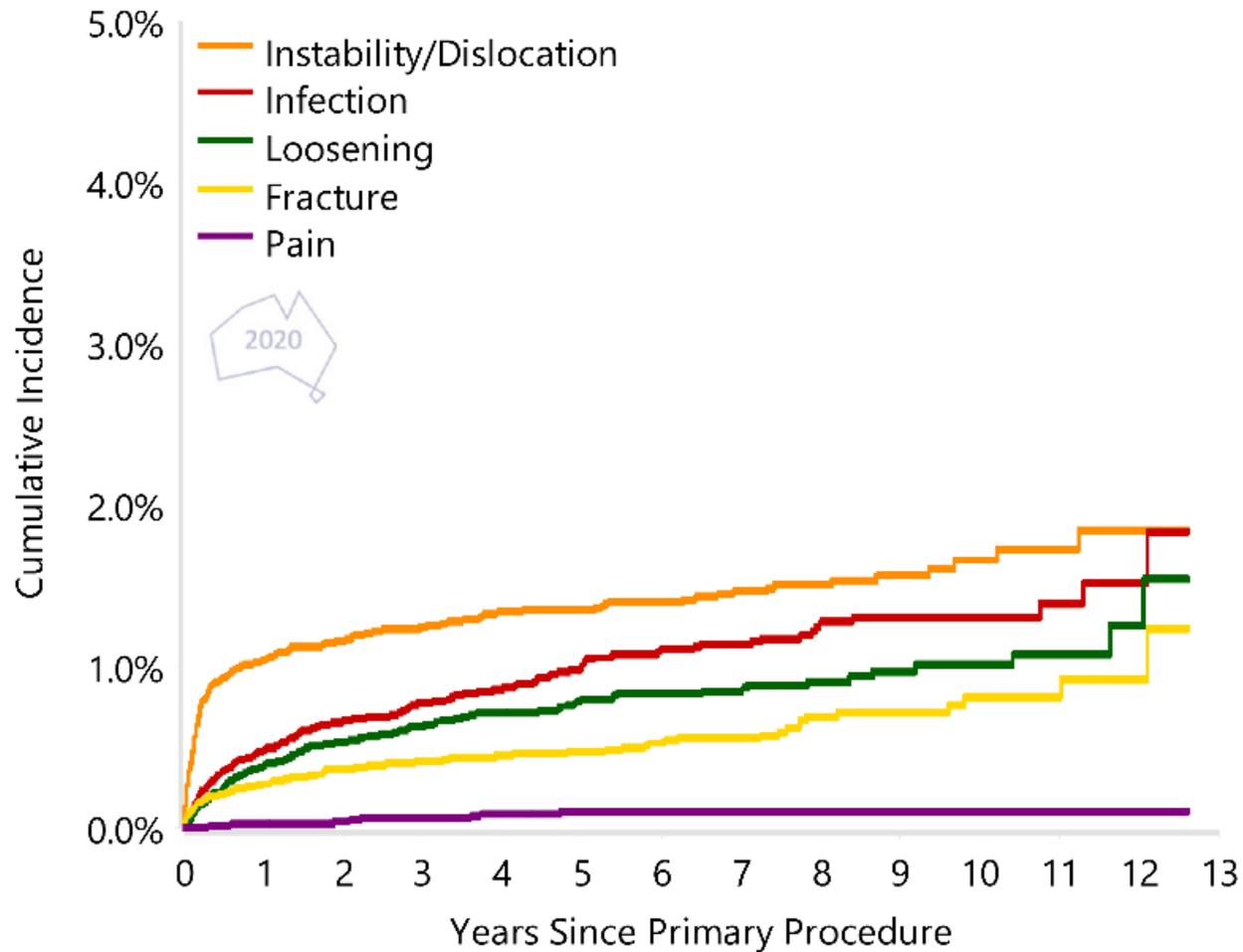


Fracture has a higher rate of revision in the first 3 months compared to osteoarthritis. After this time, there is no difference but there is a difference between:

- rheumatoid arthritis and osteoarthritis
- and also a difference between:
- instability and osteoarthritis.

Figure ST30

Cumulative Incidence Revision Diagnosis of Primary Total Reverse Shoulder Replacement



Instability/dislocation is the most common reason for revision.



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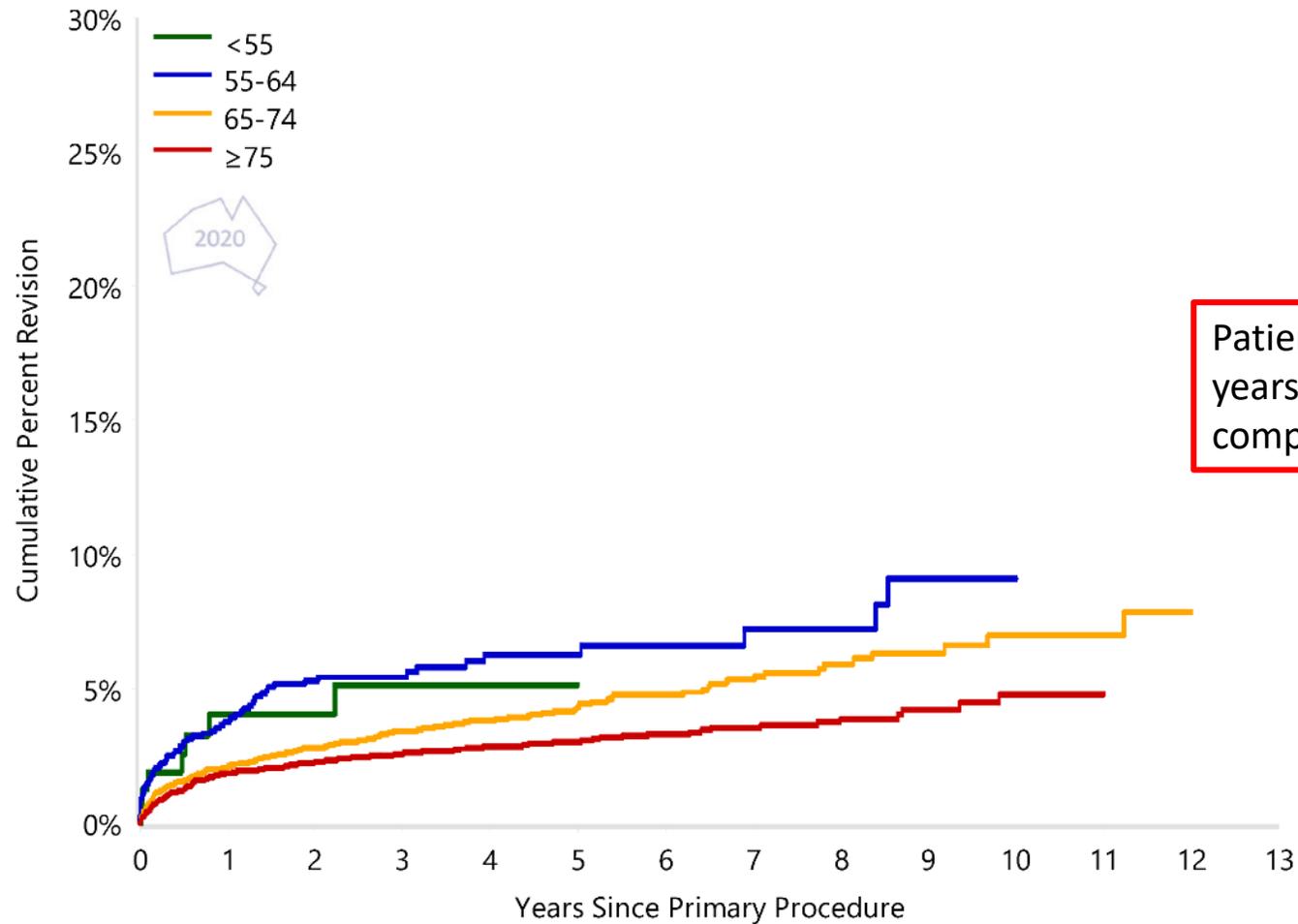
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Reverse Shoulder Replacement

Primary Diagnosis Osteoarthritis

Figure ST31

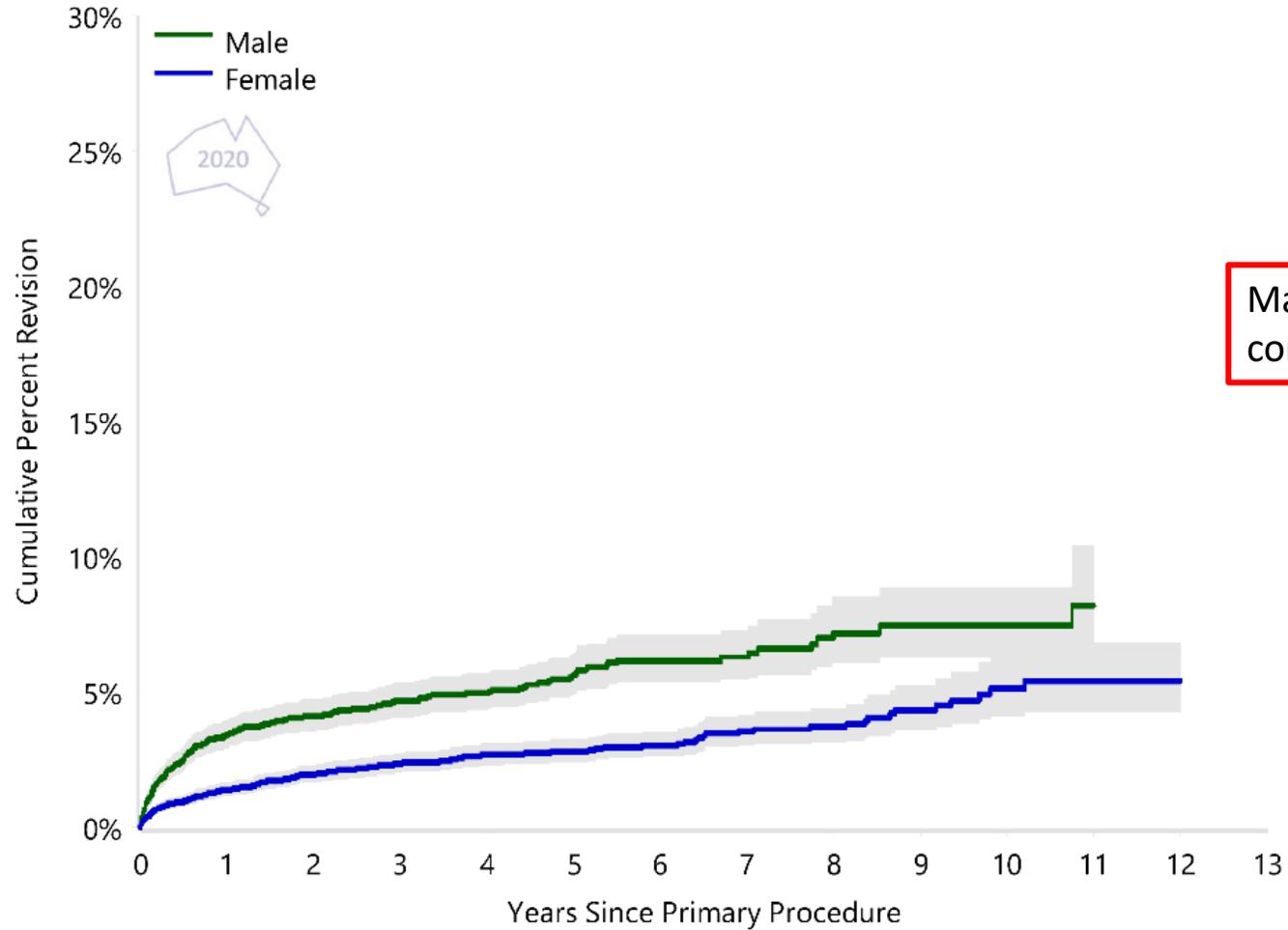
Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Age (OA)



Patients aged 55-64 years and 65-74 years have a higher rate of revision compared to patients aged ≥75 years.

Figure ST32

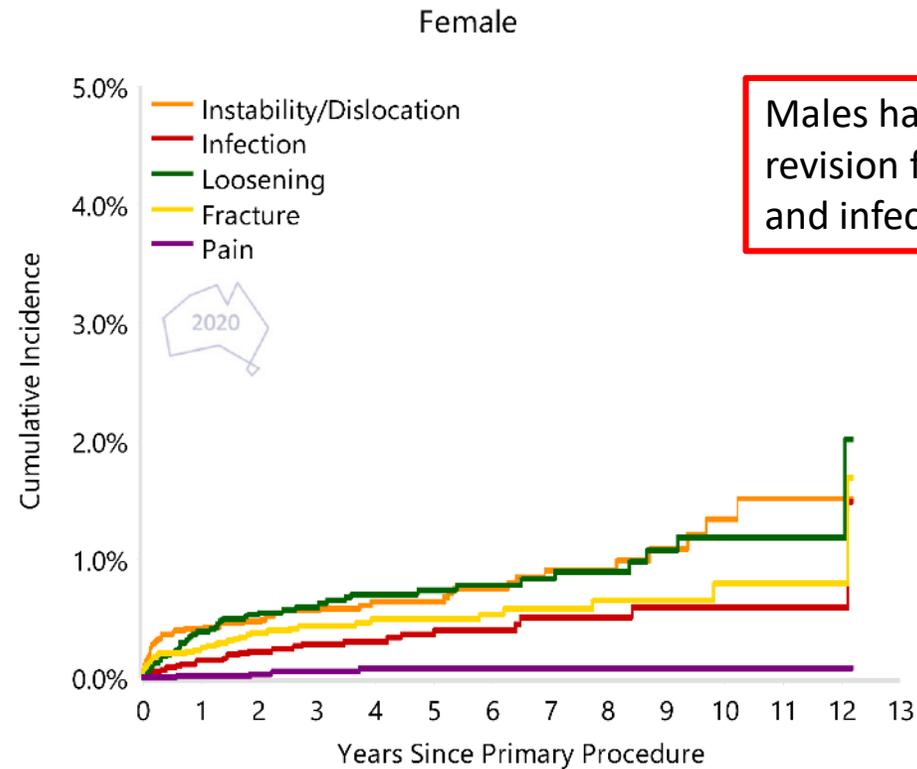
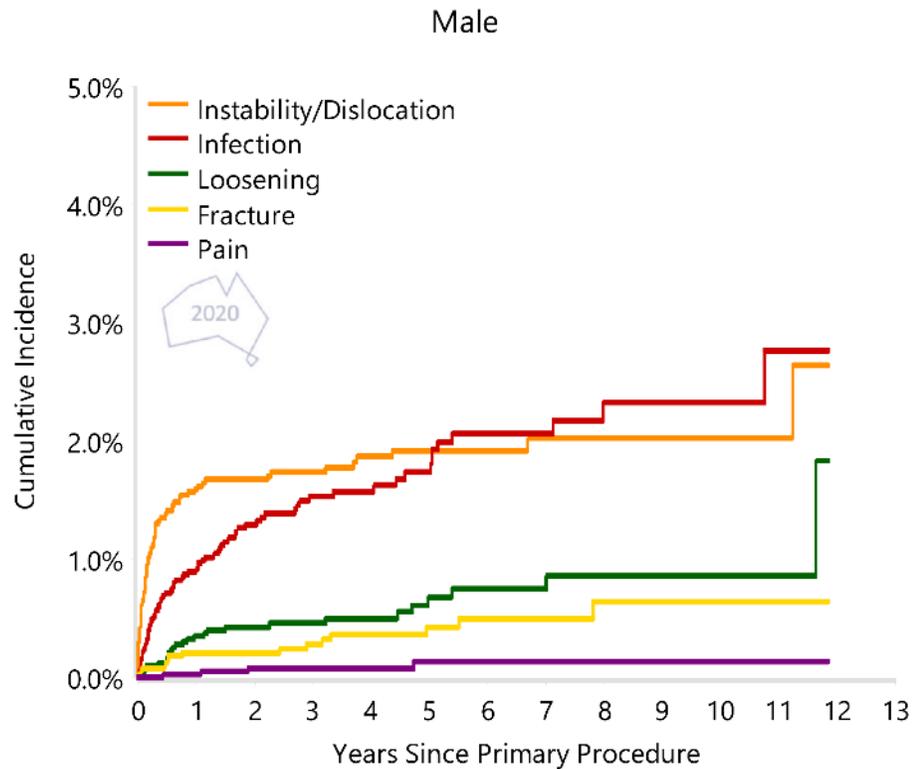
Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Gender (OA)



Males have a higher rate of revision compared to females.

Figure ST33

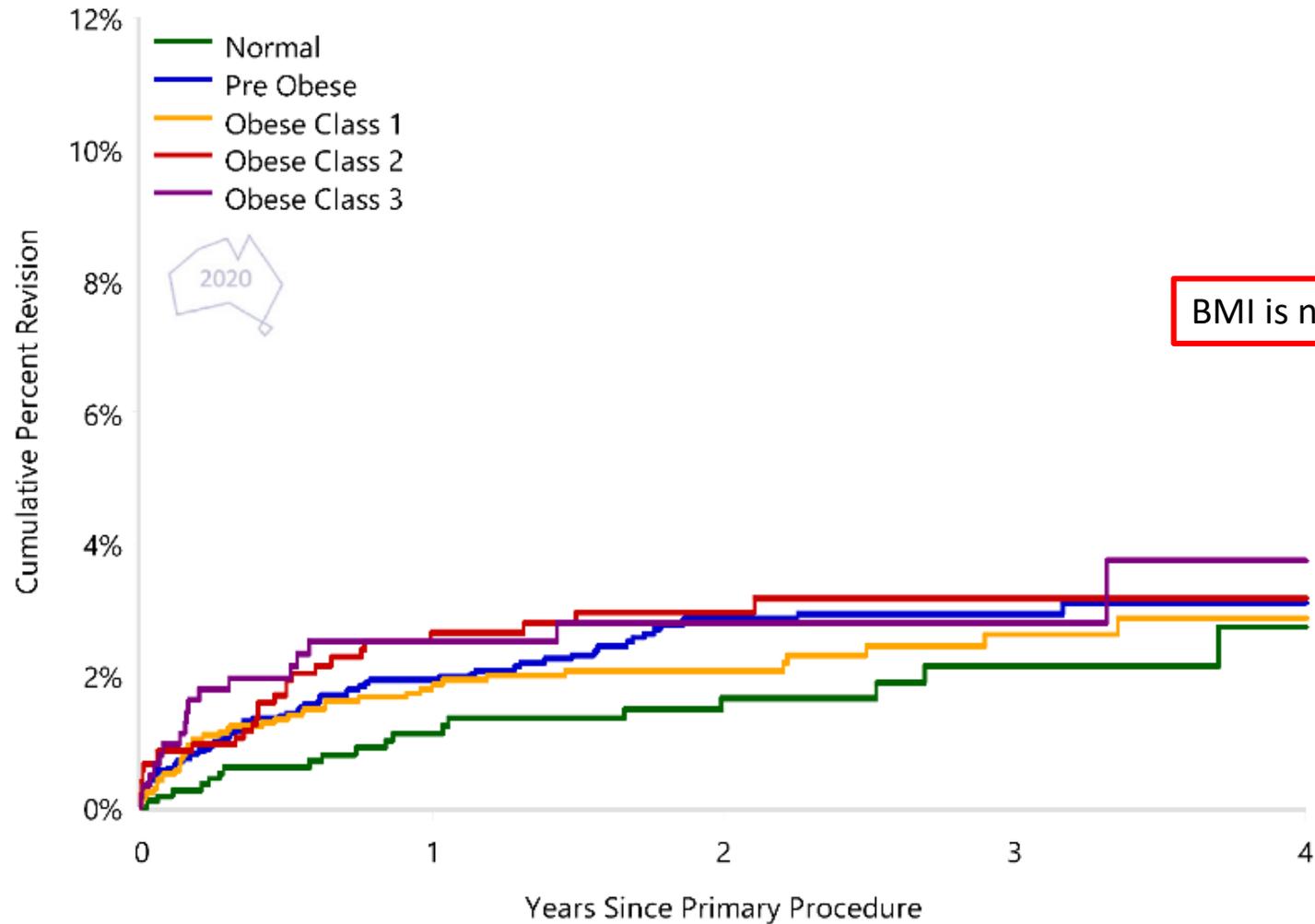
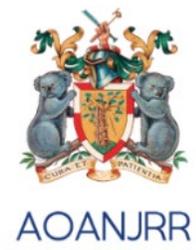
Cumulative Incidence Revision Diagnosis of Primary Total Reverse Shoulder Replacement by Gender (OA)



Males have a higher rate of revision for instability/dislocation and infection.

Figure ST36

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by BMI Category (OA)





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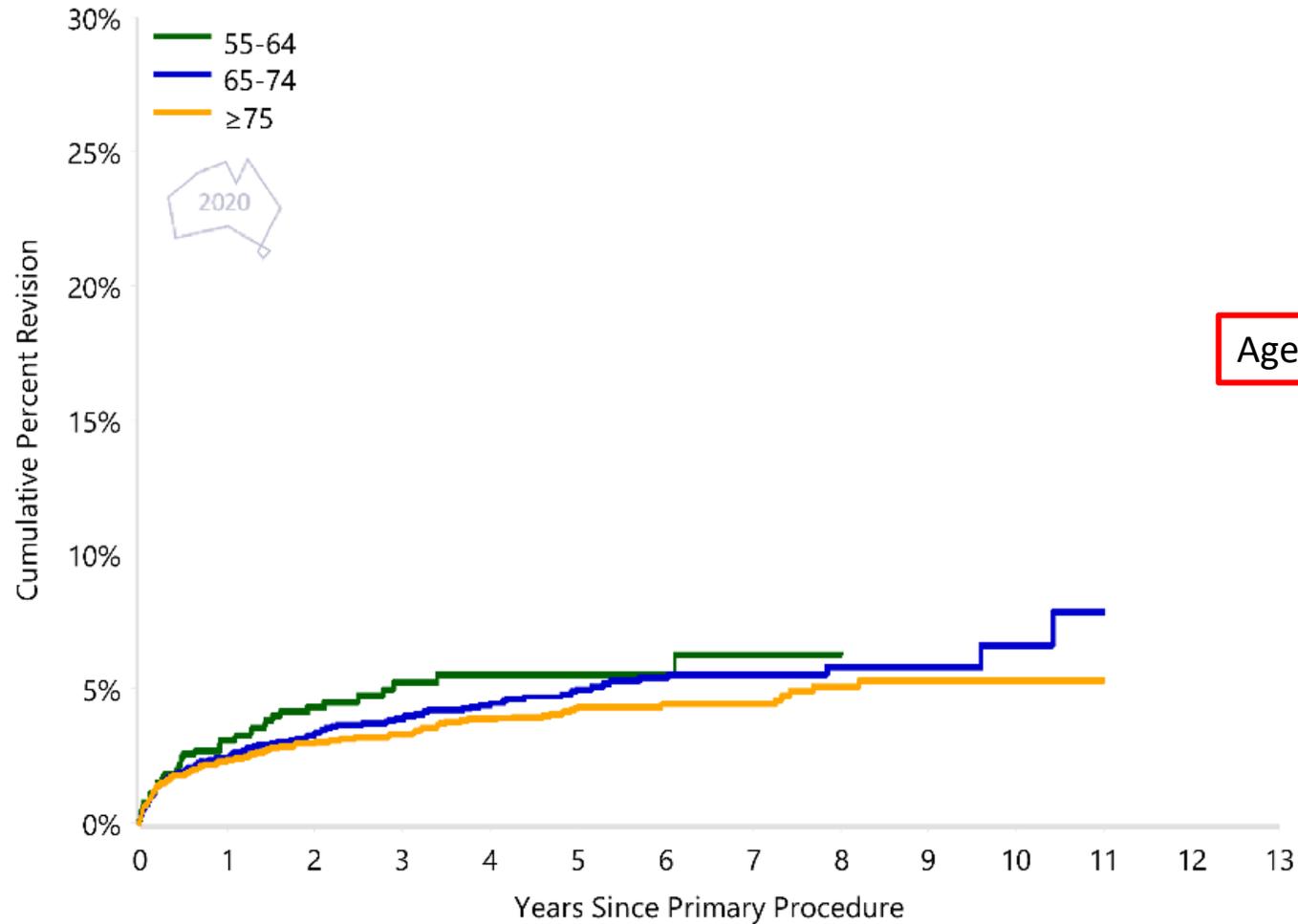
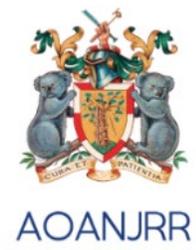
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Reverse Shoulder Replacement

Primary Diagnosis Rotator Cuff Arthropathy

Figure ST42

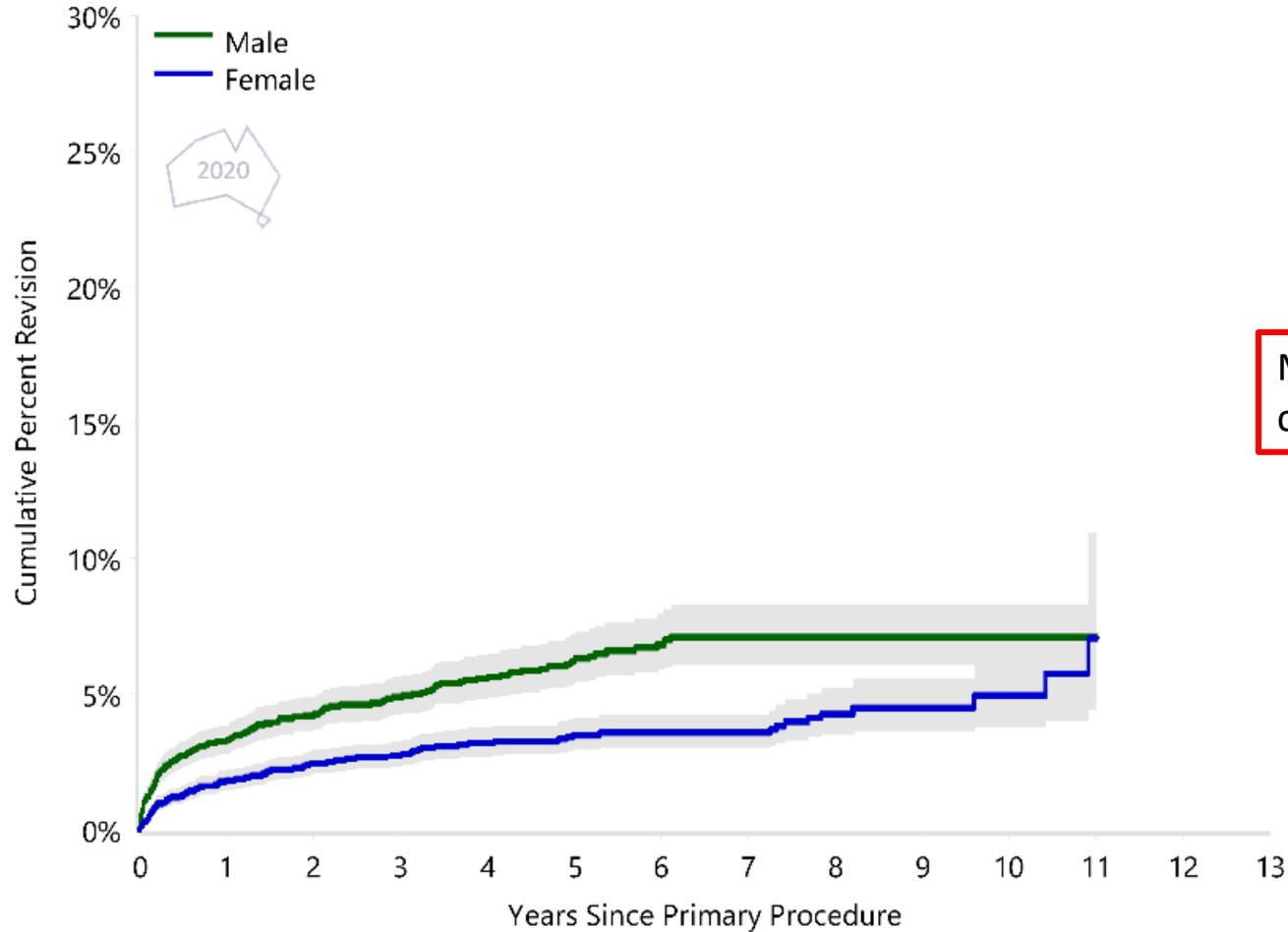
Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Age (Rotator Cuff Arthropathy)



Age is not a risk factor for revision.

Figure ST43

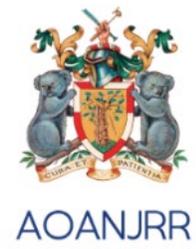
Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Gender (Rotator Cuff Arthropathy)



Males have a higher rate of revision compared to females.

Figure ST44

Cumulative Incidence Revision Diagnosis of Primary Total Reverse Shoulder Replacement by Gender (Rotator Cuff Arthropathy)



Males have a higher rate of revision for infection and instability/dislocation.

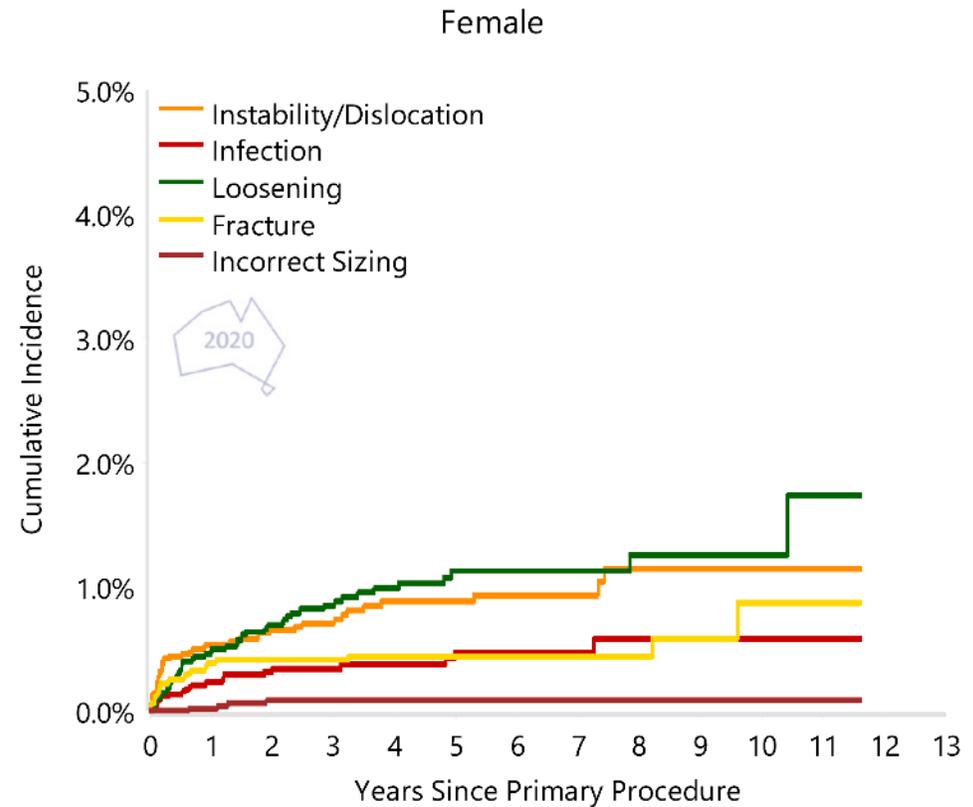
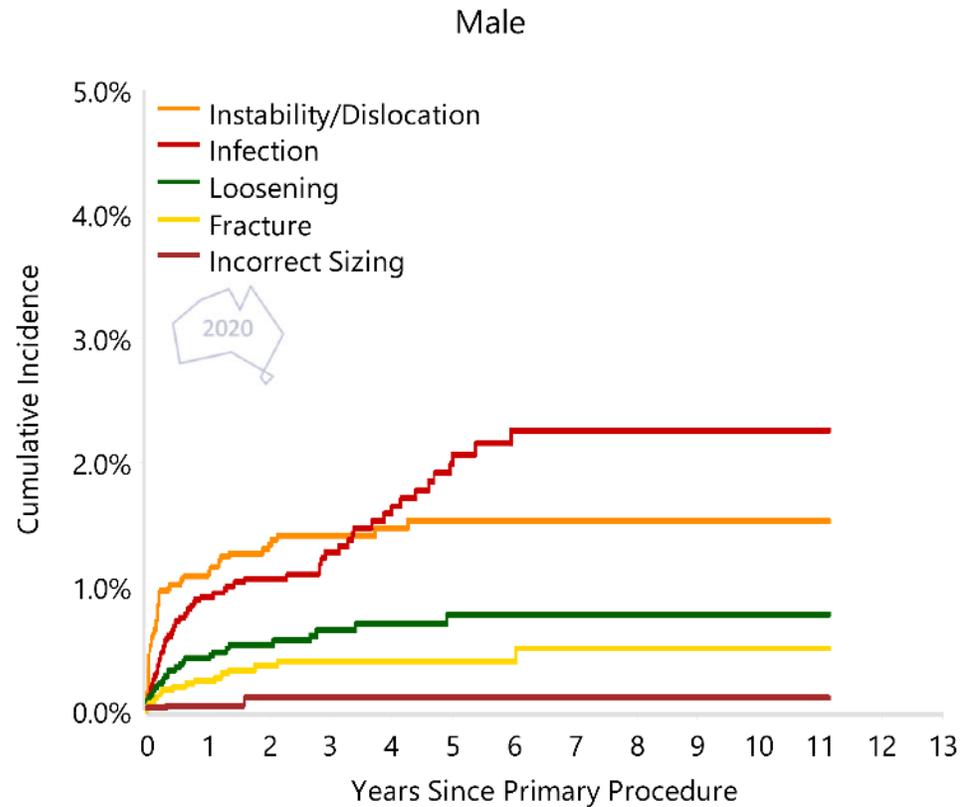
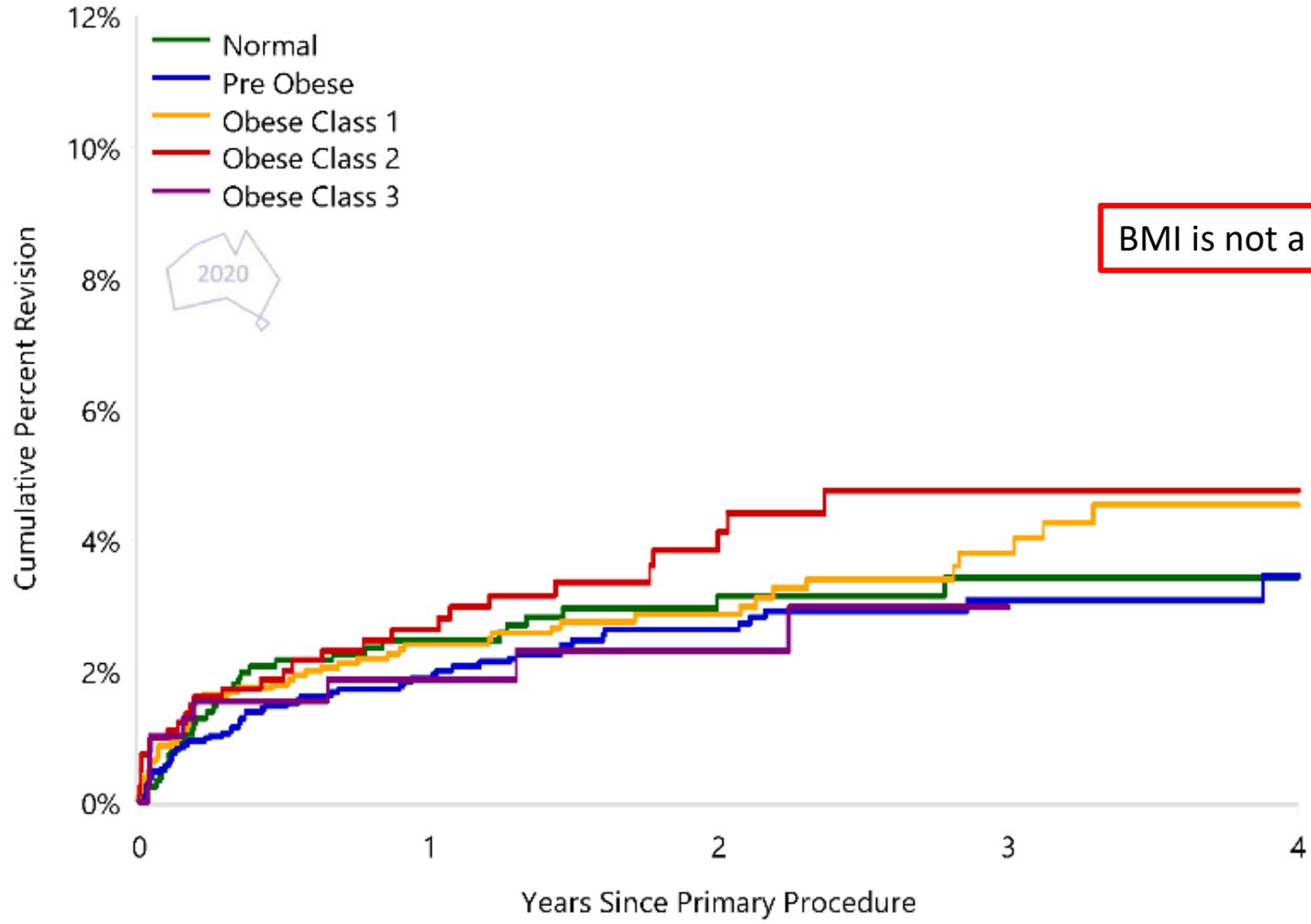


Figure ST47

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by BMI Category (RCA)





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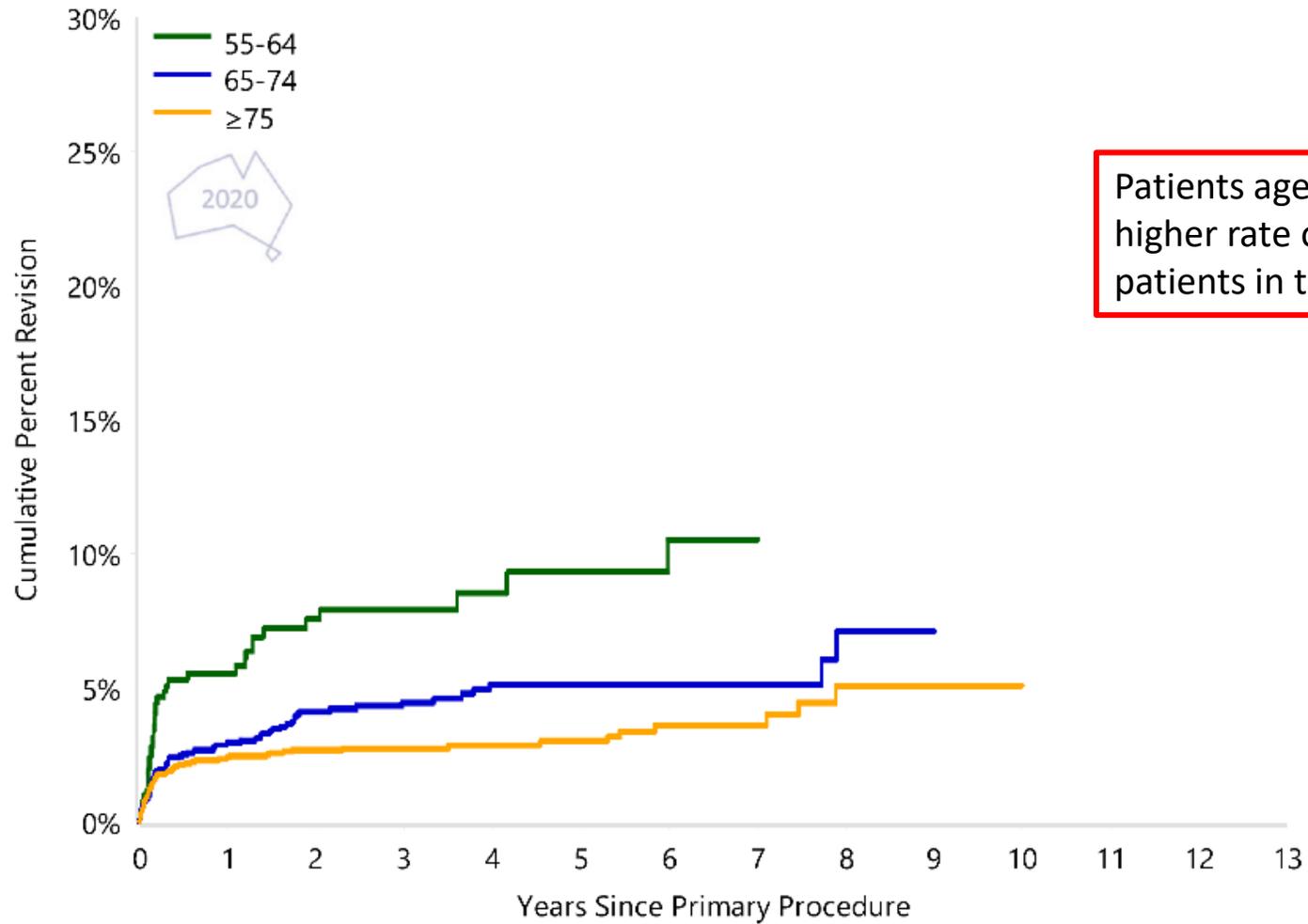
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Reverse Shoulder Replacement

Primary Diagnosis Fracture

Figure ST53

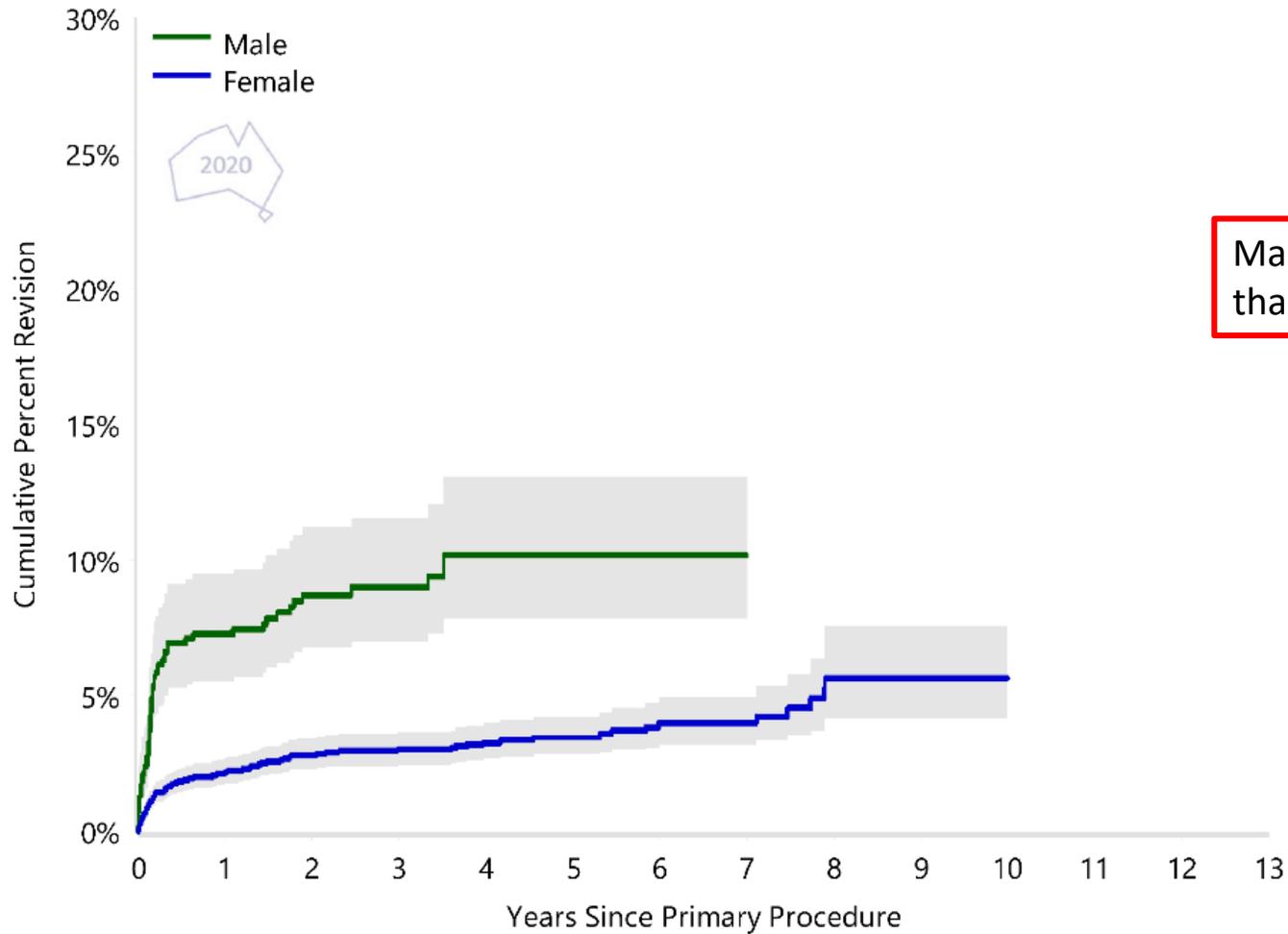
Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Age (Fracture)



Patients aged 55-64 years have a higher rate of revision compared to patients in the other age categories.

Figure ST54

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Gender (Fracture)



Males have a higher rate of revision than females for the first 3 months.

Figure ST55

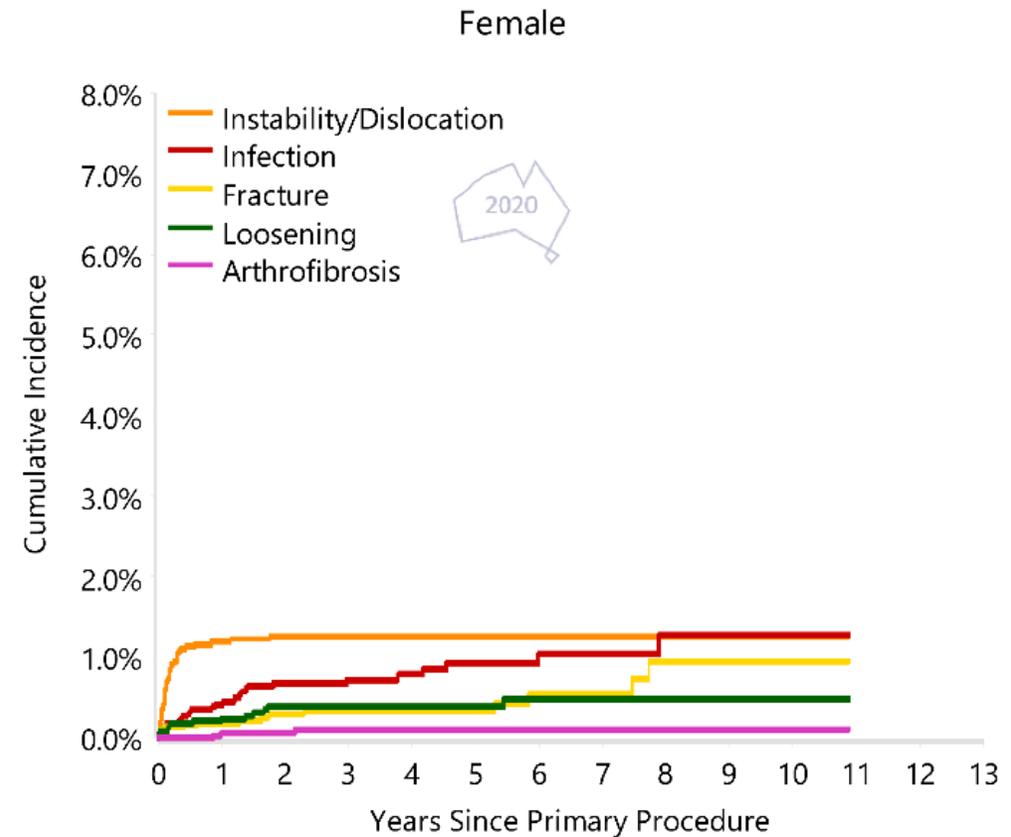
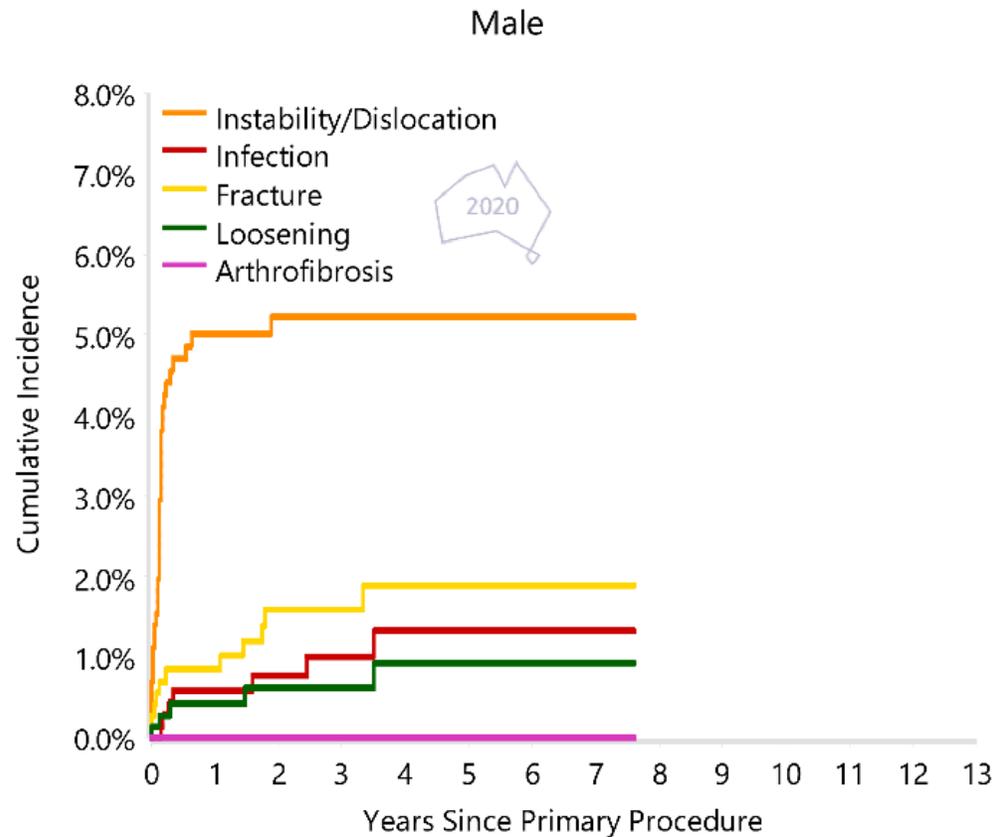
Cumulative Incidence Revision Diagnosis of Primary Total Reverse Shoulder Replacement by Gender (Fracture)



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Males have a higher rate of revision for instability/dislocation.





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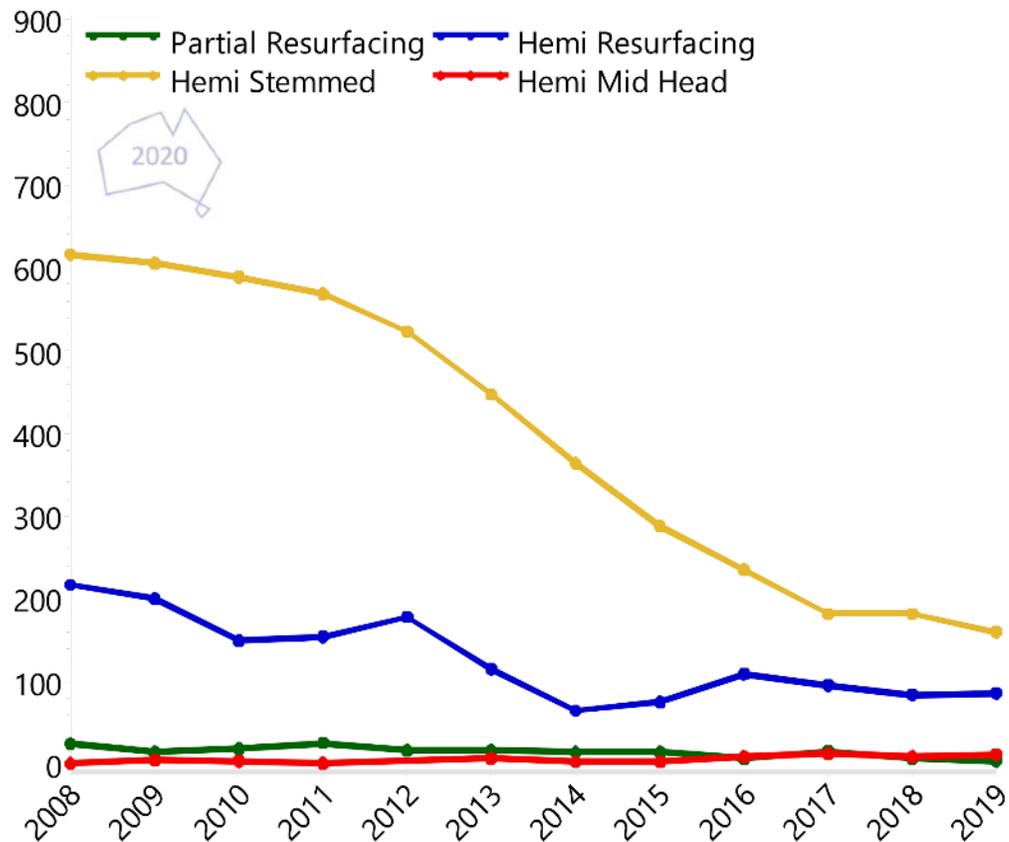
Partial Shoulder Replacement



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Figure SP1 & Table SP1 Primary Partial Shoulder Replacement by Class

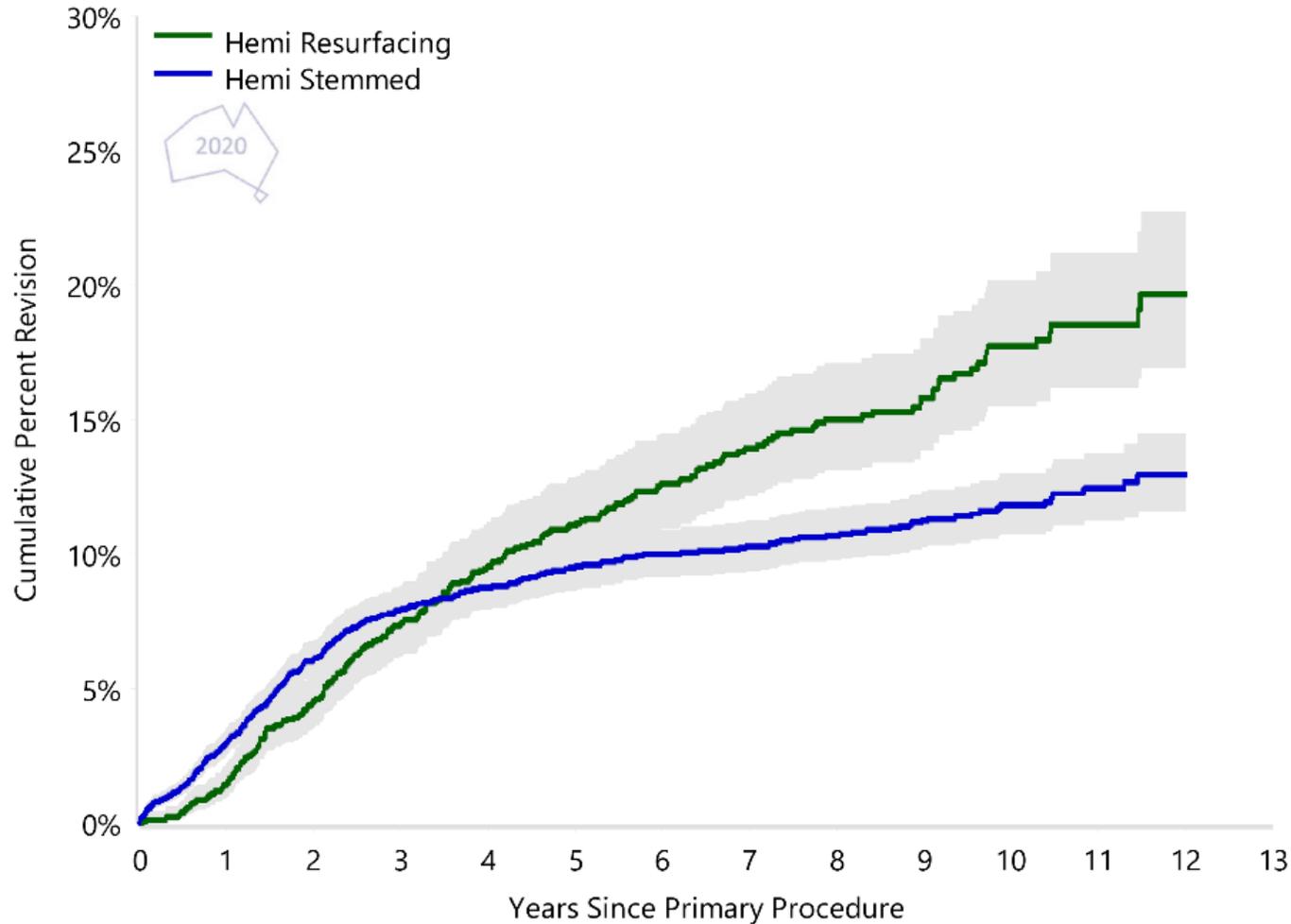


Shoulder Class	Number	Percent
Partial Resurfacing	191	2.7
Hemi Resurfacing	1675	23.7
Hemi Stemmed	5129	72.6
Hemi Mid Head	67	0.9
TOTAL	7062	100.0

Hemi Stemmed and hemi resurfacing are the most common classes of partial shoulder.

Figure SP2

Cumulative Percent Revision of Primary Partial Shoulder Replacement by Class (All Diagnoses)



10 year CPR:
17.7% Hemi Resurfacing
11.8% Hemi Stemmed



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Partial Shoulder Replacement

Hemi Resurfacing

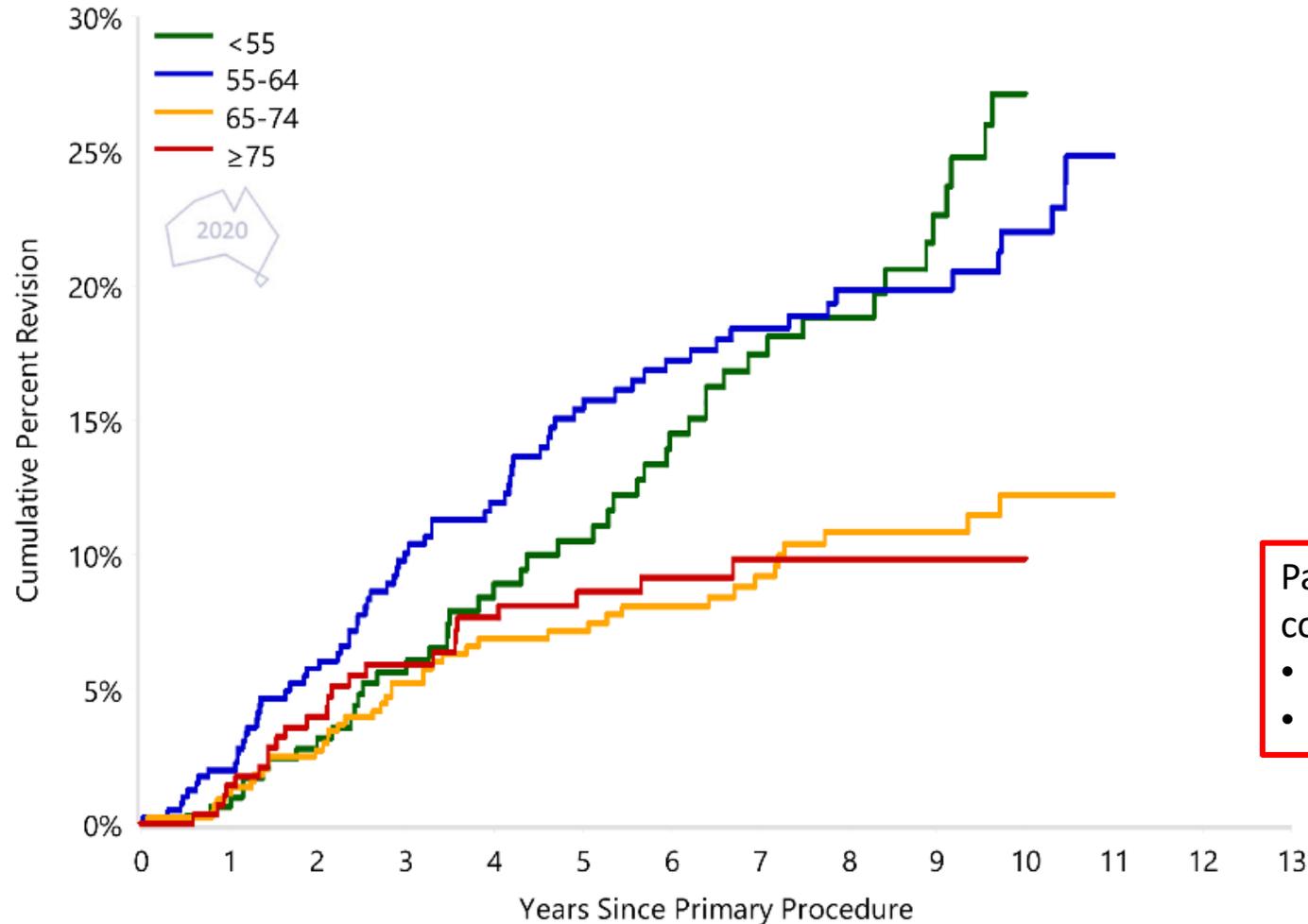
Figure SP4

Cumulative Percent Revision of Primary Hemi Resurfacing Shoulder Replacement by Age (OA)



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Patients aged <55 years have a higher rate of revision compared to patients aged:

- ≥75 years (2.5-3.5 years and after 4 years)
- 65-74 years (after 2.5 years)

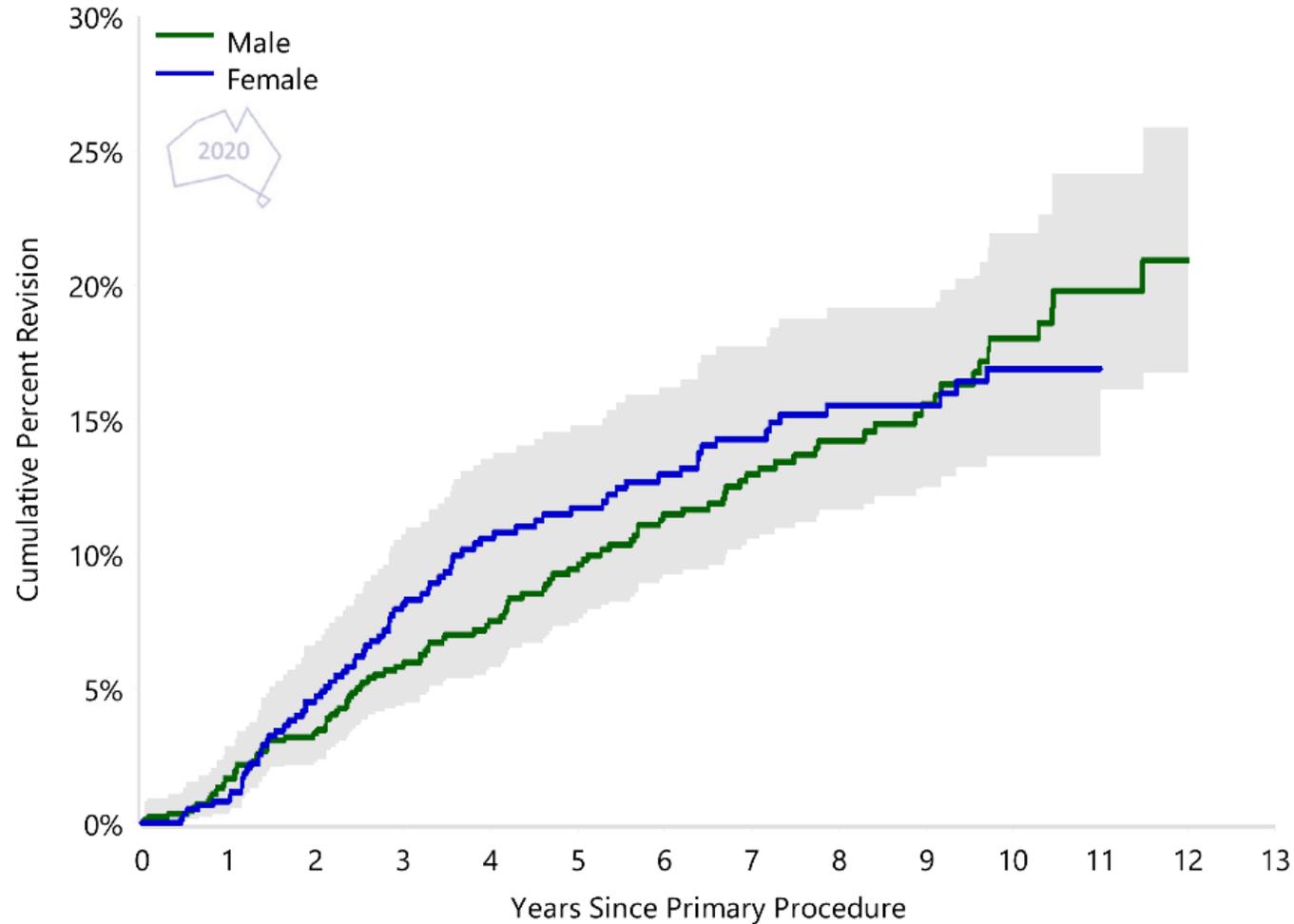
Figure SP5

Cumulative Percent Revision of Primary Hemi Resurfacing Shoulder Replacement by Gender (OA)



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Male vs Female
– no statistically significant difference

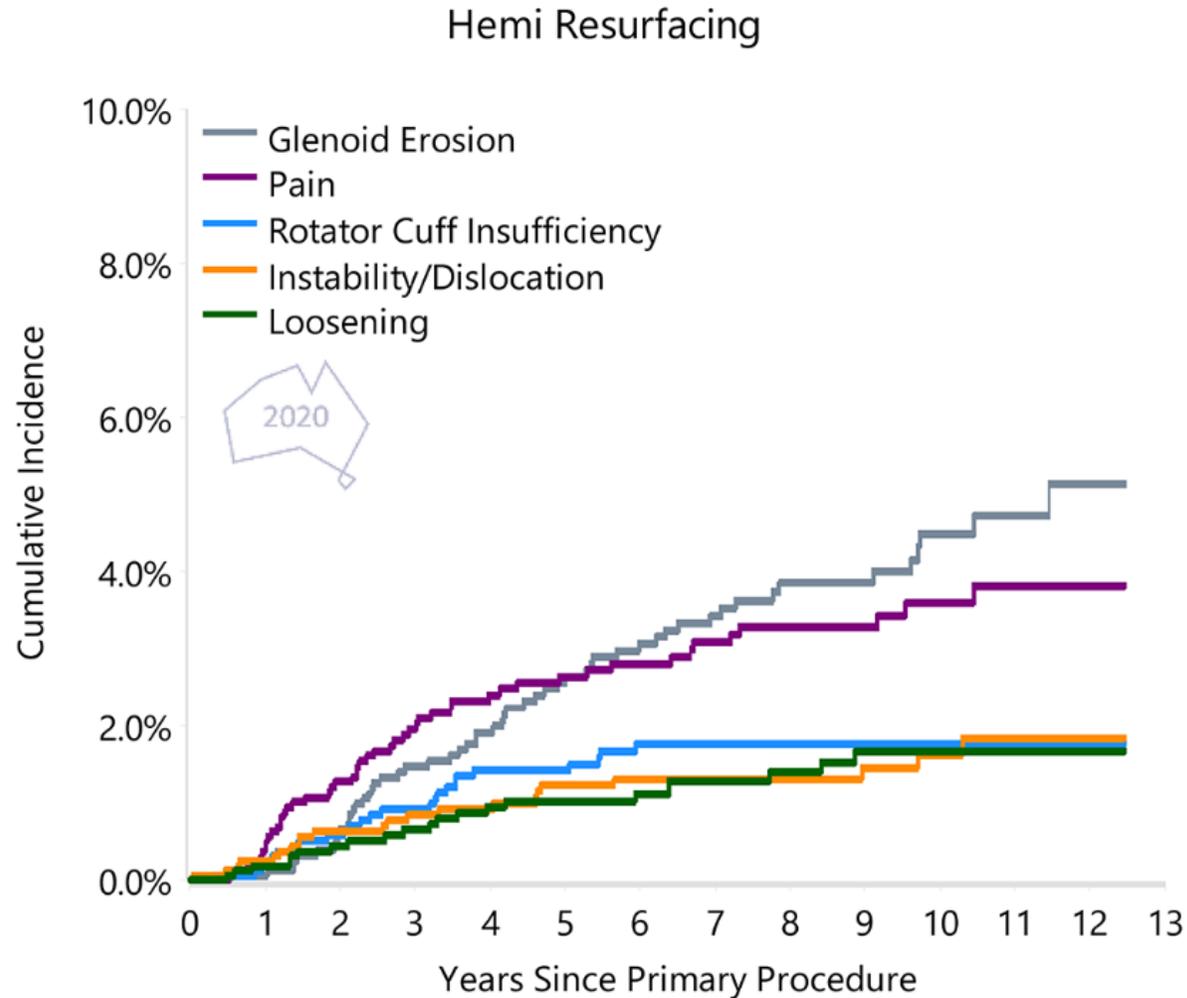
Figure SP3

Cumulative Incidence Revision Diagnosis of Primary Hemi Resurfacing Shoulder Replacement (All Diagnoses)



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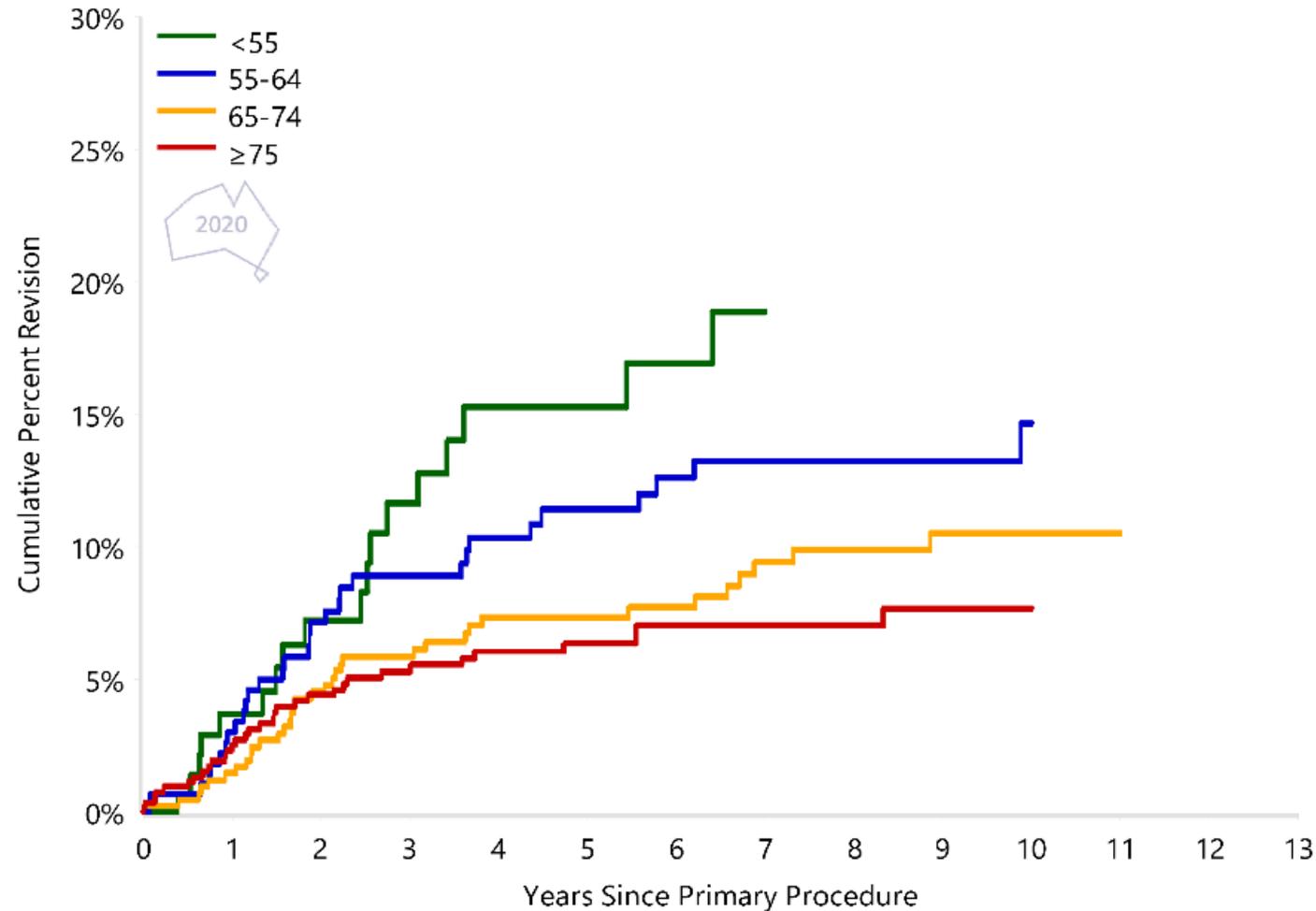
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Partial Shoulder Replacement

Hemi Stemmed

Figure SP13

Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Age (OA)



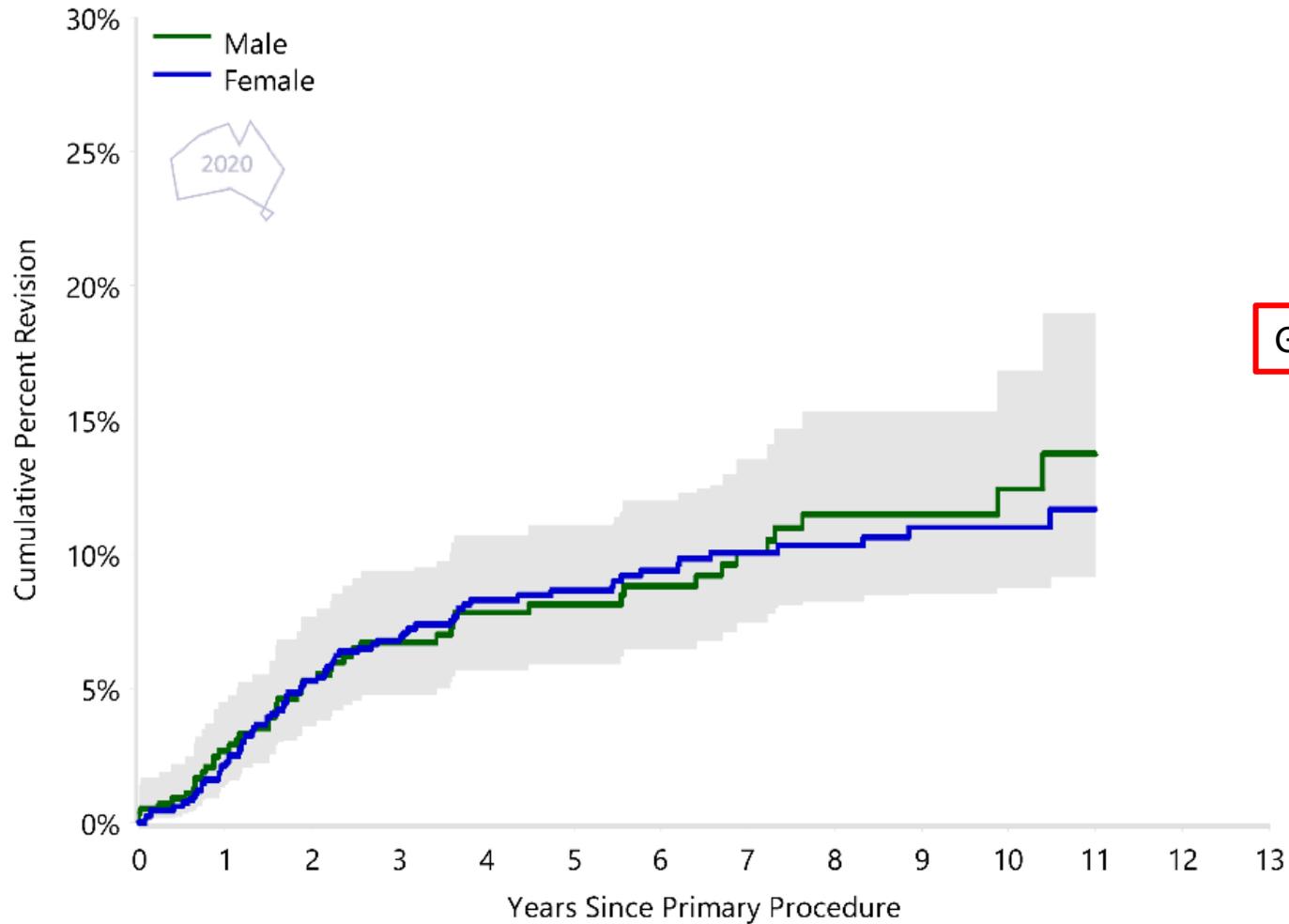
The rate of revision is lower for patients aged ≥ 75 years compared to:

- patients < 55 years (after 2.5 years) and
- 55-64 years.

No difference between patients aged ≥ 75 years and 65-74 years.

Figure SP14

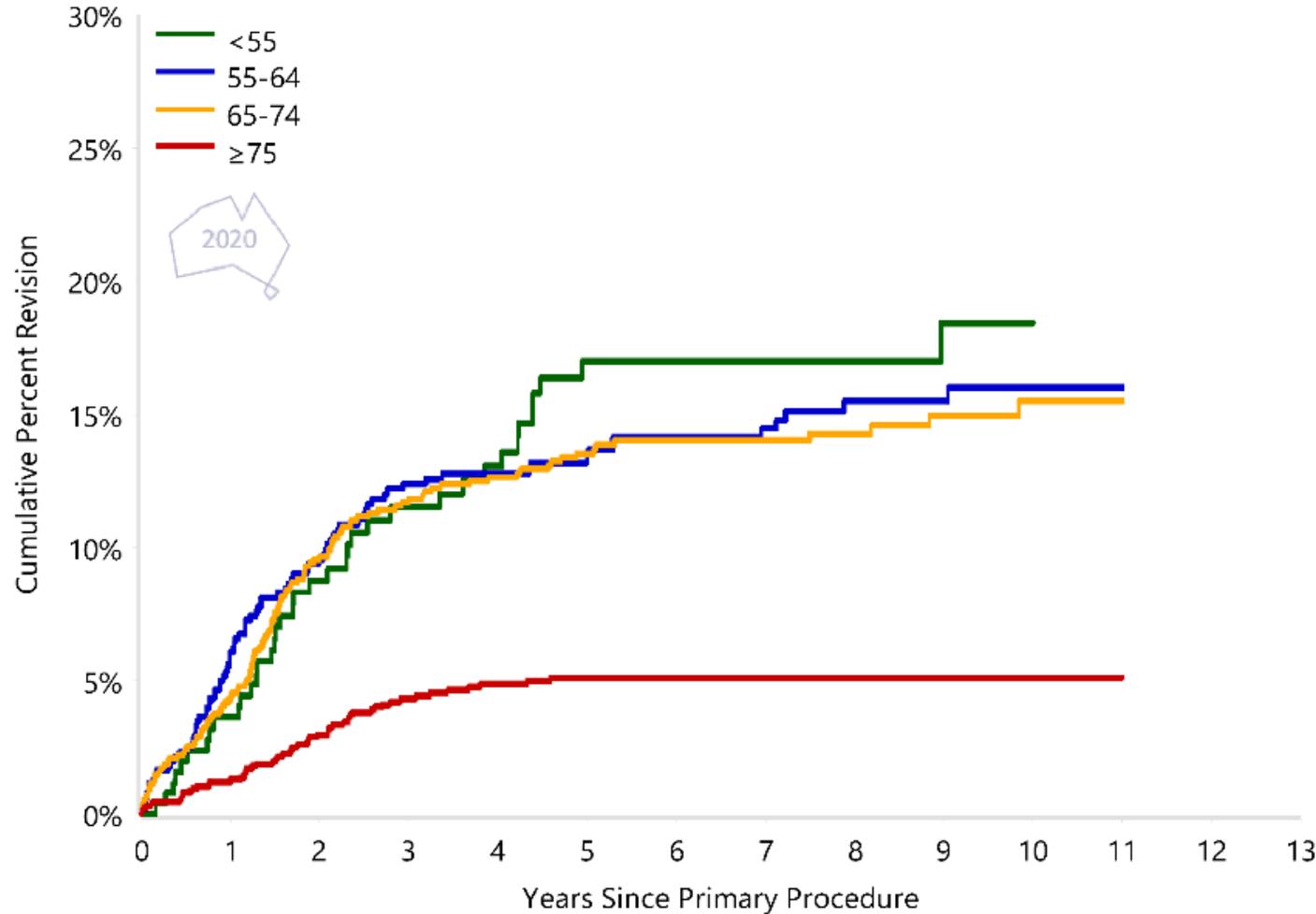
Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Gender (OA)



Gender is not a risk factor for revision.

Figure SP9

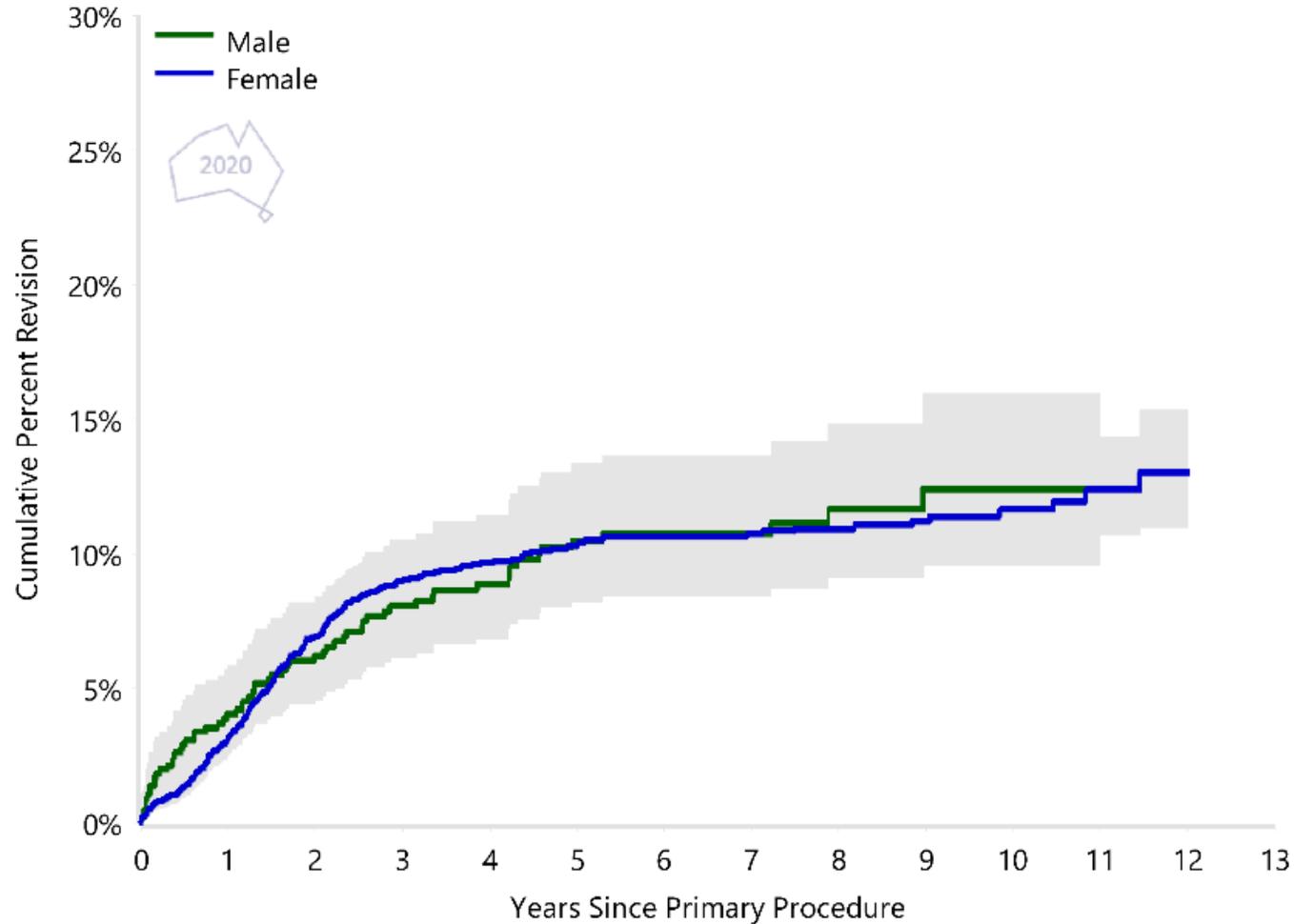
Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Age (Primary Diagnosis Fracture)



The rate of revision is lower for patients aged ≥ 75 years compared to all other age groups.

Figure SP10

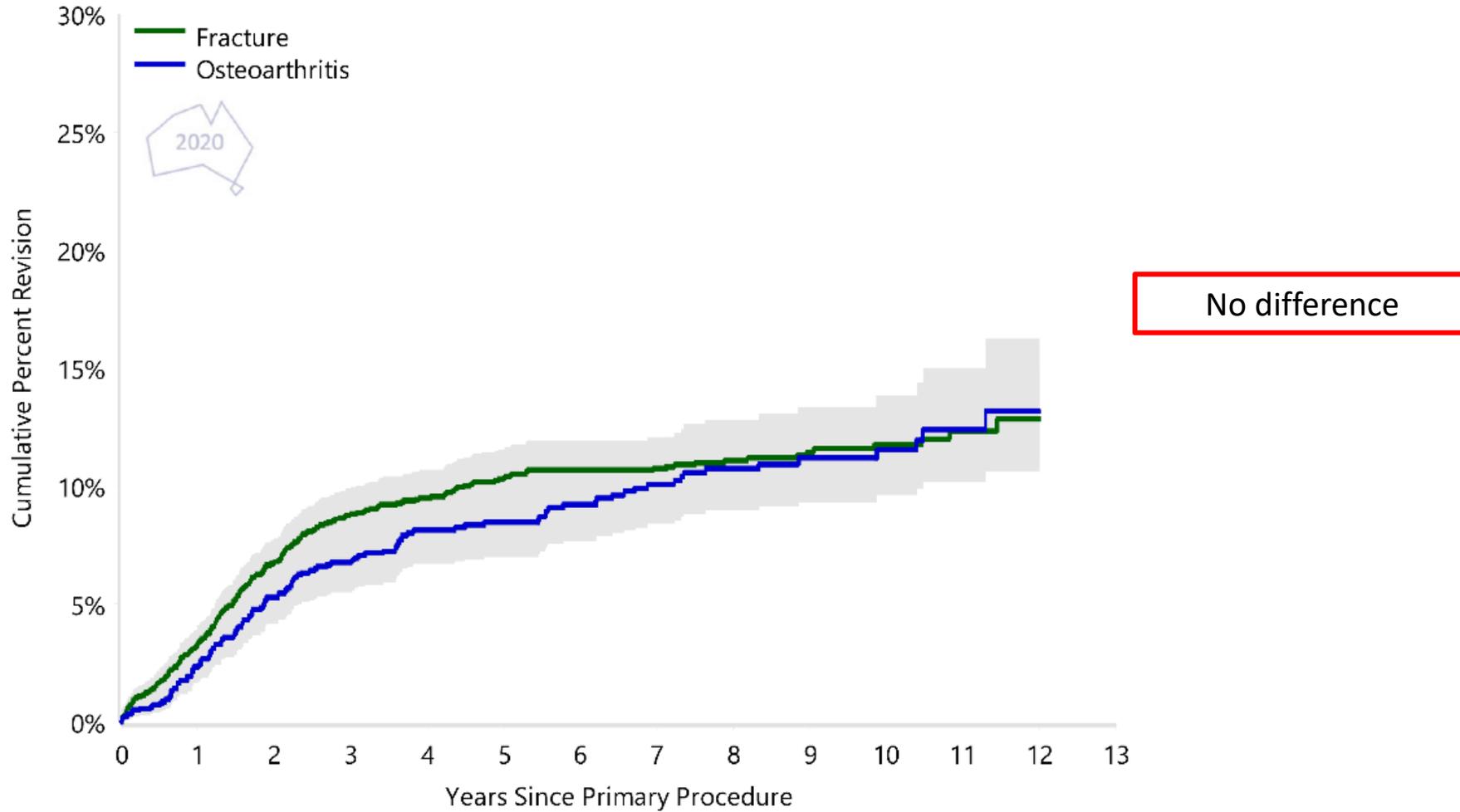
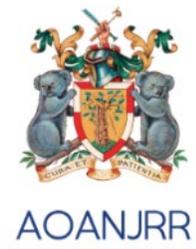
Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Gender (Primary Diagnosis Fracture)



Females have a higher rate of revision after 1.5 years compared to males.

Figure SP7

Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Primary Diagnosis



Note: Only primary diagnoses with over 1,000 procedures have been listed

Figure SP6

Primary Hemi Stemmed Shoulder Replacement by Primary Diagnosis



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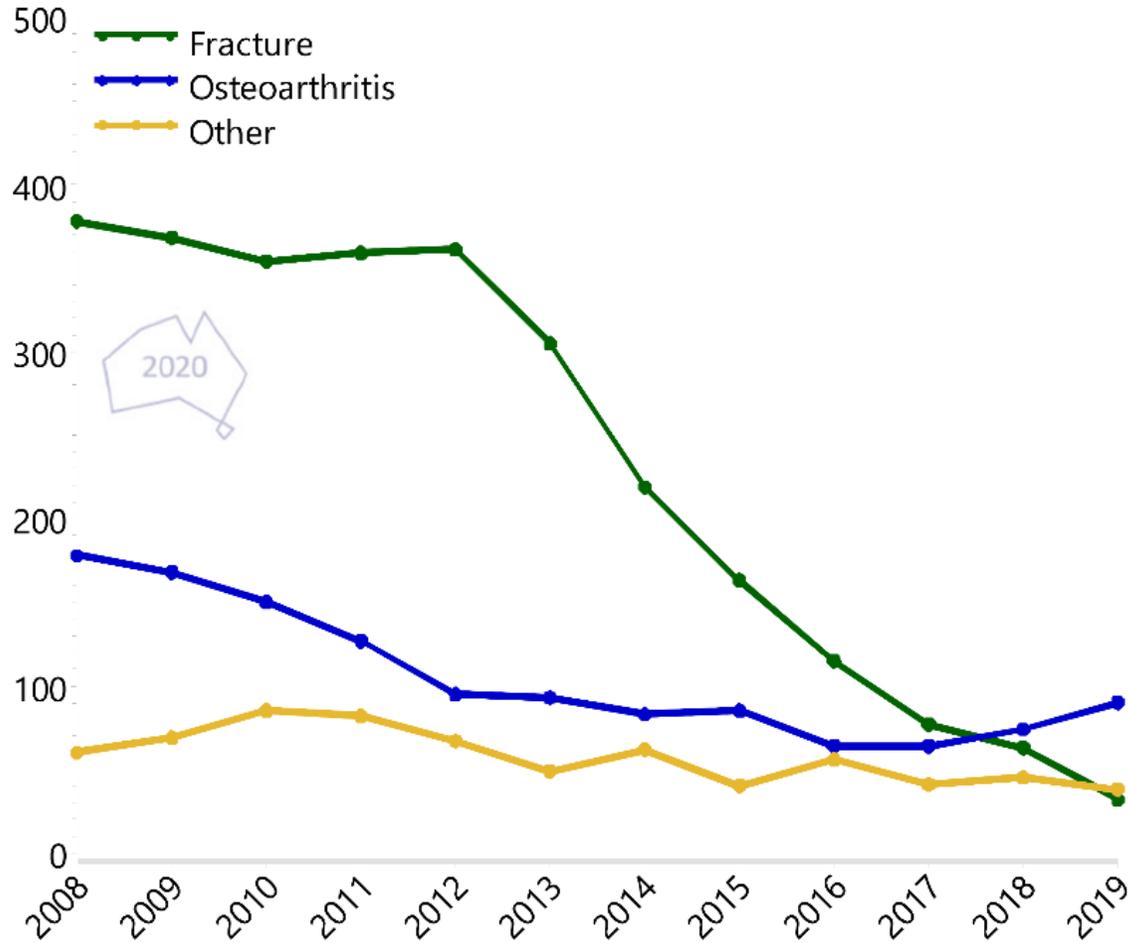


Table SP26

Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Primary Diagnosis



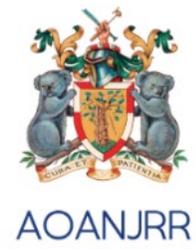
There is no difference in the rate of revision when primary hemi stemmed shoulder replacement is performed for fracture or osteoarthritis.

Primary Diagnosis	N Revised	N Total	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	13 Yrs
Fracture	298	2993	3.4 (2.8, 4.1)	8.8 (7.8, 9.9)	10.4 (9.3, 11.6)	10.7 (9.6, 12.0)	11.8 (10.5, 13.2)	
Osteoarthritis	123	1390	2.4 (1.7, 3.4)	6.8 (5.5, 8.3)	8.5 (7.0, 10.2)	10.1 (8.4, 12.0)	11.5 (9.6, 13.8)	
Rotator Cuff Arthropathy	16	236	2.2 (0.9, 5.2)	5.7 (3.3, 9.9)	7.6 (4.6, 12.3)	7.6 (4.6, 12.3)		
Osteonecrosis	14	174	2.3 (0.9, 6.1)	5.6 (3.0, 10.5)	7.5 (4.2, 13.4)	8.7 (4.9, 15.1)		
Tumour	14	158	3.9 (1.6, 9.2)	12.3 (6.5, 22.7)				
Other (4)	12	178	2.9 (1.2, 6.7)	5.2 (2.8, 9.8)	5.2 (2.8, 9.8)	5.2 (2.8, 9.8)		
TOTAL	477	5129						

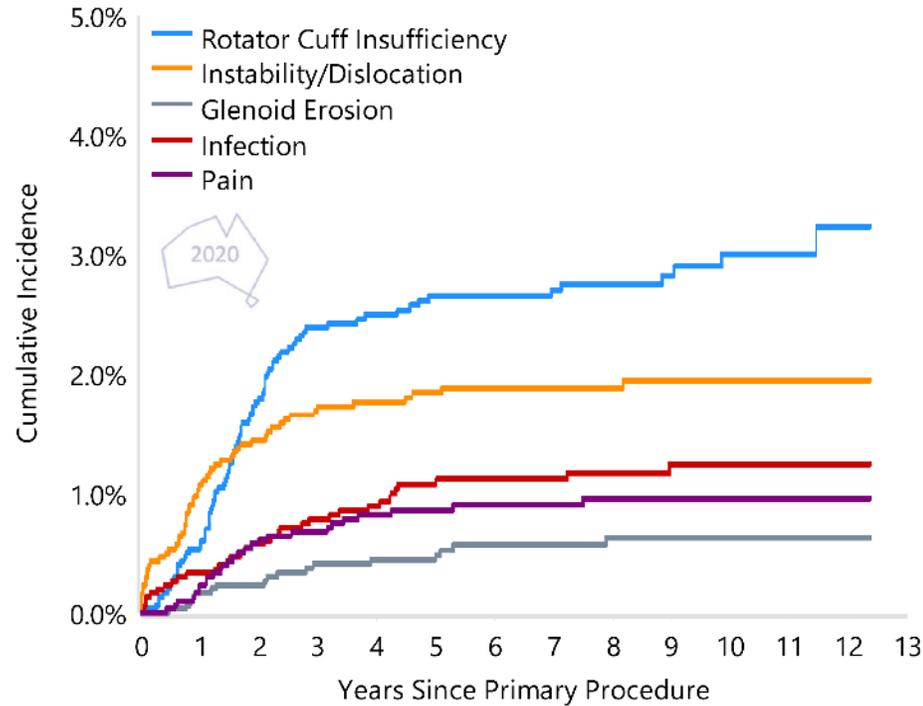
Note: Only primary diagnoses with over 100 procedures have been listed

Figure SP8

Cumulative Incidence Revision Diagnosis of Primary Hemi Stemmed Shoulder Replacement by Primary Diagnosis



Fracture



Osteoarthritis

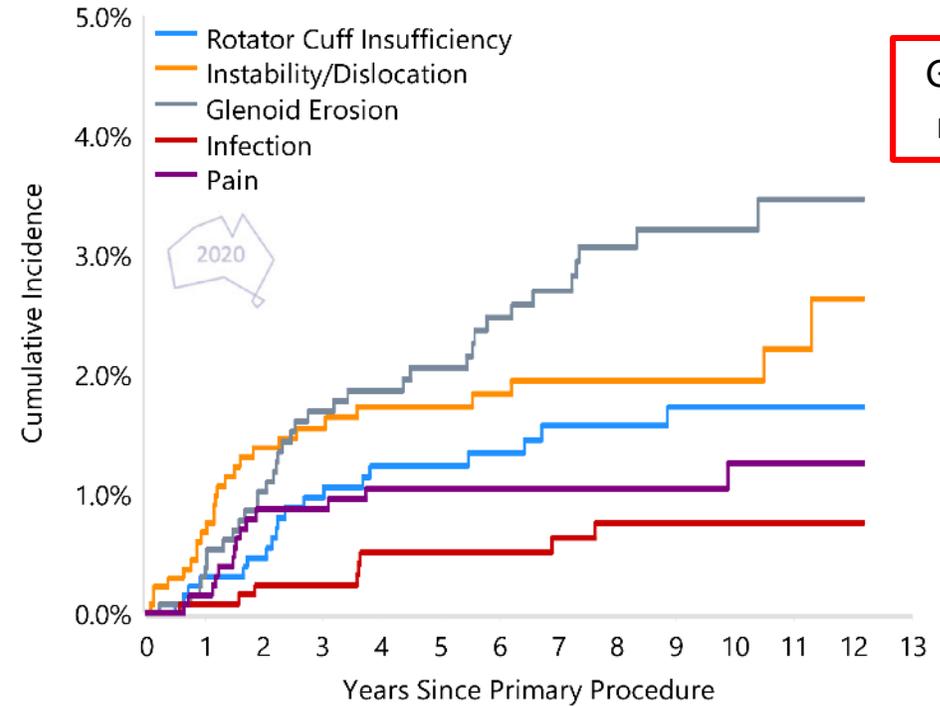
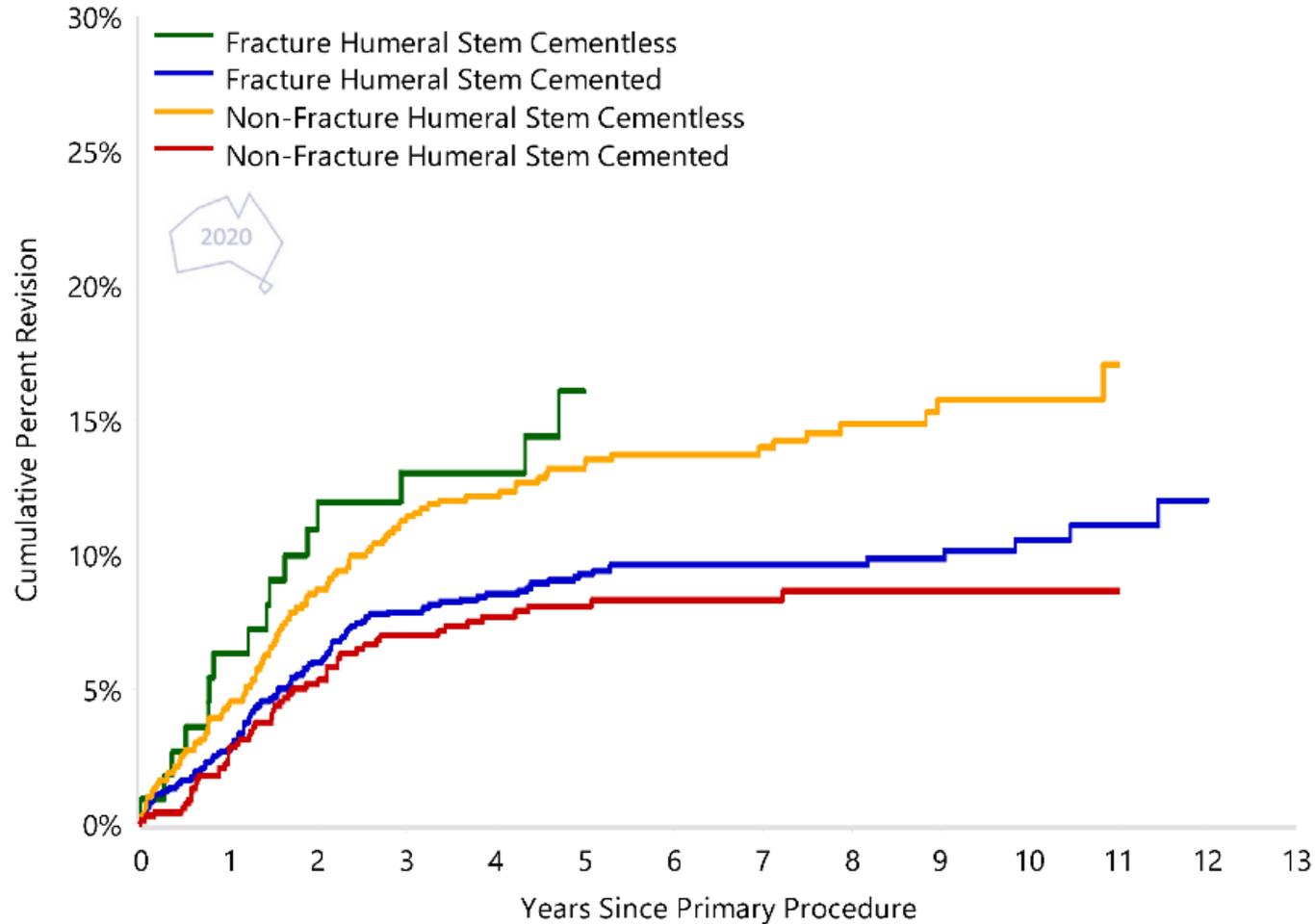


Figure SP12

Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Stem Type and Humeral Fixation (Primary Diagnosis Fracture)



Cemented non-fracture stems have the lowest rate of revision.