

COVID-Surgery Recommendations & Risk Calculator Validation Study

Thank you for participating in this study. We appreciate your valuable time and by answering this survey, you will be a part of a dynamic process to validate a novel COVID-Surgery Risk Calculator created for the South African context.

As new daily COVID-19 cases have decreased in South Africa, numerous guidelines about re-escalating elective surgery had been published, mostly by high income countries. The need for national guidelines, adopted for the South Africa context around risk calculation and prioritisation of surgical care are paramount. As hospitals in both the public and private health systems re-start elective surgery, an objective risk calculator and guidelines are needed to determine individual patient risk and to prioritise operations.

In early March 2020, the South African National Department of Health convened a technical working group (TWG) to create a National Surgical Anesthesia Obstetric Plan (NSOAP). This group consists of academic surgeons, anesthesiologists, obstetricians, emergency medicine physicians and critical care specialists from five SA universities and the Department of Health. A COVID-19 subcommittee of this group was tasked to establish a COVID-Surgery Recommendations and Risk Calculator.

The primary aim of this study is to assess whether the COVID-Surgery Recommendations and Risk Calculator reflects reasonable practice in South Africa.

This survey has four parts. 1) demographic information and pandemic score 2) feedback on the COVID-Surgery Recommendations 3) 10 hypothetical cases and 4) feedback on the COVID-Surg Risk Calculator.

This survey should not take more than 20 minutes to complete. By completing this survey you are consenting to partake in this study.

This study has HREC approval from Stellenbosch University (N20/08/050_COVID-19). For any queries or concerns, please contact Prof Kathryn Chu (kchu@sun.ac.za)

* Required

Part 1: Demographic Information

1. Which province do you practice in? *

Mark only one oval.

- Eastern Cape
- Free State
- Gauteng
- KwaZulu-Natal
- Limpopo
- Mpumalanga
- Northern Cape
- North West
- Western Cape

2. Which health sector do you work in? *

Mark only one oval.

- Public
- Private
- Both

3. What is the geographic area of your primary hospital? *

Mark only one oval.

- Urban
- Rural
- Semi-Urban

4. What is your profession? *

Mark only one oval.

- Anesthetist
- General or Trauma Surgeon
- ENT Surgeon
- Urologist
- Ophthalmologic Surgeon
- Orthopaedic Surgeon
- Neurosurgeon
- Ob/Gyn
- Other
- Family Physician
- Rural doctor

5. Please calculate the pandemic score for your hospital (/20) *

		1	3	5
1	Community COVID-19 numbers	Decreasing over 2/52	Plateau over 2/52	Increasing over 2/52
2	COVID Test Turn-around time	<48 hours	2 – 3 days	>3 days
3	Reallocation of Hospital Beds and Staff for COVID	Minimal/no reallocation	Significant reallocation	Majority of beds/staff reallocated
4	PPE	Adequate supplies	Rationed	Limited or uncertain availability

Part 2: Feedback on Key Recommendations

Do you agree with the following statements (our key recommendations for COVID-Surgery)

6. Safe re-introduction of surgery in the presence of community transmission of COVID-19 requires assessment of individual patient risk as well as health facility readiness. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	Strongly agree				

7. Surgery with co-existing COVID-19 infection poses an increased risk of morbidity and mortality and should be avoided for non-emergency surgery *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	Strongly agree				

8. Pre-operative COVID-19 testing should ideally be performed on all patients scheduled for non-emergency surgery and surgery postponed if positive (for at least 14 days after last day of symptoms or from test if asymptomatic) *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	Strongly agree				

9. Where testing is not available or turnaround time is prohibitively long, patients with COVID-19 symptoms should be postponed for at least 14 days *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	Strongly agree				

10. For patients recovered from COVID-19 (>14 days after last day of symptoms or from test if asymptomatic), assessment for COVID-19 sequelae is part of the risk evaluation. Routine repeat PCR testing is not recommended *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	Strongly agree				

11. Risks of concomitant and nosocomial COVID infection should be discussed as part of the consent process *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	Strongly agree				

**Part 3:
Hypothetical
Cases**

Case 1: Inguinal Hernia Repair

60 year old (YO) male with symptomatic inguinal hernia affecting quality of life. 30 pack year smoker, BMI=28, previous MI 5 years ago but currently no angina, walks 2 km daily. Operation length-1 hour. Overnight stay only.

12. Would you have operated on this patient given your current hospital climate? *

Mark only one oval.

- Yes
- No
- Maybe
- Do not have the clinical experience to comment on this case

13. Please score this patient (between 12-80)

		1	3	5	10
1	Age	<40	41-60	61-70	>70
2	Diabetes	None	Yes, well controlled	Poorly controlled	
3	BMI	<30	31-40	>40	
4	ASA Category	1-2 (Well/Mild systemic disease)	3 (Severe systemic disease)	4 (Systemic disease - threat to life)	
5	Functional capacity (Metabolic equivalents)	Engages in strenuous sporting activity (METS 10)	Climbs 2 flights of stairs/can jog (METS 4-9)	Walks on flat, light housework (METS <4)	

b) Disease Factors: Total /30

		1	5	10
1	Non operative Mx	Not available	Available, poorer outcome	Available, similar outcome
2	2-week delay (impact on outcome)	Significant	Moderate	Minimal
3	3-month delay (impact on outcome)	Significant	Moderately	Minimal

c) Procedure Factors: Total: /20

		1	3	5
1	Operating Time	< 60 mins	61 – 180mins	>180mins
2	Expected Post op care	General Ward	High Care Unit	Planned ICU post op
3	Type of Anaesthetic	Local/Regional	Possible GA	Planned GA
4	Ext length of Stay	<24 hrs	1 – 3 days	>4 days

Case 2: Cataract Operation

75 YO female with bilateral cataracts dramatically affecting vision and daily activities including driving and reading. Well-controlled HTN. BMI=30. No other co-morbidities. Operation time <1 hr. Outpatient procedure.

14. Would you have operated on this patient given your current hospital climate? *

Mark only one oval.

- Yes
- No
- Maybe
- Do not have the clinical experience to comment on this case

15. Please score this patient (between 12-80)

		1	3	5	10
1	Age	<40	41-60	61-70	>70
2	Diabetes	None	Yes, well controlled	Poorly controlled	
3	BMI	<30	31-40	>40	
4	ASA Category	1-2 (Well/Mild systemic disease)	3 (Severe systemic disease)	4 (Systemic disease - threat to life)	
5	Functional capacity (Metabolic equivalents)	Engages in strenuous sporting activity (METS 10)	Climbs 2 flights of stairs/can jog (METS 4-9)	Walks on flat, light housework (METS <4)	

b) Disease Factors: Total /30

		1	5	10
1	Non operative Mx	Not available	Available, poorer outcome	Available, similar outcome
2	2-week delay (impact on outcome)	Significant	Moderate	Minimal
3	3-month delay (impact on outcome)	Significant	Moderately	Minimal

c) Procedure Factors: Total: /20

		1	3	5
1	Operating Time	< 60 mins	61 – 180mins	>180mins
2	Expected Post op care	General Ward	High Care Unit	Planned ICU post op
3	Type of Anaesthetic	Local/Regional	Possible GA	Planned GA
4	Ext length of Stay	<24 hrs	1 – 3 days	>4 days

Case 3: Total Hip Replacement

80 YO female previously healthy with progressive debilitating right hip pain. Previous marathon runner. No comorbidities. Now cannot walk more than 100m. BMI=25, no medications. No SOB when walking but cannot walk up-stairs due to hip pain. Operation time=2.5 hours. 5-day inpatient stay

16. Would you have operated on this patient given your current hospital climate? *

Mark only one oval.

- Yes
- No
- Maybe
- Do not have the clinical experience to comment on this case

17. Please score this patient (between 12-80)

		1	3	5	10
1	Age	<40	41-60	61-70	>70
2	Diabetes	None	Yes, well controlled	Poorly controlled	
3	BMI	<30	31-40	>40	
4	ASA Category	1-2 (Well/Mild systemic disease)	3 (Severe systemic disease)	4 (Systemic disease - threat to life)	
5	Functional capacity (Metabolic equivalents)	Engages in strenuous sporting activity (METS 10)	Climbs 2 flights of stairs/can jog (METS 4-9)	Walks on flat, light housework (METS <4)	

b) Disease Factors: Total /30

		1	5	10
1	Non operative Mx	Not available	Available, poorer outcome	Available, similar outcome
2	2-week delay (impact on outcome)	Significant	Moderate	Minimal
3	3-month delay (impact on outcome)	Significant	Moderately	Minimal

c) Procedure Factors: Total: /20

		1	3	5
1	Operating Time	< 60 mins	61 – 180mins	>180mins
2	Expected Post op care	General Ward	High Care Unit	Planned ICU post op
3	Type of Anaesthetic	Local/Regional	Possible GA	Planned GA
4	Ext length of Stay	<24 hrs	1 – 3 days	>4 days

Case 4: Total colectomy for IBD

25 YO male with ulcerative colitis hospitalized with rectal bleeding requiring 4 units 3 months ago. Partial improvement on medical treatment. Semi elective colectomy recommended for ongoing symptoms. Previously well. BMI 19, fit athlete. Operation=4 hours, likely transfusion requirements, and 5-7 day inpatient stay.

18. Would you have operated on this patient given your current hospital climate? *

Mark only one oval.

- Yes
- No
- Maybe
- Do not have the clinical experience to comment on this case

19. Please score this patient (between 12-80)

		1	3	5	10
1	Age	<40	41-60	61-70	>70
2	Diabetes	None	Yes, well controlled	Poorly controlled	
3	BMI	<30	31-40	>40	
4	ASA Category	1-2 (Well/Mild systemic disease)	3 (Severe systemic disease)	4 (Systemic disease - threat to life)	
5	Functional capacity (Metabolic equivalents)	Engages in strenuous sporting activity (METS 10)	Climbs 2 flights of stairs/can jog (METS 4-9)	Walks on flat, light housework (METS <4)	

b) Disease Factors: Total /30

		1	5	10
1	Non operative Mx	Not available	Available, poorer outcome	Available, similar outcome
2	2-week delay (impact on outcome)	Significant	Moderate	Minimal
3	3-month delay (impact on outcome)	Significant	Moderately	Minimal

c) Procedure Factors: Total: /20

		1	3	5
1	Operating Time	< 60 mins	61 – 180mins	>180mins
2	Expected Post op care	General Ward	High Care Unit	Planned ICU post op
3	Type of Anaesthetic	Local/Regional	Possible GA	Planned GA
4	Ext length of Stay	<24 hrs	1 – 3 days	>4 days

Case 5: Cholecystectomy for Symptomatic Gallstones

55 YO with multiple hospitalized episodes of biliary colic and one episode of cholecystitis confirmed on US 6 months ago. BMI=35. 10 pack year smoking history. DM well controlled. HTN. Can walk up 2 flights of stairs without difficulty. Surgery duration 1.5 hours. Hospital stay 3 – 4 days.

20. Would you have operated on this patient given your current hospital climate? *

Mark only one oval.

- Yes
 No
 Maybe
 Do not have the clinical experience to comment on this case

21. Please score this patient (between 12-80)

		1	3	5	10
1	Age	<40	41-60	61-70	>70
2	Diabetes	None	Yes, well controlled	Poorly controlled	
3	BMI	<30	31-40	>40	
4	ASA Category	1-2 (Well/Mild systemic disease)	3 (Severe systemic disease)	4 (Systemic disease - threat to life)	
5	Functional capacity (Metabolic equivalents)	Engages in strenuous sporting activity (METS 10)	Climbs 2 flights of stairs/can jog (METS 4-9)	Walks on flat, light housework (METS <4)	

b) Disease Factors: Total /30

		1	5	10
1	Non operative Mx	Not available	Available, poorer outcome	Available, similar outcome
2	2-week delay (impact on outcome)	Significant	Moderate	Minimal
3	3-month delay (impact on outcome)	Significant	Moderately	Minimal

c) Procedure Factors: Total: /20

		1	3	5
1	Operating Time	< 60 mins	61 – 180mins	>180mins
2	Expected Post op care	General Ward	High Care Unit	Planned ICU post op
3	Type of Anaesthetic	Local/Regional	Possible GA	Planned GA
4	Ext length of Stay	<24 hrs	1 – 3 days	>4 days

Case 6: Abdominal Aortic Aneurysm Repair

68 YO with asymptomatic AAA. Surgery planned for increase in size on surveillance CT. BMI 32, hypertensive. Surgery duration 4 hours. ICU required. Length of stay 7 days

22. Would you have operated on this patient given your current hospital climate? *

Mark only one oval.

- Yes
- No
- Maybe
- Do not have the clinical experience to comment on this case

23. Please score this patient (between 12-80)

		1	3	5	10
1	Age	<40	41-60	61-70	>70
2	Diabetes	None	Yes, well controlled	Poorly controlled	
3	BMI	<30	31-40	>40	
4	ASA Category	1-2 (Well/Mild systemic disease)	3 (Severe systemic disease)	4 (Systemic disease - threat to life)	
5	Functional capacity (Metabolic equivalents)	Engages in strenuous sporting activity (METS 10)	Climbs 2 flights of stairs/can jog (METS 4-9)	Walks on flat, light housework (METS <4)	

b) Disease Factors: Total /30

		1	5	10
1	Non operative Mx	Not available	Available, poorer outcome	Available, similar outcome
2	2-week delay (impact on outcome)	Significant	Moderate	Minimal
3	3-month delay (impact on outcome)	Significant	Moderately	Minimal

c) Procedure Factors: Total: /20

		1	3	5
1	Operating Time	< 60 mins	61 – 180mins	>180mins
2	Expected Post op care	General Ward	High Care Unit	Planned ICU post op
3	Type of Anaesthetic	Local/Regional	Possible GA	Planned GA
4	Ext length of Stay	<24 hrs	1 – 3 days	>4 days

Case 7: Carpal Tunnel Release

42 YO with carpal tunnel syndrome. Symptoms daily, worse at night. Surgery under LA and length of stay one day. Comorbidities: BMI 35, diabetic. Occasional jogger.

24. Would you have operated on this patient given your current hospital climate? *

Mark only one oval.

 Yes No Maybe Do not have the clinical experience to comment on this case

25. Please score this patient (between 12-80)

		1	3	5	10
1	Age	<40	41-60	61-70	>70
2	Diabetes	None	Yes, well controlled	Poorly controlled	
3	BMI	<30	31-40	>40	
4	ASA Category	1-2 (Well/Mild systemic disease)	3 (Severe systemic disease)	4 (Systemic disease - threat to life)	
5	Functional capacity (Metabolic equivalents)	Engages in strenuous sporting activity (METS 10)	Climbs 2 flights of stairs/can jog (METS 4-9)	Walks on flat, light housework (METS <4)	

b) Disease Factors: Total /30

		1	5	10
1	Non operative Mx	Not available	Available, poorer outcome	Available, similar outcome
2	2-week delay (impact on outcome)	Significant	Moderate	Minimal
3	3-month delay (impact on outcome)	Significant	Moderately	Minimal

c) Procedure Factors: Total: /20

		1	3	5
1	Operating Time	< 60 mins	61 – 180mins	>180mins
2	Expected Post op care	General Ward	High Care Unit	Planned ICU post op
3	Type of Anaesthetic	Local/Regional	Possible GA	Planned GA
4	Ext length of Stay	<24 hrs	1 – 3 days	>4 days

Case 8: Hysterectomy for Multifibroid Uterus

55 YO with menorrhagia and pain from multifibroid uterus. No comorbidities. BMI 33. Can walk up two flights of stairs but no regular recreational exercise. Surgery duration 2 hours. Length of stay 5 days.

26. Would you have operated on this patient given your current hospital climate? *

Mark only one oval.

Yes

No

Maybe

Do not have the clinical experience to comment on this case

27. Please score this patient (between 12-80)

		1	3	5	10
1	Age	<40	41-60	61-70	>70
2	Diabetes	None	Yes, well controlled	Poorly controlled	
3	BMI	<30	31-40	>40	
4	ASA Category	1-2 (Well/Mild systemic disease)	3 (Severe systemic disease)	4 (Systemic disease - threat to life)	
5	Functional capacity (Metabolic equivalents)	Engages in strenuous sporting activity (METS 10)	Climbs 2 flights of stairs/can jog (METS 4-9)	Walks on flat, light housework (METS <4)	

b) Disease Factors: Total /30

		1	5	10
1	Non operative Mx	Not available	Available, poorer outcome	Available, similar outcome
2	2-week delay (impact on outcome)	Significant	Moderate	Minimal
3	3-month delay (impact on outcome)	Significant	Moderately	Minimal

c) Procedure Factors: Total: /20

		1	3	5
1	Operating Time	< 60 mins	61 – 180mins	>180mins
2	Expected Post op care	General Ward	High Care Unit	Planned ICU post op
3	Type of Anaesthetic	Local/Regional	Possible GA	Planned GA
4	Ext length of Stay	<24 hrs	1 – 3 days	>4 days

Case 9: Cystoscopy and Bladder Tumour Resection

72 YO with bladder carcinoma. Hypertensive, smoker with COPD. Can only walk the flat for 100m. BMI 28. Surgery under spinal, duration 1 – 2 hours. Length of stay 3 days.

28. Would you have operated on this patient given your current hospital climate? *

Mark only one oval.

 Yes No Maybe Do not have the clinical experience to comment on this case

29. Please score this patient (between 12-80)

		1	3	5	10
1	Age	<40	41-60	61-70	>70
2	Diabetes	None	Yes, well controlled	Poorly controlled	
3	BMI	<30	31-40	>40	
4	ASA Category	1-2 (Well/Mild systemic disease)	3 (Severe systemic disease)	4 (Systemic disease - threat to life)	
5	Functional capacity (Metabolic equivalents)	Engages in strenuous sporting activity (METS 10)	Climbs 2 flights of stairs/can jog (METS 4-9)	Walks on flat, light housework (METS <4)	

b) Disease Factors: Total /30

		1	5	10
1	Non operative Mx	Not available	Available, poorer outcome	Available, similar outcome
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3	3-month delay (impact on outcome)	Significant	Moderately	Minimal

c) Procedure Factors: Total: /20

		1	3	5
1	Operating Time	< 60 mins	61 – 180mins	>180mins
2	Expected Post op care	General Ward	High Care Unit	Planned ICU post op
3	Type of Anaesthetic	Local/Regional	Possible GA	Planned GA
4	Ext length of Stay	<24 hrs	1 – 3 days	>4 days

Case 10: Tonsillectomy for Recurrent Tonsillitis

9 YO with recurrent tonsillitis (3x per year for 2 years). Some snoring but no sleep apnoea. Previously well child, fit and active. Surgery under GA. Duration 30 – 60 mins. Length of stay 2 days.

30. Would you have operated on this patient given your current hospital climate? *

Mark only one oval.

 Yes No Maybe Do not have the clinical experience to comment on this case

31. Please score this patient (between 12-80)

		1	3	5	10
1	Age	<40	41-60	61-70	>70
2	Diabetes	None	Yes, well controlled	Poorly controlled	
3	BMI	<30	31-40	>40	
4	ASA Category	1-2 (Well/Mild systemic disease)	3 (Severe systemic disease)	4 (Systemic disease - threat to life)	
5	Functional capacity (Metabolic equivalents)	Engages in strenuous sporting activity (METS 10)	Climbs 2 flights of stairs/can jog (METS 4-9)	Walks on flat, light housework (METS <4)	

b) Disease Factors: Total /30

		1	5	10
1	Non operative Mx	Not available	Available, poorer outcome	Available, similar outcome
2	2-week delay (impact on outcome)	Significant	Moderate	Minimal
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c) Procedure Factors: Total: /20

		1	3	5
1	Operating Time	< 60 mins	61 – 180mins	>180mins
2	Expected Post op care	General Ward	High Care Unit	Planned ICU post op
3	Type of Anaesthetic	Local/Regional	Possible GA	Planned GA
4	Ext length of Stay	<24 hrs	1 – 3 days	>4 days

Part 4: Feedback on Risk Calculator

32. Was the C-19 risk calculator helpful for you? *

Mark only one oval.

- Yes, to determine individual patient risk
- Yes, to prioritise patients against one another
- No, I make decisions around surgery using a different method
- Maybe
- Don't know

33. Other comments on the C-19 risk calculator

34. Would this C-19 surgery risk calculator help others at your hospital? *

Mark only one oval.

- Yes, to determine individual patient risk
- Yes, to prioritise patients against one another
- No
- Maybe
- Don't know

35. If you feel this risk calculator would be helpful to others at your hospital, please indicate who that would be.

Check all that apply.

- Anesthetists
- Surgeons
- Hospital Managers
- Nurses

Other: _____

36. Thank you for completing this survey. Please leave any additional comments below

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