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COVID-19 and mortality in surgical patients

Submission date 14/02/2024	**Recruitment status** No longer recruiting	[_] Prospectively registered [X] Protocol
Registration date 17/06/2024	**Overall study status** Completed	[_] Statistical analysis plan [X] Results
Last Edited 08/07/2025	**Condition category** Surgery	[_] Individual participant data

Plain English summary of protocol

Background and study aims
Surgical deaths may be preventable, potentially preventable or non-preventable. A preventable death is a death that should not have occurred regardless of the setting or resources whereas a potentially preventable death would not have happened if the situation was ideal. Factors that contribute to preventable or potentially preventable mortalities in surgical patients include medication errors, treatment delay, error of judgement, training issues, lack of supervision, shortage of resources and patient factors. Non-preventable deaths include deaths due to advanced cancer or severe traumatic brain injury. Around 5-15% of surgical deaths are preventable. The COVID-19 pandemic led to limitations in access to healthcare facilities and delays in the initiation of treatment. COVID-19 affects the outcomes of patients receiving surgery. Globally, it is evident that COVID-19 infection increases surgical death rates. Evidence from a recent study performed internationally illustrated that COVID-19-positive patients requiring surgery had an 18.9% risk of in-hospital mortality compared to COVID-19-negative patients where a 3.6% risk for IHM was reported. The study investigates how COVID-19 influences the preventability of surgical deaths and the contributing factors.

Who can participate?
Records of surgical patients who died during the period of study

What does the study involve?
The study involved the analysis of records of surgical patients who were admitted and died during the period of the COVID-19 pandemic from 01/03/2020 to 31/03/2020.

What are the possible benefits and risks of participating?
There were no benefits to the patients and potential risks included potential violation of privacy as the study dealt with medical records. However, data was de-identified and anonymized.

Where is the study run from?
Charlotte Maxeke Johannesburg Academic Hospital (South Africa)

When is the study starting and how long is it expected to run for?
March 2020 to November 2023

Who is funding the study?
Investigator initiated and funded

Who is the main contact?
Dr Thifhelimbilu Luvhengo, thifheliluvhengo@gmail.com or thifhelimbilu.luvhengo@wits.ac.za

Contact information

Type(s)
Public, Scientific, Principal investigator

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Additional identifiers

Protocol serial number
M221055 MED-09-108 HREC University of the Witwatersrand

Study information

Scientific Title
The impact of COVID-19 infection on surgical mortality in Johannesburg, South Africa

Acronym
COVID-19 Surg Mortalities

Study objectives
The study was observational. The rationale was to investigate if COVID-19 led to an increase in preventable surgical mortalities.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 24/04/2023, Human Research Ethics Committee (Medical) University of the Witwatersrand (3rd Floor, Room 306, Philip Tobias Building, Cnr York Road and Princess of Wales Terrace, Faculty of Health Sciences, Parktown, Johannesburg, 2193, South Africa; +27 (0) 117171252; Iain.Burns@wits.ac.za), ref: M221055 MED-09-108

Primary study design
Observational

Study design
Retrospective observational study

Study type(s)
Treatment, Efficacy

Health condition(s) or problem(s) studied
Surgical mortality during the COVID-19 pandemic

Interventions
The study involved the analysis of records of surgical patients who were admitted and died during the period of the COVID-19 pandemic from 01/03/2020 to 31/03/2020.

Intervention Type
Other

Primary outcome(s)
The rate of occurrence of preventable mortalities among surgical patients who died during admission measured using data collected from medical records over 2 years from the 1st March 2020 to 31st March 2022

Key secondary outcome(s)
Factors that contributed to preventable surgical mortalities measured using data collected from medical records over 2 years from the 1st March 2020 to 31st March 2022

Completion date
30/11/2023

Eligibility

Key inclusion criteria
All patients who were admitted to the surgical department and died in hospital during the study period

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 Years

Upper age limit

90 Years

Sex
All

Total final enrolment
404

Key exclusion criteria
Patients whose final diagnosis at death was not surgical

Date of first enrolment
25/04/2023

Date of final enrolment
01/11/2023

Locations

Countries of recruitment
South Africa

Study participating centre
Charlotte Maxeke Johannesburg Academic Hospital
Department of Surgery
Johannesburg
South Africa
2193

Sponsor information

Organisation
University of the Witwatersrand

ROR
https://ror.org/03rp50x72

Funder(s)

Funder type
Other

Funder Name
Investigator initiated and funded

Results and Publications

Individual participant data (IPD) sharing plan
The dataset generated and analyzed during the research will be made available on request with the prior permission of the local ethics committee by Thifhelimbilu Luvhengo (thifhelimbilu.luvhengo@wits.ac.za).
The type of data that will be shared: Excel spreadsheet of results.
Dates of availability: When it is requested and after obtaining permission from the local ethics committee.
Whether consent from participants was required and obtained: The study did not require consent from participants as it was an audit based on records of departmental weekly morbidity and mortality records.
Comments on data anonymization: Data was anonymized after extraction. All patient's identifiers were removed.
Any ethical or legal restrictions: Data can only be shared after receipt of ethical approval.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		01/05/2025	08/07/2025	Yes	No
Protocol file		28/02/2023	20/02/2024	No	No