

# Comparing international data between keyhole and robotic rectal cancer surgery

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| <b>Submission date</b><br>26/10/2023   | <b>Recruitment status</b><br>No longer recruiting | <input type="checkbox"/> Prospectively registered<br><input type="checkbox"/> Protocol            |
| <b>Registration date</b><br>12/12/2023 | <b>Overall study status</b><br>Completed          | <input type="checkbox"/> Statistical analysis plan<br><input checked="" type="checkbox"/> Results |
| <b>Last Edited</b><br>12/05/2026       | <b>Condition category</b><br>Cancer               | <input type="checkbox"/> Individual participant data  |

## Plain English summary of protocol

### Background and study aims

This study is an investigation into the medical outcomes of patients with rectal cancer who underwent a surgical procedure called "Total Mesorectal Excision" (TME) with the assistance of robotic technology. Instead of studying patients in real-time, we're taking a look back in time to analyse data from multiple medical centers where this robotic surgical technique was used. The primary goal of our research is to determine whether the use of robots in TME surgery has a positive impact on the long-term health and recovery of patients with rectal cancer. We aim to collect and analyse data, comparing the outcomes of patients who had robot-assisted TME surgery with those who underwent traditional procedures.

### Who can participate?

Patients aged 18 years or older who underwent rectal cancer surgery beginning in 2014.

### What does the study involve?

We aim to combine retrospective data from 3 European datasets (for an estimated total of 3,000 inclusions) to perform high-quality statistical analyses on surgical outcomes (such as length of stay, operative time, and conversion) between laparoscopic and robotic proctectomy with partial or complete TME surgery. We will only be collecting data on patients treated after 2014 in all centres. The study will also have secondary objectives, such as complications, reinterventions and readmissions, pathological outcomes, stoma formation and reversal, and short- and long-term oncological outcomes (local recurrence, distant recurrence, disease-free survival, and overall survival).

### What are the possible benefits and risks of participating?

None

### Where is the study run from?

Portsmouth Hospitals NHS Trust (UK)

### When is the study starting and how long is it expected to run for?

June 2023 to June 2025

Who is funding the study?  
Intuitive Foundation (USA)

Who is the main contact?  
Rauand.Duhoky@porthosp.nhs.uk

## Contact information

### Type(s)

Public, Scientific, Principal investigator

### Contact name

Dr Rauand Duhoky

### ORCID ID

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### Contact details

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Rauand.Duhoky@porthosp.nhs.uk

## Additional identifiers

Integrated Research Application System (IRAS)  
319973

Central Portfolio Management System (CPMS)  
56922

## Study information

### Scientific Title

Retrospective, Propensity Score Matched Analysis of Short- and Long-term Outcomes in Laparoscopic versus Robotic Total Mesorectal Excision: an international, multi-centre data study

### Acronym

RESOLUTION

### Study objectives

Current study hypothesis as of 05/02/2025:

This study is a retrospective, multi-centre data study analysing the oncological outcomes in rectal cancer patients that underwent robotic "Total Mesorectal Excision" (TME) surgery. We aim

to combine retrospective data from 3 European datasets (for an estimated total of 3,000 inclusions) to perform high quality statistical analyses on surgical outcomes (such as length of stay, operative time, and conversion) between laparoscopic and robotic proctectomy.

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Previous study hypothesis:

This study is a retrospective, multi-centre data study analysing the oncological outcomes in rectal cancer patients that underwent robotic "Total Mesorectal Excision" (TME) surgery. We aim to combine retrospective data from 3 European datasets (for an estimated total of 3,000 inclusions) to perform high quality statistical analyses on surgical outcomes (such as length of stay, operative time, and conversion) between laparoscopic and robotic proctectomy with partial or complete TME surgery.

### **Ethics approval required**

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### **Ethics approval(s)**

approved 12/06/2023, HRA and Health and Care Research Wales (HCRW) (5-15, Castlebridge, 19 Cowbridge Rd E, Cardiff, CF11 9AB, United Kingdom; +44 (0)2920 230457; healthandcareresearch@wales.nhs.uk), ref: 23/HRA/2175

### **Study design**

Observational cohort study

### **Primary study design**

Observational

### **Study type(s)**

Treatment

### **Health condition(s) or problem(s) studied**

Colorectal cancer

### **Interventions**

Current interventions as of 05/02/2025:

This is a multicentre, retrospective cohort study for comparative analysis of postoperative surgical outcomes and short- and long-term oncological outcomes after rectal cancer surgery using propensity score-matched cohorts.

The study is looking to include all eligible patients treated after 2014 whose data is available at one of the three participating sites and estimates an inclusion of 3000 patients in total. All data transfer will comply with local and UK privacy laws, and have been outlined in a "Data Sharing Agreement" and "Data Management Plan". After reception at the Sponsor site, data will be checked for errors and converted to a file suitable for statistical analysis. This process has been outlined in detail in the "Data Management Plan" as well.

This study will not have any influence on the care or lives of patients included in the study. There is no direct benefit and no additional risk for included patients. A patient is eligible for inclusion

when they meet all the inclusion criteria and none of the exclusion criteria for the study, as outlined in the protocol.

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#### **Intervention Type**

Procedure/Surgery

#### **Primary outcome(s)**

The primary outcome variables will be measured using data held in pre-existing databases at each of the participating sites from rectal cancer patients who underwent robotic total mesorectal excision (TME) surgery at one timepoint:

1. Length of stay in days after surgery
2. Operative time in minutes
3. Blood loss in millilitres

#### **Key secondary outcome(s)**

The secondary outcome variables will be measured using data held in pre-existing databases at each of the participating sites from rectal cancer patients who underwent robotic total mesorectal excision (TME) surgery at one timepoint:

1. Intraoperative and postoperative complications recorded as timepoint, type of complication, and Clavien-Dindo classification grading of complication
2. Reinterventions and readmissions after surgery recorded as yes/no and timepoint
3. Pathological outcomes recorded as the number of positive lymph nodes, differentiation grading, quality of the specimen, and positivity of circumferential resection margins
4. Stoma formation as yes/no and type, as well as reversal of stoma and timepoint of reversal
5. Local recurrence of disease as yes/no and timepoint
6. Distant recurrence of disease as yes/no, timepoint, and location of recurrence
7. Disease-free survival as yes/no and timepoint
8. Overall survival as yes/no and timepoint

#### **Completion date**

01/06/2025

# Eligibility

## Key inclusion criteria

Current inclusion criteria as of 05/02/2025:

1. All patients who underwent a laparoscopic or robotic proctectomy since 2014;
  2. Aged 18 years or above;
  3. Rectal cancer tumour located within 15 cm from the anal verge or 20 cm from the anorectal junction.
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Previous inclusion criteria:

1. All patients who underwent a laparoscopic or robotic proctectomy with partial or complete TME after 2015;
2. Aged 18 years or above;
3. Rectal cancer tumour located within 15 cm from the anal verge or 20 cm from the anorectal junction.

## Participant type(s)

Patient

## Healthy volunteers allowed

No

## Age group

Mixed

## Lower age limit

18 years

## Upper age limit

100 years

## Sex

All

## Total final enrolment

0

## Key exclusion criteria

Current exclusion criteria as of 05/02/2025:

1. Patients that underwent robotic TME surgery as part of a more complex procedure, for example a peritonectomy, or a synchronous colonic or hepatic resection.
  2. Patients that underwent palliative resection
  3. Patients that underwent emergency resection
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Previous exclusion criteria:

1. Patients that underwent an APER or Hartmann's procedure
2. Patients that underwent robotic TME surgery as part of a more complex procedure, for example a peritonectomy, or a synchronous colonic or hepatic resection.
3. Patients that underwent palliative resection
4. Patients that underwent emergency resection

**Date of first enrolment**

04/07/2023

**Date of final enrolment**

01/02/2025

## **Locations**

**Countries of recruitment**

United Kingdom

England

France

Netherlands

**Study participating centre**

**Queen Alexandra Hospital**

Southwick Hill Road

Cosham

Portsmouth

England

PO6 3LY

**Study participating centre**

**Centre Hospitalier Universitaire de Lyon**

Lyon

France

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**Study participating centre**

**University Medical Centre Groningen**

Groningen

Netherlands

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**Study participating centre**  
**Montpellier Cancer Institute**  
Montpellier  
France

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**Study participating centre**  
**Bordeaux Colorectal Institute**  
Bordeaux  
France

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**Study participating centre**  
**Amsterdam Medical Centre**  
Amsterdam  
Netherlands

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## **Sponsor information**

### **Organisation**

Portsmouth Hospitals NHS Trust

### **ROR**

<https://ror.org/009fk3b63>

## **Funder(s)**

### **Funder type**

Charity

### **Funder Name**

Intuitive Foundation

### **Alternative Name(s)**

### **Funding Body Type**

Private sector organisation

## Funding Body Subtype

Trusts, charities, foundations (both public and private)

## Location

United States of America

# Results and Publications

## Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request

## IPD sharing plan summary

Available on request

## Study outputs

| Output type                     | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|---------------------------------|---------|--------------|------------|----------------|-----------------|
| <a href="#">Results article</a> |         | 12/04/2025   | 14/04/2025 | Yes            | No              |
| <a href="#">Results article</a> |         | 11/05/2026   | 12/05/2026 | Yes            | No              |