Definitions used for first feedback PROCARE
17th November 2008

Introduction

Analyses for feedback per team were performed for those teams submitting at least 10 cases that could be entered in the database before the 17th of July 2008.

This feedback with benchmark data is presented in three parts:
- part 1: quality of care indicators
- part 2: descriptive data
- part 3: missing data

Part 1 certainly is the most important, but should be interpreted with caution in view of the amount of missing data for some aspects.

This document accompanies the first feedback of the PROCARE project in which your team is participating. It contains a list of the general and more specific definitions used to calculate the different items of the report.

The feedback document provides absolute and, where relevant, relative numbers computed for the data concerning only the team to which the report is addressed on the one hand and for the data of the whole PROCARE database (59 teams 1249 records) on the other hand. The percentiles p25, p75 and median are computed for the relative numbers for the whole PROCARE database. If only absolute numbers are reported, the p25, median and p75 are computed for the absolute numbers:

- p25: the value of the variable below which 1 in 4 values lie
- median: the value of the variable below which 1 in 2 values lie
- p75: the value of the variable above which 1 in 4 values lie

The absolute numbers (N) in the report correspond to the numerator (N), whereas the relative numbers (%) correspond to the ratio between the numerator and denominator (D).
A note was added to some of the items following below. These notes aim to improve the quality (correctness) of the data entered in the database in the future.

We would like to remark that the PROCARE database has been 'cleaned' in some aspects. The most important are related to pTis, lower limit of the tumour, total dose and fractions of radiotherapy treatment, c and pStage X, p/yp on the pathology sheet, date of first contact and date of first treatment.
pTis cases have been eliminated from the database for this feedback. In fact, they were not planned to be inserted in the databank because they are not invasive rectal cancers. In contrast, ypTis cases have been retained if the cT stage was cT1 or more and/or a biopsy or endoscopic resection proved the presence of an invasive cancer.
Cases where the lower limit of the tumour is superior to 15 cm have been eliminated from the database.
Often information about the total dose and the number of fractions of the radiotherapy treatment was missing making it impossible to determine whether a short or long course was given to the patient.
cTNM and pTNM had to be converted to stage X when not enough information was given (for example cN missing) to determine the corresponding stage.

The p/yp filled in on the pathology sheet was often inconsistent with other information elsewhere in the form.
In some forms errors in date of first contact or in the treatment dates were detected and corrected.

General definitions

Lower limit tumour
For patients without neoadjuvant treatment or with no long course neoadjuvant radiotherapy the lower limit measured with rectoscopy is taken as lower limit of the tumour. If no result with rectoscopy is available, the lower limit measured with coloscopy is taken as lower limit of the tumour.
For patients with long course neoadjuvant radiotherapy the pretreatment lower limit is taken as lower limit of the tumour. If no lower limit is available before neoadjuvant treatment, the lower limit measured at surgery is taken as lower limit of the tumour.
For patients who received neoadjuvant treatment but for whom it is not known whether they received short or long course radiotherapy, the lowest limit of either the pretreatment or the lower limit at surgery is taken.

Level of tumour (lower limit determined by distance from anal verge):

Lower limit tumour (LL)	**Level tumour**
≤ 5 cm	Low
>5 - ≤ 10 cm	Mid
>10 cm	High

Treated with surgery:
A patient for whom a date of surgery is given or for whom the type of surgical reconstruction is given is considered to be treated with surgery.

Treated with radical resection:
A patient treated with abdominoperineal resection (APR), Hartmann's procedure, or sphincter sparing/saving radical rectum resection (PME or TME) with reconstruction (SSO) is treated with radical resection.

Treated with sphincter sparing/saving radical rectum resection (PME or TME) with reconstruction (SSO)
A patient is treated with SSO if the type of surgical reconstruction is one of the following:
- High anterior resection + CRA (anastomosis above peritoneal reflection)
- Low anterior resection + CRA (anastomosis below peritoneal reflection)
- Restorative rectum resection (TME) + straight CAA
- Restorative rectum resection (TME) + colon J pouch
- Restorative rectum resection (TME) + coloplasty
- Restorative rectum resection (TME) + side-to-end anastomosis

R status:
If the type of resection at surgery is 'R2' then R status equals 'R2'.
Otherwise, if cM equals 'M1' then R status equals 'other'.

If type of resection at surgery is not 'R2' and cM does not equal 'M1', four conditions are checked:

- Is (y)pCRM > 1 mm?
- Is distal resection margin free or is the distance of the tumour free resection margin > 1 mm (0.1 cm).
- Is there no rectum perforation as indicated by the surgeon or is this data missing?
- Is there no rectum perforation as indicated by the pathologist or is this data missing?

If the answer to all of these questions is 'yes' or if the answer to three of these questions is 'yes' with the other answer missing, then R status equals 'R0'. If the answer to one of these questions is 'no', then R status equals 'R1'. If the answer to two or more of these four questions is missing, R status is missing.

Radiotherapy:
If the radiotherapy form is completed or the pathology or chemotherapy forms indicate radiotherapy was given, the patient is considered to be treated with radiotherapy.

Chemotherapy:
If the chemotherapy form is completed or the pathology or radiotherapy forms indicate chemotherapy was given, the patient is considered to be treated with chemotherapy

Part 1: Quality of care indicators

A. Quality indicators related to pretreatment diagnosis and staging

Documented distance from anal verge
N: Number of patients in denominator for whom lower limit of the tumour is known (see definition lower limit of tumour)
D: Number of patients treated with surgery

CEA before any treatment
N: Number of patient in denominator for whom CEA serum level before treatment is reported
D: Number of registered patients

Complete large bowel-imaging
N: Number of patients in denominator who underwent a total coloscopy or a complete double contrast enema
D: Number of patients treated with elective or scheduled surgery and for whom it is known whether they underwent a complete large bowel-imaging

TRUS + CT and/or MRI
N: Number of patients in whom cT or cN were based on TRUS and at least one of the two following:

- pelvic CT
- pelvic MRI

D: Number of registered patients

Reported cCRM in cStage II-III
N: Number of patients for whom cCRM is reported
D: Number of patients with cStage II-III treated with surgery

Median time first contact to treatment (days)
For the patients treated by surgery and/or radiotherapy and/or chemotherapy, the time interval in days is computed between the date of pathologic diagnosis, if available, otherwise the date of first contact/hospitalisation and the date of first treatment
- Global: Median time first contact to treatment independently of the kind of first treatment
- First treatment: Surgery : Median time first contact to treatment in patients treated with surgery without neoadjuvant therapy
- First treatment: (C)RT : Median time first contact to treatment in patients who received neoadjuvant treatment
- First treatment: palliative (C)RT: Median time first contact to treatment in patients who received palliative chemo and/or radiotherapy.

B. Quality indicators related to neoadjuvant treatment

Short course RT in cStage II-III
N: Number of patients in denominator that received a short course of neoadjuvant pelvic radiotherapy
D: Number of patients with cStage II-III treated with surgery and for whom the course of radiotherapy treatment is not missing

Long course (C)RT in cStage II-III
N: Number of patients in denominator that received a long course of neoadjuvant pelvic (chemo)radiotherapy
D: Number of patients with cStage II-III treated with surgery and for whom the course of radiotherapy treatment is not missing

Long course (C)RT in cStage II-III within the planned timing
N: Number of patients in denominator for whom the radiotherapy treatment was not interrupted for more than five working days
D: Number of patients with cStage II-III treated with long course neoadjuvant radiotherapy

Surgery 6 to 8 weeks after (C)RT in cStage II-III
N: Number of patients in denominator that was operated 6 to 8 weeks after completion of the (chemo)radiotherapy
D: Number of patients with cStage II-III treated with long course neoadjuvant radiotherapy and for whom date of surgery and date of last irradiation are not missing

C. Quality indicators related to surgery

R0/R1/R2 resection

R0 resection
N: Number of patients in denominator with R0 resection
D: Number of patients treated with radical resection and for whom R status is not missing

R1 resection
N: Number of patients in denominator with R1 resection
D: Number of patients treated with radical resection and for whom R status is not missing

R2 resection
N: Number of patients in denominator with R status equal 'R2' or 'other' (see definition R status (general definitions))
D: Number of patients treated with radical resection and for whom R status is not missing

Rate of intra-operative rectal perforation
N: Number of patient in denominator for whom the surgeon or pathologist reported rectal perforation
D: Number of patients treated with radical resection

APR and Hartmann's procedure
N: Number of patients treated with APR or Hartmann's procedure
D: Number of patients treated with radical resection

Rate of major leakage of the anastomosis
N: Number of patients with major leakage of the anastomosis (requiring reoperation)
D: Number of patients treated with SSO and for whom it is reported whether there were postoperative complications or not

In hospital mortality (surgery any type)
N: Number of patients who died in hospital following surgery (any type)
D: Number of patients treated with surgery and for whom it is known whether they died in hospital after surgery or not

D. Quality indicators related to histopathologic examination

Use of pathology report sheet (since 1/ 2007)
N: Number of patients in denominator for whom a pathology report sheet was completed
D: Number of patients treated with (local or radical) surgery and for whom date of surgery is later than or equal to the 1st of January 2007

Quality of TME (since 1/2007)
N: Number of patients for whom the external surface of TME was reported in the pathology report sheet
D: Number of patients treated with TME after the 1st of January 2007

Distal tumour-free margin mentioned
N: Number of patients in denominator for whom it was reported whether the distal resection margin was free or invaded
D: Number of patients treated with Hartmann's procedure or SSO with reconstruction and for whom a pathology report sheet was completed

Median number of lymph nodes examined
The median number of lymph nodes examined is computed for the following conditions:
- no or short course neoadjuvant RT
- long course neoadjuvant RT
- other course neoadjuvant RT
- course type missing

(y)pCRM mentioned in the pathology report
N: Number of patients in denominator for whom (y)pCRM was mentioned in the pathology report
D: Number of patients treated with radical resection and for whom a pathology report was completed

Part 2: General data

A. General data

Male/female ratio
Male/Female ratio
N: number of male patients
D: number of female patients

ASA

ASA 1
N: Number of patients having ASA 1
D: Number of patients for whom ASA is stated

ASA 2
N: Number of patients having ASA 2
D: Number of patients for whom ASA is stated

ASA 3
N: Number of patients having ASA 3
D: Number of patients for whom ASA is stated

ASA 4
N: Number of patients having ASA greater than 3
D: Number of patients for whom ASA is stated

Level of tumour

High
N: Number of patients in denominator for whom the level of the tumour is superior to 10 cm
D: Number of patients for whom the level of the tumour is known
Mid
N: Number of patients in denominator for whom the level of the tumour is superior to 5 cm and inferior or equal to 10 cm
D: Number of patients for whom the level of the tumour is known
Low
N: Number of patients in denominator for whom the level of the tumour is inferior or equal to 5 cm.
D: Number of patients for whom the level of the tumour is known

B. Pretreatment data

Imaging

Use of TRUS (any stage)
N: Number of patients in whom cT and/or cN was based on TRUS
D: Number of registered patients

Use of CT pelvis (any stage)
N: Number of patients in whom cT and/or cN was based on CT
D: Number of registered patients

Use of MRI pelvis (any stage)
N: Number of patients in whom cT and/or cN was based on MRI
D: Number of registered patients

Use of TRUS in cT1/cT2
N: Number of patients in denominator in whom cT was based on TRUS
D: Number of patients with cT1 or cT2

Use of MRI in cT3/cT4
N: Number of patients in denominator in whom cT was based on MRI
D: Number of patients with cT3 or cT4 based on any imaging technique

cStage

cStage 0
N: Number of patients in denominator with cStage 0
D: Number of patients for whom cStage (incl. cStageX) is reported

cStage I
N: Number of patients in denominator with cStage I
D: Number of patients for whom cStage (incl. cStageX) is reported

cStage II
N: Number of patients in denominator with cStage II
D: Number of patients for whom cStage (incl. cStageX) is reported

cStage III
N: Number of patients in denominator with cStage III
D: Number of patients for whom cStage (incl. cStageX) is reported

cStage IV
N: Number of patients in denominator with cStage IV
D: Number of patients for whom cStage (incl. cStageX) is reported

cStage X
N: Number of patients in denominator with cStage X (cTX and/or NX M0 reported as such and meaning that tumour and/or regional nodes cannot be assessed)
D: Number of patients for whom cStage (incl. cStageX) is reported

Accuracy of cT/cN staging if no or short radiotherapy

For patients who did not receive neoadjuvant radiotherapy or short course neoadjuvant radiotherapy, the (y)pT/(y)pN is shown related to the cT/cN for this patient.
In the Procare database for example, 50 patients with (y)pT3 had cT2 as clinical tumour category.

C. Neoadjuvant treatment

Neoadjuvant treatment in cStage II-III

level of tumour = high (> 10 cm)
N: Number of patients in denominator who received neoadjuvant treatment
D: Number of patients in cStage II or III, treated with radical resection with tumour in upper third

level of tumour = mid (>5 - 10 cm)
N: Number of patients in denominator who received neoadjuvant treatment
D: Number of patients in cStage II or III, treated with radical resection with tumour in middle third

level of tumour = low (≤ 5 cm)
N: Number of patients in denominator who received neoadjuvant treatment
D: Number of patients in cStage II or III, treated with radical resection with tumour in lower third

Neoadjuvant treatment if cCRM <= 2 mm on MRI/CT
N: Number of patients in denominator who received neoadjuvant treatment
D: Number of patients treated with radical resection and for whom cCRM is less or equal 2 mm

Neoadjuvant treatment in cStage I
N: Number of patients in denominator who received neoadjuvant treatment
D: Number of patients treated with radical resection for cStage I rectal cancer

Interruption in neoadjuvant therapy

Short course radiotherapy
N: Number of patients in denominator for whom radiotherapy treatment was interrupted for more than five working days
D: Number of patients treated with surgery and neoadjuvant short course radiotherapy

Long course radiotherapy
N: Number of patients in denominator for whom radiotherapy treatment was interrupted for more than five working days
D: Number of patients treated with surgery and neoadjuvant long course radiotherapy

D. Surgery

1) LE/TEMS

Global
N: Number of patients in denominator in whom local excision or TEMS was performed
D: Number of patients treated with surgery

For cT1N0M0
N: Number of patients in denominator treated with local excision or TEMS
D: Number of patients in cStage I having cT1 and for whom surgical "type of reconstruction" is not missing

For cT2 N0M0
N: Number of patients in denominator treated with local excision or TEMS
D: Number of patients in cStage I having cT2 and for whom surgical "type of reconstruction" is not missing

2) Radical resection

Intraoperative break
N: Number of patients in denominator for whom the surgeon reported perforation of the rectum
D: Number of patients treated with radical resection and for whom perforation of the rectum (yes or no) is reported

3) Reconstruction

APR/Hartmann

Level of tumour = high (> 10 cm)
N: Number of patients in denominator in whom APR or Hartmann's procedure was performed
D: Number of patients treated with radical resection with tumour in upper third

Level of tumour = mid (>5 - 10 cm)
N: Number of patients in denominator in whom APR or Hartmann's procedure was performed
D: Number of patients treated with radical resection with tumour in middle third

Level of tumour = low (≤ 5 cm)
N: Number of patients in denominator in whom APR or Hartmann's procedure was performed
D: Number of patients treated with radical resection with tumour in lower third

Type of reconstruction after SSO

Straight
N: Number of patients in denominator with straight coloanal anastomosis
D: Number of patients treated with restorative rectum resection (i.e. radical SSO with reconstruction)

Side-to-end
N: Number of patients in denominator with side-to-end anastomosis
D: Number of patients treated with restorative rectum resection (i.e. radical SSO with reconstruction)

Coloplasty
N: Number of patients in denominator with coloplasty pouch
D: Number of patients treated with restorative rectum resection (i.e. radical SSO with reconstruction)

Colon J-Pouch
N: Number of patients in denominator with colonic J-pouch
D: Number of patients treated with restorative rectum resection (i.e. radical SSO with reconstruction)

Stapled anastomosis at SSO for RC in lower third
N: Number of patients in denominator in whom a stapled anastomosis was performed
D: Number of patients with tumour in lower third treated with SSO and reconstruction and for whom anastomosis technique is reported

Derivative stoma after SSO
At PME
N: Number of patient in denominator with a derivative stoma
D: Number of patients in whom SSO with reconstruction and PME were performed

At TME
N: Number of patient in denominator with a derivative stoma
D: Number of patients in whom SSO with reconstruction and TME were performed

E. Postoperative course

Postoperative in hospital death (radical resection)
N: Number of patients in denominator who died in hospital after radical resection
D: Number of patients treated with radical resection and for whom it is known whether they died in hospital or not

Median length of hospital stay
Hospital stay is computed as the number of days between date of surgery and discharge date for the patients treated with radical resection who did not die in-hospital.

Clinical leaks after SSO
N: Number of patients in denominator with minor or major leakage of the anastomosis
D: Number of patients treated with SSO and reconstruction and for whom it is known whether there were postoperative complications or not

F. Pathology for radical resection

TME good/moderate quality
N: Number of patients in denominator for whom the TME external surface is smooth, regular or mildly irregular
D: Number of patients treated with radical resection and TME and for whom the TME quality is reported

Radical excision: (y)pCRM positive
Global
N: Number of patients in denominator for whom (y)pCRM ≤ 1 mm
D: Number of patients treated with radical resection

Level of tumour = high (> 10 cm)
N: Number of patients in denominator for whom (y)pCRM ≤ 1 mm
D: Number of patients treated with radical resection with tumour in highest third

Level of tumour = mid (>5 - 10 cm)
N: Number of patients in denominator for whom (y)pCRM ≤ 1 mm
D: Number of patients treated with radical resection with tumour in middest third

Level of tumour = low (≤ 5 cm)
N: Number of patients in denominator for whom (y)pCRM ≤ 1 mm
D: Number of patients treated with radical resection with tumour in lowest third

(y)p distal margin positive
N: Number of patients in denominator for whom the (y)p distal margin is invaded
D: Number of patients treated with Hartmann's procedure or SSO and for whom it is reported whether the (y)p distal margin is free or invaded

Mean tumour free distal margin (cm)
For patients treated with Hartmann or SSO with reconstruction the mean of the tumour free distal margin is computed by level of the tumour.

(y)pT

ypT0
N: Number of patients with ypT0
D: Number of patients treated with radical resection after neoadjuvant chemoradiation and for whom ypT is not missing

Note: if no tumour was found in a radical resection specimen after endoscopic or local excision, the pT category of the endoscopic or local excision (was asked and) was used for stadification whether the patient received (chemo)radiation between local and radical treatment or not.

ypTis
N: Number of patients with ypTis
D: Number of patients treated with radical resection after neoadjuvant chemoradiation and for whom ypT is not missing

Note: pTis rectal cancer is not included in the PROCARE database.

(y)pT1
N: Number of patients with (y)pT1
D: Number of patients treated with radical resection and for whom (y)pT is not missing

(y)pT2
N: Number of patients with (y)pT2
D: Number of patients treated with radical resection and for whom (y)pT is not missing

(y)pT3
N: Number of patients with (y)pT3
D: Number of patients treated with radical resection and for whom (y)pT is not missing

(y)pT4
N: Number of patients with (y)pT4
D: Number of patients treated with radical resection and for whom (y)pT is not missing

(y)pN
(y)pN +
N: Number of patients in denominator with (y)pN1 or (y)pN2
D: Number of patients treated with radical resection and for whom (y)pN is not missing

(y)pStage
ypStage 0
N: Number of patients in denominator with (y)pStage 0
D: Number of patients treated with radical resection after neoadjuvant chemoradiation and for whom ypStage is not missing

(y)pStage I
N: Number of patients in denominator with (y)pStage I
D: Number of patients treated with radical resection and for whom (y)pStage is not missing

(y)pStage II
N: Number of patients in denominator with (y)pStage II
D: Number of patients treated with radical resection and for whom (y)pStage is not missing

(y)pStage III
N: Number of patients in denominator with (y)pStage III
D: Number of patients treated with radical resection and for whom (y)pStage is not missing

(y)pStage IV
N: Number of patients in denominator with (y)pStage IV
D: Number of patients treated with radical resection and for whom (y)pStage is not missing

Part 3: Missing data

A. Pretreatment data

Missing date of first consultation/hospitalisation
N: Number of patients for whom the date of first consultation or hospitalisation is missing
D: Number of registered patients

Note: it is important to mention the date of the first contact when the diagnosis of rectal cancer was made (by any physician!) or the date of pretreatment biopsy. They determine the 'incidence date' and are used to calculate the interval to first treatment (therapeutic delay).

Missing date pathologic diagnosis
N: Number of patients for whom date of pretreatment biopsy is missing
D: Number of registered patients

Missing lower limit primary tumour
N: Number of patients for whom lower limit of tumour is missing
D: Number of registered patients

Note: for risk adjustment it is essential to categorize the tumours into one of the rectal thirds. Therefore the lower limit of the tumour from the anal verge preferentially as measured at rigid rectoscopy (proctoscopy) should be known.

Missing staging
cT
N: Number of patients for whom cT is missing
D: Number of registered patients

Note: for risk adjustment it is important to know the pretreatment cT

cN
N: Number of patients for whom cN is missing
D: Number of registered patients

Note: for risk adjustment it is important to know the pretreatment cN

cM
N: Number of patients for whom cM is missing
D: Number of registered patients

Note: for risk adjustment it is important to know the pretreatment cM

cStage
N: Number of patients for whom cStage is missing
D: Number of registered patients

Note: for risk adjustment it is important to know the pretreatment cStage

Missing cCRM
N: Number of patients for whom cCRM is missing
D: Number of registered patients

Note: for risk adjustment it is important to know the pretreatment cCRM

Missing CEA
N: Number of patients for whom CEA serum before treatment is missing
D: Number of registered patients

Missing imaging
Total coloscopy
N: Number of patients for whom it is not stated whether they had a total coloscopy or not
D: Number of registered patients

Contrast enema
N: Number of patients for whom it is not stated whether they had a double contrast enema
D: Number of registered patients

Missing anorectal function before treatment
N: Number of patients for whom the anorectal function before treatment is not stated
D: Number of registered patients

B. Operative data

Missing ASA (see ERRATUM for correct definition)
N: Number of patients for whom ASA is missing
D: Number of registered patients

Note: for risk adjustment it is important to know the pretreatment ASA classification as well as the Hct.

Missing planned type of resection
N: Number of patients treated with surgery for whom the planned type of resection is missing
D: Number of patients treated with surgery

Missing date of surgery
N: Number of patients in denominator for whom the date of surgery is missing
D: Number of patients treated with surgery (local or radical)

Missing mode of surgery
N: Number of patients in denominator for whom mode of surgery is missing
D: Number of patients treated with surgery

Note: for risk adjustment it is important to know the mode of surgery

Missing surgical exploration

Approach if radical resection
N: Number of patients in denominator for whom the surgical approach at exploration is missing
D: Number of patients treated with radical resection

Metastasis
N: Number of patients in denominator for whom it is not stated whether metastases were found or not during surgical exploration and for whom it is not stated whether the exploration was limited because of adhesions
D: Number of patients treated with radical resection

Note: for Stage stadification it is important to know the presence of metastatic disease

Localisation of tumour
N: Number of patients in denominator for whom the localisation of the tumour related to the peritoneal reflection at surgical exploration is not stated
D: Number of patients treated with radical resection

Invasion of other organs
N: Number of patients in denominator for whom it is not stated whether the tumour has been found to invade other organs or not at surgical exploration
D: Number of patients treated with radical resection

Missing surgical resection

Irrigation rectal stump
N: Number of patients in denominator for whom the answer at both of the two following questions is missing:
- Rectal irrigation at the start of the procedure?
- Rectal irrigation before reanastomosis?
D: Number of patients treated with radical resection

Resection y/n
N: Number of patients in denominator for whom it is not stated whether a resection was performed or not
D: Number of patients treated with surgery (local or radical)

Approach if radical resection
N: Number of patients in denominator for whom the surgical approach at resection is missing
D: Number of patients treated with radical resection

Note: for risk adjustment it is important to know the surgical approach during resection

en bloc resection
N: Number of patients in denominator for whom it is not stated whether there was an 'en bloc' resection of another organ
D: Number of patients treated with radical resection

Deviation from en bloc resection
N: Number of patients in denominator for whom it is not stated whether there was a deviation from the procedure of 'en bloc' resection
D: Number of patients treated with radical resection

Resection of other organ
N: Number of patients in denominator for whom it is not stated whether another organ was resected
D: Number of patients treated with radical resection

Perforation of the rectum
N: Number of patients in denominator for whom perforation of the rectum is not reported by surgeon
D: Number of patients treated with radical resection

Distal level of resection (at SSO, excluding endoscopic, local excision, TEMS, APR or Hartmann)
N: Number of patients in denominator for whom the distal level of resection is missing
D: Number of patients treated with SSO

Technique used
N: Number of patients in denominator for whom the technique used at radical resection (PME, TME, conventional) is missing
D: Number of patients treated with radical resection

Type (R0/R1/R2) at surgery
N: Number of patients in denominator for whom the type of resection (R0/R1/R2) is missing
D: Number of patients treated with radical resection

Missing surgical reconstruction

Approach if radical resection
N: Number of patients in denominator for whom the surgical approach at reconstruction is missing
D: Number of patients treated with radical resection

Type of reconstruction
N: Number of patients in denominator for whom the type of reconstruction is missing
D: Number of patients treated with radical resection

Distal anastomosis technique (SSO with reconstruction)
N: Number of patients in denominator for whom the distal anastomosis technique (stapled/manual) is missing
D: Number of patients treated with SSO and reconstruction

Derivative stoma (SSO with reconstruction)
N: Number of patients in denominator for whom it is not stated whether they had a derivative stoma or not
D: Number of patients treated with SSO and reconstruction

Note: for risk adjustment it is important to know whether a derivative stoma was constructed or not

Intraoperative transfusion:
N: Number of patients for whom it is not stated whether they received blood during surgery
D: Number of patients treated with surgery

C. Postoperative data

Missing postoperative in hospital death
N: Number of patients in denominator for whom it is not reported whether they died in hospital following radical resection
D: Number of patients treated with radical resection

Missing discharge date
N: Number of patients in denominator for whom discharge date is missing
D: Number of patients treated with radical resection

Missing postoperative complications (medical and/or surgical minor and/or major complications)
N: Number of patients in denominator for whom it is not stated whether there were postoperative complications before discharge or not
D: Number of patients treated with radical resection

D. Radiotherapy data

Missing treatment position
N: Number of patients in denominator for whom treatment position (supine/prone) is missing
D: Number of patients treated with radiotherapy

Missing belly board
N: Number of patients in denominator for whom it is not stated whether a belly board was used
D: Number of patients treated with radiotherapy

Missing date of first irradiation
N: Number of patients in denominator for whom the date of first irradiation is missing
D: Number of patients treated with radiotherapy

Missing date of last irradiation
N: Number of patients in denominator for whom the date of last irradiation is missing
D: Number of patients treated with radiotherapy

Missing number of fractions
N: Number of patients in denominator for whom the number of fractions is missing
D: Number of patients treated with radiotherapy

Missing total dose
N: Number of patients in denominator for whom the total dose at ICRU reference point is missing
D: Number of patients treated with radiotherapy

Missing radiation compliance
N: Number of patients in denominator for whom it is not stated whether the radiotherapy treatment was interrupted for more than five working days
D: Number of patients treated with radiotherapy

Missing custom shielding
N: Number of patients in denominator for whom it is not stated whether custom shielding was used
D: Number of patients treated with radiotherapy

Missing photon energy used
N: Number of patients in denominator for whom the photon energy used is missing
D: Number of patients treated with radiotherapy

Missing number of beams
N: Number of patients in denominator for whom the number of beams used is missing
D: Number of patients treated with radiotherapy

Missing technique used
N: Number of patients in denominator for whom the technique used (2D/IMRT/3D CRT/IMAT/HT) is missing
D: Number of patients treated with radiotherapy

Missing PTV
N: Number of patients in denominator for whom the mean, median, maximum and minimum dose of the PTV are missing
D: Number of patients treated with radiotherapy

Missing concomitant chemotherapy
N: Number of patients in denominator for whom it is not stated whether they received concomitant chemotherapy or not
D: Number of patients treated with radiotherapy

E. Pathology in radical excision

Missing TME quality
N: Number of patients in denominator for whom the external surface of TME (smooth, regular/ mildly irregular/ severely irregular) is missing
D: Number of patients treated with TME as indicated by the surgeon

Missing (y)pCRM
N: Number of patients in denominator for whom the (y)pCRM is missing
D: Number of patients treated with radical resection

Missing distal margin

(y)p distal margin at SSO or Hartmann free/invaded
N: Number of patients in denominator for whom it is not stated whether the distal margin is free or invaded
D: Number of patients treated with SSO or Hartmann's procedure's procedure

Tumour free distal margin (cm) at SSO or Hartmann
N: Number of patients in denominator for whom the distance of the distal free tumour free margin is not stated
D: Number of patients treated with SSO or Hartmann's procedure's procedure

Staging after radical resection

(y)pT
N: Number of patients in denominator for whom (y)pT is missing
D: Number of patients treated with radical resection

(y)pN
N: Number of patients in denominator for whom (y)pN is missing
D: Number of patients treated with radical resection

R status
N: Number of patients in denominator for whom R status is missing
D: Number of patients treated with radical resection

(y)pStage
N: Number of patients in denominator for whom (y)pStage is missing
D: Number of patients treated with radical resection

F. Follow-up

Follow-up for patients diagnosed before 1st july 2007
N: Number of patients in denominator for whom at least one follow-up form was received
D: Number of patients diagnosed before the 1st of July 2007 and who did not die in hospital after surgery

ERRATUM

Part 3: Missing data

B. Operative data

Missing ASA
N: Number of patients for whom ASA is missing
D: Number of patients ***treated with surgery***