

Supplementary Table 1. Presentation of variable options and restriction criteria used for calculations of validity presented in Table 2.

Variable label	Variable name	Possible values of categorical variables	Restriction criteria
Hospital code	a0_opsjhkod		
Date of diagnosis	a1_diagnosdatum		
Pretherapeutic staging, primary tumor	a1_pretera1	0=No, 1=Yes	
Staging primary tumor, CT scan	a1_ct1		if a1_pretera1 == 1
Staging primary tumor, MRI	a1_mr1		if a1_pretera1 == 1
Staging primary tumor, rectal US	a1_rekt		if a1_pretera1 == 1
Pretherapeutic staging, lung metastasis	a1_pretera2	0=No, 1=Yes	
Staging lung metastasis, CT scan	a1_ct2		if a1_pretera2 == 1
Staging lung metastasis, MRI	a1_mr2		if a1_pretera2 == 1
Staging lung metastasis, chest X-ray	a1_lungrtg		if a1_pretera2 == 1
Pretherapeutic staging, liver metastasis	a1_pretera3	0=No, 1=Yes	
Staging liver metastasis, CT scan	a1_ct3		if a1_pretera3 == 1
Staging liver metastasis, MRI	a1_mr3		if a1_pretera3 == 1
Staging liver metastasis, US	a1_ultra		if a1_pretera3 == 1
Outcome pretherapeutic staging, cT	a1_utfallt	1=cT1-2, 3=cT3, 4=cT4, 5=cTX	if a1_pretera1 == 1
Outcome pretherapeutic staging, cN	a1_utfalln	0=cN0, 1=cN1-2, 5=cNX	if a1_pretera1 == 1
Outcome pretherapeutic staging, cM	a1_utfallm	0=cM0, 1=cM1, 5=cMX	if a1_pretera2 == 1 a1_pretera3 == 1
Metastasis liver	a1_levermet	0=No, 1=Yes	if a1_pretera3 == 1
Metastasis lung	a1_lungmet	0=No, 1=Yes	if a1_pretera2 == 1
Pretherapeutic evaluation	a2_prebed	0=No, 1=Yes	
Primarily non-resectable tumor	a2_fix	0=No, 1=Yes	
Preoperative radiation therapy	a2_prestral	0=No, 1=Yes	if a2_tumlok == 2
Date of initiation of radiation therapy	a2_straldat		if a2_prestral == 1
Radiation dose	a2_dos	1=Short (5x5 Gy), 2=Long (25x1,8/2 Gy), 3=Other fraction	if a2_prestral == 1
Preoperative chemotherapy	a2_precyt	0=No, 1=Yes	
Mechanical bowel preparation	a2_pretarm	0=No, 1=Yes	if a2_atgard == 3
Preoperative diversion	a2_preavl	0=No, 1=Yes	if a2_atgard == 3
Preoperative diversion, temporary intention	a2_temp	0=No, 1=Yes	if a2_preavl == 1
Preoperative diversion, stent	a2_stent	0=No, 1=Yes	if a2_preavl == 1
Preoperative diversion, stoma	a2_stomi	0=No, 1=Yes	if a2_preavl == 1
Tumor location	a2_tumlok	1=Colon, 2=Rectum, 3=Not specified	
Lower tumor limit by rectoscopy, cm from anal verge	a2_rscop		if a2_tumlok == 2
Tumor location	a2_tumlage	1=Appendix, 2=Cecum, 3=Ascending colon, 4=Hepatic flexure, 5=Transverse colon, 6=Splenic flexure, 7=Descending colon, 8=Sigmoid colon, 9=Not specified	if a2_tumlok == 1
Therapeutic intervention	a2_oper	0=No, 1=Yes	
Surgical intervention	a2_atgard	1=Colonic stent (as only treatment), 2=Endoscopic polypectomi (as only treatment), 3=Operation	if a2_oper == 1
Date of therapeutic intervention	a2_opdat		if a2_oper == 1
Ligature placement 1	a2_plac1		if a2_atgard == 3
Ligature placement 2	a2_plac2		if a2_atgard == 3
Ligature placement 3	a2_plac3		if a2_atgard == 3
Ligature placement 4	a2_plac4		if a2_atgard == 3
Ligature placement 5	a2_plac5		if a2_atgard == 3
Ligature placement 6	a2_plac6		if a2_atgard == 3
Ligature placement 7	a2_plac7		if a2_atgard == 3
Ligature placement 8	a2_plac9		if a2_atgard == 3
Ligature placement 9	a2_plac10		if a2_atgard == 3
Ligature placement 10	a2_plac11		if a2_atgard == 3
Ligature placement 12	a2_plac12		if a2_atgard == 3
Ligature placement 13	a2_plac13		if a2_atgard == 3
Ligature placement 14	a2_plac14		if a2_atgard == 3
Resection of other organ	a2_resekt	0=No, 1=Yes	if a2_atgard == 3 & a2_optyp2 != 12
Synchronous resection of liver metastasis	a2_samt	0=No, 1=Yes	if a2_atgard == 3 & a2_optyp2 != 12
Laparoscopic procedure	a2_lapa	0=No, 1=Yes	if a2_atgard == 3 & a2_optyp2 != 12
Converted (for laparoscopic)	a2_konv	0=No, 1=Yes	if a2_atgard == 3 & a2_optyp2 != 12 & a2_lapa == 1
Protective stoma	a2_skydd	0=No, 1=Yes	if a2_atgard == 3
Permanent stoma	a2_perm	0=No, 1=Yes	if a2_atgard == 3
Peroperative rectal wash out	a2_skoljn	0=No, 1=Yes	if a2_atgard == 3 & a2_optyp2 != 12 & a2_tumlok == 2
Peroperative bowel perforation	a2_perf	0=No, 1=Yes	if a2_atgard == 3 & a2_optyp2 != 12
Tumour adjacent perforation	a2_tumperf	0=No, 1=Yes, 2=Not stated	if a2_perf == 1
Locally radical resection (evaluated by surgeon)	a2_lokal	0=No, 1=Yes, 2=Uncertain, 3=Not possible to assess	if (a2_atgard == 3 a2_atgard == 3) & a2_optyp2 != 12
Curative resection (as evaluated by surgeon)	a2_kurativ	0=No, 1=Yes, 2=Uncertain, 3=Not possible to assess	if (a2_atgard == 3 a2_atgard == 3) & a2_optyp2 != 12
Type of operation	a2_optyp1	1=Elective, 2=Emergency	if a2_atgard == 3
Emergency procedure due to bowel obstruction	a2_akutil		if a2_atgard == 3 & a2_optyp1 == 2
Emergency procedure due to bleeding	a2_akutblad		if a2_atgard == 3 & a2_optyp1 == 2
Emergency procedure due to perforation/abcess	a2_akutperf		if a2_atgard == 3 & a2_optyp1 == 2
Emergency procedure due to others	a2_akutann		if a2_atgard == 3 & a2_optyp1 == 2

Surgical procedure performed	a2_optyp2	1=Ileocecal resection, 2=Right hemicolectomi, 3=Transverse colectomy, 4=Left hemicolectomi, 5=Sigmoide resection, 6=Colectomy, 7=Anterior resection, 8=Abdominoperineal resection, 9=Hartmann's procedure, 10=TEM, 11=Local excision, 12=Laparotomy without resection	if a2_atgard == 3
Colonic reservoir	a2_reserv	0=No reservoir, 1=Reservoir or side-to-end anastomosis, 2=Reservoir, 3=Side-to-end anastomosis	if a2_optyp2 == 7
Start of procedure (time)	a2_kstart		if a2_atgard == 3
End of procedure (time)	a2_kslut		if a2_atgard == 3
Duration of procedure, minutes	a2_optid_visa		if a2_atgard == 3
ASA classification	a2_asaklass	1=ASA classification 1, 2=ASA classification 2, 3=ASA classification 3, 4=ASA classification 4, 5=ASA	if a2_atgard == 3
Peroperative bleeding (ml)	a2_blodn		if a2_atgard == 3
Bodyweight (kg)	a2_vikt		if a2_atgard == 3
Bodyweight not registered	a2_ejvikt		if a2_atgard == 3 & a2_vikt == .
Height (cm)	a2_langd		if a2_atgard == 3 & a2_langd == .
Height not documented	a2_ejlangd		if a2_atgard == 3
Adenocarcinoma	a3_adeno	0=No, 1=Yes	
T-stage	a3_t	0=T0, 1=T1, 2=T2, 3=T3, 4=T4, 5=TX	if (a2_atgard == 2 a2_atgard == 3) & a2_optyp2 != 12
T1-stage	a3_t1	1=T1sm1, 2=T1sm2, 3=T1sm3, 5=sm-classification not specified	if a3_t == 1
T3-stage	a3_t3	1=T3A/B, 2=T3C/D, 5=T3A/B/C/D not specified	if a3_t == 3
T4-stage	a3_t4	1=T4A, 2=T4B, 5=T4A/B not specified	if a3_t == 4
N-stage	a3_n	0=N0, 1=N1, 2=N2, 5=NX	if a2_atgard == 3 & a2_optyp2 != 10 & a2_optyp2 != 12
M-stage	a3_m	0=M0, 1=M1, 5=MX	if a2_atgard == 3
Distant metastasis, liver	a3_lever		if a2_atgard == 3 & a3_m == 1
Distant metastasis, lung	a3_lunga		if a2_atgard == 3 & a3_m == 1
Distant metastasis, other location	a3_annat		if a2_atgard == 3 & a3_m == 1
No. examined lymph nodes	a3_antal		if a2_atgard == 3 & a2_optyp2 != 12
No. positive lymph nodes	a3_antalp		if a2_atgard == 3 & a2_optyp2 != 12
Clear resection margin	a3_mikro	0=No, 1=Yes, 2=Uncertain, 3=Not specified	if (a2_atgard == 2 a2_atgard == 3) & a2_optyp2 != 12
Mucinous tumour	a3_mucinos	0=No, 1=Yes, 2=Not specified	if (a2_atgard == 2 a2_atgard == 3) & a2_optyp2 != 12
Perineural invasion	a3_vaxt	0=No, 1=Yes, 2=Not specified	if (a2_atgard == 2 a2_atgard == 3) & a2_optyp2 != 12
Vascular invasion	a3_karl	0=No, 1=Yes, 2=Not specified	if (a2_atgard == 2 a2_atgard == 3) & a2_optyp2 != 12
Differentiation grade	a3_diffgrad	1=High, 2=Moderate, 3=Poor, 5=Not specified	if (a2_atgard == 2 a2_atgard == 3) & a2_optyp2 != 12
Circumferential resection margin (mm)	a3_margx		if a2_atgard == 3 & a2_optyp2 != 12
Longitudinal resection margin (mm)	a3_distalx		if a2_atgard == 3 & a2_optyp2 != 12
Postoperative complication	a4_kompl	0=No, 1=Yes	if a2_oper == 1
Postoperative infection	a4_inf		if a2_oper == 1
Postoperative pneumonia	a4_pneumoni		if a2_oper == 1
Postoperative sepsis	a4_sepsis		if a2_oper == 1
Other postoperative infections	a4_infivr		if a2_oper == 1
Cardiovascular complications	a4_cv		if a2_oper == 1
Surgical complications	a4_kirkomp		if a2_oper == 1
Wound infection	a4_sarkomp		if a2_oper == 1
Intraabdominal infection	a4_intkomp		if a2_oper == 1
Wound dehiscence	a4_rupkomp		if a2_oper == 1
Bleeding	a4_blodkomp		if a2_oper == 1
Anastomotic insufficiency	a4_anakomp		if a2_oper == 1
Stoma complication	a4_stokomp		if a2_oper == 1
Urinary catheter at discharge	a4_kad		if a2_oper == 1
Other complications	a4_ovr		if a2_oper == 1
ICU care	a4_iva	0=No, 1=Yes	if a2_oper == 1
ICU, date of admission	a4_ivadat1		if a2_oper == 1 & a4_iva == 1
ICU, date of discharge	a4_ivadat2		if a2_oper == 1 & a4_iva == 1
Re-operation	a4_reop	0=No, 1=Yes	if a2_oper == 1
Date of first re-operation	a4_reopdat1		if a2_oper == 1 & a4_reop == 1
Date of second re-operation	a4_reopdat2		if a2_oper == 1 & a4_reop == 1
Wound dehiscence as cause for re-operation	a4_reoprup		if a2_oper == 1 & a4_reop == 1
Bleeding as cause of re-operation	a4_reopblod		if a2_oper == 1 & a4_reop == 1
Infection as cause of re-operation	a4_reopinf		if a2_oper == 1 & a4_reop == 1
Anastomotic insufficiency as cause of reoperation	a4_reopana		if a2_oper == 1 & a4_reop == 1
Unplanned postoperative hospital admission	a4_ater	0=No, 1=Yes	if a2_oper == 1
Death within 30 days of surgery	a4_dod30	0=No, 1=Yes	if a2_oper == 1
Date of discharge	a5_utdat		if a2_oper == 1
Discharged to	a5_utors	1=Home 2=Other instance, 3=Dead, 4=Outpatient treatment	if a2_oper == 1
Postoperative multidisciplinary meeting	a5_postop	0=No, 1=Yes	if a2_oper == 1
Adjuvant treatment planned	a5_adjuv	0=No, 1=Yes	if a2_atgard == 3 & a2_optyp2 != 12
Palliative treatment	a5_pall	0=No, 1=Yes	if (a1_utfallm != 0 a3_m != 0) a2_lokal != 1

Further treatment and examination with curative intention	a5_ytter2	0=No, 1=Yes
Further follow up apart from postoperative return	a5_planerad	0=No, 1=Yes
Patient included in study	a5_studie	0=No, 1=Yes