

## Supplemental Online Content

Sauro KM, Smith C, Ibadin S, et al. Enhanced Recovery After Surgery guidelines and hospital length of stay, readmission, complications, and mortality. *JAMA Netw Open*. 2024;7(6):e2417310.  
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This supplemental material has been provided by the authors to give readers additional information about their work.

## eAppendix 1. Search strategies

Database(s): **Ovid MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations and Daily** 1946 to June 18, 2021

Search Strategy:

#	Searches	Results
1	exp Enhanced Recovery After Surgery/	659
2	(ERAS or ERP or "enhanced recovery" or "enhanced rehabilitation" or "fast track" or FTS).kf,tw.	29740
3	1 or 2	29794
4	Practice Guidelines as Topic/	123943
5	Critical Pathways/	7164
6	(guideline* or pathway* or protocol*).kf,tw.	2041178
7	4 or 5 or 6	2105525
8	3 and 7	4996

Database(s): **Embase** 1974 to 2021 June 21

Search Strategy:

#	Searches	Results
1	enhanced recovery after surgery/	1809
2	(ERAS or ERP or "enhanced recovery" or "enhanced rehabilitation" or "fast track" or FTS).kw,tw.	42713
3	1 or 2	42975
4	practice guideline/ or clinical pathway/	471208
5	(guideline* or pathway* or protocol*).kw,tw.	2790188
6	4 or 5	2995615
7	3 and 6	9010
8	limit 7 to (editorial or letter or note)	250
9	7 not 8	8760

Database(s): **EBM Reviews - Cochrane Central Register of Controlled Trials** May 2021

Search Strategy:

#	Searches	Results
1	(ERAS or ERP or "enhanced recovery" or "enhanced rehabilitation" or "fast track" or FTS).kw,tw.	4013
2	Practice Guidelines as Topic/	1675

3	Critical Pathways/	203
4	(guideline* or pathway* or protocol*).kw,tw.	172695
5	2 or 3 or 4	173219
6	1 and 5	1275

Database(s): **EBM Reviews - Cochrane Central Register of Controlled Trials** May 2021

Search Strategy:

#	Searches	Results
1	(ERAS or ERP or "enhanced recovery" or "enhanced rehabilitation" or "fast track" or FTS).kw,tw.	4013
2	Practice Guidelines as Topic/	1675
3	Critical Pathways/	203
4	(guideline* or pathway* or protocol*).kw,tw.	172695
5	2 or 3 or 4	173219
6	1 and 5	1275

\*Note: There were no articles indexed with the SH “Enhanced Recovery After Surgery” which is why it’s not present in the search history.

## eAppendix 2. Data dictionary

Variable name	Description	Possible values
<b>Master_ERAS Data</b>		
Country		Open text
Province/State, City, Region	Provide as much information provided in manuscript regarding geographical location	Open text
Setting	Information about size and location of hospital	Open text
Hospital type(s)	Description of type of hospital (e.g. tertiary, teaching, trauma, etc.)	Open text
Hospital number	Number of included hospitals	N
Bed numbers	Number of beds in hospital	N
Start year data collection	Year data collection began	Year
End year data collection	Year data collection ended	Year
Study design	Epidemiological study design *this will determine quality assessment criteria	Cohort Case control RCT Intervention Quasi-experimental Other
Timing of data collection	Timing related to patient admission	Prospective Retrospective Cross-sectional
Data collection method	How was ERAS Ascertained	Administrative data Chart review Voluntary reporting Other
Reviewer process	If ERAS ascertainment by chart review, provide information about reviewer	Number of reviewers, role (e.g. nurse, MD, research staff, other)
Exclusion criteria	Description of any exclusion criteria (except pediatric)	Open text

Patient number	Number of included patients	N
Non-ERAS, before group	Number of patients in Non-ERAS group	N
ERAS, after group	Number of patients in ERAS group	N
Age describe	Describe age of population	Yes No
Age (type)	Description of how age is presented	Range Mean Median Categories
Age (range)	Provide overall age range	Years of age
Age (overall, mean)	Provide overall mean	Years of age
Age (overall, median)	Provide overall median	Years of age
Age (ERAS, mean)	Provide mean age of ERAS group	Years of age
Age (non-ERAS, mean)	Provide mean age of non-ERAS group	Years of age
Age (ERAS, median)	Provide mean age of ERAS group	Years of age
Age (non-ERAS, median)	Provide mean age of non-ERAS group	Years of age
Sex (male)	Provide proportion of population/sample male	Proportion
Surgery Category	Surgery Category (ERAS)	Gynecological Colorectal Liver Pancreas Breast Bariatric Head & Neck Orthopedic Other -Specify
Surgery Describe	Description of Surgery Types Included	Open text
ERAS Protocol Label	Provide how the authors describe the surgical protocol (ERAS/ERP/Fast-Track etc)	Open Text
ERAS 1 Preadmission Patient Education	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)

ERAS 2 Preadmission Screening (nutrition, frailty, tobacco, ethanol)	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 3 Fasting and Carbohydrate Loading	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 4 Pre-emptive Analgesia	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 5 Anti-emetic Prophylaxis	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 6 Intraoperative Fluid Management Strategy	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 7 Anesthetics Administered (dose, route, timing)	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 8 Patient Warming	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 9 Management of Postoperative Fluids	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 10 Postoperative Analgesia and Anti-emetic plans	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 11 Plan for Opioid Minimization	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 12 Drain and Line Management	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 13 Early Mobilization	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 14 Postoperative Diet and Bowel Regimen Management	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 15 Criteria for Discharge	Is ERAS element included in the study's surgery protocol	Yes No NR (not reported)
ERAS 16 Tracking of Post Discharge Outcomes		Yes No NR (not reported)

ERAS Criteria Notes	Optional: notes on ERAS elements and criteria	Open Text
ERAS Compliance Describe	Provide compliance estimate for ERAS	Yes No
ERAS Compliance Estimate	Provide compliance estimate for ERAS	Yes No
Implementation Interventions Describe	Description of any implementation interventions noted in the text.	Open Text
<b>LOS WORKSHEET</b>		
Overall estimate	Is this an overall estimate	Yes No
Stratification	Were stratified estimates provided? *should be “No” if answer to overall is “Yes”	Yes No
Sex strat	Sex stratified estimate	Yes No
Sex	What sex is estimate provided for	Male Female
Age strat	Age stratified estimate	Yes No
Age group	What sex is estimate provided for	Age category
Year strat	Year stratified estimate	Yes No
Year range	Year range for strata (e.g. 2001-2002)	Years
Other strat	Estimate stratified by other variable	Yes No
Other strat, specify	Name of variable stratified	Open text
Other category	Category estimate stratified by	Open text
Control_Estimate	Provide Length of Stay	Days
Control_N	Provide N of control (non-ERAS) group	N
Control_SD	Provide Standard Deviation of Estimate	N
Lower 95% CI/ IQR/ Range	Provide lower 95%CI (IQR or Range if Median estimate)	N
Upper 95% CI/ IQR/ Range	Provide upper 95%CI (IQR or Range if Median estimate)	N

ERAS_Estimate	Provide Length of Stay	Days
ERAS_N	Provide N of ERAS group	N
ERAS_SD	Provide Standard Deviation of Estimate	N
Lower 95% CI/ IQR/ Range	Provide lower 95%CI (IQR or Range if Median estimate)	N
Upper 95% CI/ IQR/ Range	Provide upper 95%CI (IQR or Range if Median estimate)	N
Estimate_type		Mean Median Patient
Estimate_unit	Provide the estimate unite	Days
Estimate_describe	Describe the estimate	
<b>Complications Worksheet</b>		
Postoperative Complications Describe	Describe postoperative complications	Open text
Postoperative Complications Estimate	Provide estimate for postoperative complications	N per 100
Overall estimate	Is this an overall estimate	Yes No
Stratification	Were stratified estimates provided? *should be “No” if answer to overall is “Yes”	Yes No
Sex strat	Sex stratified estimate	Yes No
Sex	What sex is estimate provided for	Male Female
Age strat	Age stratified estimate	Yes No
Age group	What sex is estimate provided for	Age category
Year strat	Year stratified estimate	Yes No
Year range	Year range for strata (e.g. 2001-2002)	Years
Other strat	Estimate stratified by other variable	Yes No
Other strat, specify	Name of variable stratified	Open text (ex. ae type, severity)
Other category	Category estimate stratified by	Open text



Control_Estimate	Provide # of complications in control group	N
Control_N	Provide N of control (non-ERAS) group	N
ERAS_Estimate	Provide # of complications in ERAS group	N
ERAS_N	Provide N of ERAS group	N
Unit	Provide Estimate Unit	Patient N
Estimate_Describe	Describe the Estimate	Open Text
<b>Mortality Worksheet</b>		
Overall estimate	Is this an overall estimate	Yes No
Stratification	Were stratified estimates provided? *should be "No" if answer to overall is "Yes"	Yes No
Sex strat	Sex stratified estimate	Yes No
Sex	What sex is estimate provided for	Male Female
Age strat	Age stratified estimate	Yes No
Age group	What sex is estimate provided for	Age category
Year strat	Year stratified estimate	Yes No
Year range	Year range for strata (e.g. 2001-2002)	Years
Other strat	Estimate stratified by other variable	Yes No
Other strat, specify	Name of variable stratified	Open text
Other category	Category estimate stratified by	Open text
Control_Estimate	Provide # of deaths in Control Group	N
Control_N	Provide N of control (non-ERAS) group	N
ERAS_Estimate	Provide # of deaths in ERAS group	N
ERAS_N	Provide N of ERAS group	N
Unit	Provide Estimate Unit	Patient
Estimate_Describe	Describe the Estimate	Open Text

<b>Readmission Worksheet</b>		
Overall estimate	Is this an overall estimate	Yes No
Stratification	Were stratified estimates provided? *should be “No” if answer to overall is “Yes”	Yes No
Sex strat	Sex stratified estimate	Yes No
Sex	What sex is estimate provided for	Male Female
Age strat	Age stratified estimate	Yes No
Age group	What sex is estimate provided for	Age category
Year strat	Year stratified estimate	Yes No
Year range	Year range for strata (e.g. 2001-2002)	Years
Other strat	Estimate stratified by other variable	Yes No
Other strat, specify	Name of variable stratified	Open text
Other category	Category estimate stratified by	Open text
Control_Estimate	Provide # of readmissions in Control Group	N
Control_n	Provide N of control (non-ERAS) group	N
ERAS_Estimate	Provide # of readmissions in ERAS group	N
ERAS_n	Provide N of ERAS group	N
Estimate_Unit	Provide Estimate Unit	Patient n
Estimate_Describe	Describe the Estimate	Open Text
<b>Cost Worksheet</b>		
Overall estimate	Is this an overall estimate	Yes No
Stratification	Were stratified estimates provided? *should be “No” if answer to overall is “Yes”	Yes No
Sex strat	Sex stratified estimate	Yes No

Sex	What sex is estimate provided for	Male Female
Age strat	Age stratified estimate	Yes No
Age group	What sex is estimate provided for	Age category
Year strat	Year stratified estimate	Yes No
Year range	Year range for strata (e.g. 2001-2002)	Years
Other strat	Estimate stratified by other variable	Yes No
Other strat, specify	Name of variable stratified	Open text
Other category	Category estimate stratified by	Open text
Control_Estimate	Provide cost estimate in Control Group	N
Control_SD	Provide N of control (non-ERAS) group	N
Lower 95% CI/ IQR/ Range	Provide lower 95%CI (IQR or Range if Median estimate)	N
Upper 95% CI/ IQR/ Range	Provide upper 95%CI (IQR or Range if Median estimate)	N
ERAS_Estimate	Provide cost estimate in ERAS group	N
ERAS_SD	Provide N of ERAS group	N
Lower 95% CI/ IQR/ Range	Provide lower 95%CI (IQR or Range if Median estimate)	N
Upper 95% CI/ IQR/ Range	Provide upper 95%CI (IQR or Range if Median estimate)	N
Estimate Difference	ERAS estimate – Control Estimate	N
Unit	Provide Estimate Unit	CAD USD Euro Etc.
Per Unit	Provide the Per Unit	Per patient Per procedure Per hospital
Estimate_Type	Provide the estimate type	Mean Median

Estimate_Describe	Describe the Estimate	Open Text
<b>Quality Assessment</b>		
RECOVER CHECKLIST	See QA data dictionary	
NOS	See QA data dictionary	
ROB-2	See QA data dicitonary	

**eTable 1.** Characteristics of included studies

Author	Year	Country	Surgery Category	Study Design	Outcomes	N Control ERAS	Protocol Type	#ERAS Elements	Risk of Bias	Recover
AbdElRahman	2020	Egypt	Colorectal	RCT	Hospital LoS Complications Hospital readmit	80 40 40	ERAS	12	Moderate	12
Abdikarim	2015	China	Upper GI	RCT	Hospital LoS Complications Hospital readmit Mortality	61 30 31	ERAS	11	Moderate	9
Akca	2019	Turkey	Gynecological	RCT	Hospital LoS Hospital readmit	89 45 44	ERAS	14	Moderate	15
Akhtar	2020	Pakistan	Other	RCT	Hospital LoS Complications Hospital readmit Cost	147 74 73	ERAS	11	Moderate	13
Baluku	2020	Uganda	Gynaecologic	RCT	Hospital LoS Complications Hospital readmit	160 80 80	ERAS	12	High	16
Bansal	2020	India	Urology	RCT	Hospital LoS Complications Hospital readmit Mortality	54 27 27	ERAS	8	Low	15
Chndan	2020	India	Upper GI	RCT	Hospital LoS Complications	85 43 42	ERAS	6	Moderate	11
Cui	2019	China	Orthopedic	RCT	Complications	50 25 25	ERAS	6	Moderate	14

Author	Year	Country	Surgery Category	Study Design	Outcomes	N Control ERAS	Protocol Type	#ERAS Elements	Risk of Bias	Recover
<b>Damadi</b>	2019	USA	Colorectal	RCT	Hospital LoS Hospital readmit	123 41 51	ERP	3	Low	13
<b>Dambaev</b>	2020	Russia	Other	RCT	Hospital LoS Complications Mortality	174 87 87	ERAS	14	Moderate	11
<b>Dickson</b>	2017	USA	Gynaecologic	RCT	Hospital LoS Complications Hospital readmit	103 52 51	ERAS Protocol	11	Moderate	13
<b>Fei</b>	2015	China	Upper GI	RCT	Hospital LoS Complications Hospital readmit Mortality	116 57 59	Fast-track Surgery	9	Moderate	13
<b>Feng</b>	2014	China	Colorectal	RCT	Complications	116 59 57	Fast Track	6	Low	12
<b>Feo</b>	2016	Italy	Other	Cohort	Hospital LoS Complications Hospital readmit Mortality	121 91 130	ERP	12	Low	16
<b>Ferrari</b>	2020	Italy	Gynaecologic	RCT	Hospital LoS Complications Hospital readmit	168 85 83	ERAS	14	Moderate	18
<b>Forsmo</b>	2016	Norway	Colorectal	RCT	Hospital LoS Complications Hospital readmit Mortality	183 122 61	ERAS	12	Low	14

Author	Year	Country	Surgery Category	Study Design	Outcomes	N Control ERAS	Protocol Type	#ERAS Elements	Risk of Bias	Recover
<b>Forsmo</b>	2016	Norway	Colorectal	RCT	Hospital LoS Complications Hospital readmit Mortality	324 162 162	ERAS	15	Moderate	16
<b>Han</b>	2019	China	Other	RCT	Hospital LoS Hospital readmit Mortality	300 150 150	ERAS protocol	13	Moderate	11
<b>He</b>	2015	China	Upper GI	RCT	Hospital LoS Complications Hospital readmit Mortality	86 38 48	ERP	13	Moderate	15
<b>Hwang</b>	2019	Korea	Other	RCT	Hospital LoS Complications Hospital readmit Mortality Cost	247 124 123	ERAS	12	Low	16
<b>Ibrahim</b>	2020	Egypt	Colorectal	RCT	Hospital LoS Complications Mortality	75 43 32	ERAS Protocol	8	Moderate	9
<b>Ionescu</b>	2009	Romania	Colorectal	RCT	Complications	96 48 48	Fast Track	8	Moderate	12
<b>Iyer</b>	2019	India	Upper GI	RCT	Hospital LoS	100 50 50	Fast-track	8	High	10
<b>Jones</b>	2021	UK	Liver	RCT	Hospital LoS Mortality Cost	91 45 46	ERP	15	Low	14

Author	Year	Country	Surgery Category	Study Design	Outcomes	N Control ERAS	Protocol Type	#ERAS Elements	Risk of Bias	Recover
Kang	2018	Korea	Other	RCT	Hospital LoS Complications Hospital readmit Mortality	97 51 46	ERAS Protocol	14	Moderate	15
Kapritsou	2020	Greek/Greece	Pancreatic	RCT	Hospital LoS Complications	85 41 44	ERAS Protocol	7	Moderate	15
Kapritsou	2018	Greek/Greece	Liver	RCT	Hospital LoS Complications Hospital readmit	62 30 32	Fast-Track Recovery Program	11	High	9
Kilpio	2020	Finland	Gynaecologic	RCT	Hospital LoS Complications Hospital readmit	120 60 60	ERAS Protocol	15	Moderate	14
Lavu	2019	USA	Pancreas	RCT	Hospital LoS Complications Hospital readmit MortalityCost	76 39 37	Whipple Accelerated Recovery Pathway (WARP)	6	Low	14
Lemanu	2013	New Zealand	Bariatric	RCT	Hospital LoS Complications Hospital readmit Cost	121 38 40	Enhanced recovery	11	Moderate	17
Li	2018	China	Cardiac	RCT	Hospital LoS Complications Hospital readmit Mortality Cost	209 105 104	ERAS	12	Low	16
Liang	2018	China	Liver	RCT	Hospital LoS Complications Hospital readmit Mortality Cost	119 61 58	ERAS	16	Low	17



Author	Year	Country	Surgery Category	Study Design	Outcomes	N Control ERAS	Protocol Type	#ERAS Elements	Risk of Bias	Recover
Liu	2019	China	Other	RCT	Hospital readmit Mortality	140 70 70	ERAS	14	Moderate	15
Liu	2020	China	Orthopedic	RCT	Hospital LoS Complications Hospital readmit Mortality Cost	94 46 48	ERAS	14	Low	15
Liu	2016	China	Upper GI	RCT	Hospital LoS Complications Cost	42 21 21	Fast Track	8	Moderate	12
Mari	2016	Italy	Colorectal	RCT	Hospital LoS Complications Hospital readmit	83 43 40	ERAS	7	Moderate	12
Mari	2014	Italy	Colorectal	RCT	Hospital LoS Complications Hospital readmit	50 25 25	Fast Track	9	High	9
Mingjie	2015	China	Other	RCT	Hospital LoS Complications Hospital readmit Mortality	149 73 76	ERAS	13	Moderate	14
Mohsina	2018	India	Other	RCT	Hospital LoS Complications	99 49 50	ERAS Pathway	11	Low	14
Muller	2009	Switzerland	Colorectal	RCT	Complications Hospital readmit Mortality	151 75 76	adapted fast-track protocol	7	Moderate	15

Author	Year	Country	Surgery Category	Study Design	Outcomes	N Control ERAS	Protocol Type	#ERAS Elements	Risk of Bias	Recover
Nakanishi	2020	Japan	Liver	RCT	Hospital LoS Complications Mortality	57 28 29	ERAS	10	High	15
Nunez-Venzor	2021	Mexico	Upper GI	RCT	Hospital LoS Complications Hospital readmit	38 19 19	ERAS Protocol	14	High	14
Ostermann	2019	Switzerland	Colorectal	RCT	Hospital LoS Complications Hospital readmit	150 75 75	Enhanced Recovery Program	13	Low	18
Pan	2020	China	Other	RCT	Hospital LoS Complications Cost	216 104 112	ERAS Protocol	14	Moderate	15
Peng	2021	China	Gynaecologic	RCT	Hospital LoS Complications Hospital readmit Mortality Cost	130 65 65	ERAS	12	Moderate	13
Pirzada	2017	Pakistan	Upper GI	RCT	Hospital LoS Complications	60 30 30	ERAS protocol	13	High	10
Prabhakaran	2020	India	Bariatric	RCT	Hospital LoS Complications Hospital readmit	112 56 56	ERAS Pathway	13	Moderate	13
Qu	2020	China	Other	RCT	Hospital LoS Complications Cost Hospital readmit	129 65 64	ERAS Protocol	15	Moderate	14
Rao	2017	China	Liver	RCT	Hospital LoS Complications Hospital readmit Mortality	128 74 54	Fast-track	13	High	12

Author	Year	Country	Surgery Category	Study Design	Outcomes	N Control ERAS	Protocol Type	#ERAS Elements	Risk of Bias	Recover
Ren	2012	China	Colorectal	RCT	Hospital LoS Complications Mortality Cost	597 298 299	ERAS	13	High	14
Ruiz-Tovar	2019	Spain	Bariatric	RCT	Hospital LoS Complications Hospital readmit Mortality	180 90 90	ERAS	15	Moderate	12
Sanchez-Iglesias	2020	Spain	Gynaecologic	RCT	Hospital LoS Complications Hospital readmit Mortality	99 49 50	ERAS	16	High	17
Sanchez-Iglesias	2021	Spain	Gynaecologic	RCT	Hospital LoS	99 49 50	ERAS	16	Low	15
Saurabh	2020	India	Other	RCT	Hospital LoS Complications Hospital readmit Mortality	70 35 35	ERAS	11	High	15
Sazhin	2018	Russia	Upper GI	RCT	Hospital LoS Complications Hospital readmit Mortality	86 48 38	Fast Track	12	High	10
Sazhin	2018	Russia	Upper GI	RCT	Hospital LoS Complications Hospital readmit Mortality	102 57 45	Fast-track	11	High	10
Scioscia	2017	Italy	Colorectal	RCT	Hospital LoS Complications Hospital readmit Cost	277 165 62	Fast-track	5	Moderate	13

Author	Year	Country	Surgery Category	Study Design	Outcomes	N Control ERAS	Protocol Type	#ERAS Elements	Risk of Bias	Recover
Serclova	2009	Czech Republic	Colorectal	RCT	Hospital LoS Complications Hospital readmit Mortality	103 52 51	Fast-track Protocol	11	High	11
Serclova	5943	Czech Republic	Colorectal	RCT	Hospital LoS Complications Hospital readmit Mortality	103 52 51	Fast-track Protocol	12	High	10
Sharma	2021	India	Upper GI	RCT	Hospital LoS Complications Hospital readmit Mortality	100 50 50	ERAS Protocol	12	Moderate	13
Shetiwy	2017	Egypt	Colorectal	RCT	Hospital LoS Complications Hospital readmit Mortality	70 35 35	ERAS	14	Moderate	12
Soffin	2020	USA	Orthopedic	RCT	Complications	51 25 26	ERAS	10	Low	17
Swaminathan	2020	India	Upper GI	RCT	Hospital LoS Complications	58 29 29	ERAS	13	Moderate	14
Takagi	2019	Japan	Pancreas	RCT	Hospital LoS Complications Hospital readmit Mortality Cost	74 37 37	ERAS	13	Moderate	18
Tanaka	2017	Japan	Upper GI	RCT	Hospital LoS Complications Hospital readmit Cost	142 69 73	ERAS protocol	11	Low	15

Author	Year	Country	Surgery Category	Study Design	Outcomes	N Control ERAS	Protocol Type	#ERAS Elements	Risk of Bias	Recover
Taupyk	2015	China	Colorectal	RCT	Hospital LoS Complications	70 39 31	Fast-track	8	High	9
Teigen	2020	USA	Gynecology	RCT	Hospital LoS Complications Hospital readmit	118 60 58	ERAS	7	Moderate	15
Trejo-Avila	2019	Mexico	Upper GI	RCT	Hospital LoS Complications Hospital readmit	108 58 50	ERAS	9	Moderate	14
Vlad	2020	Romania	Bladder Cancer	RCT	Hospital LoS Complications Hospital readmit Mortality	90 45 45	ERAS	11	Moderate	15
Wang	2019	China	Orthopedic	RCT	Hospital LoS Complications Hospital readmit MortalityCost	140 70 70	ERAS	10	Moderate	15
Yang	2016	China	orthopedic	RCT	Hospital LoS Complications Hospital readmit Mortality	258 126 132	Fast Track	11	Moderate	15
Yilmaz	2020	Turkey	Gynecological	RCT	Hospital LoS Complications Hospital readmit	104 53 51	ERAS	10	High	14
Yilmaz	2018	Turkey	Gynecological	RCT	Hospital LoS Complications Hospital readmit	62 32 30	ERAS	14	High	14
Zhao	2014	China	Upper GI	RCT	Hospital LoS Complications Hospital readmit Cost	68 34 34	Fast Track	8	High	12

**eTable 2.** Risk of bias

Randomization process	Deviation from intended intervention (intent to treat)	Deviation from intended intervention (per protocol)	Missing Outcome data	Measurement of Outcome	Selection of results
Low = 52.0 (39) Some = 42.7 (32) High = 5.3 (4)	Low = 44.0 (33) Some = 40.0 (30) High = 16 (12)	Low = 52.0 (39) Some = 22.7 (17) High = 22.7 (17)	Low = 85.3 (64) Some = 8.0 (6) High = 5.4 (4)	Low = 65.3 (49) Some = 26.7 (20) High = 8.0 (6)	Low = 76.0 (57) Some = 24.0 (18) High = 0

**eFigure. PRISMA Flow Diagram**

