

Clinical scenarios	Outcomes	No. of RCTs	Random Effects (95% CI)	Baseline risk	Absolute risk difference	p value	I ² , Q test p value	t ₂	95% Prediction interval	Egger's p value	Begg's p value	Harbord's p value	LH/SS/ESB	GRADE	AMSTAR2	Evidence Classification
Surgery																
Clean																
Total joint arthroplasty	Surgical site infections	3	0.24 [0.16,0.37]	60 per 1000	46 fewer per 1000 (38 fewer to 50 fewer)	4.52E-11	0%, 0.65	0	0.096 to 0.61	0.27	0.12	0.43	None	Moderate	Critically Low	Class I
Tube thoracostomy for traumatic chest injuries	Overall infectious complications	10	0.24 [0.12,0.49]	NA	NA	7.55E-05	30%, 1.71	0.36	0.05 to 1.21	0.27	0.089	NA	None	Low	Critically Low	Class III
Tube thoracostomy for traumatic chest injuries	Empyema	11	0.31 [0.17,0.59]	NA	NA	0.0004	0%, 0.94	0	0.15 to 0.66	0.56	0.016	NA	None	Low	Critically Low	Class I
Closed fracture surgery	Deep surgical site infections (multiple dose)	10	0.39 [0.21,0.70]	50 per 1000	30 fewer per 1000 (15 fewer to 39 fewer)	0.002	0%, 0.89	0	0.19 to 0.78	0.007	0.73	0.006	None	Very low	High	Class I
Closed fracture surgery	Deep surgical site infections (single dose)	7	0.41 [0.24,0.69]	27 per 1000	16 fewer per 1000 (8 fewer to 21 fewer)	0.00075	0%, 0.59	0	0.21 to 0.81	0.21	0.62	0.74	None	Very low	High	Class I
Plastic and reconstructive surgery (Clean)	Surgical site infections	4	0.41 [0.25,0.66]	170 per 1000	100 fewer per 1000 (58 fewer to 130 fewer)	0.00031	0%, 0.42	0	0.14 to 1.19	0.24	0.17	0.11	None	Moderate	Low	Class II
Craniotomy surgery	Meningitis	7	0.42 [0.21,0.86]	26 per 1000	15 fewer per 1000 (4 fewer to 21 fewer)	0.017	0%, 0.57	0	0.17 to 1.07	0.26	0.65	0.69	None	Very low	Critically Low	Class IV
Closed fracture surgery	Superficial surgical site infections (multiple dose)	7	0.43 [0.21, 0.89]	76 per 1000	43 fewer per 1000 (8 fewer to 60 fewer)	0.02	23%, 0.26	0.21	0.095 to 1.95	0.06	0.051	0.29	None	Very low	High	Class IV
Mohs Surgery	Surgical site infections	5	0.49 [0.19,1.24]	69 per 1000	35 fewer per 1000 (56 fewer to 17 more)	0.13	74%, 0.004	0.77	0.02 to 11.72	0.32	0.62	0.37	LH	Very low	Critically Low	Class V
Breast reduction surgery	Surgical site infections	5	0.50 [0.28,0.89]	210 per 1000	110 fewer per 1000 (23 fewer to 150 fewer)	0.02	27%, 0.24	0.12	0.11 to 2.17	0.034	0.33	0.07	SSE	Low	Critically Low	Class IV
Hepatectomy	Surgical site infections	4	1.19 [0.79,1.80]	70 per 1000	13 more per 1000 (15 fewer to 56 more)	0.41	0%, 0.28	0	0.48 to 2.94	0.83	0.5	0.79	None	Low	Critically Low	Class V
Hernioplasty surgery	Postoperative wound infection	22	0.61 [0.48,0.78]	63 per 1000	25 fewer per 1000 (14 fewer to 33 fewer)	8.80E-5	0%, 0.87	0	0.47 to 0.79	0.059	0.11	0.42	SSE	Moderate	High	Class III
Shunt surgery in children with hydrocephalus	Infections	7	0.62 [0.40,0.96]	140 per 1000	53 fewer per 1000 (6 fewer to 84 fewer)	0.032	0%, 0.98	0	0.35 to 1.10	0.61	0.65	0.5	None	None	Critically Low	Class IV
Thyroid surgery	Surgical site infections	3	0.67 [0.17,2.58]	7 per 1000	2 fewer per 1000 (6 fewer to 12 more)	0.56	0%, 0.54	0	NA	0.43	0.12	0.49	None	Very low	Low	Class V
Breast cancer surgery	Surgical site infections	10	0.69 [0.54,0.88]	110 per 1000	34 fewer per 1000 (13 fewer to 51 fewer)	0.0027	0%, 0.61	0	0.52 to 0.92	0.21	0.30	0.20	None	Moderate	High	Class I
Closed fracture surgery	Superficial surgical site infections (single dose)	7	0.71 [0.51,0.98]	51 per 1000	15 fewer per 1000 (1 fewer to 25 fewer)	0.04	0%, 0.75	0	0.47 to 1.08	0.65	0.88	0.76	None	Very low	High	Class IV
Herniorrhaphy surgery	Postoperative wound infection	5	0.86 [0.56,1.33]	45 per 1000	6 fewer per 1000 (20 fewer to 15 more)	0.48	0%, 0.44	0	0.39 to 1.80	0.085	0.014	0.24	SSE	Very low	High	Class V
Simple hand surgery	Wound infection	10	0.92 [0.65,1.30]	55 per 1000	4 fewer per 1000 (19 fewer to 17 more)	0.64	0%, 0.81	0	0.61 to 1.38	0.64	0.42	0.51	None	Low	Critically Low	Class V
Clean-contaminated																
Transurethral resection of the prostate	Septicemia	8	0.23 [0.09,0.57]	13 per 1000	10 fewer per 1000 (6 fewer to 12 fewer)	0.0014	0%, 0.88	0	0.08 to 0.71	0.24	1.0	0.44	None	Low	Low	Class I
Renal transplant recipients	Bacteremia	2	0.13 [0.02,0.70]	120 per 1000	104 fewer per 1000 (36 fewer to 120 fewer)	0.02	0%, 0.75	0	NA	NA	NA	NA	None	Very low	Critically Low	Class IV
Elective vaginal hysterectomy	Postoperative infections	4	0.20 [0.06,0.62]	630 per 1000	500 fewer per 1000 (240 fewer to 590 fewer)	0.0052	82%, 0.00092	1.046	0.0013 to 31.09	0.097	0.50	0.34	SSE, LH	Low	High	Class II
Elective vaginal hysterectomy	Pelvic infection	11	0.24 [0.13,0.46]	160 per 1000	120 fewer per 1000 (90 fewer to 140 fewer)	1.30E-05	45%, 0.050	0.41	0.048 to 1.23	0.0038	0.70	0.049	None	Moderate	High	Class II
Uteroscopic lithotripsy	Postoperative bacteriuria	3	0.27 [0.11,0.63]	150 per 1000	110 fewer per 1000 (60 fewer to 130 fewer)	0.0027	0%, 0.69	0	0.0010 to 69.11	0.095	0.12	0.026	SSE	Moderate	Critically Low	Class III
Uteroscopic lithotripsy	Postoperative febrile UTIs	3	0.29 [0.07,1.23]	30 per 1000	20 fewer per 1000 (30 fewer to 7 more)	0.093	0%, 0.79	0	NA	NA	NA	NA	None	Low	Critically Low	Class V
Dental implants surgery	Early implant failure	8	0.32 [0.20,0.51]	50 per 1000	34 fewer per 1000 (29 fewer to 38 fewer)	1.50E-06	0%, 0.55	0	0.18 to 0.57	0.23	0.047	0.22	None	Low	Critically Low	Class I
Transurethral resection of the prostate	Postoperative bacteriuria	32	0.33 [0.25,0.43]	85 per 1000	57 fewer per 1000 (48 fewer to 64 fewer)	9.94E-17	40%, 0.012	0.17	0.14 to 0.80	0.002	0.11	0.043	SSE	Low	Low	Class II
Tooth extraction	Post-surgical infectious complications	12	0.37 [0.22,0.62]	91 per 1000	57 fewer per 1000 (35 fewer to 71 fewer)	0.00015	8%, 0.36	0.08	0.16 to 0.86	0.77	0.68	0.53	None	Low	High	Class I
Cesarean section	Serious infectious morbidity	32	0.37 [0.23,0.59]	32 per 1000	20 fewer per 1000 (13 fewer to 25 fewer)	3.76E-05	0%, 0.99	0	0.22 to 0.60	0.34	0.27	0.40	None	Moderate	High	Class I
Percutaneous nephrolithotomy	Postoperative sepsis	4	0.39 [0.27,0.58]	370 per 1000	230 fewer per 1000 (160 fewer to 270 fewer)	1.52E-06	0%, 0.56	0	0.17 to 0.91	0.12	0.50	0.16	None	Moderate	Critically Low	Class I
Cesarean section	Endometritis	83	0.39 [0.35,0.44]	160 per 1000	98 fewer per 1000 (90 fewer to 100 fewer)	2.74E-55	8%, 0.27	0.02	0.29 to 0.54	0.0035	0.03	0.08	None	Moderate	High	Class I
Cesarean section	Wound infection	82	0.41 [0.35,0.49]	95 per 1000	56 fewer per 1000 (48 fewer to 62 fewer)	2.25E-22	19%, 0.076	0.11	0.21 to 0.81	0.00016	0.08	0.01	None	Moderate	High	Class I
Uteroscopic lithotripsy	Postoperative pyuria	2	0.42 [0.25,0.69]	570 per 1000	330 fewer per 1000 (180 fewer to 430 fewer)	0.00076	0%, 0.33	0	NA	NA	NA	NA	None	Moderate	Critically Low	Class II
Elective vaginal hysterectomy	Postoperative fever	9	0.43 [0.29,0.62]	280 per 1000	160 fewer per 1000 (110 fewer to 200 fewer)	9.60E-06	45%, 0.068	0.13	0.16 to 1.12	0.11	0.061	0.24	None	Moderate	High	Class II
Elective abdominal hysterectomy	UTIs	12	0.43 [0.30,0.61]	130 per 1000	70 fewer per 1000 (50 fewer to 90 fewer)	3.80E-06	26%, 0.19	0.091	0.20 to 0.94	0.24	0.27	0.52	ESB	Moderate	High	Class II
Renal transplant recipients	Bacteriuria	3	0.43 [0.32,0.58]	650 per 1000	370 fewer per 1000 (270 fewer to 440 fewer)	4.21E-08	0%, 0.56	0	0.06 to 3.06	0.16	0.12	0.19	None	Moderate	Critically Low	Class II
Percutaneous endoscopic gastrostomy	Peristomal site infection	11	0.43 [0.32,0.58]	250 per 1000	140 fewer per 1000 (110 fewer to 170 fewer)	4.21E-08	0%, 0.56	0	0.06 to 3.06	0.16	0.94	0.83	None	Moderate	High	Class I
Rhinoplasty	Infectious complications	3	0.44 [0.18,1.04]	100 per 1000	60 fewer per 1000 (80 fewer to 4 more)	0.06	0%, 0.43	0	0.0015 to 122.20	0.53	0.60	NA	None	Very low	Low	Class V
Cesarean section	Febrile morbidity	56	0.45 [0.40,0.51]	270 per 1000	150 fewer per 1000 (130 fewer to 160 fewer)	8.21E-38	38%, 0.0030	0.069	0.26 to 0.77	0.011	0.11	0.19	SSE	Moderate	High	Class III
Stented distal hypoplasias repair	Overall complications	3	0.50 [0.21,1.19]	80 per 1000	40 fewer per 1000 (60 fewer to 20 more)	0.12	50%, 0.14	0.29	NA	0.22	0.6	0.13	LH	Very low	Critically Low	Class V
Elective abdominal hysterectomy	Abdominal wound infection	11	0.53 [0.35,0.80]	60 per 1000	30 fewer per 1000 (10 fewer to 40 fewer)	0.00023	6%, 0.39	0.032	0.28 to 0.98	0.94	0.70	0.69	None	Moderate	High	Class I
Elective abdominal hysterectomy	Pelvic infection	11	0.54 [0.36,0.81]	100 per 1000	50 fewer per 1000 (60 fewer to 20 fewer)	0.0028	9%, 0.36	0.042	0.28 to 1.04	0.038	0.14	0.068	None	Moderate	High	Class III
Elective abdominal hysterectomy	Postoperative fever	11	0.55 [0.42,0.72]	270 per 1000	120 fewer per 1000 (80 fewer to 160 fewer)	1.10E-05	54%, 0.016	0.098	0.25 to 1.19	0.0004	0.0008	0.0008	LH, SSE	Moderate	High	Class III
Elective vaginal hysterectomy	UTIs	8	0.56 [0.35,0.89]	160 per 1000	70 fewer per 1000 (20 fewer to 100 fewer)	0.014	44%, 0.086	0.17	0.17 to 1.79	0.96	1.0	0.95	None	Moderate	High	Class IV
Plastic and reconstructive surgery (Clean-contaminated)	Surgical site infections	5	0.61 [0.37,0.99]	120 per 1000	47 fewer per 1000 (11 fewer to 76 fewer)	0.045	17%, 0.31	0.062	0.20 to 1.86	0.057	0.17	0.21	SSE	Moderate	Low	Class III
Surgery for incomplete abortion	Genital tract infection	24	0.63 [0.51,0.77]	NA	NA	6.80E-06	50%, 0.003	0.1	0.31 to 1.27	0.0003	0.0068	NA	LH, SSE	Moderate	High	Class III
Elective laparoscopic cholecystectomy	Surgical site infections	21	0.67 [0.50,0.90]	47 per 1000	16 fewer per 1000 (5 fewer to 24 fewer)	0.0076	0%, 0.74	0	0.49 to 0.91	0.93	0.81	0.5	None	High	Critically Low	Class I
Post-midurethral sling placement	UTIs	3	0.72 [0.29,1.78]	NA	NA	0.48	70%, 0.036	0.44	NA	0.98	0.60	NA	LH	Very low	Critically Low	Class V
Endoscopic sinus surgery	Infections	3	0.76 [0.54,1.09]	NA	NA	0.14	0%, 0.79	0	0.08 to 7.56	0.27	0.60	NA	None	Very low	Critically Low	Class V
Uteroscopic lithotripsy	Postoperative fever	2	0.82 [0.41,1.67]	90 per 1000	20 fewer per 1000 (50 fewer to 60 more)	0.59	0%, 0.59	0	NA	NA	NA	NA	None	None	Critically Low	Class V
Kidney transplant recipients with asymptomatic bacteriuria	Symptomatic UTIs	2	0.86 [0.51,1.45]	250 per 1000	40 fewer per 1000 (120 fewer to 110 more)	0.566	0%, 0.3438	0	NA	NA	NA	NA	None	Low	Low	Class V
Transurethral resection of bladder tumors	Postoperative UTIs	4	1.12 [0.22,5.70]	26 per 1000	3 more per 1000 (20 fewer to 120 more)	0.89	30%, 0.23	0.85	0.005 to 233	0.5	0.60	0.90	None	Very low	High	Class V
Contaminated																
Endoscopic resection for colorectal lesions	Postoperative adverse events	3	0.16 [0.08,0.31]	180 per 1000	150 fewer per 1000 (120 fewer to 170 fewer)	3.13E-08	0%, 0.91	0	0.002 to 10.66	0.00012	0.12	0.27	SSE	Moderate	Low	Class II
Colorectal surgery	Surgical wound infection	30	0.35 [0.29,0.41]	390 per 1000	250 fewer per 1000 (230 fewer to 270 fewer)	4.84E-31	8%, 0.34	0.02	0.25 to 0.49	2.47E-06	NA	NA	SSE	Low	High	Class III
Transrectal prostate biopsy	Pooled infectious complications	12	0.58 [0.40,0.85]	150 per 1000	63 fewer per 1000 (23 fewer to 90 fewer)	0.0055	14%, 0.31	0.062	0.29 to 1.18	0.014	0.028	0.032	None	Low	High	Class III
Dirty or infected																
Incision and drainage of anorectal abscesses	Anal fistulas	2	0.89 [0.26,3.03]	270 per 1000	30 fewer per 1000 (200 fewer to 550 more)	0.85	92%, 0.00035	0.73	NA	NA	NA	NA	LH	Very low	Critically Low	Class V
Undefined																
Any surgical procedures	Surgical site infections	52	0.89 [0.79,1.00]	63 per 1000	7 fewer per 1000 (0 fewer to 13 fewer)	0.05	0%, 0.50	0	0.79 to 1.00	0.31	0.45	0.54	None	Moderate	High	Class V
Non-surgical invasive procedures																
Shock wave lithotripsy in patients with sterile urine	Fever	4	0.39 [0.07,2.20]	140 per 1000	85 fewer per 1000 (130 fewer to 170 more)	0.29	57%, 0.07	1.72	0.00044 to 347.84	0.74	0.5	0.2	None	Very low	Critically Low	Class V
External ventricular drain (EVD) placement	Ventriculostomy-related infections	3	0.43 [0.17,1.08]	190 per 1000	110 fewer per 1000 (160 fewer to 16 more)	0.07	0%, 0.71	0	0.001 to 163	0.057	0.12	0.89	None	Very low	Low	Class V
Endoscopic retrograde cholangiopancreatography (ERCP)	Septicaemia	6	0.44 [0.18,1.07]	55 per 1000	30 fewer per 1000 (45 fewer to 4 more)	0.07	0%, 0.57	0	0.12 to 1.57	0.52	0.17	0.9	None	Very low	High	Class V
Adults undergoing cystoscopy	Symptomatic UTIs	11	0.48 [0.29,0.78]	40 per 1000	20 fewer per 1000 (