

Table 4 Process measures before and after implementation of the emergency laparotomy pathway quality improvement care bundle

	Site 1		Site 2		Site 3		Site 4	
	Before	After	Before	After	Before	After	Before	After
	ELPQuiC (n = 51)	ELPQuiC (n = 109)	ELPQuiC (n = 144)	ELPQuiC (n = 144)	ELPQuiC (n = 44)	ELPQuiC (n = 97)	ELPQuiC (n = 60)	ELPQuiC (n = 77)
Early warning score recorded								
No	22 (43)	38 (34.9)	0 (0)	32 (22.2)	8 (18)	1 (1)	0 (0)	1 (1)
Yes	15 (29)	71 (65.1)	0 (0)	112 (77.8)	35 (80)	96 (99)	40 (67)	76 (99)
n.a.	14 (27)	–	144 (100)	–	1 (2)	–	20 (33)	–
<i>P</i> *	< 0.001 (0.012)		Not computed		< 0.001 (< 0.001)		< 0.001 (1.000)	
Preop. antibiotics								
No	22 (43)	50 (45.9)	39 (27.1)	44 (30.6)	11 (25)	34 (35)	19 (32)	11 (14)
Yes	25 (49)	58 (53.2)	69 (47.9)	100 (69.4)	33 (75)	63 (65)	18 (30)	66 (86)
n.a.	4 (8)	1 (0.9)	36 (25.0)	–	–	–	23 (38)	–
<i>P</i> *	0.082 (1.000)		< 0.001 (0.417)		0.251		< 0.001 (< 0.001)	
Decision to theatre time < 6 h								
No	18 (35)	19 (17.4)	50 (34.7)	46 (31.9)	12 (27)	23 (24)	12 (20)	18 (23)
Yes	25 (49)	86 (78.9)	64 (44.4)	92 (63.9)	22 (50)	67 (69)	21 (35)	59 (77)
n.a.	8 (16)	4 (3.7)	30 (20.8)	6 (4.2)	10 (23)	7 (7)	27 (45)	–
<i>P</i> *	< 0.001 (0.004)		< 0.001 (0.092)		0.020 (0.371)		< 0.001 (0.170)	
Intraop. goal-directed fluid therapy								
No	17 (33)	8 (7.3)	118 (81.9)	61 (42.4)	31 (70)	17 (18)	56 (93)	39 (51)
Yes	32 (63)	100 (91.7)	26 (18.1)	83 (57.6)	13 (30)	80 (82)	4 (7)	38 (49)
n.a.	2 (4)	1 (0.9)	–	–	–	–	–	–
<i>P</i> *	< 0.001 (< 0.001)		< 0.001		< 0.001		< 0.001	
Postop. intensive care								
No	15 (29)	5 (4.6)	66 (45.8)	64 (44.4)	23 (52)	24 (25)	34 (57)	29 (38)
Yes	36 (71)	104 (95.4)	76 (52.8)	80 (55.6)	21 (48)	73 (75)	26 (43)	48 (62)
n.a.	–	–	2 (1.4)	–	–	–	–	–
<i>P</i> *	< 0.001		0.501 (0.812)		0.002		0.038	
Consultant anaesthetist in theatre								
No	31 (61)	19 (17.4)	66 (45.8)	51 (35.4)	4 (9)	2 (2)	29 (48)	27 (35)
Yes	20 (39)	90 (82.6)	78 (54.2)	93 (64.6)	40 (91)	95 (98)	31 (52)	50 (65)
n.a.	–	–	–	–	–	–	–	–
<i>P</i> *	< 0.001		0.093		0.076		0.161	
Consultant surgeon in theatre								
No	28 (55)	18 (16.5)	85 (59.0)	68 (47.2)	8 (18)	14 (14)	15 (25)	16 (21)
Yes	23 (45)	91 (83.5)	59 (41.0)	76 (52.8)	36 (82)	83 (86)	45 (75)	61 (79)
n.a.	–	–	–	–	–	–	–	–
<i>P</i> *	< 0.001		0.059		0.619		0.681	

Values in parentheses are percentages unless indicated otherwise. ELPQuiC, emergency laparotomy pathway quality improvement care; n.a., not available. *Fisher's two-tailed exact test with yes, no and n.a. as distinct categories; *P* values in parentheses were calculated excluding n.a.

mean P-POSSUM risk of death, individually for each hospital and collectively for all hospitals using a test for proportions.

The statistical significance of changes in process-of-care variables was determined using a two-tailed Fisher's exact

test with missing data treated as a separate category, and also with the missing data excluded from the calculations, so that the extent to which missing data contributed to the change could be assessed. All analyses were undertaken